

Appendix



Approved MOU



Town of Stallings
TIA Memorandum of Understanding

Date: July 9, 2019

Project Information

Project Name: Willows at Stallings
Project Location: S. of Stevens Mill Rd. W. of Stallings Rd
Project Owner: Dave Ransenburg

Applicant Information

Applicant Name: Dave Ransenburg
Applicant Telephone: (704) 752-8550
Applicant Email: dave@gatecomllc.com

Application Request: Small Area Plan
(eg. Rezoning, preliminary or final plat, special use permit, site plan, etc.)

Existing

Existing Zoning: MU-2
Existing Land Use: Undeveloped/Single Family Homes
Parcel Size: ± 22.79 acres

Proposed Development

Proposed Zoning: MU-2 (Small Area Plan)
Proposed Land Use: Apartments
Proposed Size/Density: 345 dwelling units
Proposed Build-Out Year: 2022

Scenarios to be Analyzed:

- ☒ 2019 Existing Conditions
☒ 2022 Background Conditions
☒ 2022 Build Conditions
☒ 2027 Build Conditions + 5 years
☐ Other: _____

Background Growth Rate: 3.5% (based on study area ADTs and Atrium Stallings TIA)

Count Times: ☒ 6:00–9:00 AM, 4:00–7:00 PM ☐ Other: _____

Future Offsite Developments (Name of Development, Location, Land Use, Density, TIA Info. if applicable):

Development	Land Use/Intensity	% Build-out	TIA Included?	Required Improvements
Atrium Stallings	160,000 SF Hospital 60,000 SF MOB	0%	Yes	Consistent with Phase 1 of TIA (proposed 2021 build-out)

Funded TIP/CIP projects (Name of Project, Location, Improvements, Schedule):

- John Street/Old Monroe Road Widening (U-4714) – *Outside TIA study area*
 - Widen to multi-lanes from Trade Street to Wesley Chapel-Stouts Road (superstreet on some locations)
 - Right-of-way in FY 2019
 - Construction in FY 2021-2024
- Chestnut Lane Connector (U-5808) – *Outside TIA study area*
 - Construct new roadway from Matthews-Indian Trail Road to Gribble Road
 - Right-of-way/Utilities in FY 2019
 - Construction in FY 2021

Projects identified in adopted Transportation Plans (Name of Project, Location, Improvements, Schedule):

- 14' multi-use path to be required on the east side of Stallings Road
- Enhanced Intersection at Stallings Road and Stevens Mill Road (C-5)
 - Provide safe pedestrian crossing opportunities at the center of the Stallings School Node.
 - Coordinate improvements with Stallings Elementary School and the Monroe Bypass project.
- Enhanced Intersection at Stallings Road and US 74 (C-7)
 - Provide safe pedestrian crossing opportunities to improve the pedestrian connection of the north and south sides of Town.
 - Coordinate improvements with Monroe Bypass project.
- Crossing of Stallings Rd. at North Fork Creek (South branch) (C-18)
 - Provide a safe pedestrian crossing for the North Fork Trail (project T-3) at Stallings Road at the south end of the Stallings School Node.
- Stallings Rd., part 1 (4,700' sidewalk facilities) (S-5)
 - Connect existing sidewalk along Stallings Road south of US 74 (at project C-7), and North Fork Trail (project T-3) to Stevens Mill Rd., along east side of Stallings Rd.
- Stallings Rd., part 2 (2,100' sidewalk facilities) (S-9)
 - Connect the Stallings School Node to Fairhaven Park, the North Fork Trail (project T-3), adjacent residential areas, and the existing Stevens Mill sidewalk.
- North Fork Trail (T-3)
 - Connect the Stallings School Node to residential neighborhoods and Fairhaven Park, existing sidewalks, and areas south of US 74.

Trip Generation Table (ITE 10th Edition):

Table 1 - Trip Generation								
Land Use	Intensity	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Multifamily Housing Mid-Rise (Apartments)	345 DU	1,879	115	30	85	145	88	57
Net New External Trips		1,879	115	30	85	145	88	57

Proposed Access:

- Access #1 – proposed full-movement access on Public Road 1
- Access #2– proposed full-movement access on Public Road 2

Intersections to be Studied:

Intersection	Type of Analysis	
	Signalized	Unsignalized
1. Stallings Road and Stevens Mill Road	☐	☒
2. Stallings Road and Monroe Expressway WB Ramp	☒	☐
3. Stallings Road and Monroe Expressway EB Ramp	☒	☐
4. Stallings Road and Matthews-Indian Trail Road	☒	☐
5. Stevens Mill Road and Mt. Harmony Church Road~	☐	☒
6. Stevens Mill Road and Oakspring Road~	☐	☒
7. Stevens Mill Road and Public Road 1*	☐	☒
8. Stevens Mill Road and Public Road 2	☐	☒
9. Public Road 1 and Access #1	☐	☒
10. Public Road 2 and Access #2	☐	☒

* ADT count to be collected on Stevens Mill Road at approximate location of Public Road 1

~ New turning movement counts to be collected

- ☒ **Other Considerations (i.e. pedestrian, transit, other scenarios):**
- A weighted peak hour factor (PHF) will be used in the AM peak hour to capture impacts of the adjacent school
 - Pedestrian LOS analysis at study area intersections using Highway Capacity Manual (HCM) 6th Edition methodologies
 - Bicycle LOS analysis at study area intersections using CDOT's *Bicycle Level of Service* worksheet
 - Turn lanes and storage lengths for the major street (uncontrolled) approaches at unsignalized intersections will be identified using NCDOT's *Policy on Street and Driveway Access to North Carolina Highways*

☐ **Traffic Signal Warrants: N/A**

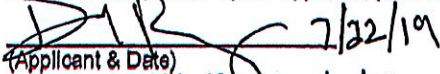
☒ **Crash Analysis Required:**

- At existing study intersections, based on most recent 3 years available

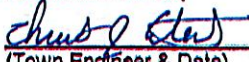
☐ **Additional Traffic Analysis (i.e. Synchro, VISSIM, SIDRA, etc.): N/A**

Agreement by all Parties

The undersigned agree to the contents and methodology described in this Memorandum of Understanding (MOU) for completing the required TIA supportive of the development application identified herein. Any changes to the above methodology contemplated by the applicant or transportation consultant must be submitted to the Town in writing and a revised MOU executed before such changes will be accepted for the TIA report. The applicant must provide payment in full to the Town for preparation of the TIA prior to commencement of the work. Any additional services incurred by the transportation consultant in addition to the MOU must be approved by the Town, and agreed to and paid for by the applicant, prior to performance of the additional work.

 7/22/19
(Applicant & Date)

 7/10/19
(Transportation Consultant & Date)

Approved by:  7/23/2019
(Town Engineer & Date)

NCDOT Involvement Needed? ☒ Yes ☐ No If Yes, contact NCDOT at (704) 218-5100 for requirements.

NCDOT Required Scoping

(NCDOT & Date, if Applicable)

Attachments:

1. Proposed Site Plan
2. Location Map
3. Proposed Site Trip Distribution

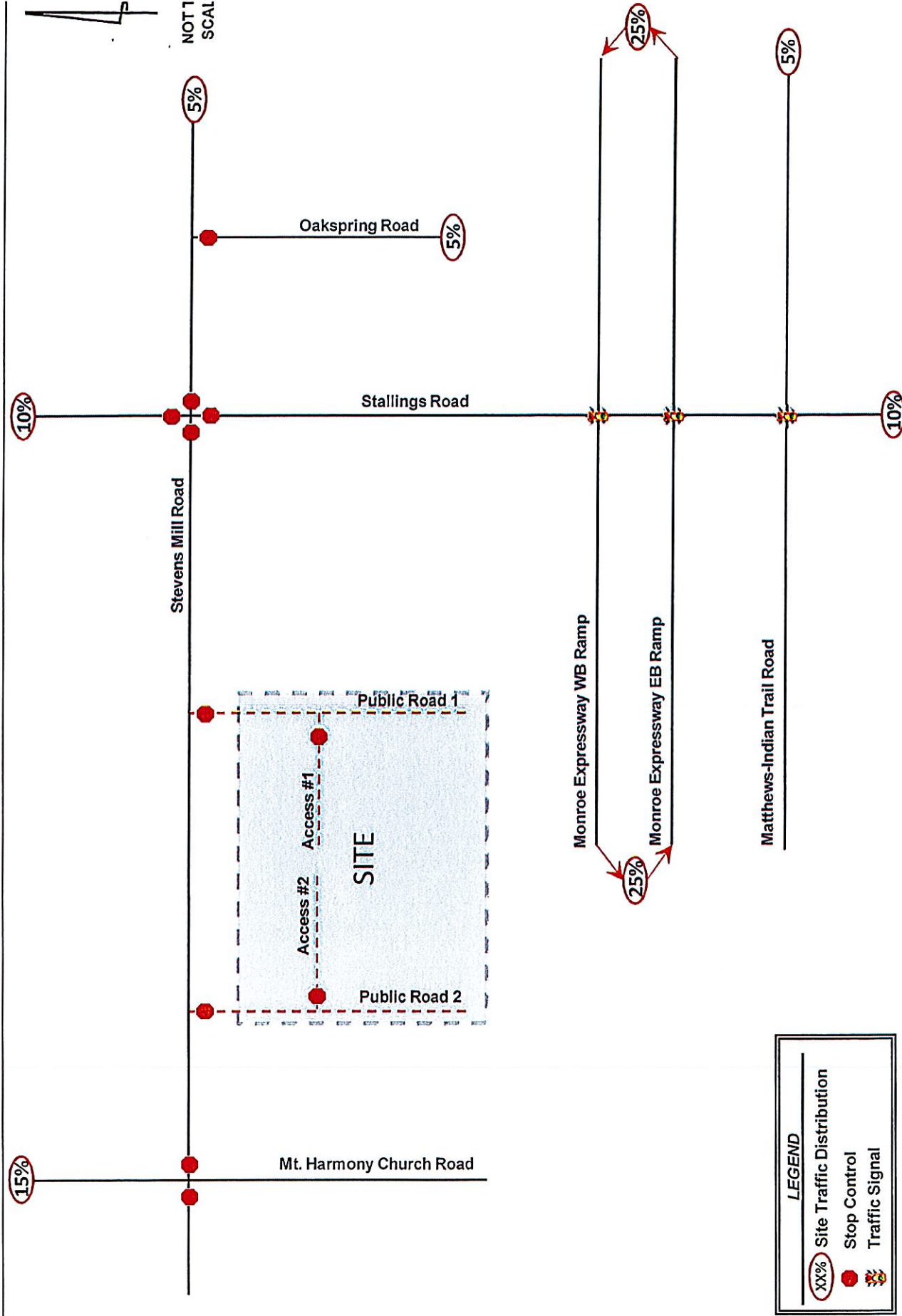


Willows at Stallings
Transportation Impact Analysis

Kimley»Horn

Location Map

Figure 2



Kimley»Horn	Willows at Stallings Transportation Impact Analysis	Proposed Site Trip Distribution	Figure 3
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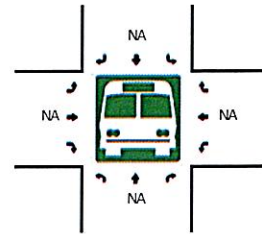
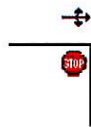
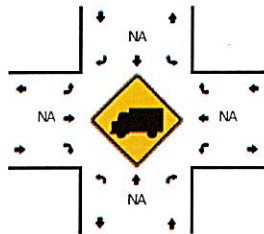
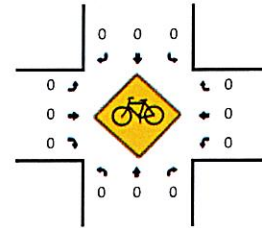
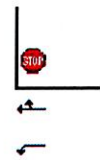
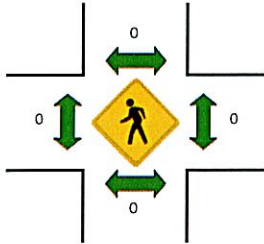
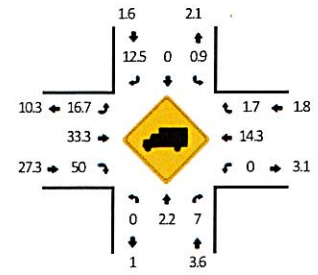
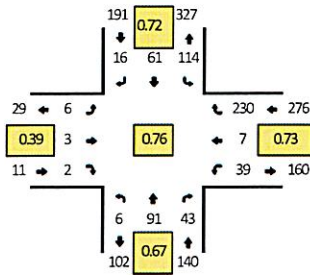
Site Plan

Turning Movement Counts

LOCATION: Mt. Harmony Church Rd -- Stevens Mill Rd
CITY/STATE: Mecklenburg, NC

QC JOB #: 15038501
DATE: Tue, Sep 10 2019

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



15-Min Count Period Beginning At	Mt. Harmony Church Rd (Northbound)				Mt. Harmony Church Rd (Southbound)				Stevens Mill Rd (Eastbound)				Stevens Mill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	3	0	0	0	3	2	0	0	0	0	0	1	0	4	0	13	
6:15 AM	1	1	0	0	2	2	1	0	0	0	0	0	0	1	11	0	19	
6:30 AM	2	6	2	1	3	10	1	0	0	0	0	0	2	1	12	0	40	
6:45 AM	2	5	2	0	6	11	8	0	0	0	0	0	1	1	16	0	52	124
7:00 AM	4	13	7	0	22	5	4	0	1	0	2	0	3	4	33	0	98	209
7:15 AM	0	22	13	0	45	18	3	0	0	0	0	0	9	0	71	0	181	371
7:30 AM	0	35	17	0	32	16	7	0	1	0	0	0	16	0	78	0	202	533
7:45 AM	2	21	6	0	15	22	2	0	4	3	0	0	11	3	48	0	137	618
8:00 AM	3	16	6	0	6	9	2	0	6	0	0	0	4	1	25	0	78	598
8:15 AM	3	15	5	0	5	9	0	0	3	2	0	0	6	0	31	0	79	496
8:30 AM	0	20	3	0	5	4	2	0	0	0	0	0	1	0	23	0	58	352
8:45 AM	0	6	1	0	5	8	1	0	1	1	0	0	1	0	17	0	41	256
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	140	68	0	128	64	28	0	4	0	0	0	64	0	312	0	808	
Heavy Trucks	0	4	4	0	0	0	4	0	0	0	0	0	0	0	4	0	16	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

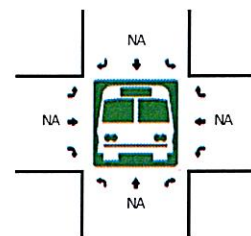
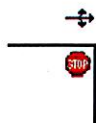
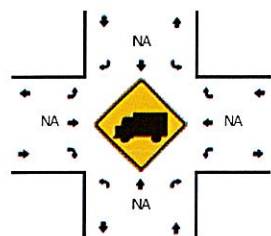
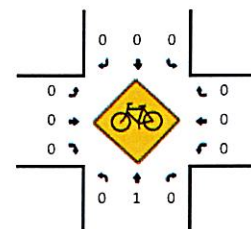
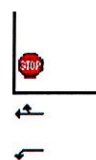
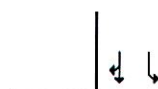
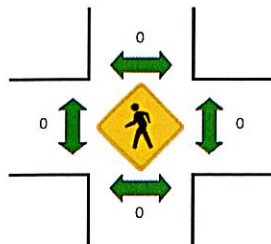
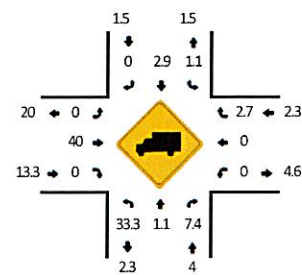
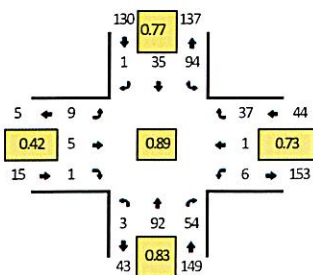
Report generated on 9/17/2019 8:25 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: Mt. Harmony Church Rd -- Stevens Mill Rd
CITY/STATE: Mecklenburg, NC

QC JOB #: 15038502
DATE: Tue, Sep 10 2019

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



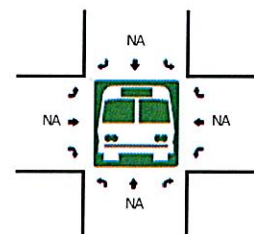
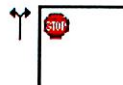
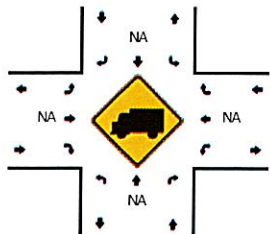
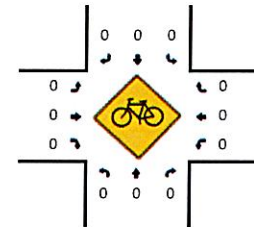
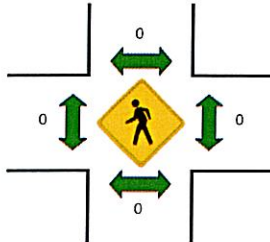
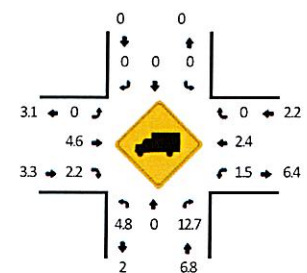
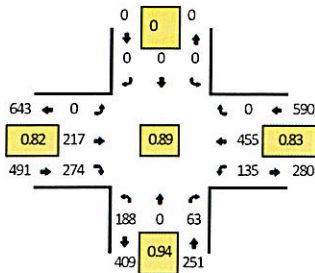
15-Min Count Period Beginning At	Mt. Harmony Church Rd (Northbound)				Mt. Harmony Church Rd (Southbound)				Stevens Mill Rd (Eastbound)				Stevens Mill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	19	5	1	7	6	0	0	5	2	1	0	0	0	16	0	62	
4:15 PM	1	13	3	0	18	6	0	0	0	1	1	0	2	0	9	0	54	
4:30 PM	0	27	18	0	20	9	0	0	2	0	0	0	1	0	10	0	87	
4:45 PM	1	16	9	0	15	8	0	0	3	4	1	1	4	1	10	0	73	276
5:00 PM	0	26	17	0	31	10	1	0	2	0	0	0	0	0	8	0	95	309
5:15 PM	1	23	10	1	28	8	0	0	1	1	0	0	1	0	9	0	83	338
5:30 PM	0	10	10	0	20	7	1	0	2	7	2	0	0	0	5	0	64	315
5:45 PM	0	28	9	0	30	4	0	0	0	0	2	0	3	0	8	0	84	326
6:00 PM	0	21	13	0	25	5	0	0	0	0	0	0	2	0	11	0	77	308
6:15 PM	0	16	4	0	20	9	0	0	0	0	0	0	0	0	18	0	67	292
6:30 PM	0	7	3	0	22	14	2	0	0	0	1	0	2	0	4	0	55	283
6:45 PM	0	15	7	0	19	3	1	0	0	1	0	0	2	0	10	0	58	257
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	104	68	0	124	40	4	0	8	0	0	0	0	0	32	0	380	
Heavy Trucks	0	0	4	0	4	4	0	0	0	0	0	0	0	0	4	0	16	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Oakspring Rd -- Stevens Mill Rd
CITY/STATE: Union, NC

QC JOB #: 15038503
DATE: Tue, Sep 10 2019

Peak-Hour: 7:15 AM -- 8:15 AM
 Peak 15-Min: 7:45 AM -- 8:00 AM



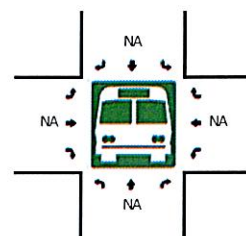
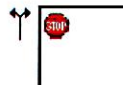
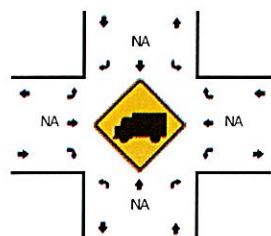
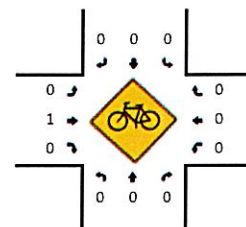
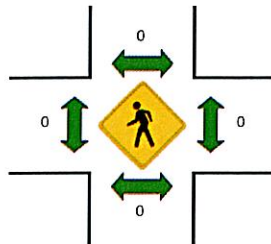
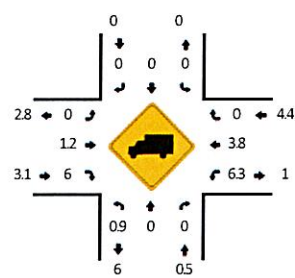
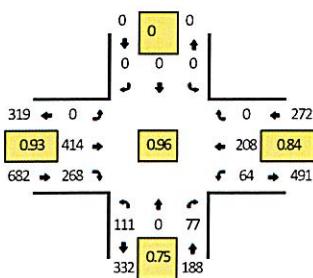
15-Min Count Period Beginning At	Oakspring Rd (Northbound)				Oakspring Rd (Southbound)				Stevens Mill Rd (Eastbound)				Stevens Mill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	6	0	2	1	0	0	0	0	0	6	6	0	5	20	0	0	46	
6:15 AM	11	0	0	0	0	0	0	0	0	8	22	0	9	32	0	0	82	
6:30 AM	24	0	2	0	0	0	0	0	0	15	28	0	10	61	0	0	140	
6:45 AM	28	0	8	0	0	0	0	0	0	16	35	0	14	66	0	0	167	435
7:00 AM	35	0	8	0	0	0	0	0	0	20	36	0	13	98	0	0	210	599
7:15 AM	52	0	15	0	0	0	0	0	0	33	61	0	29	80	0	0	270	787
7:30 AM	52	0	15	0	0	0	0	0	0	29	77	0	42	106	0	0	321	968
7:45 AM	43	0	13	0	0	0	0	0	0	61	80	0	22	156	0	0	375	1176
8:00 AM	41	0	20	0	0	0	0	0	0	94	56	0	42	113	0	0	366	1332
8:15 AM	45	0	20	0	0	0	0	0	0	31	35	0	12	59	0	0	202	1264
8:30 AM	29	0	10	0	0	0	0	0	0	27	26	0	10	66	0	0	168	1111
8:45 AM	23	0	11	0	0	0	0	0	0	22	21	0	12	71	0	0	160	896
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	172	0	52	0	0	0	0	0	0	244	320	0	88	624	0	0	1500	
Heavy Trucks	4	0	12		0	0	0		0	12	12		0	16	0		56	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Oakspring Rd -- Stevens Mill Rd
CITY/STATE: Union, NC

QC JOB #: 15038504
DATE: Tue, Sep 10 2019

Peak-Hour: 5:00 PM -- 6:00 PM
 Peak 15-Min: 5:30 PM -- 5:45 PM



15-Min Count Period Beginning At	Oakspring Rd (Northbound)				Oakspring Rd (Southbound)				Stevens Mill Rd (Eastbound)				Stevens Mill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	33	0	21	0	0	0	0	0	0	95	24	0	9	44	0	0	226	
4:15 PM	18	0	23	0	0	0	0	0	0	56	54	0	16	37	0	0	204	
4:30 PM	27	0	25	0	0	0	0	0	0	91	45	0	11	54	0	0	253	
4:45 PM	29	0	30	0	0	0	0	0	0	79	50	0	19	33	0	0	240	923
5:00 PM	32	0	31	0	0	0	0	0	0	105	72	0	12	43	0	0	295	992
5:15 PM	20	0	17	0	0	0	0	0	0	118	66	0	16	52	0	0	289	1077
5:30 PM	36	0	19	0	0	0	0	0	0	110	64	0	16	52	0	0	297	1121
5:45 PM	23	0	10	0	0	0	0	0	0	81	66	0	20	61	0	0	261	1142
6:00 PM	18	0	9	0	0	0	0	0	0	96	56	0	13	56	0	0	248	1095
6:15 PM	28	0	16	0	0	0	0	0	0	79	37	0	15	50	0	0	225	1031
6:30 PM	10	0	19	0	0	0	0	0	0	60	26	0	15	36	0	0	166	900
6:45 PM	20	0	14	0	0	0	0	0	0	74	18	0	6	49	0	0	181	820
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	144	0	76	0	0	0	0	0	0	440	256	0	64	208	0	0	1188	
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	8	0	4	0	0	0	16	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad Stopped Buses																		

Comments:

Report generated on 9/17/2019 8:25 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Stevens Mill Rd/Eaglecrest Dr & Stallings Rd

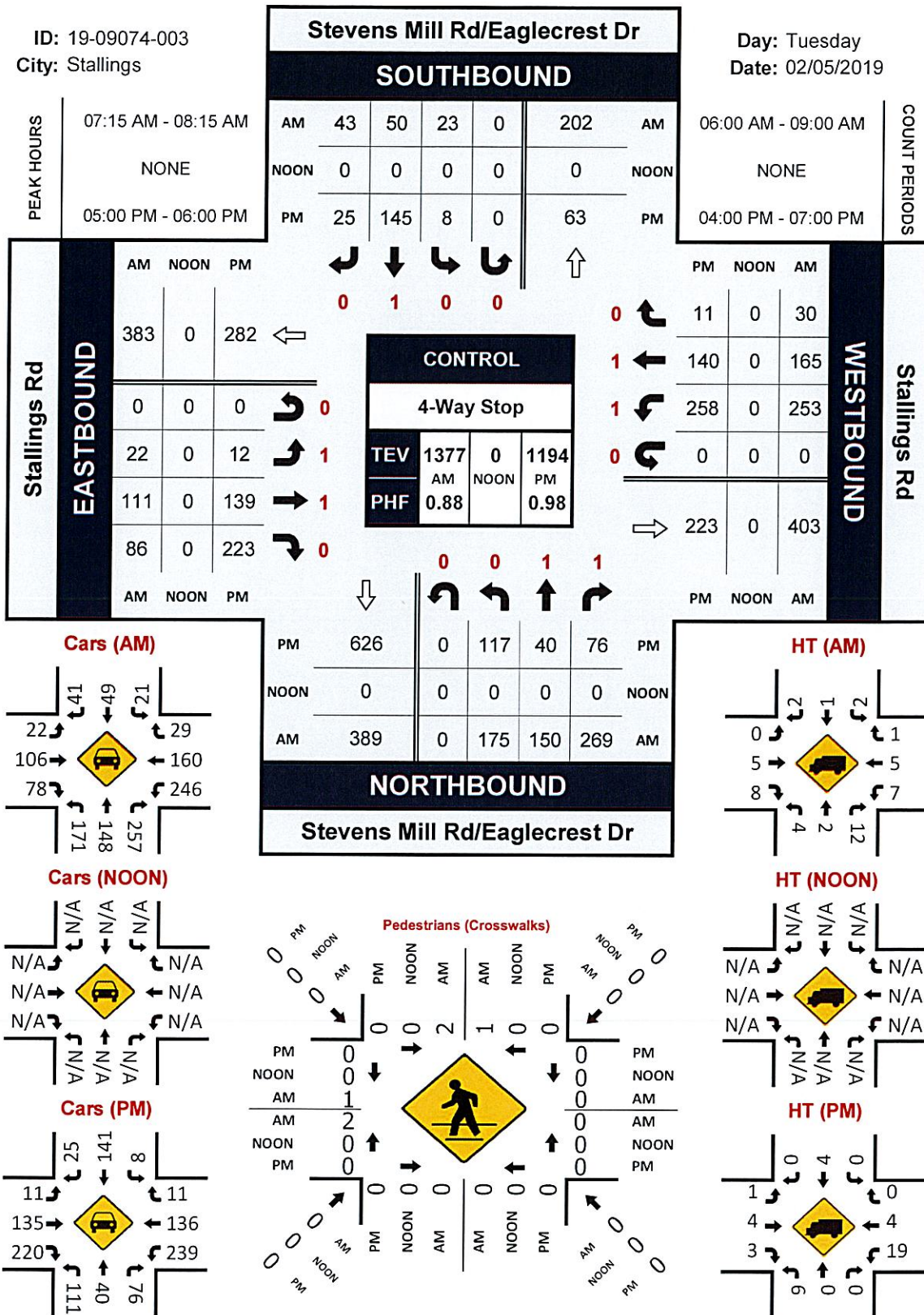
Peak Hour Turning Movement Count

ID: 19-09074-003

City: Stallings

Day: Tuesday

Date: 02/05/2019



Monroe Expy WB Ramp & Stallings Rd

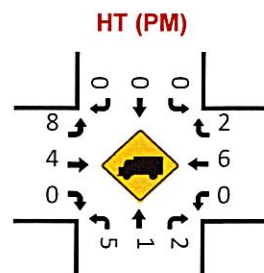
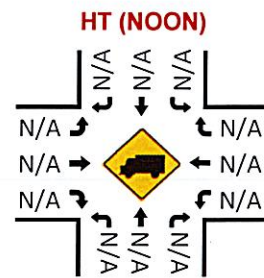
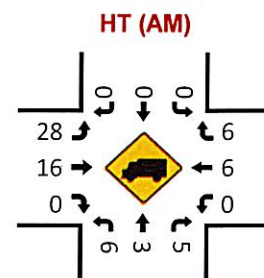
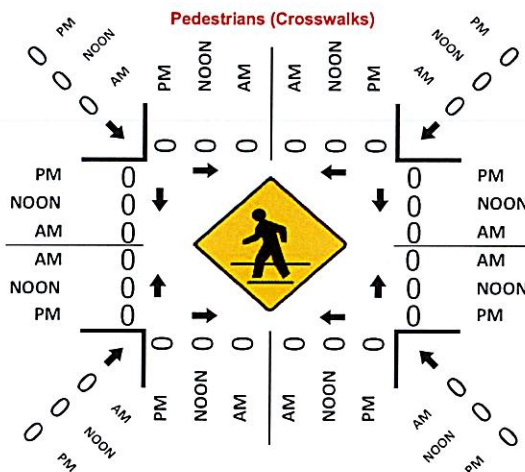
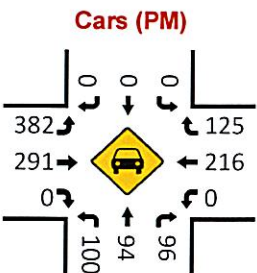
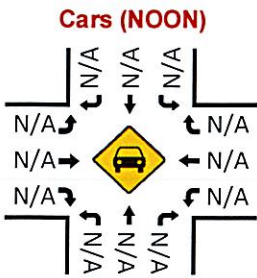
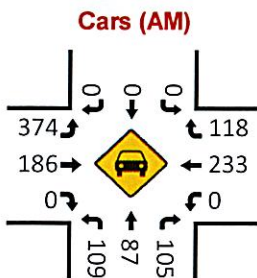
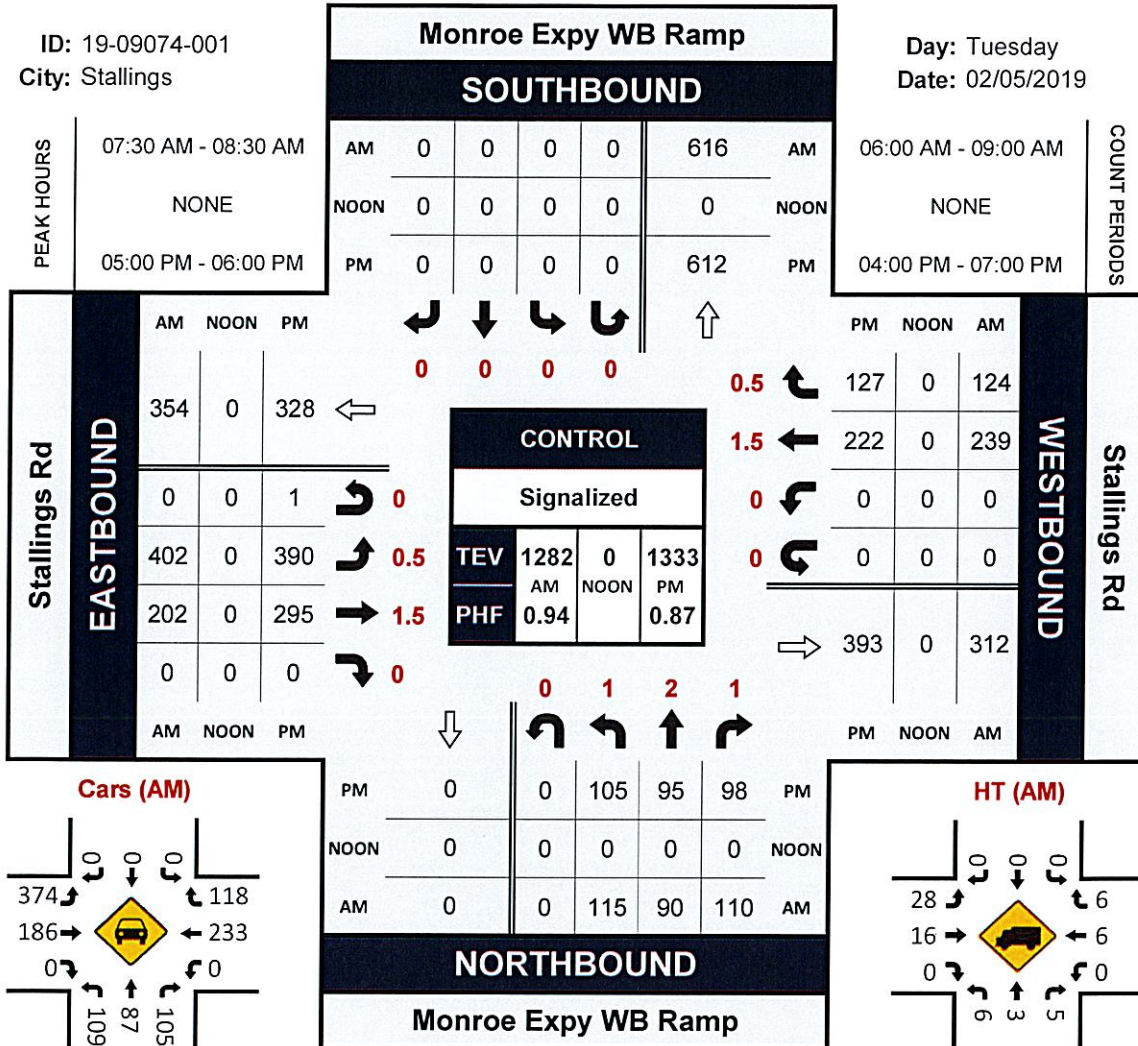
Peak Hour Turning Movement Count

ID: 19-09074-001

City: Stallings

Day: Tuesday

Date: 02/05/2019



Monroe Expy EB Ramp & Stallings Rd

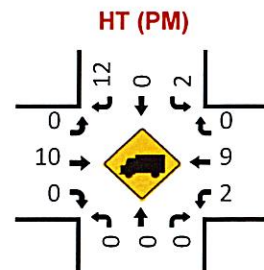
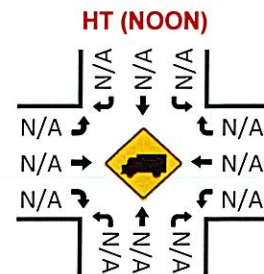
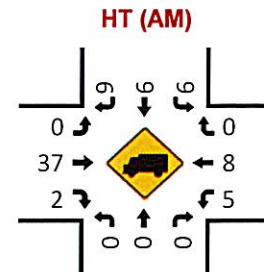
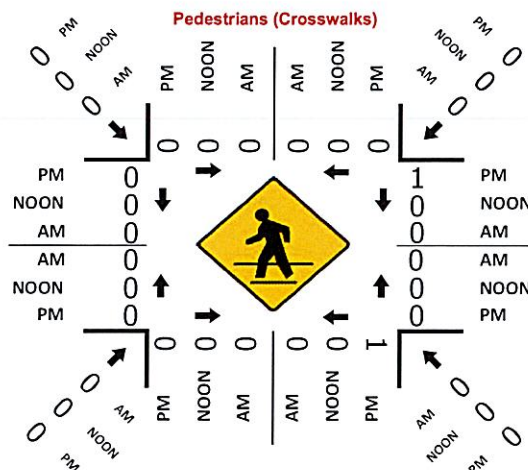
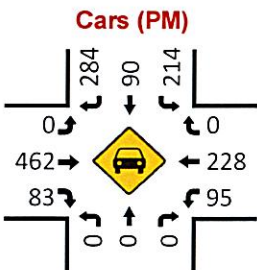
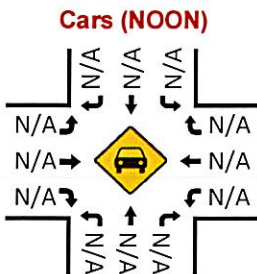
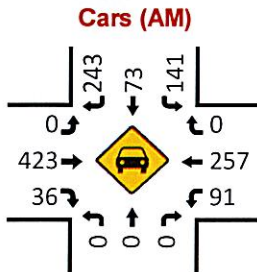
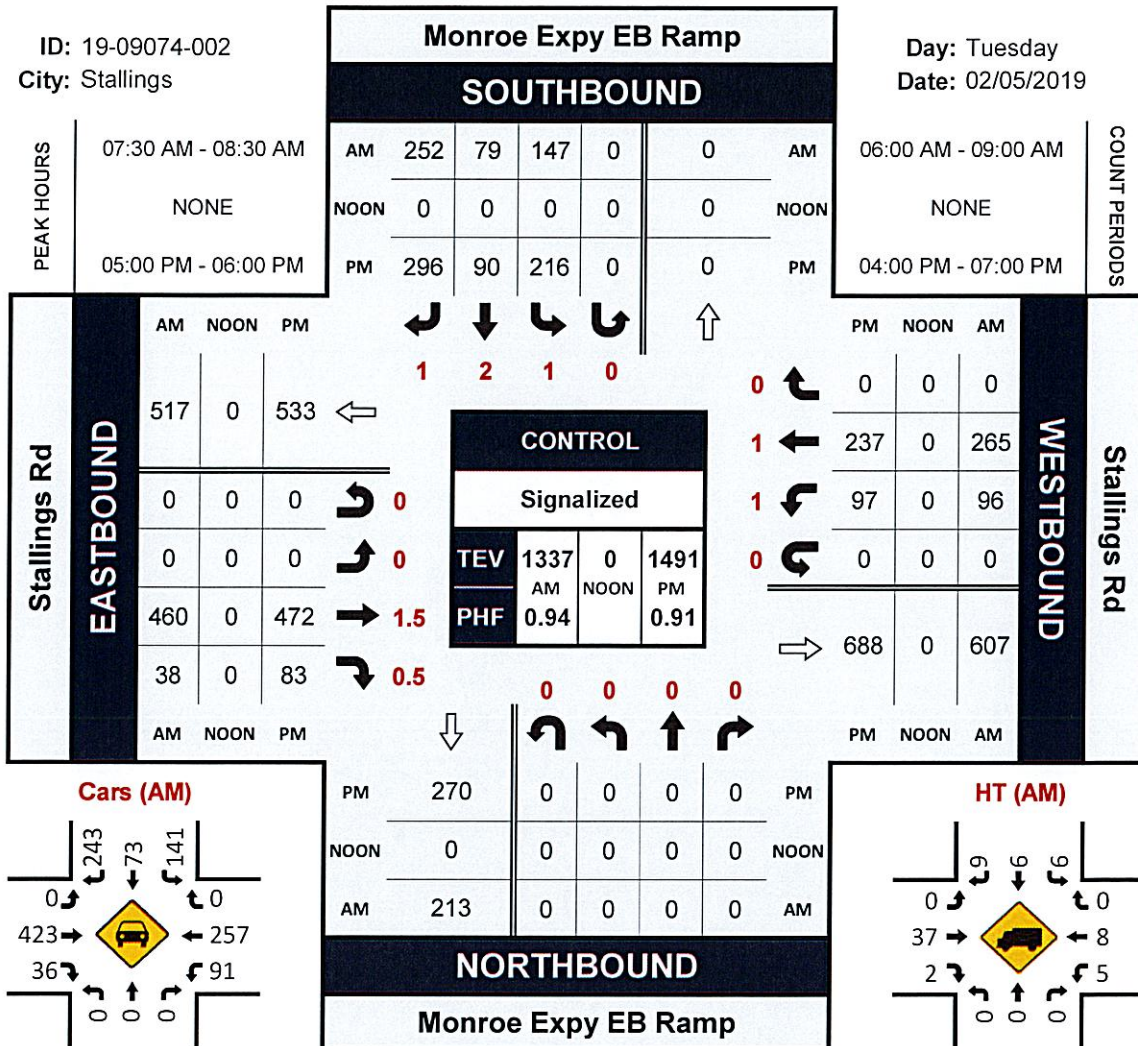
Peak Hour Turning Movement Count

ID: 19-09074-002

City: Stallings

Day: Tuesday

Date: 02/05/2019

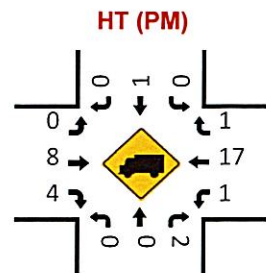
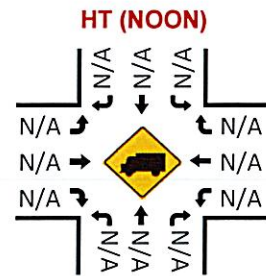
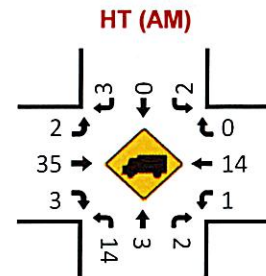
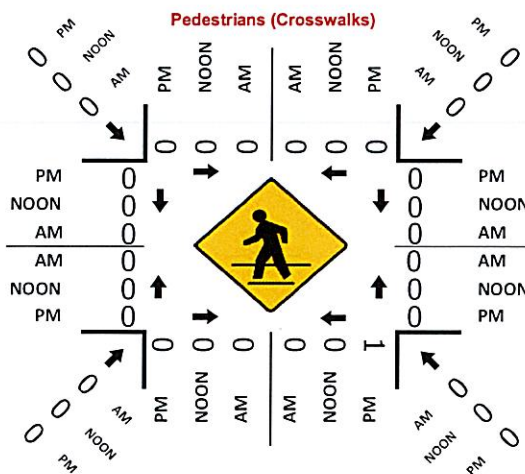
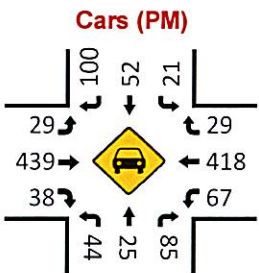
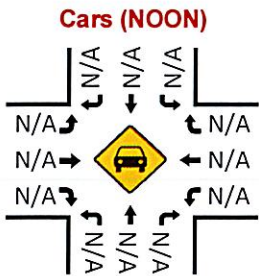
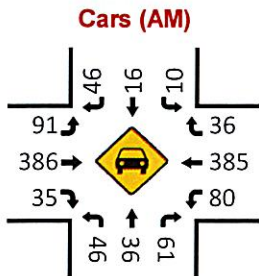
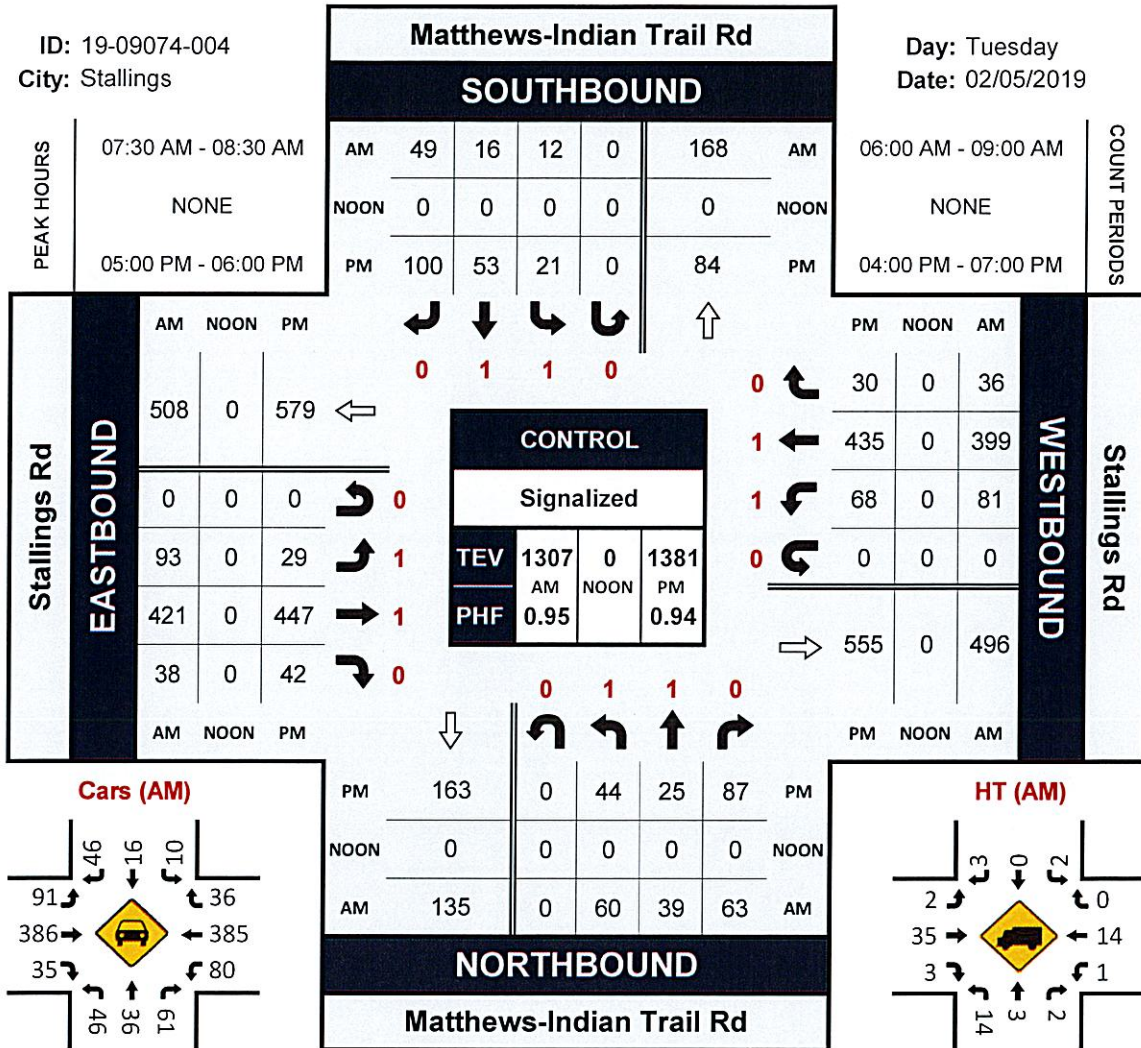


Matthews-Indian Trail Rd & Stallings Rd

Peak Hour Turning Movement Count

ID: 19-09074-004
City: Stallings

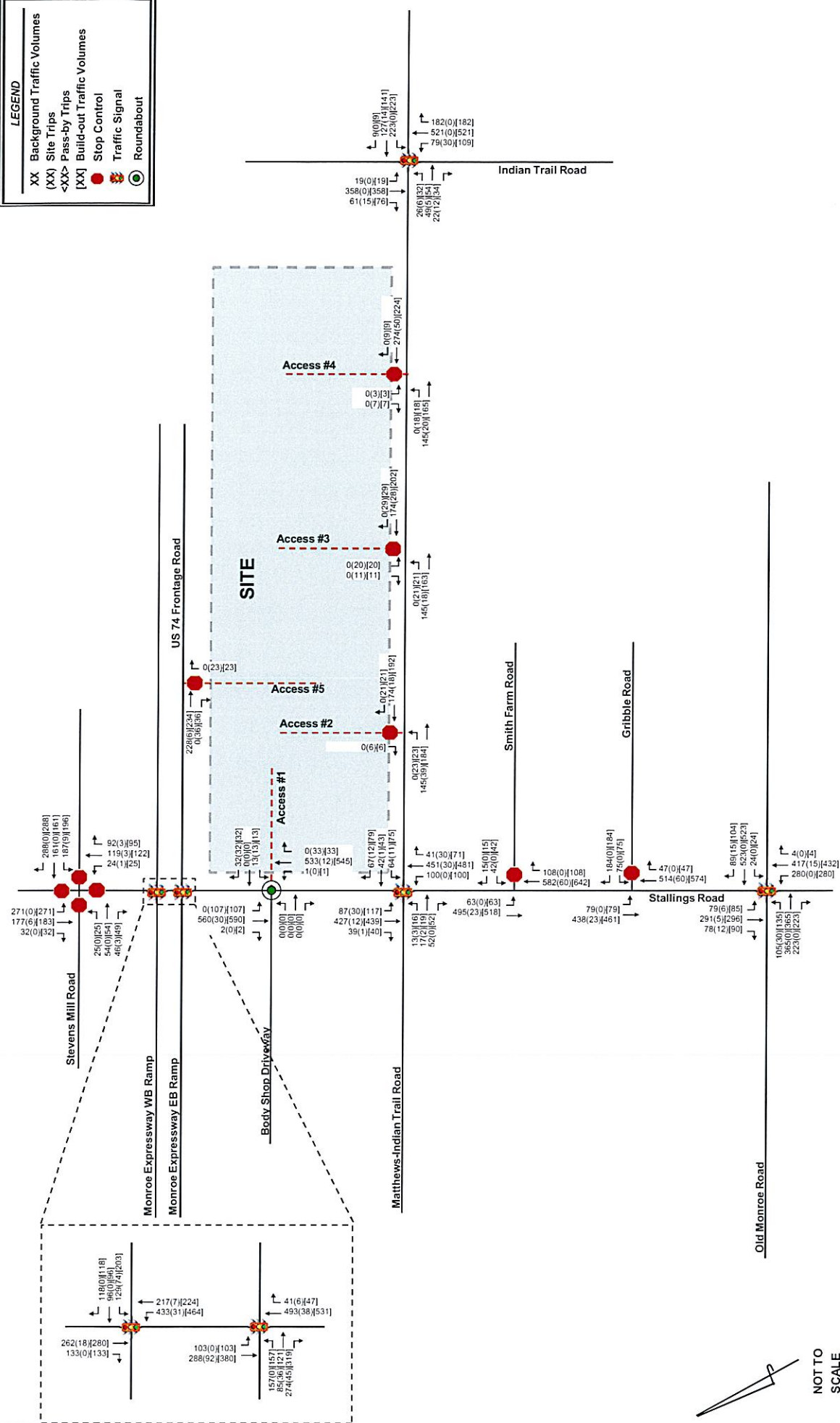
Day: Tuesday
Date: 02/05/2019



Approved Developments

LEGEND

- XX Background Traffic Volumes
- (XX) Site Trips
- <XX> Pass-by Trips
- [XX] Build-out Traffic Volumes
- Stop Control
- Traffic Signal
- Roundabout



Kimley»Horn

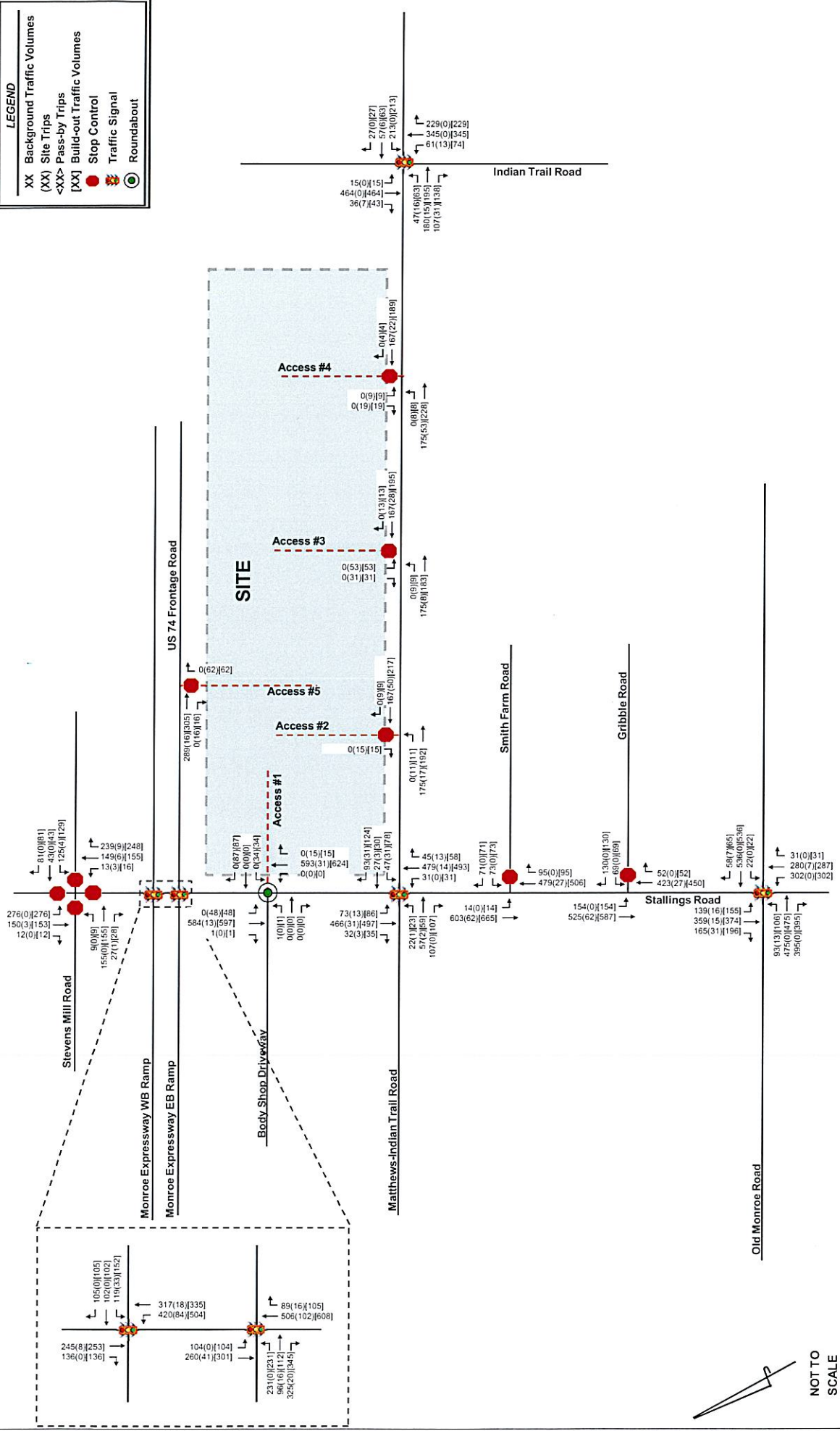
Atrium Stallings
Transportation Impact Analysis

2021 Build-Out AM Phase 1 Alt 3
Peak-Hour Traffic Volumes

Figure
5.7

LEGEND

- XX Background Traffic Volumes
- (XX) Site Trips
- <XX> Pass-by Trips
- [XX] Build-out Traffic Volumes
- Stop Control
- Traffic Signal
- Roundabout



Intersection Volume Development

INTERSECTION VOLUME DEVELOPMENT

Stallings Road and Stevens Mill Road AM PEAK HOUR

Description	Stallings Road Northbound				Stallings Road Southbound				Stevens Mill Road Eastbound				Stevens Mill Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	22	111	86	0	253	165	30	0	23	50	43	0	175	150	269	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	22	111	86	0	253	165	30	0	23	50	43	0	175	150	269	0
Conflicting Peds	3		0	0	0		3	0	0		3	0	3		0	0
Conflicting Bikes			0				0				0				0	
2019 Existing PHF	0.69	0.84	0.74	0.90	0.69	0.68	0.83	0.90	0.72	0.83	0.57	0.90	0.81	0.78	0.71	0.90
2022 Background PHF	0.70	0.84	0.74	0.90	0.69	0.69	0.83	0.90	0.72	0.83	0.59	0.90	0.81	0.78	0.71	0.90
2022 Buildout PHF	0.79	0.84	0.74	0.90	0.69	0.69	0.84	0.90	0.77	0.84	0.75	0.90	0.81	0.78	0.71	0.90
Heavy Vehicle %	2%	5%	9%	2%	3%	3%	3%	2%	9%	2%	5%	2%	2%	2%	4%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	24	123	95	0	281	183	33	0	26	55	48	0	194	166	298	0
Approved Development Trips	1	3	3	0	0	6	0	0	0	0	3	0	9	0	0	0
2022 Background Traffic	25	126	98	0	281	189	33	0	26	55	51	0	203	166	298	0
Percent Inbound Assignment	65%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	10%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	65%	0%	0%	0%	0%	0%
Apartment Project Trips	19	0	0	0	0	0	3	0	9	8	55	0	0	3	0	0
Project Trips (Total)	19	0	0	0	0	0	3	0	9	8	55	0	0	3	0	0
2022 Buildout Total	44	126	98	0	281	189	36	0	35	63	106	0	203	169	298	0
2027 Buildout Total	49	149	116	0	333	223	43	0	39	74	115	0	239	201	354	0

PM PEAK HOUR

Description	Stallings Road Northbound				Stallings Road Southbound				Stevens Mill Road Eastbound				Stevens Mill Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	12	139	223	0	258	140	11	0	8	145	25	0	117	40	76	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	12	139	223	0	258	140	11	0	8	145	25	0	117	40	76	0
Conflicting Peds	0		0	0	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0				1	
2019 PHF	0.50	0.89	0.85	0.90	0.91	0.75	0.55	0.90	0.67	0.91	0.63	0.90	0.84	0.59	0.95	0.90
2022 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	8%	3%	2%	2%	7%	3%	2%	2%	2%	3%	2%	2%	5%	2%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	13	154	247	0	286	155	12	0	9	161	28	0	130	44	84	0
Approved Development Trips	3	6	9	0	0	3	0	0	0	0	1	0	4	0	0	0
2022 Background Traffic	16	160	256	0	286	158	12	0	9	161	29	0	134	44	84	0
Percent Inbound Assignment	65%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	10%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	65%	0%	0%	0%	0%	0%
Apartment Project Trips	58	0	0	0	0	0	9	0	6	6	36	0	0	8	0	0
Project Trips (Total)	58	0	0	0	0	0	9	0	6	6	36	0	0	8	0	0
2022 Buildout Total	74	160	256	0	286	158	21	0	15	167	65	0	134	52	84	0
2027 Buildout Total	77	189	303	0	340	187	23	0	17	197	70	0	158	61	100	0

INTERSECTION VOLUME DEVELOPMENT

Stallings Road and Monroe Expressway WB Ramp AM PEAK HOUR

Description	Stallings Road <u>Northbound</u>				Stallings Road <u>Southbound</u>				Monroe Expressway WB Ramp <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	402	202	0	0	0	239	124	0	115	90	110	0
Balanced Volumes	2	1	0	0	0	6	0	0	5	0	0	0
2019 Existing Traffic	404	203	0	0	0	245	124	0	120	90	110	0
Conflicting Peds	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Bikes		0				0				0		
2019 Existng PHF	0.96	0.83	0.90	0.90	0.90	0.85	0.97	0.90	0.85	0.80	0.83	0.90
2022 Background PHF	0.96	0.83	0.90	0.90	0.90	0.85	0.97	0.90	0.87	0.80	0.83	0.90
2022 Buildout PHF	0.96	0.84	0.90	0.90	0.90	0.86	0.96	0.90	0.87	0.80	0.83	0.90
Heavy Vehicle %	7%	8%	2%	2%	2%	3%	5%	2%	5%	3%	5%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	448	225	0	0	0	272	137	0	133	100	122	0
Approved Development Trips	31	7	0	0	0	18	0	0	74	0	0	0
2022 Background Traffic	479	232	0	0	0	290	137	0	207	100	122	0
Percent Inbound Assignment	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	40%	25%	0%	0%	0%	0%	0%
Apartment Project Trips	0	11	0	0	0	34	21	0	0	0	8	0
Project Trips (Total)	0	11	0	0	0	34	21	0	0	0	8	0
2022 Buildout Total	479	243	0	0	0	324	158	0	207	100	130	0
2027 Buildout Total	563	285	0	0	0	375	184	0	232	119	153	0

PM PEAK HOUR

Description	Stallings Road <u>Northbound</u>				Stallings Road <u>Southbound</u>				Monroe Expressway WB Ramp <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	391	295	0	0	0	222	127	0	105	95	98	0
Balanced Volumes	1	1	0	0	0	7	0	0	6	0	0	0
2019 Existing Traffic	392	296	0	0	0	229	127	0	111	95	98	0
Conflicting Peds	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Bikes		0				0				0		
2019 PHF	0.79	0.91	0.90	0.90	0.90	0.93	0.72	0.90	0.97	0.85	0.88	0.90
2022 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	3%	2%	2%	5%	2%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	435	328	0	0	0	254	141	0	123	105	109	0
Approved Development Trips	84	18	0	0	0	8	0	0	33	0	0	0
2022 Background Traffic	519	346	0	0	0	262	141	0	156	105	109	0
Percent Inbound Assignment	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	40%	25%	0%	0%	0%	0%	0%
Apartment Project Trips	0	36	0	0	0	22	14	0	0	0	22	0
Project Trips (Total)	0	36	0	0	0	23	14	0	0	0	22	0
2022 Buildout Total	519	382	0	0	0	285	155	0	156	105	131	0
2027 Buildout Total	600	444	0	0	0	333	181	0	179	125	151	0

INTERSECTION VOLUME DEVELOPMENT

Stallings Road and Monroe Expressway EB Ramp AM PEAK HOUR

Description	Stallings Road <u>Northbound</u>				Stallings Road <u>Southbound</u>				Monroe Expressway EB Ramp <u>Eastbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	460	38	0	96	265	0	0	147	79	252	0
Balanced Volumes	0	0	0	0	0	4	0	0	0	0	0	0
2019 Existing Traffic	0	460	38	0	96	269	0	0	147	79	252	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0	
2019 Existing PHF	0.90	0.92	0.63	0.90	0.75	0.93	0.90	0.90	0.78	0.71	0.79	0.90
2022 Background PHF	0.90	0.92	0.66	0.90	0.75	0.92	0.90	0.90	0.78	0.77	0.81	0.90
2022 Buildout PHF	0.90	0.92	0.66	0.90	0.77	0.92	0.90	0.90	0.78	0.77	0.81	0.90
Heavy Vehicle %	2%	8%	5%	2%	5%	3%	2%	2%	4%	8%	4%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	0	510	42	0	106	298	0	0	163	88	279	0
Approved Development Trips	0	38	6	0	0	92	0	0	0	36	45	0
2022 Background Traffic	0	548	48	0	106	391	0	0	163	124	324	0
Percent Inbound Assignment	0%	15%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	25%	15%	0%	0%	0%	0%	0%	0%
Apartment Project Trips	0	5	0	0	21	13	0	0	6	0	0	0
Project Trips (Total)	0	5	0	0	21	13	0	0	6	0	0	0
2022 Buildout Total	0	553	48	0	127	404	0	0	169	124	324	0
2027 Buildout Total	0	649	56	0	147	459	0	0	200	140	377	0

PM PEAK HOUR

Description	Stallings Road <u>Northbound</u>				Stallings Road <u>Southbound</u>				Monroe Expressway EB Ramp <u>Eastbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	472	83	0	97	237	0	0	216	90	296	0
Balanced Volumes	0	0	0	0	0	6	0	0	0	0	0	0
2019 Existing Traffic	0	472	83	0	97	243	0	0	216	90	296	0
Conflicting Peds	0		1	0	1		0	0	1		0	0
Conflicting Bikes			0				0				0	
2019 PHF	0.90	0.90	0.83	0.90	0.76	0.91	0.90	0.90	0.66	0.73	0.82	0.90
2022 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%	4%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	0	523	92	0	108	269	0	0	239	100	328	0
Approved Development Trips	0	102	16	0	0	41	0	0	0	16	20	0
2022 Background Traffic	0	625	108	0	108	310	0	0	239	116	348	0
Percent Inbound Assignment	0%	15%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	25%	15%	0%	0%	0%	0%	0%	0%
Apartment Project Trips	0	13	0	0	13	9	0	0	23	0	0	0
Project Trips (Total)	0	13	0	0	13	9	0	0	23	0	0	0
2022 Buildout Total	0	638	108	0	121	319	0	0	262	116	348	0
2027 Buildout Total	0	737	125	0	141	370	0	0	307	135	410	0

K:\CHL_PRJ\018273 Stallings\009 Willows at Stallings\06_CALCULATIONS\2019-10-06 Willows at Stallings.xlsx Int. #3

INTERSECTION VOLUME DEVELOPMENT

Stallings Road and Matthews-Indian Trail Road AM PEAK HOUR

Description	Stallings Road Northbound				Stallings Road Southbound				Matthews-Indian Trail Road Eastbound				Matthews-Indian Trail Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	93	421	38	0	81	399	36	0	12	16	49	0	60	39	63	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	93	421	38	0	81	399	36	0	12	16	49	0	60	39	63	0
Conflicting Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing PHF	0.80	0.86	0.73	0.90	0.84	0.89	0.82	0.90	0.75	0.67	0.77	0.90	0.63	0.70	0.72	0.90
2022 Background PHF	0.80	0.86	0.80	0.90	0.86	0.89	0.82	0.90	0.78	0.69	0.77	0.90	0.67	0.70	0.75	0.90
2022 Buildout PHF	0.80	0.86	0.80	0.90	0.86	0.89	0.82	0.90	0.78	0.69	0.77	0.90	0.67	0.70	0.75	0.90
Heavy Vehicle %	2%	8%	8%	2%	2%	4%	2%	2%	17%	2%	6%	2%	23%	8%	3%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	103	467	42	0	90	442	40	0	13	18	54	0	67	43	70	0
Approved Development Trips	0	30	30	0	30	12	1	0	3	2	0	0	11	1	12	0
2022 Background Traffic	103	497	72	0	120	454	41	0	16	20	54	0	78	44	82	0
Percent Inbound Assignment	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
Percent Outbound Assignment	0%	0%	0%	0%	5%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Apartment Project Trips	0	3	0	0	4	9	0	0	0	0	0	0	0	0	2	0
Project Trips (Total)	0	3	0	0	4	9	0	0	0	0	0	0	0	0	2	0
2022 Buildout Total	103	500	72	0	124	463	41	0	16	20	54	0	78	44	84	0
2027 Buildout Total	122	587	80	0	141	546	48	0	19	23	65	0	90	52	97	0

PM PEAK HOUR

Description	Stallings Road Northbound				Stallings Road Southbound				Matthews-Indian Trail Road Eastbound				Matthews-Indian Trail Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	29	447	42	0	68	435	30	0	21	53	100	0	44	25	87	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	29	447	42	0	68	435	30	0	21	53	100	0	44	25	87	0
Conflicting Peds	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Conflicting Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019 PHF	0.60	0.87	0.88	0.90	0.65	0.98	0.68	0.90	0.75	0.83	0.68	0.90	0.65	0.57	0.54	0.90
2022 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	10%	2%	2%	4%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	32	496	47	0	75	482	33	0	23	59	111	0	49	28	96	0
Approved Development Trips	0	14	13	0	13	31	3	0	1	2	0	0	31	3	31	0
2022 Background Traffic	32	510	60	0	88	513	36	0	24	61	111	0	80	31	127	0
Percent Inbound Assignment	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
Percent Outbound Assignment	0%	0%	0%	0%	5%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Apartment Project Trips	0	9	0	0	3	6	0	0	0	0	0	0	0	0	4	0
Project Trips (Total)	0	9	0	0	3	6	0	0	0	0	0	0	0	0	4	0
2022 Buildout Total	32	519	60	0	91	519	36	0	24	61	111	0	80	31	131	0
2027 Buildout Total	38	612	68	0	106	610	43	0	29	72	132	0	89	36	150	0

INTERSECTION VOLUME DEVELOPMENT

Mt Harmony Church Rd and Stevens Mill Road AM PEAK HOUR

Description	Mt Harmony Church Rd <u>Northbound</u>				Mt Harmony Church Rd <u>Southbound</u>				Stevens Mill Road <u>Eastbound</u>				Stevens Mill Road <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	6	91	43	0	114	61	16	0	6	3	2	0	39	7	230	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	6	91	43	0	114	61	16	0	6	3	2	0	39	7	230	0
Conflicting Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing PHF	0.38	0.65	0.63	0.90	0.63	0.69	0.57	0.90	0.38	0.25	0.25	0.90	0.61	0.44	0.74	0.90
2022 Background PHF	0.38	0.65	0.63	0.90	0.64	0.69	0.57	0.90	0.38	0.25	0.25	0.90	0.61	0.44	0.74	0.90
2022 Buildout PHF	0.38	0.65	0.63	0.90	0.65	0.69	0.57	0.90	0.38	0.25	0.25	0.90	0.61	0.44	0.75	0.90
Heavy Vehicle %	2%	2%	7%	2%	2%	2%	13%	2%	17%	33%	50%	2%	3%	57%	7%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	7	101	48	0	126	68	18	0	7	3	2	0	43	8	255	0
Approved Development Trips	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0
2022 Background Traffic	7	101	48	0	129	68	18	0	7	3	2	0	43	8	256	0
Percent Inbound Assignment	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%
Apartment Project Trips	0	0	0	0	5	0	0	0	0	0	0	0	0	0	13	0
Project Trips (Total)	0	0	0	0	5	0	0	0	0	0	0	0	0	0	13	0
2022 Buildout Total	7	101	48	0	134	68	18	0	7	3	2	0	43	8	269	0
2027 Buildout Total	8	120	57	0	158	80	21	0	8	4	3	0	51	9	317	0

PM PEAK HOUR

Description	Mt Harmony Church Rd <u>Northbound</u>				Mt Harmony Church Rd <u>Southbound</u>				Stevens Mill Road <u>Eastbound</u>				Stevens Mill Road <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	3	92	54	0	94	35	1	0	9	5	1	0	6	1	37	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	3	92	54	0	94	35	1	0	9	5	1	0	6	1	37	0
Conflicting Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019 PHF	0.38	0.85	0.75	0.90	0.76	0.88	0.25	0.90	0.56	0.31	0.25	0.90	0.38	0.25	0.93	0.90
2022 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	33%	2%	7%	2%	2%	3%	2%	2%	2%	40%	2%	2%	2%	2%	3%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	3	102	60	0	104	39	1	0	10	6	1	0	7	1	41	0
Approved Development Trips	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0
2022 Background Traffic	3	102	60	0	105	39	1	0	10	6	1	0	7	1	44	0
Percent Inbound Assignment	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%
Apartment Project Trips	0	0	0	0	13	0	0	0	0	0	0	0	0	0	9	0
Project Trips (Total)	0	0	0	0	13	0	0	0	0	0	0	0	0	0	9	0
2022 Buildout Total	3	102	60	0	118	39	1	0	10	6	1	0	7	1	53	0
2027 Buildout Total	4	121	71	0	138	46	1	0	12	7	1	0	8	1	61	0

INTERSECTION VOLUME DEVELOPMENT

Oakspring Rd and Stevens Mill Road AM PEAK HOUR

Description	Oakspring Rd <u>Northbound</u>				Stevens Mill Road <u>Eastbound</u>				Stevens Mill Road <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	188	0	63	0	0	217	274	0	135	455	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	188	0	63	0	0	217	274	0	135	455	0	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			1				0				0	
2019 Existng PHF	0.90	0.90	0.79	0.90	0.90	0.58	0.86	0.90	0.80	0.73	0.90	0.90
2022 Background PHF	0.90	0.90	0.79	0.90	0.90	0.58	0.86	0.90	0.80	0.73	0.90	0.90
2022 Buildout PHF	0.90	0.90	0.79	0.90	0.90	0.59	0.86	0.90	0.80	0.73	0.90	0.90
Heavy Vehicle %	5%	2%	13%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	208	0	70	0	0	241	304	0	150	504	0	0
Approved Development Trips	2	0	0	0	0	1	2	0	0	7	0	0
2022 Background Traffic	210	0	70	0	0	242	306	0	150	511	0	0
Percent Inbound Assignment	5%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	5%	5%	0%	0%	0%	0%	0%
Apartment Project Trips	2	0	0	0	0	4	4	0	0	1	0	0
Project Trips (Total)	2	0	0	0	0	4	4	0	0	1	0	0
2022 Buildout Total	212	0	70	0	0	246	310	0	150	512	0	0
2027 Buildout Total	252	0	83	0	0	291	367	0	178	607	0	0

PM PEAK HOUR

Description	Oakspring Rd <u>Northbound</u>				Stevens Mill Road <u>Eastbound</u>				Stevens Mill Road <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	111	0	77	0	0	414	268	0	64	208	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	111	0	77	0	0	414	268	0	64	208	0	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0	
2019 PHF	0.77	0.90	0.62	0.90	0.90	0.88	0.93	0.90	0.80	0.85	0.90	0.90
2022 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	6%	2%	6%	4%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	123	0	85	0	0	459	297	0	71	231	0	0
Approved Development Trips	1	0	0	0	0	5	4	0	0	3	0	0
2022 Background Traffic	124	0	85	0	0	464	301	0	71	234	0	0
Percent Inbound Assignment	5%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	5%	5%	0%	0%	0%	0%	0%
Apartment Project Trips	4	0	0	0	0	3	3	0	0	4	0	0
Project Trips (Total)	4	0	0	0	0	3	3	0	0	4	0	0
2022 Buildout Total	128	0	85	0	0	467	304	0	71	238	0	0
2027 Buildout Total	151	0	101	0	0	553	360	0	84	281	0	0

INTERSECTION VOLUME DEVELOPMENT

Public Road 1 and Stevens Mill Rd AM PEAK HOUR

Description	Public Road 1 <u>Northbound</u>				Stevens Mill Rd <u>Eastbound</u>				Stevens Mill Rd <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	0	92	0	0	0	195	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	0	92	0	0	0	195	0	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0	
2019 Existing PHF	0.90	0.90	0.90	0.90	0.90	0.74	0.90	0.90	0.90	0.92	0.90	0.90
2022 Background PHF	0.90	0.90	0.90	0.90	0.90	0.74	0.90	0.90	0.90	0.92	0.90	0.90
2022 Buildout PHF	0.90	0.90	0.90	0.90	0.90	0.75	0.90	0.90	0.90	0.92	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	7%	2%	2%	2%	4%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	0	0	0	0	0	102	0	0	0	216	0	0
Approved Development Trips	0	0	0	0	0	3	0	0	0	1	0	0
2022 Background Traffic	0	0	0	0	0	105	0	0	0	217	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	5%	10%	0%	30%	0%	0%	0%
Percent Outbound Assignment	10%	0%	30%	0%	0%	0%	0%	0%	0%	5%	0%	0%
Apartment Project Trips	9	0	25	0	0	2	3	0	9	4	0	0
Project Trips (Total)	9	0	25	0	0	2	3	0	9	4	0	0
2022 Buildout Total	9	0	25	0	0	107	3	0	9	221	0	0
2027 Buildout Total	9	0	25	0	0	126	3	0	9	262	0	0

PM PEAK HOUR

Description	Public Road 1 <u>Northbound</u>				Stevens Mill Rd <u>Eastbound</u>				Stevens Mill Rd <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	0	154	0	0	0	41	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	0	154	0	0	0	41	0	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0	
2019 PHF	0.90	0.90	0.90	0.90	0.90	0.71	0.90	0.90	0.90	0.68	0.90	0.90
2022 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	6%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	0	0	0	0	0	171	0	0	0	45	0	0
Approved Development Trips	0	0	0	0	0	1	0	0	0	3	0	0
2022 Background Traffic	0	0	0	0	0	172	0	0	0	48	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	5%	10%	0%	30%	0%	0%	0%
Percent Outbound Assignment	10%	0%	30%	0%	0%	0%	0%	0%	0%	5%	0%	0%
Apartment Project Trips	6	0	17	0	0	4	9	0	26	3	0	0
Project Trips (Total)	6	0	17	0	0	4	9	0	26	3	0	0
2022 Buildout Total	6	0	17	0	0	176	9	0	26	51	0	0
2027 Buildout Total	6	0	17	0	0	208	9	0	26	60	0	0

INTERSECTION VOLUME DEVELOPMENT

Public Road 2 and Stevens Mill Rd AM PEAK HOUR

Description	Public Road 2 <u>Northbound</u>				Stevens Mill Rd <u>Eastbound</u>				Stevens Mill Rd <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	0	92	0	0	0	195	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	0	92	0	0	0	195	0	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0	
2019 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.74	0.90	0.90	0.90	0.92	0.90	0.90
2022 Background PHF	0.90	0.90	0.90	0.90	0.90	0.74	0.90	0.90	0.90	0.92	0.90	0.90
2022 Buildout PHF	0.90	0.90	0.90	0.90	0.90	0.77	0.90	0.90	0.90	0.92	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	7%	2%	2%	2%	4%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	0	0	0	0	0	102	0	0	0	216	0	0
Approved Development Trips	0	0	0	0	0	3	0	0	0	1	0	0
2022 Background Traffic	0	0	0	0	0	105	0	0	0	217	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	5%	0%	55%	30%	0%	0%
Percent Outbound Assignment	5%	0%	55%	0%	0%	30%	0%	0%	0%	0%	0%	0%
Apartment Project Trips	4	0	47	0	0	25	2	0	16	9	0	0
Project Trips (Total)	4	0	47	0	0	25	2	0	16	9	0	0
2022 Buildout Total	4	0	47	0	0	130	2	0	16	226	0	0
2027 Buildout Total	4	0	47	0	0	149	2	0	16	267	0	0

PM PEAK HOUR

Description	Public Road 2 <u>Northbound</u>				Stevens Mill Rd <u>Eastbound</u>				Stevens Mill Rd <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	0	154	0	0	0	41	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	0	154	0	0	0	41	0	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0	
2019 PHF	0.90	0.90	0.90	0.90	0.90	0.71	0.90	0.90	0.90	0.68	0.90	0.90
2022 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	6%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	0	0	0	0	0	171	0	0	0	45	0	0
Approved Development Trips	0	0	0	0	0	1	0	0	0	3	0	0
2022 Background Traffic	0	0	0	0	0	172	0	0	0	48	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	5%	0%	55%	30%	0%	0%
Percent Outbound Assignment	5%	0%	55%	0%	0%	30%	0%	0%	0%	0%	0%	0%
Apartment Project Trips	3	0	31	0	0	17	4	0	49	26	0	0
Project Trips (Total)	3	0	31	0	0	17	4	0	49	26	0	0
2022 Buildout Total	3	0	31	0	0	189	4	0	49	74	0	0
2027 Buildout Total	3	0	31	0	0	221	4	0	49	83	0	0

INTERSECTION VOLUME DEVELOPMENT

Public Road 1 and Access 1 AM PEAK HOUR

Description	Public Road 1 <u>Northbound</u>				Public Road 1 <u>Southbound</u>				Access 1 <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0	
2019 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2022 Background PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2022 Buildout PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	0	0	0	0	0	0	0	0	0	0	0	0
Approved Development Trips	0	0	0	0	0	0	0	0	0	0	0	0
2022 Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%
Apartment Project Trips	0	0	0	0	12	0	0	0	0	0	34	0
Project Trips (Total)	0	0	0	0	12	0	0	0	0	0	34	0
2022 Buildout Total	0	0	0	0	12	0	0	0	0	0	34	0
2027 Buildout Total	0	0	0	0	12	0	0	0	0	0	34	0

PM PEAK HOUR

Description	Public Road 1 <u>Northbound</u>				Public Road 1 <u>Southbound</u>				Access 1 <u>Westbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0	
2019 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2022 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	0	0	0	0	0	0	0	0	0	0	0	0
Approved Development Trips	0	0	0	0	0	0	0	0	0	0	0	0
2022 Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%
Apartment Project Trips	0	0	0	0	35	0	0	0	0	0	23	0
Project Trips (Total)	0	0	0	0	35	0	0	0	0	0	23	0
2022 Buildout Total	0	0	0	0	35	0	0	0	0	0	23	0
2027 Buildout Total	0	0	0	0	35	0	0	0	0	0	23	0

INTERSECTION VOLUME DEVELOPMENT

Public Road 2 and Access 2 AM PEAK HOUR

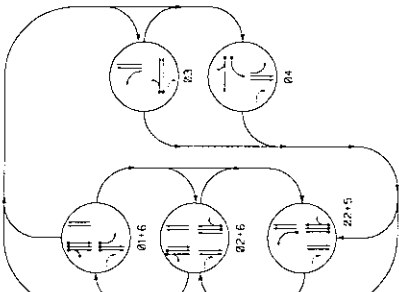
Description	Public Road 2 <u>Northbound</u>				Public Road 2 <u>Southbound</u>				Access 2 <u>Eastbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0	
2019 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2022 Background PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2022 Buildout PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	0	0	0	0	0	0	0	0	0	0	0	0
Approved Development Trips	0	0	0	0	0	0	0	0	0	0	0	0
2022 Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	60%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	60%	0%	0%	0%
Apartment Project Trips	0	0	0	0	0	0	18	0	51	0	0	0
Project Trips (Total)	0	0	0	0	0	0	18	0	51	0	0	0
2022 Buildout Total	0	0	0	0	0	0	18	0	51	0	0	0
2027 Buildout Total	0	0	0	0	0	0	18	0	51	0	0	0

PM PEAK HOUR

Description	Public Road 2 <u>Northbound</u>				Public Road 2 <u>Southbound</u>				Access 2 <u>Eastbound</u>			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds	0		0	0	0		0	0	0		0	0
Conflicting Bikes			0				0				0	
2019 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2022 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
2022 Background Traffic (No AD)	0	0	0	0	0	0	0	0	0	0	0	0
Approved Development Trips	0	0	0	0	0	0	0	0	0	0	0	0
2022 Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	60%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	60%	0%	0%	0%
Apartment Project Trips	0	0	0	0	0	0	53	0	34	0	0	0
Project Trips (Total)	0	0	0	0	0	0	53	0	34	0	0	0
2022 Buildout Total	0	0	0	0	0	0	53	0	34	0	0	0
2027 Buildout Total	0	0	0	0	0	0	53	0	34	0	0	0

Signal Plans

PHASING DIAGRAM

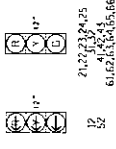


PHASING DIAGRAM DETECTION LEGEND
● DETECTED MOVEMENT
○ UNSIGNALIZED MOVEMENT (OVERLAY)
○ UNSIGNALIZED MOVEMENT
○ PEDESTRIAN MOVEMENT

TABLE OF OPERATION

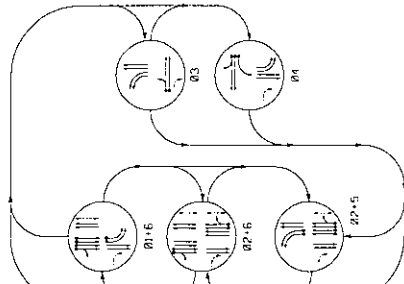
SIGNAL FACE	Phase					
	1	2	3	4	5	6
23	40	40	40	40	40	40
24	40	40	40	40	40	40
22+5	40	40	40	40	40	40
22+6	40	40	40	40	40	40
21+6	40	40	40	40	40	40
61+22	40	40	40	40	40	40
61+23	40	40	40	40	40	40
61+24	40	40	40	40	40	40
61+25	40	40	40	40	40	40
61+26	40	40	40	40	40	40
61+27	40	40	40	40	40	40
61+28	40	40	40	40	40	40
61+29	40	40	40	40	40	40
61+30	40	40	40	40	40	40
61+31	40	40	40	40	40	40
61+32	40	40	40	40	40	40
61+33	40	40	40	40	40	40
61+34	40	40	40	40	40	40
61+35	40	40	40	40	40	40
61+36	40	40	40	40	40	40
61+37	40	40	40	40	40	40
61+38	40	40	40	40	40	40
61+39	40	40	40	40	40	40
61+40	40	40	40	40	40	40
61+41	40	40	40	40	40	40
61+42	40	40	40	40	40	40
61+43	40	40	40	40	40	40
61+44	40	40	40	40	40	40
61+45	40	40	40	40	40	40
61+46	40	40	40	40	40	40
61+47	40	40	40	40	40	40
61+48	40	40	40	40	40	40
61+49	40	40	40	40	40	40
61+50	40	40	40	40	40	40
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61+59	40	40	40	40	40	40
61+60	40	40	40	40	40	40
61+61	40	40	40	40	40	40
61+62	40	40	40	40	40	40
61+63	40	40	40	40	40	40
61+64	40	40	40	40	40	40
61+65	40	40	40	40	40	40
61+66	40	40	40	40	40	40
61+67	40	40	40	40	40	40
61+68	40	40	40	40	40	40
61+69	40	40	40	40	40	40
61+70	40	40	40	40	40	40
61+71	40	40	40	40	40	40
61+72	40	40	40	40	40	40
61+73	40	40	40	40	40	40
61+74	40	40	40	40	40	40
61+75	40	40	40	40	40	40
61+76	40	40	40	40	40	40
61+77	40	40	40	40	40	40
61+78	40	40	40	40	40	40
61+79	40	40	40	40	40	40
61+80	40	40	40	40	40	40
61+81	40	40	40	40	40	40
61+82	40	40	40	40	40	40
61+83	40	40	40	40	40	40
61+84	40	40	40	40	40	40
61+85	40	40	40	40	40	40
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61+89	40	40	40	40	40	40
61+90	40	40	40	40	40	40
61+91	40	40	40	40	40	40
61+92	40	40	40	40	40	40
61+93	40	40	40	40	40	40
61+94	40	40	40	40	40	40
61+95	40	40	40	40	40	40
61+96	40	40	40	40	40	40
61+97	40	40	40	40	40	40
61+98	40	40	40	40	40	40
61+99	40	40	40	40	40	40
61+100	40	40	40	40	40	40

SIGNAL FACE I.D.
ALL PHASES I.E.D.



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
LOOP	INDUCTIVE LOOPS		DETECTOR PROGRAMMING				DETECTOR		DETECTOR		DETECTOR	
	SIZE (FT)	TIME (SEC)	TIME (SEC)	TIME (SEC)	TIME (SEC)	TIME (SEC)	TIME (SEC)	TIME (SEC)	TIME (SEC)	TIME (SEC)	TIME (SEC)	TIME (SEC)
1H	6'x40'	0	2.42	1	1	1	1	1	1	1	1	1
2H	6'x40'	0	2.42	1	1	1	1	1	1	1	1	1
3A	6'x6'	70	4	2	2	2	2	2	2	2	2	2
3B	6'x40'	0	2.42	3	3	3	3	3	3	3	3	3
4C	6'x40'	0	2.42	4	4	4	4	4	4	4	4	4
5B	6'x40'	0	2.42	5	5	5	5	5	5	5	5	5
6A	6'x6'	300	6	6	6	6	6	6	6	6	6	6
6B	6'x6'	300	6	6	6	6	6	6	6	6	6	6
7A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
7B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
8A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
8B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
9A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
9B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
10A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
10B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
11A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
11B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
12A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
12B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
13A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
13B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
14A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
14B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
15A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
15B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
16A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
16B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
17A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
17B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
18A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
18B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
19A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
19B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
20A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
20B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
21A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
21B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
22A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
22B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
23A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
23B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
24A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
24B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
25A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
25B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
26A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
26B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
27A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
27B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
28A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
28B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
29A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
29B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
30A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
30B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
31A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
31B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
32A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
32B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
33A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
33B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
34A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
34B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
35A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
35B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
36A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
36B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
37A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
37B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
38A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
38B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
39A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
39B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
40A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
40B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
41A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
41B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
42A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
42B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
43A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
43B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
44A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
44B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
45A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
45B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
46A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
46B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
47A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
47B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
48A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
48B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
49A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
49B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
50A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
50B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
51A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
51B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
52A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
52B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
53A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
53B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
54A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
54B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
55A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
55B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
56A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
56B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
57A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
57B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
58A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
58B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
59A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
59B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
60A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
60B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
61A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
61B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
62A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
62B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
63A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
63B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
64A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
64B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
65A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
65B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
66A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
66B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
67A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
67B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
68A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
68B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
69A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
69B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
70A	6'x6'	400	4	4	4	4	4	4	4	4	4	4
70B	6'x6'	400	4	4	4	4	4	4	4	4	4	4
71A	6'x6'	400	4	4	4	4	4	4	4	4	4	

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

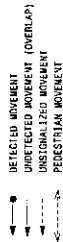
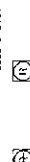


TABLE OF OPERATION		PHASE	
SIGNAL	FACE	F	H
11,12		0 0	- -
21,22,23		0 0	- -
24,25		0 0	- -
31,32		0 0	- -
41,42,43		0 0	- -
51,52		0 0	- -
61,62,63,64		0 0	- -
55,56		0 0	- -
P21,P22		0 0	- -
F61,F62		0 0	- -

SIGNAL_FACE_I.D.
ALL HEADS L.F.D.

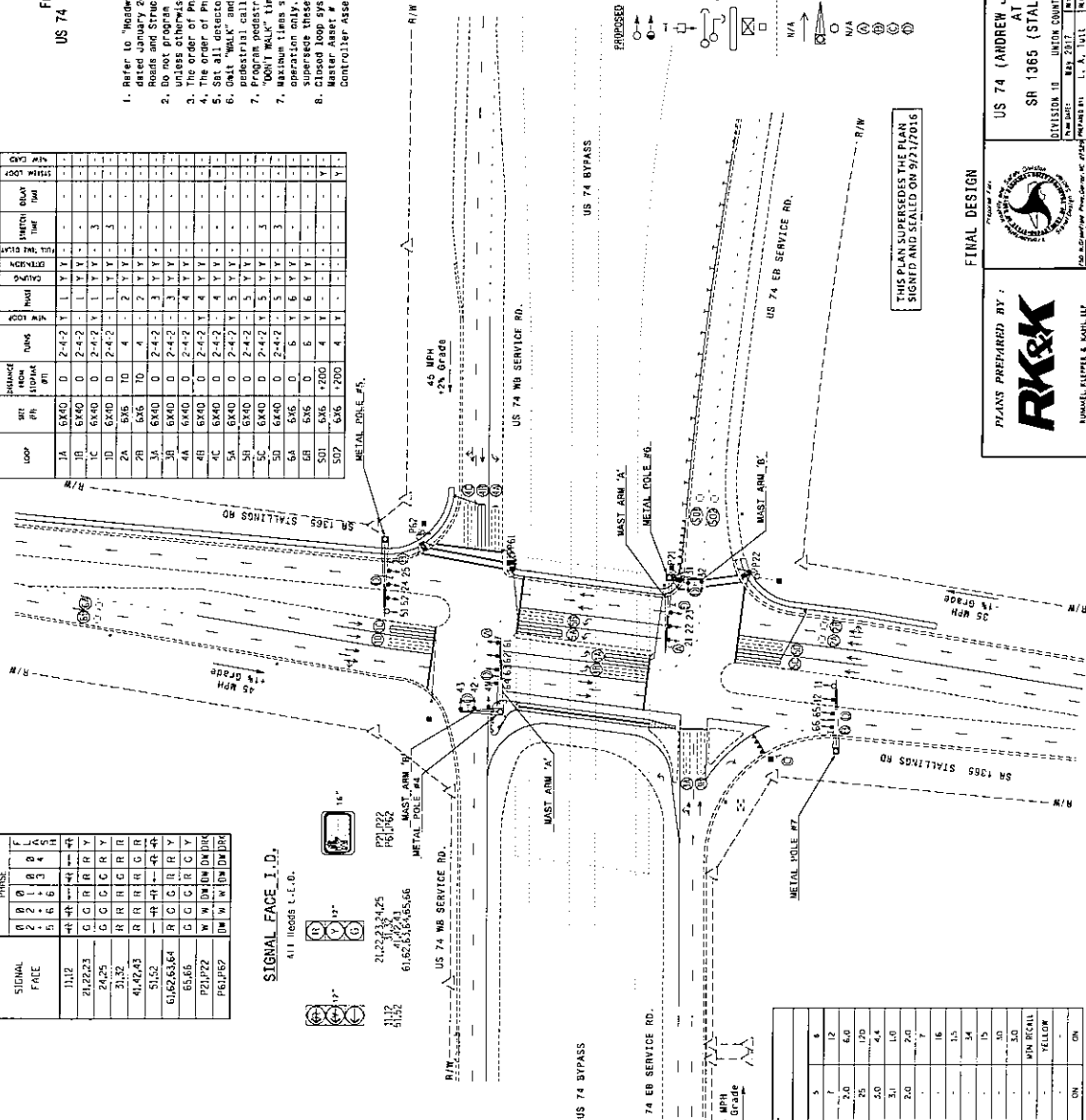


OASIS 2070 LOOP & DETECTOR INSTALLATION CHART									
LOOP	INDUCTIVE LOOPS			MILE OF PROGRAM			MILE OF PROGRAM		
	PH	FR	SPARE	THUS	THUS	THUS	THUS	THUS	THUS
1A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
1B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
2A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
2B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
3A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
3B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
4A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
4B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
5A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
5B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
6A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
6B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
7A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
7B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
8A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
8B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
9A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
9B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
10A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
10B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
11A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
11B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
12A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
12B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
13A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
13B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
14A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
14B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
15A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
15B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
16A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
16B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
17A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
17B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
18A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
18B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
19A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
19B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
20A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
20B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
21A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
21B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
22A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
22B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
23A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
23B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
24A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
24B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
25A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
25B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
26A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
26B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
27A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
27B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
28A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
28B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
29A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
29B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
30A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
30B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
31A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
31B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
32A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
32B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
33A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
33B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
34A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
34B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
35A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
35B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
36A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
36B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
37A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
37B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
38A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
38B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
39A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
39B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
40A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
40B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
41A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
41B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
42A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
42B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
43A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
43B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
44A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
44B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
45A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
45B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
46A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
46B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
47A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
47B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
48A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
48B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
49A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
49B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
50A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
50B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
51A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
51B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
52A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
52B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
53A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
53B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
54A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
54B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
55A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
55B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
56A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
56B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
57A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
57B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
58A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
58B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
59A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
59B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
60A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
60B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
61A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
61B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
62A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
62B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
63A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
63B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
64A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
64B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
65A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
65B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
66A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
66B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
67A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
67B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
68A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
68B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
69A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
69B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
70A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
70B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
71A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
71B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
72A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
72B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
73A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
73B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
74A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
74B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
75A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
75B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
76A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
76B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
77A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
77B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
78A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
78B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
79A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
79B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
80A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
80B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
81A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
81B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
82A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
82B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
83A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
83B	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
84A	5X40	0	2-2-2	1	Y	Y	Y	Y	Y
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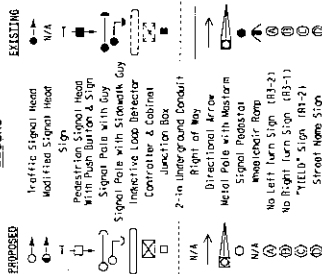
5 Phase
Fully Actuated
US 74 (Indian Trail) CLS

NOTES

1. Refer to "Weekly Standard Drawings N2004" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program for late night flashing operation unless otherwise directed by the engineer.
3. The order of Phase 1 and Phase 5 may be reversed.
4. The order of Phase 3 and Phase 4 may be reversed.
5. All intersection units to precedence code.
6. Minimum 10 second "DON'T WALK" with no pedestrian calls.
7. Program pedestrian horns to count down the flashing "DON'T WALK" line only.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values overrides these values.
9. Master Asset # 0598.
10. Master Asset # 1031.
11. Controller Asset # 0598.



LEGEND



THIS PLAN SUPERSEDES THE PLAN
SIGNED AND SEALED ON 9/21/2016

FINAL DESIGN

PLANS PREPARED BY : **RY&K**

Measurement Day	LN	ON	ON	ON
These values may be field adjusted. Do not adjust the Green and transition times for phases 2 and 6 lower than what is shown. The Green for all other phases should not be lower than 4 seconds.				

FEATURE	PHASE									
	1	2	3	4	5	6	7	8	9	10
Maximum T ₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₂₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₃₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₄₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₅₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₆₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₇₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₈₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₉₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₀₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁₆	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁₇	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁₈	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₁₉	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₂₀	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₂₁	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₂₂	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₂₃	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₂₄	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₂₅	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum T ₁₂₆	2.0									

US 74 (ANDREW JACKSON HWY)
AT
SR 1365 (STALLINGS RD.)



NUMMEL, KLEPPER & KAHIL, LLP
100 RIDGEFIELD DRIVE SUITE 250
CH. NORTH CAROLINA 27609-3960

SEAL

SEAL
035753

NOTARIAL
CAROLINE
PROFESSIONAL
NOTARY
PUBLIC
C. BYRNE, Notary

DATE
10-11-98

STATE
MISSISSIPPI

SIG. INVESTOR NO.

.....

2 Phase
Fully Actuated
Isolated

NOTES

1. Refer to "Roadway Standard Drawings MCDOT" dated January 2010 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not give signal for 10 seconds after flashing ends on night flashing device as directed by the Engineer.
3. Set all detector units to presence mode.
4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
5. Unit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
6. Program pedestrian heads to countdown the Flashing "Don't Walk" time only.

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS				DETECTION PROGRAMMING			
LOOP	SIZE	NUMBER OF RECURSIONS	NUMBER OF CALLS	COLLISION	EXTENSION	TEST THE STATE	SWITCH THE STATE
2A	545	10	3	Y	Y	Y	Y
2B	6400	0	2 + 2	Y	Y	Y	Y
2C	6400	0	2 + 2	Y	Y	Y	Y
3A	6400	10	3	Y	Y	Y	Y
3B	6400	0	2 + 2	Y	Y	Y	Y
3C	6400	0	2 + 2	Y	Y	Y	Y
4A	545	10	3	Y	Y	Y	Y
4B	6400	0	2 + 2	Y	Y	Y	Y
4C	6400	0	2 + 2	Y	Y	Y	Y
5A	545	10	3	Y	Y	Y	Y
5B	6400	0	2 + 2	Y	Y	Y	Y
5C	6400	0	2 + 2	Y	Y	Y	Y
6A	545	10	3	Y	Y	Y	Y
6B	6400	0	2 + 2	Y	Y	Y	Y
6C	6400	0	2 + 2	Y	Y	Y	Y
7A	545	10	3	Y	Y	Y	Y
7B	6400	0	2 + 2	Y	Y	Y	Y
7C	6400	0	2 + 2	Y	Y	Y	Y
8A	545	10	3	Y	Y	Y	Y
8B	6400	0	2 + 2	Y	Y	Y	Y
8C	6400	0	2 + 2	Y	Y	Y	Y
9A	545	10	3	Y	Y	Y	Y
9B	6400	0	2 + 2	Y	Y	Y	Y
9C	6400	0	2 + 2	Y	Y	Y	Y
10A	545	10	3	Y	Y	Y	Y
10B	6400	0	2 + 2	Y	Y	Y	Y
10C	6400	0	2 + 2	Y	Y	Y	Y
11A	545	10	3	Y	Y	Y	Y
11B	6400	0	2 + 2	Y	Y	Y	Y
11C	6400	0	2 + 2	Y	Y	Y	Y
12A	545	10	3	Y	Y	Y	Y
12B	6400	0	2 + 2	Y	Y	Y	Y
12C	6400	0	2 + 2	Y	Y	Y	Y
13A	545	10	3	Y	Y	Y	Y
13B	6400	0	2 + 2	Y	Y	Y	Y
13C	6400	0	2 + 2	Y	Y	Y	Y
14A	545	10	3	Y	Y	Y	Y
14B	6400	0	2 + 2	Y	Y	Y	Y
14C	6400	0	2 + 2	Y	Y	Y	Y
15A	545	10	3	Y	Y	Y	Y
15B	6400	0	2 + 2	Y	Y	Y	Y
15C	6400	0	2 + 2	Y	Y	Y	Y
16A	545	10	3	Y	Y	Y	Y
16B	6400	0	2 + 2	Y	Y	Y	Y
16C	6400	0	2 + 2	Y	Y	Y	Y
17A	545	10	3	Y	Y	Y	Y
17B	6400	0	2 + 2	Y	Y	Y	Y
17C	6400	0	2 + 2	Y	Y	Y	Y
18A	545	10	3	Y	Y	Y	Y
18B	6400	0	2 + 2	Y	Y	Y	Y
18C	6400	0	2 + 2	Y	Y	Y	Y
19A	545	10	3	Y	Y	Y	Y
19B	6400	0	2 + 2	Y	Y	Y	Y
19C	6400	0	2 + 2	Y	Y	Y	Y
20A	545	10	3	Y	Y	Y	Y
20B	6400	0	2 + 2	Y	Y	Y	Y
20C	6400	0	2 + 2	Y	Y	Y	Y

TABLE OF OPERATION

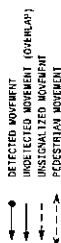
SIGNAL FACE	PHASE	
	FLASH	
21, 22	CR Y	
41, 42	CR R	
61, 62	CR Y	
81, 82	CR R	
P21, P22	W D	DIR

W - Walk
M - Don't Walk
BK - Dark

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND



SIGNAL_FACE I.D.

U.S.D.



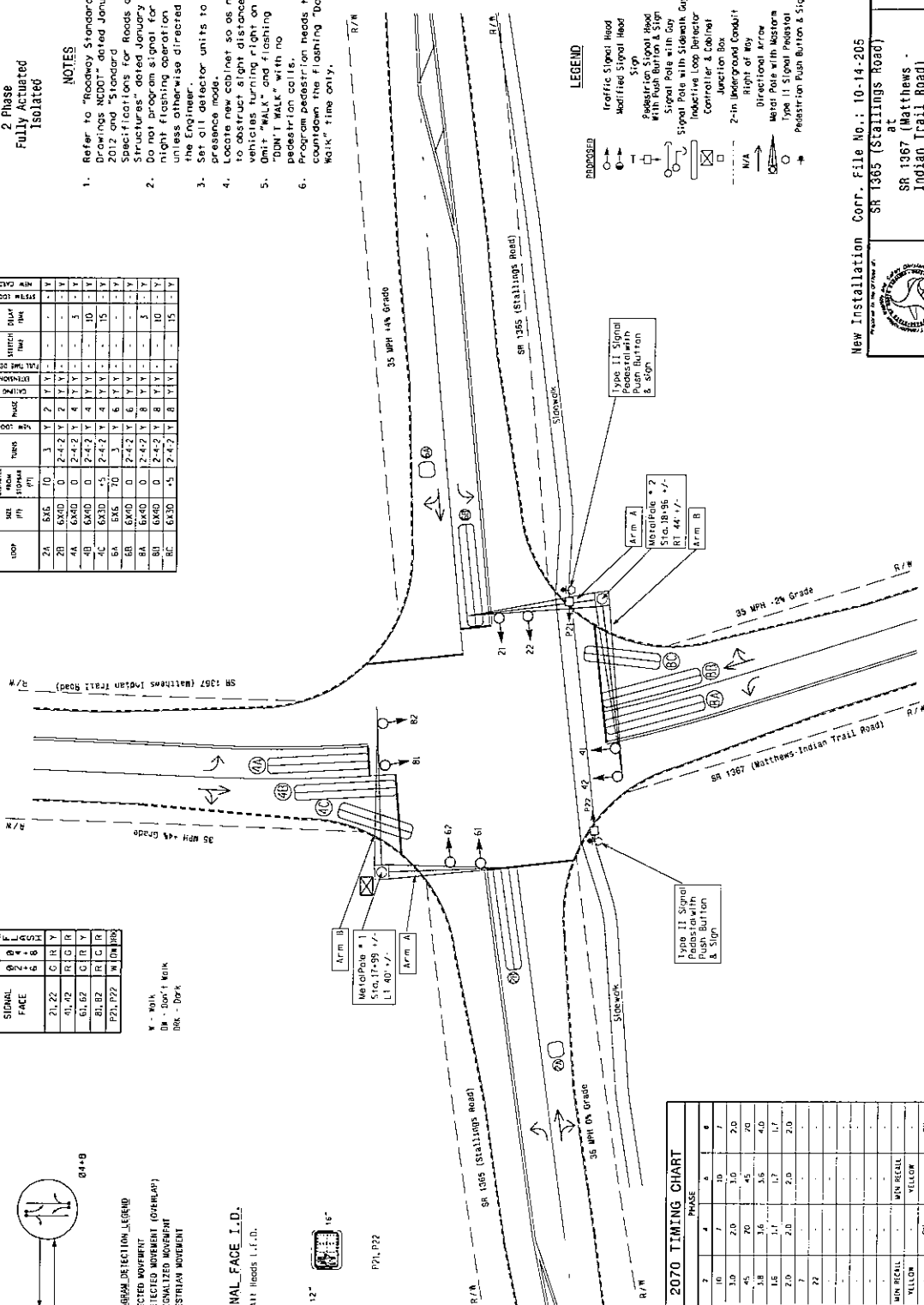
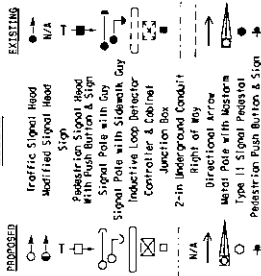
P21, P22

OASIS 2070 TIMING CHART

[illegible]

These values may be held adjusted. Do not adjust Min Green and Extension times for phases 2 and 4 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

LEGEND



New Installation Corr. File No.: 10-14-205
SR 1365 (Stallings Road)



Indian Trail Road)
Division 10 Union County Stallings

due date:	February 2015	mailorder:	L. Williams
ordered by:	M. Wahboba	mailstop:	
4/15/2005		mail:	date:

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100											
1991	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100											
1992	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100											
1993	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100											
1994	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19																																																																																												

[illegible]

Intersection Capacity Analysis

2019 Existing Conditions

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	50	43	175	150	269	22	111	86	253	165	30
Future Volume (vph)	23	50	43	175	150	269	22	111	86	253	165	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		300	150		0	150		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.939				0.850		0.930			0.981	
Flt Protected		0.991			0.974		0.950			0.950		
Satd. Flow (prot)	0	1689	0	0	1814	1553	1770	1653	0	1752	1810	0
Flt Permitted		0.991			0.974		0.950			0.950		
Satd. Flow (perm)	0	1689	0	0	1814	1553	1770	1653	0	1752	1810	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1672			940			3692			1502	
Travel Time (s)		25.3			14.2			55.9			22.8	
Confl. Peds. (#/hr)			3	3			3					3
Peak Hour Factor	0.72	0.83	0.57	0.81	0.78	0.71	0.69	0.84	0.74	0.69	0.68	0.83
Heavy Vehicles (%)	9%	2%	5%	2%	2%	4%	2%	5%	9%	3%	3%	3%
Adj. Flow (vph)	32	60	75	216	192	379	32	132	116	367	243	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	167	0	0	408	379	32	248	0	367	279	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 61.4%

ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing AM

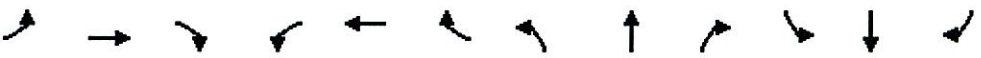
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	23	50	43	175	150	269	22	111	86	253	165	30
Future Volume (vph)	23	50	43	175	150	269	22	111	86	253	165	30
Peak Hour Factor	0.72	0.83	0.57	0.81	0.78	0.71	0.69	0.84	0.74	0.69	0.68	0.83
Hourly flow rate (vph)	32	60	75	216	192	379	32	132	116	367	243	36
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total (vph)	167	408	379	32	248	367	279					
Volume Left (vph)	32	216	0	32	0	367	0					
Volume Right (vph)	75	0	379	0	116	0	36					
Hadj (s)	-0.15	0.30	-0.63	0.53	-0.21	0.55	-0.04					
Departure Headway (s)	8.6	8.2	7.3	9.4	8.6	8.7	8.1					
Degree Utilization, x	0.40	0.93	0.77	0.08	0.59	0.88	0.62					
Capacity (veh/h)	406	426	485	375	399	407	434					
Control Delay (s)	17.1	55.6	29.2	12.0	22.3	48.4	22.3					
Approach Delay (s)	17.1	42.9		21.1		37.1						
Approach LOS	C	E		C		E						
Intersection Summary												
Delay			35.4									
Level of Service			E									
Intersection Capacity Utilization			61.4%	ICU Level of Service		B						
Analysis Period (min)			15									

Lanes, Volumes, Timings

Willows at Stallings TIA

2: Stallings Rd & Monroe Expressway WB Ramp

2019 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	120	90	110	404	203	0	0	245	124
Future Volume (vph)	0	0	0	120	90	110	404	203	0	0	245	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		150
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			0			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt						0.850					0.954	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1719	1845	1538	1687	1759	0	0	3324	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1719	1845	1538	1687	1759	0	0	3324	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			45			35			45	
Link Distance (ft)		1788			2381			198			998	
Travel Time (s)		40.6			36.1			3.9			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.85	0.80	0.83	0.96	0.83	0.90	0.90	0.85	0.97
Heavy Vehicles (%)	2%	2%	2%	5%	3%	5%	7%	8%	2%	2%	3%	5%
Adj. Flow (vph)	0	0	0	141	113	133	421	245	0	0	288	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	141	113	133	421	245	0	0	416	0
Turn Type				Split	NA	Prot	Prot	NA			NA	
Protected Phases				4	4	4	3 5	2 3			6	
Permitted Phases												
Detector Phase				4	4	4	3 5	2 3			6	
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0					12.0	
Minimum Split (s)				13.7	13.7	13.7					28.4	
Total Split (s)				24.0	24.0	24.0					37.0	
Total Split (%)				20.0%	20.0%	20.0%					30.8%	
Maximum Green (s)				17.3	17.3	17.3					31.6	
Yellow Time (s)				4.3	4.3	4.3					4.4	
All-Red Time (s)				2.4	2.4	2.4					1.0	
Lost Time Adjust (s)				-1.7	-1.7	-1.7					-0.4	
Total Lost Time (s)				5.0	5.0	5.0					5.0	
Lead/Lag				Lag	Lag	Lag					Lag	
Lead-Lag Optimize?				Yes	Yes	Yes					Yes	
Vehicle Extension (s)				3.0	3.0	3.0					3.0	
Recall Mode				None	None	None					C-Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											16.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				16.9	16.9	16.9	41.2	72.3			39.1	
Actuated g/C Ratio				0.14	0.14	0.14	0.34	0.60			0.33	
v/c Ratio				0.58	0.43	0.62	0.73	0.23			0.38	
Control Delay				57.6	51.7	60.4	29.3	1.2			34.6	
Queue Delay				0.0	0.0	0.0	2.4	0.2			0.0	

Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2019 Existing AM

Lane Group	Ø1	Ø2	Ø3	Ø5
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	3	5
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	10.0	7.0	7.0
Minimum Split (s)	13.3	24.2	13.4	13.2
Total Split (s)	14.0	37.0	45.0	14.0
Total Split (%)	12%	31%	38%	12%
Maximum Green (s)	7.7	31.8	38.6	7.8
Yellow Time (s)	3.0	3.9	3.8	3.0
All-Red Time (s)	3.3	1.3	2.6	3.2
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	None	None
Walk Time (s)		7.0		
Flash Dont Walk (s)		12.0		
Pedestrian Calls (#/hr)		0		
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2019 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay				57.6	51.7	60.4	31.7	1.4			34.6	
LOS				E	D	E	C	A			C	
Approach Delay					56.9			20.5			34.6	
Approach LOS					E			C			C	
Queue Length 50th (ft)				102	80	97	139	5			138	
Queue Length 95th (ft)				159	121	149	395	7			180	
Internal Link Dist (ft)		1708			2301			118			918	
Turn Bay Length (ft)						50						
Base Capacity (vph)				279	300	249	719	1209			1095	
Starvation Cap Reductn				0	0	0	181	435			0	
Spillback Cap Reductn				0	0	0	0	0			48	
Storage Cap Reductn				0	0	0	0	0			0	
Reduced v/c Ratio				0.51	0.38	0.53	0.78	0.32			0.40	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 34.1

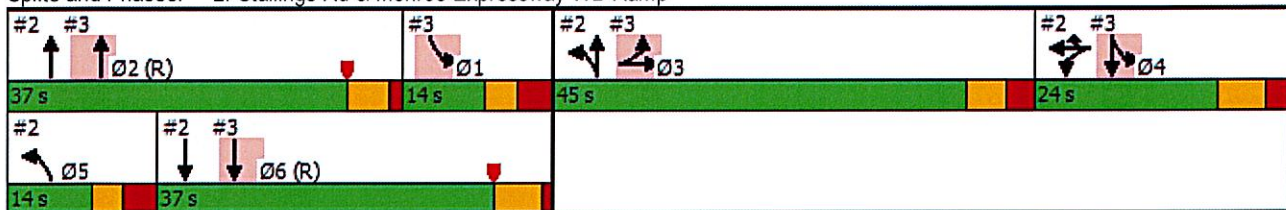
Intersection LOS: C

Intersection Capacity Utilization 52.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Stallings Rd & Monroe Expressway WB Ramp



Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2019 Existing AM

Lane Group	Ø1	Ø2	Ø3	Ø5
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

3: Stallings Rd & Monroe Expressway EB Ramp

2019 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	79	252	0	0	0	0	460	38	96	269	0
Future Volume (vph)	147	79	252	0	0	0	0	460	38	96	269	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	0		0	150		0	0		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	100			25			100			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.889						0.984				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1736	3056	0	0	0	0	0	3299	0	1719	1845	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1736	3056	0	0	0	0	0	3299	0	1719	1845	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		1776			891			1501			198	
Travel Time (s)		34.6			20.3			29.2			3.9	
Peak Hour Factor	0.78	0.71	0.79	0.90	0.90	0.90	0.90	0.92	0.63	0.75	0.93	0.90
Heavy Vehicles (%)	4%	8%	4%	2%	2%	2%	2%	8%	5%	5%	3%	2%
Adj. Flow (vph)	188	111	319	0	0	0	0	500	60	128	289	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	430	0	0	0	0	0	560	0	128	289	0
Turn Type	Split	NA						NA		Prot	NA	
Protected Phases	3	3						2		1 4	4 6	
Permitted Phases												
Detector Phase	3	3						2		1 4	4 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						10.0				
Minimum Split (s)	13.4	13.4						24.2				
Total Split (s)	45.0	45.0						37.0				
Total Split (%)	37.5%	37.5%						30.8%				
Maximum Green (s)	38.6	38.6						31.8				
Yellow Time (s)	3.8	3.8						3.9				
All-Red Time (s)	2.6	2.6						1.3				
Lost Time Adjust (s)	-1.4	-1.4						-0.2				
Total Lost Time (s)	5.0	5.0						5.0				
Lead/Lag	Lead	Lead						Lead				
Lead-Lag Optimize?	Yes	Yes						Yes				
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Min				
Walk Time (s)								7.0				
Flash Dont Walk (s)								12.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)	29.9	29.9						42.8		24.7	52.6	
Actuated g/C Ratio	0.25	0.25						0.36		0.21	0.44	
v/c Ratio	0.43	0.56						0.48		0.36	0.36	
Control Delay	40.1	41.6						33.6		16.3	3.0	
Queue Delay	0.1	0.0						0.3		0.7	0.2	

Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2019 Existing AM

Lane Group	Ø1	Ø4	Ø5	Ø6
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	4	5	6
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	12.0
Minimum Split (s)	13.3	13.7	13.2	28.4
Total Split (s)	14.0	24.0	14.0	37.0
Total Split (%)	12%	20%	12%	31%
Maximum Green (s)	7.7	17.3	7.8	31.6
Yellow Time (s)	3.0	4.3	3.0	4.4
All-Red Time (s)	3.3	2.4	3.2	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min
Walk Time (s)				7.0
Flash Dont Walk (s)				16.0
Pedestrian Calls (#/hr)				0
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

Lanes, Volumes, Timings

Willows at Stallings TIA

3: Stallings Rd & Monroe Expressway EB Ramp

2019 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	40.1	41.6						33.9		17.1	3.1	
LOS	D	D						C		B	A	
Approach Delay		41.2						33.9			7.4	
Approach LOS		D						C			A	
Queue Length 50th (ft)	122	152						182		64	8	
Queue Length 95th (ft)	145	138						266		93	15	
Internal Link Dist (ft)		1696			811			1421			118	
Turn Bay Length (ft)	175											
Base Capacity (vph)	578	1018						1180		390	855	
Starvation Cap Reductn	0	0						0		96	144	
Spillback Cap Reductn	33	0						198		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.34	0.42						0.57		0.44	0.41	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 29.8

Intersection LOS: C

Intersection Capacity Utilization 52.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Stallings Rd & Monroe Expressway EB Ramp

   37 s	  14 s	   45 s	   24 s
  14 s	   37 s		

Lane Group	Ø1	Ø4	Ø5	Ø6
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings
4: Stallings Rd & Matthews-Indian Trail Rd

Willows at Stallings TIA
2019 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	16	49	60	39	63	93	421	38	81	399	36
Future Volume (vph)	12	16	49	60	39	63	93	421	38	81	399	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	140		0	120		0	110		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			75			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.891			0.908			0.986			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	1614	0	1467	1644	0	1770	1735	0	1770	1806	0
Flt Permitted	0.665			0.700			0.446			0.404		
Satd. Flow (perm)	1080	1614	0	1081	1644	0	831	1735	0	753	1806	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			35			35	
Link Distance (ft)		2002			586			1248			1501	
Travel Time (s)		30.3			11.4			24.3			29.2	
Peak Hour Factor	0.75	0.67	0.77	0.63	0.70	0.72	0.80	0.86	0.73	0.84	0.89	0.82
Heavy Vehicles (%)	17%	2%	6%	23%	8%	3%	2%	8%	8%	2%	4%	2%
Adj. Flow (vph)	16	24	64	95	56	88	116	490	52	96	448	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	88	0	95	144	0	116	542	0	96	492	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.3	12.3		12.7	12.7		34.4	34.4		15.3	15.3	
Total Split (s)	19.0	19.0		19.0	19.0		41.0	41.0		41.0	41.0	
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	
Maximum Green (s)	13.7	13.7		13.3	13.3		35.6	35.6		35.7	35.7	
Yellow Time (s)	3.6	3.6		4.0	4.0		3.8	3.8		3.6	3.6	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.7	1.7	
Lost Time Adjust (s)	-0.3	-0.3		-0.7	-0.7		-0.4	-0.4		-0.3	-0.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							22.0	22.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	9.4	9.4		9.5	9.5		22.2	22.2		22.2	22.2	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.59	0.59		0.59	0.59	
v/c Ratio	0.06	0.22		0.35	0.35		0.24	0.53		0.22	0.46	
Control Delay	13.8	14.6		17.7	16.0		7.7	9.4		7.6	8.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings

Willows at Stallings TIA

4: Stallings Rd & Matthews-Indian Trail Rd

2019 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	13.8	14.6		17.7	16.0		7.7	9.4		7.6	8.4	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		14.4			16.7			9.1			8.3	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	2	13		15	22		12	67		9	58	
Queue Length 95th (ft)	13	36		38	56		35	161		32	145	
Internal Link Dist (ft)		1922			506			1168			1421	
Turn Bay Length (ft)	140			140			120			110		
Base Capacity (vph)	418	624		418	636		758	1583		687	1648	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.14		0.23	0.23		0.15	0.34		0.14	0.30	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 37.8

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 10.3

Intersection LOS: B

Intersection Capacity Utilization 55.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Stallings Rd & Matthews-Indian Trail Rd

 Ø2	 Ø4
41 s	19 s
 Ø6	 Ø8
41 s	19 s

Lanes, Volumes, Timings
5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔		↔	↔	
Traffic Volume (vph)	6	4	4	39	7	230	6	91	43	114	61	16
Future Volume (vph)	6	4	4	39	7	230	6	91	43	114	61	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	125		0	0		0	150		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			125			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.857			0.959			0.964	
Flt Protected		0.984		0.950				0.996		0.950		
Satd. Flow (prot)	0	1339	0	1752	1488	0	0	1753	0	1770	1750	0
Flt Permitted		0.984		0.950				0.996		0.950		
Satd. Flow (perm)	0	1339	0	1752	1488	0	0	1753	0	1770	1750	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		831			703			907			461	
Travel Time (s)		16.2			13.7			17.7			9.0	
Peak Hour Factor	0.38	0.25	0.25	0.61	0.44	0.74	0.38	0.65	0.63	0.63	0.69	0.57
Heavy Vehicles (%)	17%	33%	50%	3%	57%	7%	2%	2%	7%	2%	2%	13%
Adj. Flow (vph)	16	16	16	64	16	311	16	140	68	181	88	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	64	327	0	0	224	0	181	116	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 38.7%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	4	4	39	7	230	6	91	43	114	61	16
Future Volume (Veh/h)	6	4	4	39	7	230	6	91	43	114	61	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.25	0.25	0.61	0.44	0.74	0.38	0.65	0.63	0.63	0.69	0.57
Hourly flow rate (vph)	16	16	16	64	16	311	16	140	68	181	88	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	989	704	102	680	684	174	116			208		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	989	704	102	680	684	174	116			208		
tC, single (s)	7.3	6.8	6.7	7.1	7.1	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.3	3.8	3.5	4.5	3.4	2.2			2.2		
p0 queue free %	86	94	98	79	94	64	99			87		
cM capacity (veh/h)	115	279	837	304	266	857	1473			1363		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	48	64	327	224	181	116						
Volume Left	16	64	0	16	181	0						
Volume Right	16	0	311	68	0	28						
cSH	223	304	773	1473	1363	1700						
Volume to Capacity	0.22	0.21	0.42	0.01	0.13	0.07						
Queue Length 95th (ft)	20	19	53	1	11	0						
Control Delay (s)	25.6	20.0	13.0	0.6	8.0	0.0						
Lane LOS	D	C	B	A	A							
Approach Delay (s)	25.6	14.2		0.6	4.9							
Approach LOS	D	B										
Intersection Summary												
Average Delay			8.7									
Intersection Capacity Utilization			38.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing AM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	217	274	135	455	188	63
Future Volume (vph)	217	274	135	455	188	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.938				0.963	
Flt Protected				0.989	0.965	
Satd. Flow (prot)	1720	0	0	1842	1647	0
Flt Permitted				0.989	0.965	
Satd. Flow (perm)	1720	0	0	1842	1647	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	940			594	925	
Travel Time (s)	14.2			9.0	18.0	
Peak Hour Factor	0.58	0.86	0.80	0.73	0.90	0.79
Heavy Vehicles (%)	5%	2%	2%	2%	5%	13%
Adj. Flow (vph)	374	319	169	623	209	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	693	0	0	792	289	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 83.9%

ICU Level of Service E

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	217	274	135	455	188	63
Future Volume (Veh/h)	217	274	135	455	188	63
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.58	0.86	0.80	0.73	0.90	0.79
Hourly flow rate (vph)	374	319	169	623	209	80
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			693		1494	534
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			693		1494	534
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			81		0	85
cM capacity (veh/h)			902		108	526
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	693	792	289			
Volume Left	0	169	209			
Volume Right	319	0	80			
cSH	1700	902	139			
Volume to Capacity	0.41	0.19	2.08			
Queue Length 95th (ft)	0	17	585			
Control Delay (s)	0.0	4.4	563.2			
Lane LOS		A	F			
Approach Delay (s)	0.0	4.4	563.2			
Approach LOS			F			
Intersection Summary						
Average Delay			93.7			
Intersection Capacity Utilization			83.9%	ICU Level of Service		E
Analysis Period (min)			15			

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	145	25	117	40	76	12	139	223	258	140	11
Future Volume (vph)	8	145	25	117	40	76	12	139	223	258	140	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		300	150		0	150		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974				0.850		0.906			0.986	
Flt Protected		0.997			0.968		0.950			0.950		
Satd. Flow (prot)	0	1796	0	0	1768	1583	1671	1681	0	1687	1821	0
Flt Permitted		0.997			0.968		0.950			0.950		
Satd. Flow (perm)	0	1796	0	0	1768	1583	1671	1681	0	1687	1821	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1672			940			3692			1502	
Travel Time (s)		25.3			14.2			55.9			22.8	
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.67	0.91	0.63	0.84	0.59	0.95	0.50	0.89	0.85	0.91	0.75	0.55
Heavy Vehicles (%)	2%	3%	2%	5%	2%	2%	8%	3%	2%	7%	3%	2%
Adj. Flow (vph)	12	159	40	139	68	80	24	156	262	284	187	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	211	0	0	207	80	24	418	0	284	207	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	66.8%						ICU Level of Service C					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	145	25	117	40	76	12	139	223	258	140	11
Future Volume (vph)	8	145	25	117	40	76	12	139	223	258	140	11
Peak Hour Factor	0.67	0.91	0.63	0.84	0.59	0.95	0.50	0.89	0.85	0.91	0.75	0.55
Hourly flow rate (vph)	12	159	40	139	68	80	24	156	262	284	187	20
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total (vph)	211	207	80	24	418	284	207					
Volume Left (vph)	12	139	0	24	0	284	0					
Volume Right (vph)	40	0	80	0	262	0	20					
Hadj (s)	-0.06	0.40	-0.67	0.64	-0.40	0.62	-0.02					
Departure Headway (s)	8.0	8.4	7.3	8.1	7.0	8.0	7.4					
Degree Utilization, x	0.47	0.48	0.16	0.05	0.81	0.63	0.42					
Capacity (veh/h)	413	402	454	428	499	430	471					
Control Delay (s)	17.7	17.7	10.5	10.3	32.8	22.5	14.4					
Approach Delay (s)	17.7	15.7		31.5		19.1						
Approach LOS	C	C		D		C						
Intersection Summary												
Delay			22.1									
Level of Service			C									
Intersection Capacity Utilization			66.8%	ICU Level of Service		C						
Analysis Period (min)			15									

Lanes, Volumes, Timings

Willows at Stallings TIA

2: Stallings Rd & Monroe Expressway WB Ramp

2019 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	111	95	98	392	296	0	0	229	127
Future Volume (vph)	0	0	0	111	95	98	392	296	0	0	229	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		150
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			0			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt						0.850					0.937	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1719	1863	1583	1770	1863	0	0	3297	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1719	1863	1583	1770	1863	0	0	3297	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			45			35			45	
Link Distance (ft)		1788			2381			198			998	
Travel Time (s)		40.6			36.1			3.9			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.97	0.85	0.88	0.79	0.91	0.90	0.90	0.93	0.72
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%	3%	2%
Adj. Flow (vph)	0	0	0	114	112	111	496	325	0	0	246	176
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	114	112	111	496	325	0	0	422	0
Turn Type				Split	NA	Prot	Prot	NA			NA	
Protected Phases				4	4	4	3 5	2 3			6	
Permitted Phases												
Detector Phase				4	4	4	3 5	2 3			6	
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0					12.0	
Minimum Split (s)				13.7	13.7	13.7					28.4	
Total Split (s)				21.0	21.0	21.0					38.0	
Total Split (%)				17.5%	17.5%	17.5%					31.7%	
Maximum Green (s)				14.3	14.3	14.3					32.6	
Yellow Time (s)				4.3	4.3	4.3					4.4	
All-Red Time (s)				2.4	2.4	2.4					1.0	
Lost Time Adjust (s)				-1.7	-1.7	-1.7					-0.4	
Total Lost Time (s)				5.0	5.0	5.0					5.0	
Lead/Lag				Lag	Lag	Lag					Lag	
Lead-Lag Optimize?				Yes	Yes	Yes					Yes	
Vehicle Extension (s)				3.0	3.0	3.0					3.0	
Recall Mode				None	None	None					C-Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											16.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				14.9	14.9	14.9	44.8	74.7			37.6	
Actuated g/C Ratio				0.12	0.12	0.12	0.37	0.62			0.31	
v/c Ratio				0.54	0.49	0.57	0.75	0.28			0.41	
Control Delay				58.5	55.9	60.7	27.7	1.2			35.6	
Queue Delay				0.0	0.0	0.0	3.4	0.3			0.0	

Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2019 Existing PM

Lane Group	Ø1	Ø2	Ø3	Ø5
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	3	5
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	10.0	7.0	7.0
Minimum Split (s)	13.3	24.2	13.4	13.2
Total Split (s)	15.0	37.0	47.0	14.0
Total Split (%)	13%	31%	39%	12%
Maximum Green (s)	8.7	31.8	40.6	7.8
Yellow Time (s)	3.0	3.9	3.8	3.0
All-Red Time (s)	3.3	1.3	2.6	3.2
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	None	None
Walk Time (s)		7.0		
Flash Dont Walk (s)		12.0		
Pedestrian Calls (#/hr)		1		
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

Lanes, Volumes, Timings

Willows at Stallings TIA

2: Stallings Rd & Monroe Expressway WB Ramp

2019 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay				58.5	55.9	60.7	31.1	1.5			35.6	
LOS				E	E	E	C	A			D	
Approach Delay					58.4			19.4			35.6	
Approach LOS					E			B			D	
Queue Length 50th (ft)				83	81	81	112	6			143	
Queue Length 95th (ft)				145	132	139	354	8			193	
Internal Link Dist (ft)		1708			2301			118			918	
Turn Bay Length (ft)						50						
Base Capacity (vph)				236	256	218	760	1274			1044	
Starvation Cap Reductn				0	0	0	174	459			0	
Spillback Cap Reductn				0	0	0	0	0			48	
Storage Cap Reductn				0	0	0	0	0			0	
Reduced v/c Ratio				0.48	0.44	0.51	0.85	0.40			0.42	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 32.0

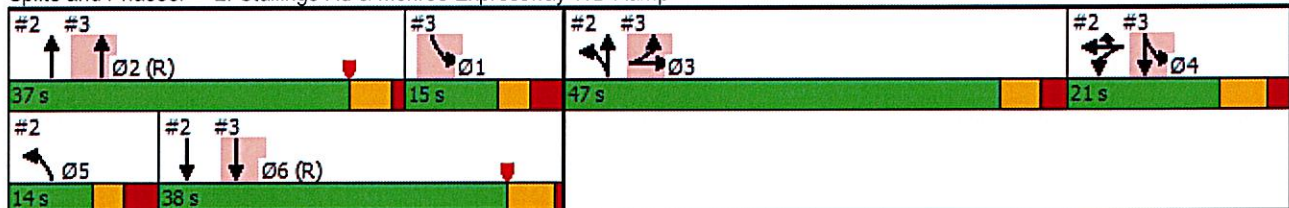
Intersection LOS: C

Intersection Capacity Utilization 54.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Stallings Rd & Monroe Expressway WB Ramp



Lane Group	Ø1	Ø2	Ø3	Ø5
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

3: Stallings Rd & Monroe Expressway EB Ramp

2019 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	90	296	0	0	0	0	472	83	97	243	0
Future Volume (vph)	216	90	296	0	0	0	0	472	83	97	243	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	0		0	150		0	0		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	100			25			100			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00							1.00		1.00		
Frt		0.888						0.976				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3098	0	0	0	0	0	3447	0	1770	1827	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1768	3098	0	0	0	0	0	3447	0	1768	1827	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		1776			891			1501			198	
Travel Time (s)		34.6			20.3			29.2			3.9	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.66	0.73	0.82	0.90	0.90	0.90	0.90	0.90	0.83	0.76	0.91	0.90
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	4%	2%
Adj. Flow (vph)	327	123	361	0	0	0	0	524	100	128	267	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	327	484	0	0	0	0	0	624	0	128	267	0
Turn Type	Split	NA						NA		Prot	NA	
Protected Phases	3	3						2		1 4	4 6	
Permitted Phases												
Detector Phase	3	3						2		1 4	4 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						10.0				
Minimum Split (s)	13.4	13.4						24.2				
Total Split (s)	47.0	47.0						37.0				
Total Split (%)	39.2%	39.2%						30.8%				
Maximum Green (s)	40.6	40.6						31.8				
Yellow Time (s)	3.8	3.8						3.9				
All-Red Time (s)	2.6	2.6						1.3				
Lost Time Adjust (s)	-1.4	-1.4						-0.2				
Total Lost Time (s)	5.0	5.0						5.0				
Lead/Lag	Lead	Lead						Lead				
Lead-Lag Optimize?	Yes	Yes						Yes				
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Min				
Walk Time (s)								7.0				
Flash Dont Walk (s)								12.0				
Pedestrian Calls (#/hr)								1				
Act Effct Green (s)	35.2	35.2						39.9		22.3	49.0	
Actuated g/C Ratio	0.29	0.29						0.33		0.19	0.41	
v/c Ratio	0.63	0.53						0.54		0.39	0.36	

Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2019 Existing PM

Lane Group	Ø1	Ø4	Ø5	Ø6
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	4	5	6
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	12.0
Minimum Split (s)	13.3	13.7	13.2	28.4
Total Split (s)	15.0	21.0	14.0	38.0
Total Split (%)	13%	18%	12%	32%
Maximum Green (s)	8.7	14.3	7.8	32.6
Yellow Time (s)	3.0	4.3	3.0	4.4
All-Red Time (s)	3.3	2.4	3.2	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min
Walk Time (s)				7.0
Flash Dont Walk (s)				16.0
Pedestrian Calls (#/hr)				0
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				

Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2019 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	41.7	37.0						36.8		17.6	4.3	
Queue Delay	0.2	0.0						0.3		0.8	0.3	
Total Delay	41.9	37.0						37.1		18.4	4.6	
LOS	D	D						D		B	A	
Approach Delay		39.0						37.1			9.0	
Approach LOS		D						D			A	
Queue Length 50th (ft)	224	168						207		63	13	
Queue Length 95th (ft)	198	156						294		95	23	
Internal Link Dist (ft)		1696			811			1421			118	
Turn Bay Length (ft)	175											
Base Capacity (vph)	619	1084						1162		357	778	
Starvation Cap Reductn	0	0						0		78	146	
Spillback Cap Reductn	30	0						151		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.56	0.45						0.62		0.46	0.42	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 31.9

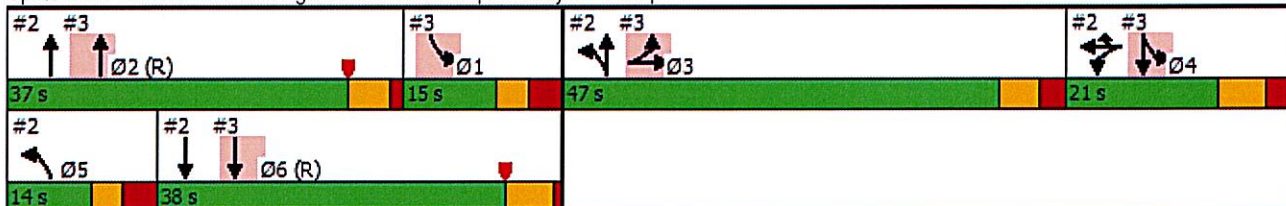
Intersection LOS: C

Intersection Capacity Utilization 54.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Stallings Rd & Monroe Expressway EB Ramp



Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2019 Existing PM

Lane Group	Ø1	Ø4	Ø5	Ø6
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings
4: Stallings Rd & Matthews-Indian Trail Rd

Willows at Stallings TIA
2019 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	53	100	44	25	87	29	447	42	68	435	30
Future Volume (vph)	21	53	100	44	25	87	29	447	42	68	435	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	140		0	120		0	110		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			75			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		1.00		
Frt		0.895			0.882			0.987			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1667	0	1770	1643	0	1770	1823	0	1770	1803	0
Flt Permitted	0.629			0.626			0.440			0.377		
Satd. Flow (perm)	1172	1667	0	1166	1643	0	820	1823	0	702	1803	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			35			35	
Link Distance (ft)		2002			586			1267			1501	
Travel Time (s)		30.3			11.4			24.7			29.2	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.75	0.83	0.68	0.65	0.57	0.54	0.60	0.87	0.88	0.65	0.98	0.68
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	10%	2%	4%	3%
Adj. Flow (vph)	28	64	147	68	44	161	48	514	48	105	444	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	211	0	68	205	0	48	562	0	105	488	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.3	12.3		12.7	12.7		34.4	34.4		15.3	15.3	
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	16.7	16.7		16.3	16.3		32.6	32.6		32.7	32.7	
Yellow Time (s)	3.6	3.6		4.0	4.0		3.8	3.8		3.6	3.6	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.7	1.7	
Lost Time Adjust (s)	-0.3	-0.3		-0.7	-0.7		-0.4	-0.4		-0.3	-0.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							22.0	22.0				
Pedestrian Calls (#/hr)							1	1				
Act Effct Green (s)	10.8	10.8		10.9	10.9		22.1	22.1		22.1	22.1	
Actuated g/C Ratio	0.28	0.28		0.29	0.29		0.58	0.58		0.58	0.58	
v/c Ratio	0.09	0.45		0.20	0.44		0.10	0.53		0.26	0.47	

Lanes, Volumes, Timings
4: Stallings Rd & Matthews-Indian Trail Rd

Willows at Stallings TIA
2019 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	13.7	16.9		14.8	16.8		7.0	10.1		9.1	9.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.7	16.9		14.8	16.8		7.0	10.1		9.1	9.2	
LOS	B	B		B	B		A	B		A	A	
Approach Delay		16.5			16.3			9.8			9.2	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	4	34		10	33		5	78		12	64	
Queue Length 95th (ft)	19	99		30	62		13	188		29	165	
Internal Link Dist (ft)		1922			506			1187			1421	
Turn Bay Length (ft)	140			140			120			110		
Base Capacity (vph)	569	809		566	798		698	1553		598	1536	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.26		0.12	0.26		0.07	0.36		0.18	0.32	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 38.2

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 11.6

Intersection LOS: B

Intersection Capacity Utilization 65.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Stallings Rd & Matthews-Indian Trail Rd

 Ø2	 Ø4
38 s	22 s
 Ø6	 Ø8
38 s	22 s

Lanes, Volumes, Timings
5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔		↔	↔	
Traffic Volume (vph)	9	5	4	6	4	37	4	92	54	94	35	4
Future Volume (vph)	9	5	4	6	4	37	4	92	54	94	35	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	125		0	0		0	150		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			125			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.893			0.949			0.957	
Flt Protected		0.984		0.950				0.997		0.950		
Satd. Flow (prot)	0	1557	0	1770	1652	0	0	1701	0	1770	1770	0
Flt Permitted		0.984		0.950				0.997		0.950		
Satd. Flow (perm)	0	1557	0	1770	1652	0	0	1701	0	1770	1770	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		823			709			904			459	
Travel Time (s)		16.0			13.8			17.6			8.9	
Peak Hour Factor	0.56	0.31	0.25	0.38	0.25	0.93	0.38	0.85	0.75	0.76	0.88	0.25
Heavy Vehicles (%)	2%	40%	2%	2%	2%	3%	33%	2%	7%	2%	3%	2%
Adj. Flow (vph)	16	16	16	16	16	40	11	108	72	124	40	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	16	56	0	0	191	0	124	56	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 31.2%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	5	4	6	4	37	4	92	54	94	35	4
Future Volume (Veh/h)	9	5	4	6	4	37	4	92	54	94	35	4
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.56	0.31	0.25	0.38	0.25	0.93	0.38	0.85	0.75	0.76	0.88	0.25
Hourly flow rate (vph)	16	16	16	16	16	40	11	108	72	124	40	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	510	498	48	478	470	144	56				180	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	510	498	48	478	470	144	56				180	
tC, single (s)	7.1	6.9	6.2	7.1	6.5	6.2	4.4				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.4	3.3	3.5	4.0	3.3	2.5				2.2	
p0 queue free %	96	96	98	96	96	96	99				91	
cM capacity (veh/h)	408	383	1021	440	444	901	1372				1396	
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	48	16	56	191	124	56						
Volume Left	16	16	0	11	124	0						
Volume Right	16	0	40	72	0	16						
cSH	496	440	696	1372	1396	1700						
Volume to Capacity	0.10	0.04	0.08	0.01	0.09	0.03						
Queue Length 95th (ft)	8	3	7	1	7	0						
Control Delay (s)	13.0	13.5	10.6	0.5	7.8	0.0						
Lane LOS	B	B	B	A	A							
Approach Delay (s)	13.0	11.3		0.5	5.4							
Approach LOS	B	B										
Intersection Summary												
Average Delay	5.1											
Intersection Capacity Utilization	31.2%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing PM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	414	268	64	208	111	77
Future Volume (vph)	414	268	64	208	111	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.949				0.938	
Flt Protected				0.988	0.974	
Satd. Flow (prot)	1742	0	0	1796	1702	0
Flt Permitted				0.988	0.974	
Satd. Flow (perm)	1742	0	0	1796	1702	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	940			594	925	
Travel Time (s)	14.2			9.0	18.0	
Peak Hour Factor	0.88	0.93	0.80	0.85	0.77	0.62
Heavy Vehicles (%)	2%	6%	6%	4%	2%	2%
Adj. Flow (vph)	470	288	80	245	144	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	758	0	0	325	268	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	73.5%			ICU Level of Service D		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2019 Existing PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	414	268	64	208	111	77
Future Volume (Veh/h)	414	268	64	208	111	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.93	0.80	0.85	0.77	0.62
Hourly flow rate (vph)	470	288	80	245	144	124
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			758		1019	614
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			758		1019	614
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			90		39	75
cM capacity (veh/h)			835		237	492
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	758	325	268			
Volume Left	0	80	144			
Volume Right	288	0	124			
cSH	1700	835	312			
Volume to Capacity	0.45	0.10	0.86			
Queue Length 95th (ft)	0	8	191			
Control Delay (s)	0.0	3.2	58.7			
Lane LOS		A	F			
Approach Delay (s)	0.0	3.2	58.7			
Approach LOS			F			
Intersection Summary						
Average Delay		12.4				
Intersection Capacity Utilization		73.5%	ICU Level of Service	D		
Analysis Period (min)		15				

2022 Background Conditions

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	55	51	203	166	298	25	126	98	281	189	33
Future Volume (vph)	26	55	51	203	166	298	25	126	98	281	189	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		300	150		0	150		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.938				0.850		0.930			0.981	
Flt Protected		0.991			0.974		0.950			0.950		
Satd. Flow (prot)	0	1687	0	0	1814	1553	1770	1653	0	1752	1810	0
Flt Permitted		0.991			0.974		0.950			0.950		
Satd. Flow (perm)	0	1687	0	0	1814	1553	1770	1653	0	1752	1810	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1672			940			3692			1502	
Travel Time (s)		25.3			14.2			55.9			22.8	
Confl. Peds. (#/hr)			3	3			3					3
Peak Hour Factor	0.72	0.83	0.59	0.81	0.78	0.71	0.70	0.84	0.74	0.69	0.69	0.83
Heavy Vehicles (%)	9%	2%	5%	2%	2%	4%	2%	5%	9%	3%	3%	3%
Adj. Flow (vph)	36	66	86	251	213	420	36	150	132	407	274	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	188	0	0	464	420	36	282	0	407	314	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	68.0%											
ICU Level of Service	C											
Analysis Period (min)	15											

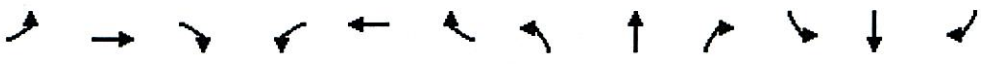
HCM Unsignalized Intersection Capacity Analysis 1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background AM

																	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR					
Lane Configurations																	
Sign Control		Stop			Stop			Stop			Stop						
Traffic Volume (vph)	26	55	51	203	166	298	25	126	98	281	189	33					
Future Volume (vph)	26	55	51	203	166	298	25	126	98	281	189	33					
Peak Hour Factor	0.72	0.83	0.59	0.81	0.78	0.71	0.70	0.84	0.74	0.69	0.69	0.83					
Hourly flow rate (vph)	36	66	86	251	213	420	36	150	132	407	274	40					
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2										
Volume Total (vph)	188	464	420	36	282	407	314										
Volume Left (vph)	36	251	0	36	0	407	0										
Volume Right (vph)	86	0	420	0	132	0	40										
Hadj (s)	-0.16	0.30	-0.63	0.53	-0.21	0.55	-0.04										
Departure Headway (s)	8.9	8.6	7.7	9.6	8.8	8.8	8.2										
Degree Utilization, x	0.46	1.11	0.89	0.10	0.69	0.99	0.72										
Capacity (veh/h)	385	418	461	365	395	406	430										
Control Delay (s)	19.3	105.6	46.1	12.4	28.2	71.8	28.1										
Approach Delay (s)	19.3	77.3		26.4		52.7											
Approach LOS	C	F		D		F											
Intersection Summary																	
Delay			56.1														
Level of Service			F														
Intersection Capacity Utilization			68.0%	ICU Level of Service		C											
Analysis Period (min)			15														

Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2022 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	207	100	122	479	232	0	0	290	137
Future Volume (vph)	0	0	0	207	100	122	479	232	0	0	290	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		50	0		0	200		0
Storage Lanes	0		0	1		0	2		0	2		0
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	1.00	1.00	0.86	0.86
Frt					0.919						0.956	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1719	3188	0	3273	3343	0	0	6032	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1719	3188	0	3273	3343	0	0	6032	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			45			35			45	
Link Distance (ft)		1788			2381			198			998	
Travel Time (s)		40.6			36.1			3.9			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.87	0.80	0.83	0.96	0.83	0.90	0.90	0.85	0.97
Heavy Vehicles (%)	2%	2%	2%	5%	3%	5%	7%	8%	2%	2%	3%	5%
Adj. Flow (vph)	0	0	0	238	125	147	499	280	0	0	341	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	238	272	0	499	280	0	0	482	0
Turn Type				Split	NA		Prot	NA			NA	
Protected Phases				4	4		3 5	2 3			6	
Permitted Phases												
Detector Phase				4	4		3 5	2 3			6	
Switch Phase												
Minimum Initial (s)				7.0	7.0						12.0	
Minimum Split (s)				13.7	13.7						28.4	
Total Split (s)				32.0	32.0						30.0	
Total Split (%)				26.7%	26.7%						25.0%	
Maximum Green (s)				25.3	25.3						24.6	
Yellow Time (s)				4.3	4.3						4.4	
All-Red Time (s)				2.4	2.4						1.0	
Lost Time Adjust (s)				-1.7	-1.7						-0.4	
Total Lost Time (s)				5.0	5.0						5.0	
Lead/Lag				Lag	Lag						Lag	
Lead-Lag Optimize?				Yes	Yes						Yes	
Vehicle Extension (s)				3.0	3.0						3.0	
Recall Mode				None	None						C-Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											16.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				23.6	23.6		45.4	67.2			28.3	
Actuated g/C Ratio				0.20	0.20		0.38	0.56			0.24	
v/c Ratio				0.71	0.44		0.40	0.15			0.34	
Control Delay				56.3	43.9		18.4	0.9			40.5	
Queue Delay				0.0	0.0		2.7	0.2			0.0	

Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2022 Background AM

Lane Group	Ø1	Ø2	Ø3	Ø5
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	3	5
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	10.0	7.0	7.0
Minimum Split (s)	13.3	24.2	13.4	13.2
Total Split (s)	13.0	30.0	45.0	13.0
Total Split (%)	11%	25%	38%	11%
Maximum Green (s)	6.7	24.8	38.6	6.8
Yellow Time (s)	3.0	3.9	3.8	3.0
All-Red Time (s)	3.3	1.3	2.6	3.2
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	None	None
Walk Time (s)		7.0		
Flash Dont Walk (s)		12.0		
Pedestrian Calls (#/hr)		0		
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

Lanes, Volumes, Timings

Willows at Stallings TIA

2: Stallings Rd & Monroe Expressway WB Ramp

2022 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay				56.3	43.9		21.1	1.0			40.5	
LOS				E	D		C	A			D	
Approach Delay					49.7			13.9			40.5	
Approach LOS					D			B			D	
Queue Length 50th (ft)				171	96		66	3			97	
Queue Length 95th (ft)				245	120		178	4			115	
Internal Link Dist (ft)		1708			2301			118			918	
Turn Bay Length (ft)				325								
Base Capacity (vph)				390	724		1314	1990			1501	
Starvation Cap Reductn				0	0		677	987			0	
Spillback Cap Reductn				0	0		0	0			0	
Storage Cap Reductn				0	0		0	0			0	
Reduced v/c Ratio				0.61	0.38		0.78	0.28			0.32	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 31.4

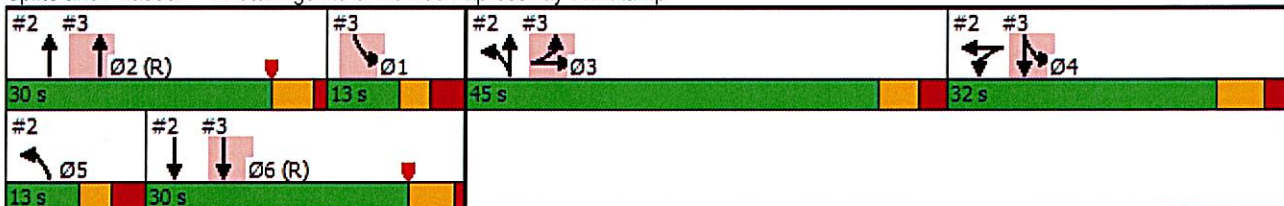
Intersection LOS: C

Intersection Capacity Utilization 59.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Stallings Rd & Monroe Expressway WB Ramp



Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2022 Background AM

Lane Group	Ø1	Ø2	Ø3	Ø5
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

3: Stallings Rd & Monroe Expressway EB Ramp

2022 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	124	324	0	0	0	0	548	48	106	391	0
Future Volume (vph)	163	124	324	0	0	0	0	548	48	106	391	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		325	0		0	425		0	0		0
Storage Lanes	0		0	0		0	2		0	2		0
Taper Length (ft)	100			25			225			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.95	1.00
Frt		0.922						0.984				
Flt Protected		0.987								0.950		
Satd. Flow (prot)	0	3134	0	0	0	0	0	5973	0	3335	3505	0
Flt Permitted		0.987								0.950		
Satd. Flow (perm)	0	3134	0	0	0	0	0	5973	0	3335	3505	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		1776			891			782			198	
Travel Time (s)		34.6			20.3			15.2			3.9	
Peak Hour Factor	0.78	0.77	0.81	0.90	0.90	0.90	0.90	0.92	0.66	0.75	0.92	0.90
Heavy Vehicles (%)	4%	8%	4%	2%	2%	2%	2%	8%	5%	5%	3%	2%
Adj. Flow (vph)	209	161	400	0	0	0	0	596	73	141	425	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	770	0	0	0	0	0	669	0	141	425	0
Turn Type	Split	NA						NA		Prot	NA	
Protected Phases	3	3						2		1 4	4 6	
Permitted Phases												
Detector Phase	3	3						2		1 4	4 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						10.0				
Minimum Split (s)	13.4	13.4						24.2				
Total Split (s)	45.0	45.0						30.0				
Total Split (%)	37.5%	37.5%						25.0%				
Maximum Green (s)	38.6	38.6						24.8				
Yellow Time (s)	3.8	3.8						3.9				
All-Red Time (s)	2.6	2.6						1.3				
Lost Time Adjust (s)		-1.4						-0.2				
Total Lost Time (s)		5.0						5.0				
Lead/Lag	Lead	Lead						Lead				
Lead-Lag Optimize?	Yes	Yes						Yes				
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Min				
Walk Time (s)								7.0				
Flash Dont Walk (s)								12.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		38.0						29.6		29.8	48.4	
Actuated g/C Ratio		0.32						0.25		0.25	0.40	
v/c Ratio		0.78						0.45		0.17	0.30	
Control Delay		42.8						41.2		7.5	2.3	
Queue Delay		0.1						0.1		0.2	0.1	

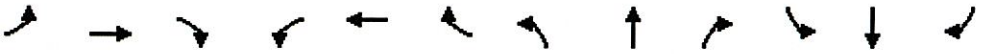
Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2022 Background AM

Lane Group	Ø1	Ø4	Ø5	Ø6
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	4	5	6
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	12.0
Minimum Split (s)	13.3	13.7	13.2	28.4
Total Split (s)	13.0	32.0	13.0	30.0
Total Split (%)	11%	27%	11%	25%
Maximum Green (s)	6.7	25.3	6.8	24.6
Yellow Time (s)	3.0	4.3	3.0	4.4
All-Red Time (s)	3.3	2.4	3.2	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min
Walk Time (s)				7.0
Flash Dont Walk (s)				16.0
Pedestrian Calls (#/hr)				0
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

3: Stallings Rd & Monroe Expressway EB Ramp

2022 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		42.9						41.3		7.8	2.5	
LOS		D						D		A	A	
Approach Delay		42.9						41.3			3.8	
Approach LOS		D						D			A	
Queue Length 50th (ft)		278						132		23	5	
Queue Length 95th (ft)		280						172		31	11	
Internal Link Dist (ft)		1696			811			702			118	
Turn Bay Length (ft)												
Base Capacity (vph)		1066						1544		930	1569	
Starvation Cap Reductn		0						0		382	395	
Spillback Cap Reductn		21						116		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.74						0.47		0.26	0.36	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 31.3

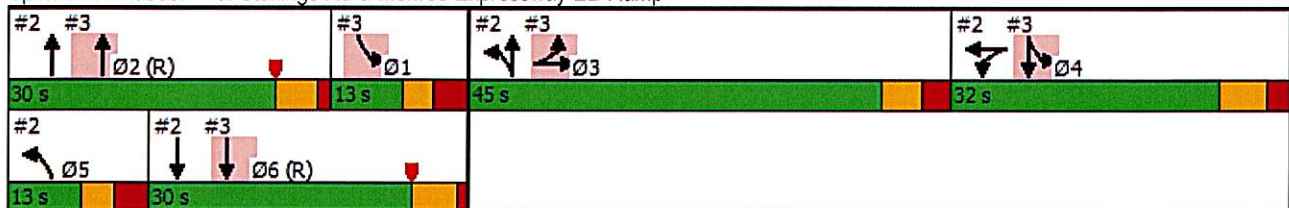
Intersection LOS: C

Intersection Capacity Utilization 59.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Stallings Rd & Monroe Expressway EB Ramp



Lane Group	Ø1	Ø4	Ø5	Ø6
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

4: Stallings Rd & Matthews-Indian Trail Rd

2022 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	20	54	78	44	82	103	497	72	120	454	41
Future Volume (vph)	16	20	54	78	44	82	103	497	72	120	454	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	140		0	120		0	110		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			75			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.894			0.905			0.980			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	1620	0	1467	1640	0	1770	1724	0	1770	1806	0
Flt Permitted	0.649			0.693			0.397			0.319		
Satd. Flow (perm)	1054	1620	0	1070	1640	0	740	1724	0	594	1806	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			35			35	
Link Distance (ft)		2002			586			1248			718	
Travel Time (s)		30.3			11.4			24.3			14.0	
Peak Hour Factor	0.78	0.69	0.77	0.67	0.70	0.75	0.80	0.86	0.80	0.86	0.89	0.82
Heavy Vehicles (%)	17%	2%	6%	23%	8%	3%	2%	8%	8%	2%	4%	2%
Adj. Flow (vph)	21	29	70	116	63	109	129	578	90	140	510	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	99	0	116	172	0	129	668	0	140	560	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.3	12.3		12.7	12.7		34.4	34.4		15.3	15.3	
Total Split (s)	19.0	19.0		19.0	19.0		41.0	41.0		41.0	41.0	
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	
Maximum Green (s)	13.7	13.7		13.3	13.3		35.6	35.6		35.7	35.7	
Yellow Time (s)	3.6	3.6		4.0	4.0		3.8	3.8		3.6	3.6	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.7	1.7	
Lost Time Adjust (s)	-0.3	-0.3		-0.7	-0.7		-0.4	-0.4		-0.3	-0.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							22.0	22.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	10.2	10.2		10.4	10.4		27.3	27.3		27.3	27.3	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.63	0.63		0.63	0.63	
v/c Ratio	0.08	0.26		0.45	0.44		0.28	0.61		0.37	0.49	
Control Delay	17.2	18.1		23.4	20.5		7.9	10.4		10.1	8.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings

Willows at Stallings TIA

4: Stallings Rd & Matthews-Indian Trail Rd

2022 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	17.2	18.1		23.4	20.5		7.9	10.4		10.1	8.3	
LOS	B	B		C	C		A	B		B	A	
Approach Delay		17.9			21.7			10.0			8.7	
Approach LOS		B			C			A			A	
Queue Length 50th (ft)	4	19		23	34		15	103		17	77	
Queue Length 95th (ft)	18	48		56	77		39	213		54	167	
Internal Link Dist (ft)		1922			506			1168			638	
Turn Bay Length (ft)	140			140			120			110		
Base Capacity (vph)	363	559		369	566		618	1441		496	1509	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.18		0.31	0.30		0.21	0.46		0.28	0.37	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 43.3

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 11.8

Intersection LOS: B

Intersection Capacity Utilization 64.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Stallings Rd & Matthews-Indian Trail Rd

 Ø2	 Ø4
41 s	19 s
 Ø6	 Ø8
41 s	19 s

Lanes, Volumes, Timings
5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	4	4	43	8	256	7	101	48	129	68	18
Future Volume (vph)	7	4	4	43	8	256	7	101	48	129	68	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	125		0	0		0	150		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			125			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.957			0.857			0.959			0.963	
Flt Protected		0.982		0.950				0.996		0.950		
Satd. Flow (prot)	0	1346	0	1752	1487	0	0	1753	0	1770	1748	0
Flt Permitted		0.982		0.950				0.996		0.950		
Satd. Flow (perm)	0	1346	0	1752	1487	0	0	1753	0	1770	1748	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		831			703			907			461	
Travel Time (s)		16.2			13.7			17.7			9.0	
Peak Hour Factor	0.38	0.25	0.25	0.61	0.44	0.74	0.38	0.65	0.63	0.64	0.69	0.57
Heavy Vehicles (%)	17%	33%	50%	3%	57%	7%	2%	2%	7%	2%	2%	13%
Adj. Flow (vph)	18	16	16	70	18	346	18	155	76	202	99	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	0	70	364	0	0	249	0	202	131	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 42.0%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	4	43	8	256	7	101	48	129	68	18
Future Volume (Veh/h)	7	4	4	43	8	256	7	101	48	129	68	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.25	0.25	0.61	0.44	0.74	0.38	0.65	0.63	0.64	0.69	0.57
Hourly flow rate (vph)	18	16	16	70	18	346	18	155	76	202	99	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1103	786	115	756	764	193	131			231		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1103	786	115	756	764	193	131			231		
tC, single (s)	7.3	6.8	6.7	7.1	7.1	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.3	3.8	3.5	4.5	3.4	2.2			2.2		
p0 queue free %	79	93	98	73	92	59	99			85		
cM capacity (veh/h)	85	244	822	264	232	836	1454			1337		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	50	70	364	249	202	131						
Volume Left	18	70	0	18	202	0						
Volume Right	16	0	346	76	0	32						
cSH	169	264	740	1454	1337	1700						
Volume to Capacity	0.30	0.27	0.49	0.01	0.15	0.08						
Queue Length 95th (ft)	29	26	69	1	13	0						
Control Delay (s)	35.0	23.5	14.5	0.6	8.2	0.0						
Lane LOS	E	C	B	A	A							
Approach Delay (s)	35.0	15.9		0.6	5.0							
Approach LOS	E	C										
Intersection Summary												
Average Delay			9.8									
Intersection Capacity Utilization			42.0%	ICU Level of Service					A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background AM

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (vph)	242	306	150	511	210	70
Future Volume (vph)	242	306	150	511	210	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.938				0.963	
Flt Protected				0.990	0.965	
Satd. Flow (prot)	1720	0	0	1844	1647	0
Flt Permitted				0.990	0.965	
Satd. Flow (perm)	1720	0	0	1844	1647	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	940			594	925	
Travel Time (s)	14.2			9.0	18.0	
Peak Hour Factor	0.58	0.86	0.80	0.73	0.90	0.79
Heavy Vehicles (%)	5%	2%	2%	2%	5%	13%
Adj. Flow (vph)	417	356	188	700	233	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	773	0	0	888	322	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 92.6%

ICU Level of Service F

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	242	306	150	511	210	70
Future Volume (Veh/h)	242	306	150	511	210	70
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.58	0.86	0.80	0.73	0.90	0.79
Hourly flow rate (vph)	417	356	188	700	233	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			773		1671	595
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			773		1671	595
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			78		0	82
cM capacity (veh/h)			842		81	484
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	773	888	322			
Volume Left	0	188	233			
Volume Right	356	0	89			
cSH	1700	842	105			
Volume to Capacity	0.45	0.22	3.08			
Queue Length 95th (ft)	0	21	Err			
Control Delay (s)	0.0	5.4	Err			
Lane LOS		A	F			
Approach Delay (s)	0.0	5.4	Err			
Approach LOS			F			
Intersection Summary						
Average Delay		1626.0				
Intersection Capacity Utilization		92.6%	ICU Level of Service	F		
Analysis Period (min)		15				

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	161	29	134	44	84	16	160	256	286	158	12
Future Volume (vph)	9	161	29	134	44	84	16	160	256	286	158	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		300	150		0	150		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.980				0.850		0.908			0.990	
Flt Protected		0.998			0.964		0.950			0.950		
Satd. Flow (prot)	0	1807	0	0	1757	1583	1671	1685	0	1687	1827	0
Flt Permitted		0.998			0.964		0.950			0.950		
Satd. Flow (perm)	0	1807	0	0	1757	1583	1671	1685	0	1687	1827	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1672			940			3692			1502	
Travel Time (s)		25.3			14.2			55.9			22.8	
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	2%	5%	2%	2%	8%	3%	2%	7%	3%	2%
Adj. Flow (vph)	10	179	32	149	49	93	18	178	284	318	176	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	221	0	0	198	93	18	462	0	318	189	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 73.8%	ICU Level of Service D											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background PM

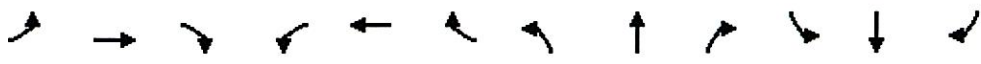
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	9	161	29	134	44	84	16	160	256	286	158	12
Future Volume (vph)	9	161	29	134	44	84	16	160	256	286	158	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	179	32	149	49	93	18	178	284	318	176	13
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total (vph)	221	198	93	18	462	318	189					
Volume Left (vph)	10	149	0	18	0	318	0					
Volume Right (vph)	32	0	93	0	284	0	13					
Hadj (s)	-0.03	0.45	-0.67	0.64	-0.39	0.62	0.00					
Departure Headway (s)	8.3	8.8	7.7	8.3	7.3	8.3	7.7					
Degree Utilization, x	0.51	0.48	0.20	0.04	0.93	0.73	0.40					
Capacity (veh/h)	406	397	451	420	490	420	452					
Control Delay (s)	19.7	18.6	11.3	10.5	51.0	29.9	14.6					
Approach Delay (s)	19.7	16.3		49.5		24.2						
Approach LOS	C	C		E		C						
Intersection Summary												
Delay			30.1									
Level of Service			D									
Intersection Capacity Utilization			73.8%		ICU Level of Service					D		
Analysis Period (min)			15									

Lanes, Volumes, Timings

Willows at Stallings TIA

2: Stallings Rd & Monroe Expressway WB Ramp

2022 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	156	105	109	519	346	0	0	262	141
Future Volume (vph)	0	0	0	156	105	109	519	346	0	0	262	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		50	0		0	200		0
Storage Lanes	0		0	1		0	2		0	2		0
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	1.00	1.00	0.86	0.86
Frt					0.924						0.947	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1719	3270	0	3433	3539	0	0	6030	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1719	3270	0	3433	3539	0	0	6030	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			45			35			45	
Link Distance (ft)		1788			2381			198			998	
Travel Time (s)		40.6			36.1			3.9			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%	3%	2%
Adj. Flow (vph)	0	0	0	173	117	121	577	384	0	0	291	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	173	238	0	577	384	0	0	448	0
Turn Type				Split	NA		Prot	NA			NA	
Protected Phases				4	4		3 5	2 3			6	
Permitted Phases												
Detector Phase				4	4		3 5	2 3			6	
Switch Phase												
Minimum Initial (s)				7.0	7.0						12.0	
Minimum Split (s)				13.7	13.7						28.4	
Total Split (s)				27.0	27.0						33.0	
Total Split (%)				22.5%	22.5%						27.5%	
Maximum Green (s)				20.3	20.3						27.6	
Yellow Time (s)				4.3	4.3						4.4	
All-Red Time (s)				2.4	2.4						1.0	
Lost Time Adjust (s)				-1.7	-1.7						-0.4	
Total Lost Time (s)				5.0	5.0						5.0	
Lead/Lag				Lag	Lag						Lag	
Lead-Lag Optimize?				Yes	Yes						Yes	
Vehicle Extension (s)				3.0	3.0						3.0	
Recall Mode				None	None						C-Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											16.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				19.0	19.0		46.8	72.1			31.3	
Actuated g/C Ratio				0.16	0.16		0.39	0.60			0.26	
v/c Ratio				0.64	0.46		0.43	0.18			0.28	
Control Delay				57.6	48.1		20.4	0.8			37.6	
Queue Delay				0.0	0.0		3.4	0.2			0.0	

Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2022 Background PM

Lane Group	Ø1	Ø2	Ø3	Ø5
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	3	5
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	10.0	7.0	7.0
Minimum Split (s)	13.3	24.2	13.4	13.2
Total Split (s)	13.0	33.0	47.0	13.0
Total Split (%)	11%	28%	39%	11%
Maximum Green (s)	6.7	27.8	40.6	6.8
Yellow Time (s)	3.0	3.9	3.8	3.0
All-Red Time (s)	3.3	1.3	2.6	3.2
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	None	None
Walk Time (s)		7.0		
Flash Dont Walk (s)		12.0		
Pedestrian Calls (#/hr)		0		
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay				57.6	48.1		23.8	1.0			37.6	
LOS				E	D		C	A			D	
Approach Delay					52.1			14.7			37.6	
Approach LOS					D			B			D	
Queue Length 50th (ft)				126	88		90	4			85	
Queue Length 95th (ft)				198	127		207	5			111	
Internal Link Dist (ft)		1708			2301			118			918	
Turn Bay Length (ft)				325								
Base Capacity (vph)				319	606		1434	2261			1649	
Starvation Cap Reductn				0	0		740	1095			0	
Spillback Cap Reductn				0	0		0	0			0	
Storage Cap Reductn				0	0		0	0			0	
Reduced v/c Ratio				0.54	0.39		0.83	0.33			0.27	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 28.8

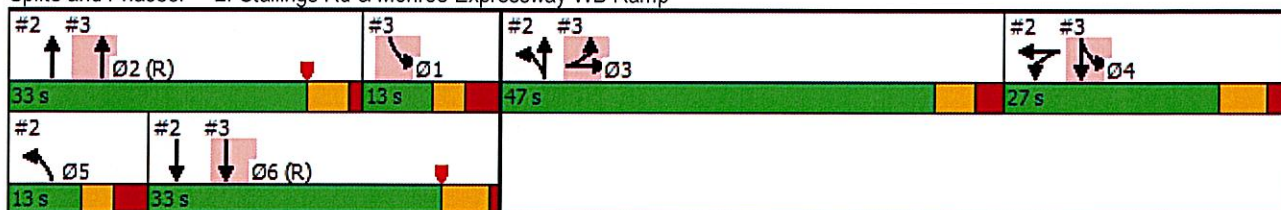
Intersection LOS: C

Intersection Capacity Utilization 66.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Stallings Rd & Monroe Expressway WB Ramp



Lane Group	Ø1	Ø2	Ø3	Ø5
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

3: Stallings Rd & Monroe Expressway EB Ramp

2022 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	116	348	0	0	0	0	625	108	108	310	0
Future Volume (vph)	239	116	348	0	0	0	0	625	108	108	310	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		325	0		0	425		0	0		0
Storage Lanes	0		0	0		0	2		0	2		0
Taper Length (ft)	100			25			225			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.95	1.00
Ped Bike Factor		1.00						1.00		1.00		
Frt		0.926						0.978				
Flt Protected		0.983								0.950		
Satd. Flow (prot)	0	3191	0	0	0	0	0	6254	0	3433	3471	0
Flt Permitted		0.983								0.950		
Satd. Flow (perm)	0	3190	0	0	0	0	0	6254	0	3430	3471	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		1776			891			782			198	
Travel Time (s)		34.6			20.3			15.2			3.9	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	4%	2%
Adj. Flow (vph)	266	129	387	0	0	0	0	694	120	120	344	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	782	0	0	0	0	0	814	0	120	344	0
Turn Type	Split	NA						NA		Prot	NA	
Protected Phases	3	3						2		1 4	4 6	
Permitted Phases												
Detector Phase	3	3						2		1 4	4 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						10.0				
Minimum Split (s)	13.4	13.4						24.2				
Total Split (s)	47.0	47.0						33.0				
Total Split (%)	39.2%	39.2%						27.5%				
Maximum Green (s)	40.6	40.6						27.8				
Yellow Time (s)	3.8	3.8						3.9				
All-Red Time (s)	2.6	2.6						1.3				
Lost Time Adjust (s)		-1.4						-0.2				
Total Lost Time (s)		5.0						5.0				
Lead/Lag	Lead	Lead						Lead				
Lead-Lag Optimize?	Yes	Yes						Yes				
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Min				
Walk Time (s)								7.0				
Flash Dont Walk (s)								12.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		39.4						33.1		24.9	47.0	
Actuated g/C Ratio		0.33						0.28		0.21	0.39	
v/c Ratio		0.75						0.47		0.17	0.25	

Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2022 Background PM

Lane Group	Ø1	Ø4	Ø5	Ø6
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	4	5	6
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	12.0
Minimum Split (s)	13.3	13.7	13.2	28.4
Total Split (s)	13.0	27.0	13.0	33.0
Total Split (%)	11%	23%	11%	28%
Maximum Green (s)	6.7	20.3	6.8	27.6
Yellow Time (s)	3.0	4.3	3.0	4.4
All-Red Time (s)	3.3	2.4	3.2	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min
Walk Time (s)				7.0
Flash Dont Walk (s)				16.0
Pedestrian Calls (#/hr)				0
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				

Lanes, Volumes, Timings

Willows at Stallings TIA

3: Stallings Rd & Monroe Expressway EB Ramp

2022 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		40.4						38.8		9.7	2.3	
Queue Delay		0.1						0.1		0.2	0.1	
Total Delay		40.5						38.9		9.9	2.5	
LOS		D						D		A	A	
Approach Delay		40.5						38.9			4.4	
Approach LOS		D						D			A	
Queue Length 50th (ft)		276						157		28	4	
Queue Length 95th (ft)		341						202		49	8	
Internal Link Dist (ft)		1696			811			702			118	
Turn Bay Length (ft)												
Base Capacity (vph)		1135						1790		803	1494	
Starvation Cap Reductn		0						0		270	401	
Spillback Cap Reductn		19						145		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.70						0.49		0.23	0.31	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 31.7

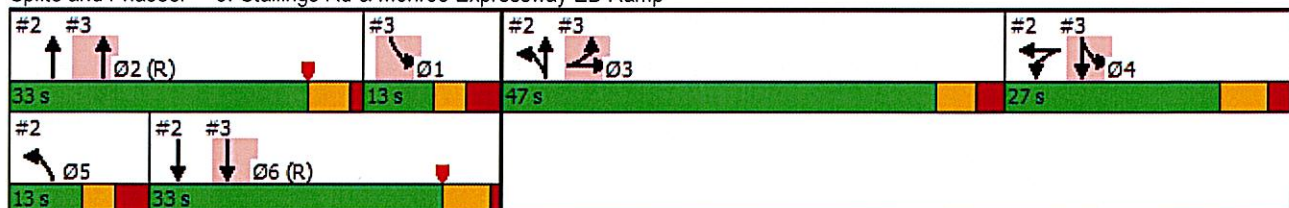
Intersection LOS: C

Intersection Capacity Utilization 66.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Stallings Rd & Monroe Expressway EB Ramp



Lane Group	Ø1	Ø4	Ø5	Ø6
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings
4: Stallings Rd & Matthews-Indian Trail Rd

Willows at Stallings TIA
2022 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	61	111	80	31	127	32	510	60	88	513	36
Future Volume (vph)	24	61	111	80	31	127	32	510	60	88	513	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	140		0	120		0	110		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			75			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt		0.903			0.879			0.984			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1682	0	1770	1637	0	1770	1814	0	1770	1810	0
Flt Permitted	0.647			0.637			0.354			0.336		
Satd. Flow (perm)	1205	1682	0	1187	1637	0	659	1814	0	626	1810	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			35			35	
Link Distance (ft)		2002			586			1267			718	
Travel Time (s)		30.3			11.4			24.7			14.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	10%	2%	4%	3%
Adj. Flow (vph)	27	68	123	89	34	141	36	567	67	98	570	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	191	0	89	175	0	36	634	0	98	610	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.3	12.3		12.7	12.7		34.4	34.4		15.3	15.3	
Total Split (s)	19.0	19.0		19.0	19.0		41.0	41.0		41.0	41.0	
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	
Maximum Green (s)	13.7	13.7		13.3	13.3		35.6	35.6		35.7	35.7	
Yellow Time (s)	3.6	3.6		4.0	4.0		3.8	3.8		3.6	3.6	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.7	1.7	
Lost Time Adjust (s)	-0.3	-0.3		-0.7	-0.7		-0.4	-0.4		-0.3	-0.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							22.0	22.0				
Pedestrian Calls (#/hr)							1	1				
Act Effct Green (s)	9.9	9.9		10.0	10.0		24.7	24.7		24.7	24.7	
Actuated g/C Ratio	0.24	0.24		0.25	0.25		0.61	0.61		0.61	0.61	
v/c Ratio	0.09	0.47		0.30	0.43		0.09	0.57		0.26	0.55	

Lanes, Volumes, Timings

Willows at Stallings TIA

4: Stallings Rd & Matthews-Indian Trail Rd

2022 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	15.5	19.2		18.0	18.8		6.1	9.7		8.2	9.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.5	19.2		18.0	18.8		6.1	9.7		8.2	9.4	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		18.8			18.5			9.5			9.2	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	4	34		15	31		4	90		11	85	
Queue Length 95th (ft)	24	107		58	99		15	208		38	197	
Internal Link Dist (ft)		1922			506			1187			638	
Turn Bay Length (ft)	140			140			120			110		
Base Capacity (vph)	439	612		432	596		576	1586		547	1582	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.31		0.21	0.29		0.06	0.40		0.18	0.39	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 40.5

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 11.8

Intersection LOS: B

Intersection Capacity Utilization 71.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Stallings Rd & Matthews-Indian Trail Rd

								
Ø2	Ø4	Ø6	Ø8					
41 s	19 s	41 s	19 s					

Lanes, Volumes, Timings
5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔		↔	↔	
Traffic Volume (vph)	10	6	4	7	4	44	4	102	60	105	39	4
Future Volume (vph)	10	6	4	7	4	44	4	102	60	105	39	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	125		0	0		0	150		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			125			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.861			0.951			0.987	
Flt Protected		0.976		0.950				0.999		0.950		
Satd. Flow (prot)	0	1585	0	1770	1589	0	0	1727	0	1770	1822	0
Flt Permitted		0.976		0.950				0.999		0.950		
Satd. Flow (perm)	0	1585	0	1770	1589	0	0	1727	0	1770	1822	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		823			709			904			459	
Travel Time (s)		16.0			13.8			17.6			8.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	40%	2%	2%	2%	3%	33%	2%	7%	2%	3%	2%
Adj. Flow (vph)	11	7	4	8	4	49	4	113	67	117	43	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	8	53	0	0	184	0	117	47	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 32.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	6	4	7	4	44	4	102	60	105	39	4
Future Volume (Veh/h)	10	6	4	7	4	44	4	102	60	105	39	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	7	4	8	4	49	4	113	67	117	43	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	484	467	45	439	436	146	47			180		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	484	467	45	439	436	146	47			180		
tC, single (s)	7.1	6.9	6.2	7.1	6.5	6.2	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.4	3.3	3.5	4.0	3.3	2.5			2.2		
p0 queue free %	97	98	100	98	99	95	100			92		
cM capacity (veh/h)	432	403	1025	485	470	898	1383			1396		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	22	8	53	184	117	47						
Volume Left	11	8	0	4	117	0						
Volume Right	4	0	49	67	0	4						
cSH	471	485	840	1383	1396	1700						
Volume to Capacity	0.05	0.02	0.06	0.00	0.08	0.03						
Queue Length 95th (ft)	4	1	5	0	7	0						
Control Delay (s)	13.0	12.5	9.6	0.2	7.8	0.0						
Lane LOS	B	B	A	A	A							
Approach Delay (s)	13.0	10.0		0.2	5.6							
Approach LOS	B	A										
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Utilization			32.8%		ICU Level of Service		A					
Analysis Period (min)			15									

Lanes, Volumes, Timings
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background PM

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (vph)	464	301	71	234	124	85
Future Volume (vph)	464	301	71	234	124	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.947				0.945	
Flt Protected				0.988	0.971	
Satd. Flow (prot)	1737	0	0	1797	1709	0
Flt Permitted				0.988	0.971	
Satd. Flow (perm)	1737	0	0	1797	1709	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	940			594	925	
Travel Time (s)	14.2			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	6%	6%	4%	2%	2%
Adj. Flow (vph)	516	334	79	260	138	94
Shared Lane Traffic (%)						
Lane Group Flow (vph)	850	0	0	339	232	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

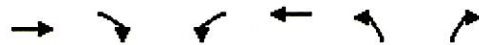
Intersection Capacity Utilization 81.1%

ICU Level of Service D

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Background PM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	464	301	71	234	124	85
Future Volume (Veh/h)	464	301	71	234	124	85
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	516	334	79	260	138	94
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			850		1101	683
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			850		1101	683
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			90		34	79
cM capacity (veh/h)			771		210	449

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	850	339	232
Volume Left	0	79	138
Volume Right	334	0	94
cSH	1700	771	268
Volume to Capacity	0.50	0.10	0.86
Queue Length 95th (ft)	0	9	183
Control Delay (s)	0.0	3.3	66.4
Lane LOS		A	F
Approach Delay (s)	0.0	3.3	66.4
Approach LOS			F

Intersection Summary			
Average Delay		11.6	
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

2022 Build-out Conditions

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	35	63	106	203	169	298	44	126	98	281	189	36
Future Volume (vph)	35	63	106	203	169	298	44	126	98	281	189	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		300	150		0	150		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.927				0.850		0.930			0.980	
Flt Protected		0.991			0.974		0.950			0.950		
Satd. Flow (prot)	0	1665	0	0	1814	1553	1770	1653	0	1752	1808	0
Flt Permitted		0.991			0.974		0.950			0.950		
Satd. Flow (perm)	0	1665	0	0	1814	1553	1770	1653	0	1752	1808	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1672			940			3692			1502	
Travel Time (s)		25.3			14.2			55.9			22.8	
Confl. Peds. (#/hr)			3	3			3					3
Peak Hour Factor	0.77	0.84	0.75	0.81	0.78	0.71	0.79	0.84	0.74	0.69	0.69	0.84
Heavy Vehicles (%)	9%	2%	5%	2%	2%	4%	2%	5%	9%	3%	3%	3%
Adj. Flow (vph)	45	75	141	251	217	420	56	150	132	407	274	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	261	0	0	468	420	56	282	0	407	317	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 73.7%

ICU Level of Service D

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build AM

																	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR					
Lane Configurations																	
Sign Control		Stop			Stop			Stop			Stop						
Traffic Volume (vph)	35	63	106	203	169	298	44	126	98	281	189	36					
Future Volume (vph)	35	63	106	203	169	298	44	126	98	281	189	36					
Peak Hour Factor	0.77	0.84	0.75	0.81	0.78	0.71	0.79	0.84	0.74	0.69	0.69	0.84					
Hourly flow rate (vph)	45	75	141	251	217	420	56	150	132	407	274	43					
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2										
Volume Total (vph)	261	468	420	56	282	407	317										
Volume Left (vph)	45	251	0	56	0	407	0										
Volume Right (vph)	141	0	420	0	132	0	43										
Hadj (s)	-0.21	0.30	-0.63	0.53	-0.21	0.55	-0.04										
Departure Headway (s)	9.0	8.9	8.0	9.9	9.1	9.2	8.6										
Degree Utilization, x	0.65	1.15	0.93	0.15	0.72	1.04	0.75										
Capacity (veh/h)	388	403	445	353	383	384	413										
Control Delay (s)	27.5	121.4	53.3	13.5	30.9	84.6	32.3										
Approach Delay (s)	27.5	89.2		28.0		61.7											
Approach LOS	D	F		D		F											
Intersection Summary																	
Delay			63.6														
Level of Service			F														
Intersection Capacity Utilization			73.7%	ICU Level of Service		D											
Analysis Period (min)			15														

Lanes, Volumes, Timings

Willows at Stallings TIA

2: Stallings Rd & Monroe Expressway WB Ramp

2022 Build AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	207	100	130	479	243	0	0	324	158
Future Volume (vph)	0	0	0	207	100	130	479	243	0	0	324	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		50	0		0	200		0
Storage Lanes	0		0	1		0	2		0	2		0
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	1.00	1.00	0.86	0.86
Frt					0.916						0.954	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1719	3176	0	3273	3343	0	0	6018	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1719	3176	0	3273	3343	0	0	6018	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			45			35			45	
Link Distance (ft)		1788			2381			198			998	
Travel Time (s)		40.6			36.1			3.9			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.87	0.80	0.83	0.96	0.84	0.90	0.90	0.86	0.96
Heavy Vehicles (%)	2%	2%	2%	5%	3%	5%	7%	8%	2%	2%	3%	5%
Adj. Flow (vph)	0	0	0	238	125	157	499	289	0	0	377	165
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	238	282	0	499	289	0	0	542	0
Turn Type				Split	NA		Prot	NA			NA	
Protected Phases				4	4		3 5	2 3			6	
Permitted Phases												
Detector Phase				4	4		3 5	2 3			6	
Switch Phase												
Minimum Initial (s)				7.0	7.0						12.0	
Minimum Split (s)				13.7	13.7						28.4	
Total Split (s)				32.0	32.0						30.0	
Total Split (%)				26.7%	26.7%						25.0%	
Maximum Green (s)				25.3	25.3						24.6	
Yellow Time (s)				4.3	4.3						4.4	
All-Red Time (s)				2.4	2.4						1.0	
Lost Time Adjust (s)				-1.7	-1.7						-0.4	
Total Lost Time (s)				5.0	5.0						5.0	
Lead/Lag				Lag	Lag						Lag	
Lead-Lag Optimize?				Yes	Yes						Yes	
Vehicle Extension (s)				3.0	3.0						3.0	
Recall Mode				None	None						C-Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											16.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				23.9	23.9		45.6	66.6			27.7	
Actuated g/C Ratio				0.20	0.20		0.38	0.56			0.23	
v/c Ratio				0.70	0.45		0.40	0.16			0.39	
Control Delay				55.4	43.9		18.1	0.9			41.4	
Queue Delay				0.0	0.0		2.7	0.2			0.0	

Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2022 Build AM

Lane Group	Ø1	Ø2	Ø3	Ø5
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	3	5
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	10.0	7.0	7.0
Minimum Split (s)	13.3	24.2	13.4	13.2
Total Split (s)	13.0	30.0	45.0	13.0
Total Split (%)	11%	25%	38%	11%
Maximum Green (s)	6.7	24.8	38.6	6.8
Yellow Time (s)	3.0	3.9	3.8	3.0
All-Red Time (s)	3.3	1.3	2.6	3.2
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	None	None
Walk Time (s)		7.0		
Flash Dont Walk (s)		12.0		
Pedestrian Calls (#/hr)		0		
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

Lanes, Volumes, Timings

Willows at Stallings TIA

2: Stallings Rd & Monroe Expressway WB Ramp

2022 Build AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay				55.4	43.9		20.8	1.1			41.4	
LOS				E	D		C	A			D	
Approach Delay					49.2			13.5			41.4	
Approach LOS					D			B			D	
Queue Length 50th (ft)				169	99		63	3			111	
Queue Length 95th (ft)				245	123		177	4			130	
Internal Link Dist (ft)		1708			2301			118			918	
Turn Bay Length (ft)				325								
Base Capacity (vph)				387	717		1315	1968			1473	
Starvation Cap Reductn				0	0		677	968			0	
Spillback Cap Reductn				0	0		0	0			0	
Storage Cap Reductn				0	0		0	0			0	
Reduced v/c Ratio				0.61	0.39		0.78	0.29			0.37	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 31.7

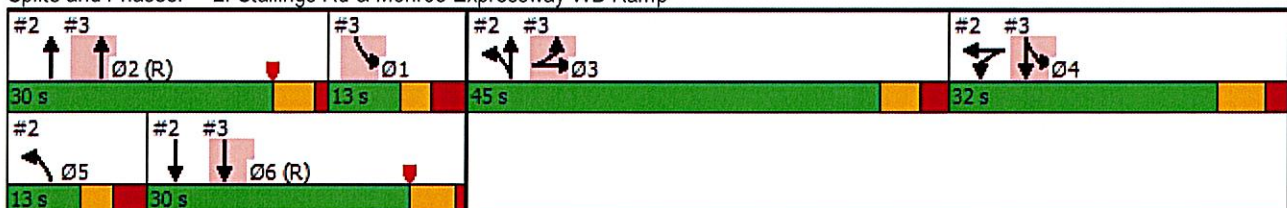
Intersection LOS: C

Intersection Capacity Utilization 59.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Stallings Rd & Monroe Expressway WB Ramp



Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2022 Build AM

Lane Group	Ø1	Ø2	Ø3	Ø5
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

3: Stallings Rd & Monroe Expressway EB Ramp

2022 Build AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔						↑↑↑		↔↔	↑↑	
Traffic Volume (vph)	169	124	324	0	0	0	0	553	48	127	404	0
Future Volume (vph)	169	124	324	0	0	0	0	553	48	127	404	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		325	0		0	425		0	0		0
Storage Lanes	0		0	0		0	2		0	2		0
Taper Length (ft)	100			25			225			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.95	1.00
Frt		0.923						0.984				
Flt Protected		0.986								0.950		
Satd. Flow (prot)	0	3134	0	0	0	0	0	5973	0	3335	3505	0
Flt Permitted		0.986								0.950		
Satd. Flow (perm)	0	3134	0	0	0	0	0	5973	0	3335	3505	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		1776			891			782			198	
Travel Time (s)		34.6			20.3			15.2			3.9	
Peak Hour Factor	0.78	0.77	0.81	0.90	0.90	0.90	0.90	0.92	0.66	0.77	0.92	0.90
Heavy Vehicles (%)	4%	8%	4%	2%	2%	2%	2%	8%	5%	5%	3%	2%
Adj. Flow (vph)	217	161	400	0	0	0	0	601	73	165	439	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	778	0	0	0	0	0	674	0	165	439	0
Turn Type	Split	NA						NA		Prot	NA	
Protected Phases	3	3						2		1 4	4 6	
Permitted Phases												
Detector Phase	3	3						2		1 4	4 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						10.0				
Minimum Split (s)	13.4	13.4						24.2				
Total Split (s)	45.0	45.0						30.0				
Total Split (%)	37.5%	37.5%						25.0%				
Maximum Green (s)	38.6	38.6						24.8				
Yellow Time (s)	3.8	3.8						3.9				
All-Red Time (s)	2.6	2.6						1.3				
Lost Time Adjust (s)		-1.4						-0.2				
Total Lost Time (s)		5.0						5.0				
Lead/Lag	Lead	Lead						Lead				
Lead-Lag Optimize?	Yes	Yes						Yes				
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Min				
Walk Time (s)								7.0				
Flash Dont Walk (s)								12.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		38.2						28.9		30.4	48.2	
Actuated g/C Ratio		0.32						0.24		0.25	0.40	
v/c Ratio		0.78						0.47		0.20	0.31	
Control Delay		43.0						41.9		7.5	2.4	
Queue Delay		0.1						0.1		0.3	0.1	

Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2022 Build AM

Lane Group	Ø1	Ø4	Ø5	Ø6
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	4	5	6
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	12.0
Minimum Split (s)	13.3	13.7	13.2	28.4
Total Split (s)	13.0	32.0	13.0	30.0
Total Split (%)	11%	27%	11%	25%
Maximum Green (s)	6.7	25.3	6.8	24.6
Yellow Time (s)	3.0	4.3	3.0	4.4
All-Red Time (s)	3.3	2.4	3.2	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min
Walk Time (s)				7.0
Flash Dont Walk (s)				16.0
Pedestrian Calls (#/hr)				0
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

Lanes, Volumes, Timings

Willows at Stallings TIA

3: Stallings Rd & Monroe Expressway EB Ramp

2022 Build AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		43.1						41.9		7.8	2.5	
LOS		D						D		A	A	
Approach Delay		43.1						41.9			4.0	
Approach LOS		D						D			A	
Queue Length 50th (ft)		281						135		15	5	
Queue Length 95th (ft)		285						173		37	11	
Internal Link Dist (ft)		1696			811			702			118	
Turn Bay Length (ft)												
Base Capacity (vph)		1065						1506		931	1550	
Starvation Cap Reductn		0						0		392	381	
Spillback Cap Reductn		21						114		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.75						0.48		0.31	0.38	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 31.2

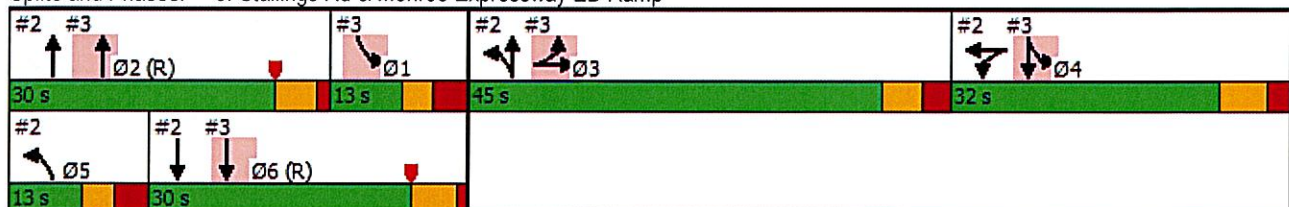
Intersection LOS: C

Intersection Capacity Utilization 59.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Stallings Rd & Monroe Expressway EB Ramp



Lane Group	Ø1	Ø4	Ø5	Ø6
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

4: Stallings Rd & Matthews-Indian Trail Rd

2022 Build AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	20	54	78	44	84	103	500	72	124	463	41
Future Volume (vph)	16	20	54	78	44	84	103	500	72	124	463	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	140		0	120		0	110		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			75			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.894			0.904			0.980			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	1620	0	1467	1639	0	1770	1724	0	1770	1806	0
Flt Permitted	0.647			0.693			0.390			0.318		
Satd. Flow (perm)	1051	1620	0	1070	1639	0	726	1724	0	592	1806	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			35			35	
Link Distance (ft)		2002			586			1248			718	
Travel Time (s)		30.3			11.4			24.3			14.0	
Peak Hour Factor	0.78	0.69	0.77	0.67	0.70	0.75	0.80	0.86	0.80	0.86	0.89	0.82
Heavy Vehicles (%)	17%	2%	6%	23%	8%	3%	2%	8%	8%	2%	4%	2%
Adj. Flow (vph)	21	29	70	116	63	112	129	581	90	144	520	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	99	0	116	175	0	129	671	0	144	570	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.3	12.3		12.7	12.7		34.4	34.4		15.3	15.3	
Total Split (s)	19.0	19.0		19.0	19.0		41.0	41.0		41.0	41.0	
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	
Maximum Green (s)	13.7	13.7		13.3	13.3		35.6	35.6		35.7	35.7	
Yellow Time (s)	3.6	3.6		4.0	4.0		3.8	3.8		3.6	3.6	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.7	1.7	
Lost Time Adjust (s)	-0.3	-0.3		-0.7	-0.7		-0.4	-0.4		-0.3	-0.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							22.0	22.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	10.2	10.2		10.3	10.3		27.5	27.5		27.5	27.5	
Actuated g/C Ratio	0.23	0.23		0.24	0.24		0.63	0.63		0.63	0.63	
v/c Ratio	0.09	0.26		0.46	0.45		0.28	0.62		0.39	0.50	
Control Delay	17.3	18.1		23.7	20.8		8.0	10.4		10.4	8.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings

Willows at Stallings TIA

4: Stallings Rd & Matthews-Indian Trail Rd

2022 Build AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	17.3	18.1		23.7	20.8		8.0	10.4		10.4	8.4	
LOS	B	B		C	C		A	B		B	A	
Approach Delay		18.0			22.0			10.0			8.8	
Approach LOS		B			C			B			A	
Queue Length 50th (ft)	4	19		23	35		15	104		18	79	
Queue Length 95th (ft)	18	48		56	79		39	216		56	171	
Internal Link Dist (ft)		1922			506			1168			638	
Turn Bay Length (ft)	140			140			120			110		
Base Capacity (vph)	358	552		364	558		624	1482		509	1552	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.18		0.32	0.31		0.21	0.45		0.28	0.37	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 43.6

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 11.9

Intersection LOS: B

Intersection Capacity Utilization 64.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Stallings Rd & Matthews-Indian Trail Rd

 Ø2	 Ø4
41 s	19 s
 Ø6	 Ø8
41 s	19 s

Lanes, Volumes, Timings
5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	4	4	43	8	269	7	101	48	134	68	18
Future Volume (vph)	7	4	4	43	8	269	7	101	48	134	68	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	125		0	0		0	150		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			125			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.957			0.857			0.959			0.963	
Flt Protected		0.982		0.950				0.996		0.950		
Satd. Flow (prot)	0	1346	0	1752	1489	0	0	1753	0	1770	1748	0
Flt Permitted		0.982		0.950				0.996		0.950		
Satd. Flow (perm)	0	1346	0	1752	1489	0	0	1753	0	1770	1748	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		831			703			907			461	
Travel Time (s)		16.2			13.7			17.7			9.0	
Peak Hour Factor	0.38	0.25	0.25	0.61	0.44	0.75	0.38	0.65	0.63	0.65	0.69	0.57
Heavy Vehicles (%)	17%	33%	50%	3%	57%	7%	2%	2%	7%	2%	2%	13%
Adj. Flow (vph)	18	16	16	70	18	359	18	155	76	206	99	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	0	70	377	0	0	249	0	206	131	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 43.1%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	4	43	8	269	7	101	48	134	68	18
Future Volume (Veh/h)	7	4	4	43	8	269	7	101	48	134	68	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.25	0.25	0.61	0.44	0.75	0.38	0.65	0.63	0.65	0.69	0.57
Hourly flow rate (vph)	18	16	16	70	18	359	18	155	76	206	99	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1124	794	115	764	772	193	131			231		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1124	794	115	764	772	193	131			231		
tC, single (s)	7.3	6.8	6.7	7.1	7.1	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.3	3.8	3.5	4.5	3.4	2.2			2.2		
p0 queue free %	78	93	98	73	92	57	99			85		
cM capacity (veh/h)	80	240	822	260	228	836	1454			1337		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	50	70	377	249	206	131						
Volume Left	18	70	0	18	206	0						
Volume Right	16	0	359	76	0	32						
cSH	161	260	742	1454	1337	1700						
Volume to Capacity	0.31	0.27	0.51	0.01	0.15	0.08						
Queue Length 95th (ft)	31	26	73	1	14	0						
Control Delay (s)	37.2	23.9	14.8	0.6	8.2	0.0						
Lane LOS	E	C	B	A	A							
Approach Delay (s)	37.2	16.2		0.6	5.0							
Approach LOS	E	C										
Intersection Summary												
Average Delay			10.1									
Intersection Capacity Utilization			43.1%		ICU Level of Service		A					
Analysis Period (min)			15									

Lanes, Volumes, Timings
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build AM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	246	310	150	512	212	70
Future Volume (vph)	246	310	150	512	212	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.937				0.963	
Flt Protected				0.990	0.965	
Satd. Flow (prot)	1718	0	0	1844	1647	0
Flt Permitted				0.990	0.965	
Satd. Flow (perm)	1718	0	0	1844	1647	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	940			594	925	
Travel Time (s)	14.2			9.0	18.0	
Peak Hour Factor	0.59	0.86	0.80	0.73	0.90	0.79
Heavy Vehicles (%)	5%	2%	2%	2%	5%	13%
Adj. Flow (vph)	417	360	188	701	236	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	777	0	0	889	325	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 93.2%

ICU Level of Service F

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build AM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	246	310	150	512	212	70
Future Volume (Veh/h)	246	310	150	512	212	70
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.86	0.80	0.73	0.90	0.79
Hourly flow rate (vph)	417	360	188	701	236	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			777		1674	597
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			777		1674	597
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			78		0	82
cM capacity (veh/h)			839		80	483
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	777	889	325			
Volume Left	0	188	236			
Volume Right	360	0	89			
cSH	1700	839	104			
Volume to Capacity	0.46	0.22	3.13			
Queue Length 95th (ft)	0	21	Err			
Control Delay (s)	0.0	5.4	Err			
Lane LOS		A	F			
Approach Delay (s)	0.0	5.4	Err			
Approach LOS			F			
Intersection Summary						
Average Delay		1634.6				
Intersection Capacity Utilization		93.2%	ICU Level of Service	F		
Analysis Period (min)		15				

Lanes, Volumes, Timings
7: Public Road 1 & Stevens Mill Rd

Willows at Stallings TIA
2022 Build AM

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Volume (vph)	107	3	9	221	9	25
Future Volume (vph)	107	3	9	221	9	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.901	
Flt Protected				0.998	0.987	
Satd. Flow (prot)	1772	0	0	1825	1657	0
Flt Permitted				0.998	0.987	
Satd. Flow (perm)	1772	0	0	1825	1657	0
Link Speed (mph)	45			45	25	
Link Distance (ft)	1311			439	372	
Travel Time (s)	19.9			6.7	10.1	
Peak Hour Factor	0.75	0.90	0.90	0.92	0.90	0.90
Heavy Vehicles (%)	7%	2%	2%	4%	2%	2%
Adj. Flow (vph)	143	3	10	240	10	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	146	0	0	250	38	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 28.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
7: Public Road 1 & Stevens Mill Rd

Willows at Stallings TIA
2022 Build AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	107	3	9	221	9	25
Future Volume (Veh/h)	107	3	9	221	9	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.90	0.90	0.92	0.90	0.90
Hourly flow rate (vph)	143	3	10	240	10	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			146		404	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			146		404	144
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	97
cM capacity (veh/h)			1436		598	903
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	146	250	38			
Volume Left	0	10	10			
Volume Right	3	0	28			
cSH	1700	1436	796			
Volume to Capacity	0.09	0.01	0.05			
Queue Length 95th (ft)	0	1	4			
Control Delay (s)	0.0	0.4	9.7			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.4	9.7			
Approach LOS			A			
Intersection Summary						
Average Delay		1.1				
Intersection Capacity Utilization		28.8%	ICU Level of Service	A		
Analysis Period (min)		15				

Lanes, Volumes, Timings
8: Public Road 2 & Stevens Mill Rd

Willows at Stallings TIA
2022 Build AM

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	↗
Traffic Volume (vph)	130	2	16	226	4	47
Future Volume (vph)	130	2	16	226	4	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.875	
Flt Protected				0.997	0.996	
Satd. Flow (prot)	1773	0	0	1824	1623	0
Flt Permitted				0.997	0.996	
Satd. Flow (perm)	1773	0	0	1824	1623	0
Link Speed (mph)	45			45	25	
Link Distance (ft)	499			1189	364	
Travel Time (s)	7.6			18.0	9.9	
Peak Hour Factor	0.77	0.90	0.90	0.92	0.90	0.90
Heavy Vehicles (%)	7%	2%	2%	4%	2%	2%
Adj. Flow (vph)	169	2	18	246	4	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	0	0	264	56	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.1% ICU Level of Service A
Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 8: Public Road 2 & Stevens Mill Rd

Willows at Stallings TIA
2022 Build AM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	130	2	16	226	4	47
Future Volume (Veh/h)	130	2	16	226	4	47
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.90	0.90	0.92	0.90	0.90
Hourly flow rate (vph)	169	2	18	246	4	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			171		452	170
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			171		452	170
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	94
cM capacity (veh/h)			1406		558	874
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	171	264	56			
Volume Left	0	18	4			
Volume Right	2	0	52			
cSH	1700	1406	840			
Volume to Capacity	0.10	0.01	0.07			
Queue Length 95th (ft)	0	1	5			
Control Delay (s)	0.0	0.6	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.6	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		33.1%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
9: Public Road 1 & Access 1

Willows at Stallings TIA
2022 Build AM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	34	0	0	12	0
Future Volume (vph)	0	34	0	0	12	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.950
Satd. Flow (prot)	1611	0	1863	0	0	1770
Flt Permitted						0.950
Satd. Flow (perm)	1611	0	1863	0	0	1770
Link Speed (mph)	25		25			25
Link Distance (ft)	498		400			372
Travel Time (s)	13.6		10.9			10.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	38	0	0	13	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	0	0	0	13
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 13.3%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
9: Public Road 1 & Access 1

Willows at Stallings TIA
2022 Build AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	34	0	0	12	0
Future Volume (Veh/h)	0	34	0	0	12	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	38	0	0	13	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	26	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	26	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			99	
cM capacity (veh/h)	981	1085			1623	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	38	0	13			
Volume Left	0	0	13			
Volume Right	38	0	0			
cSH	1085	1700	1623			
Volume to Capacity	0.04	0.00	0.01			
Queue Length 95th (ft)	3	0	1			
Control Delay (s)	8.4	0.0	7.2			
Lane LOS	A		A			
Approach Delay (s)	8.4	0.0	7.2			
Approach LOS	A					
Intersection Summary						
Average Delay		8.1				
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				

Lanes, Volumes, Timings
10: Public Road 2 & Access 2

Willows at Stallings TIA
2022 Build AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	51	0	0	0	0	18
Future Volume (vph)	51	0	0	0	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1863	1611	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1863	1611	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	413			501	364	
Travel Time (s)	11.3			13.7	9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	0	0	0	0	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	0	0	0	20	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 10: Public Road 2 & Access 2

Willows at Stallings TIA
2022 Build AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	51	0	0	0	0	18
Future Volume (Veh/h)	51	0	0	0	0	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	57	0	0	0	0	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	10	10	20			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	10	10	20			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	100	100			
cM capacity (veh/h)	1010	1071	1596			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	57	0	20			
Volume Left	57	0	0			
Volume Right	0	0	20			
cSH	1010	1700	1700			
Volume to Capacity	0.06	0.00	0.01			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	8.8	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.8	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		6.5				
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA

2022 Build PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	167	65	134	52	84	74	160	256	286	158	21
Future Volume (vph)	15	167	65	134	52	84	74	160	256	286	158	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		300	150		0	150		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.965				0.850		0.908			0.983	
Flt Protected		0.997			0.965		0.950			0.950		
Satd. Flow (prot)	0	1780	0	0	1760	1583	1671	1685	0	1687	1815	0
Flt Permitted		0.997			0.965		0.950			0.950		
Satd. Flow (perm)	0	1780	0	0	1760	1583	1671	1685	0	1687	1815	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1672			940			3692			1502	
Travel Time (s)		25.3			14.2			55.9			22.8	
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	2%	5%	2%	2%	8%	3%	2%	7%	3%	2%
Adj. Flow (vph)	17	186	72	149	58	93	82	178	284	318	176	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	275	0	0	207	93	82	462	0	318	199	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 77.0%

ICU Level of Service D

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	167	65	134	52	84	74	160	256	286	158	21
Future Volume (vph)	15	167	65	134	52	84	74	160	256	286	158	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	186	72	149	58	93	82	178	284	318	176	23
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total (vph)	275	207	93	82	462	318	199					
Volume Left (vph)	17	149	0	82	0	318	0					
Volume Right (vph)	72	0	93	0	284	0	23					
Hadj (s)	-0.10	0.43	-0.67	0.64	-0.39	0.62	-0.03					
Departure Headway (s)	8.5	9.3	8.2	8.8	7.7	8.9	8.2					
Degree Utilization, x	0.65	0.53	0.21	0.20	0.99	0.78	0.45					
Capacity (veh/h)	409	374	432	402	462	401	438					
Control Delay (s)	26.1	21.2	12.1	12.8	66.2	36.2	16.6					
Approach Delay (s)	26.1	18.4		58.1		28.7						
Approach LOS	D	C		F		D						
Intersection Summary												
Delay		36.2										
Level of Service		E										
Intersection Capacity Utilization		77.0%			ICU Level of Service				D			
Analysis Period (min)		15										

Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

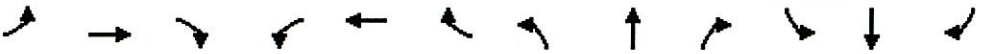
Willows at Stallings TIA
2022 Build PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	156	105	131	519	382	0	0	285	155
Future Volume (vph)	0	0	0	156	105	131	519	382	0	0	285	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		50	0		0	200		0
Storage Lanes	0		0	1		0	2		0	2		0
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	1.00	1.00	0.86	0.86
Frt					0.917						0.947	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1719	3245	0	3433	3539	0	0	6030	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1719	3245	0	3433	3539	0	0	6030	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			45			35			45	
Link Distance (ft)		1788			2381			198			998	
Travel Time (s)		40.6			36.1			3.9			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%	3%	2%
Adj. Flow (vph)	0	0	0	173	117	146	577	424	0	0	317	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	173	263	0	577	424	0	0	489	0
Turn Type				Split	NA		Prot	NA			NA	
Protected Phases				4	4		3 5	2 3			6	
Permitted Phases												
Detector Phase				4	4		3 5	2 3			6	
Switch Phase												
Minimum Initial (s)				7.0	7.0						12.0	
Minimum Split (s)				13.7	13.7						28.4	
Total Split (s)				27.0	27.0						33.0	
Total Split (%)				22.5%	22.5%						27.5%	
Maximum Green (s)				20.3	20.3						27.6	
Yellow Time (s)				4.3	4.3						4.4	
All-Red Time (s)				2.4	2.4						1.0	
Lost Time Adjust (s)				-1.7	-1.7						-0.4	
Total Lost Time (s)				5.0	5.0						5.0	
Lead/Lag				Lag	Lag						Lag	
Lead-Lag Optimize?				Yes	Yes						Yes	
Vehicle Extension (s)				3.0	3.0						3.0	
Recall Mode				None	None						C-Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											16.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				18.9	18.9		47.6	72.1			30.7	
Actuated g/C Ratio				0.16	0.16		0.40	0.60			0.26	
v/c Ratio				0.64	0.51		0.42	0.20			0.32	
Control Delay				57.9	49.4		20.4	0.9			38.2	
Queue Delay				0.0	0.0		4.0	0.2			0.0	

Lanes, Volumes, Timings
 2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
 2022 Build PM

Lane Group	Ø1	Ø2	Ø3	Ø5
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	3	5
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	10.0	7.0	7.0
Minimum Split (s)	13.3	24.2	13.4	13.2
Total Split (s)	13.0	33.0	47.0	13.0
Total Split (%)	11%	28%	39%	11%
Maximum Green (s)	6.7	27.8	40.6	6.8
Yellow Time (s)	3.0	3.9	3.8	3.0
All-Red Time (s)	3.3	1.3	2.6	3.2
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	None	None
Walk Time (s)		7.0		
Flash Dont Walk (s)		12.0		
Pedestrian Calls (#/hr)		0		
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay				57.9	49.4		24.4	1.1			38.2	
LOS				E	D		C	A			D	
Approach Delay					52.8			14.5			38.2	
Approach LOS					D			B			D	
Queue Length 50th (ft)				125	97		89	4			96	
Queue Length 95th (ft)				198	139		204	5			120	
Internal Link Dist (ft)		1708			2301			118			918	
Turn Bay Length (ft)				325								
Base Capacity (vph)				315	594		1433	2232			1620	
Starvation Cap Reductn				0	0		755	1060			0	
Spillback Cap Reductn				0	0		0	0			0	
Storage Cap Reductn				0	0		0	0			0	
Reduced v/c Ratio				0.55	0.44		0.85	0.36			0.30	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

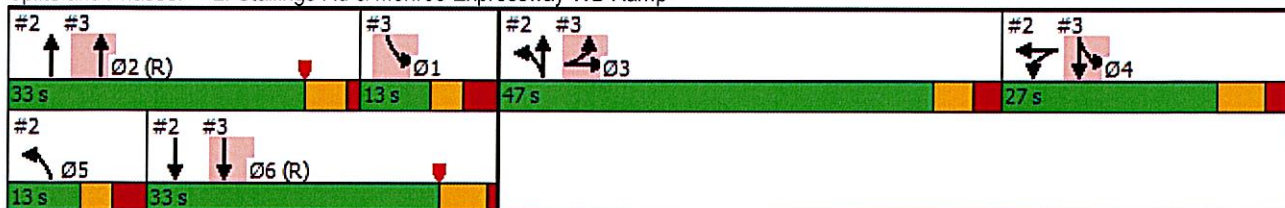
Intersection Signal Delay: 29.2

Intersection LOS: C

Intersection Capacity Utilization 66.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Stallings Rd & Monroe Expressway WB Ramp

Lane Group	Ø1	Ø2	Ø3	Ø5
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

3: Stallings Rd & Monroe Expressway EB Ramp

2022 Build PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	116	348	0	0	0	0	638	108	121	319	0
Future Volume (vph)	262	116	348	0	0	0	0	638	108	121	319	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		325	0		0	425		0	0		0
Storage Lanes	0		0	0		0	2		0	2		0
Taper Length (ft)	100			25			225			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.95	1.00
Ped Bike Factor		1.00						1.00		1.00		
Frt		0.928						0.978				
Flt Protected		0.982								0.950		
Satd. Flow (prot)	0	3195	0	0	0	0	0	6254	0	3433	3471	0
Flt Permitted		0.982								0.950		
Satd. Flow (perm)	0	3194	0	0	0	0	0	6254	0	3430	3471	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		1776			891			782			198	
Travel Time (s)		34.6			20.3			15.2			3.9	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	4%	2%
Adj. Flow (vph)	291	129	387	0	0	0	0	709	120	134	354	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	807	0	0	0	0	0	829	0	134	354	0
Turn Type	Split	NA						NA		Prot	NA	
Protected Phases	3	3						2		1 4	4 6	
Permitted Phases												
Detector Phase	3	3						2		1 4	4 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						10.0				
Minimum Split (s)	13.4	13.4						24.2				
Total Split (s)	47.0	47.0						33.0				
Total Split (%)	39.2%	39.2%						27.5%				
Maximum Green (s)	40.6	40.6						27.8				
Yellow Time (s)	3.8	3.8						3.9				
All-Red Time (s)	2.6	2.6						1.3				
Lost Time Adjust (s)		-1.4						-0.2				
Total Lost Time (s)		5.0						5.0				
Lead/Lag	Lead	Lead						Lead				
Lead-Lag Optimize?	Yes	Yes						Yes				
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Min				
Walk Time (s)								7.0				
Flash Dont Walk (s)								12.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		40.2						32.2		24.9	46.2	
Actuated g/C Ratio		0.34						0.27		0.21	0.38	
v/c Ratio		0.75						0.49		0.19	0.26	

Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2022 Build PM

Lane Group	Ø1	Ø4	Ø5	Ø6
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	4	5	6
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	12.0
Minimum Split (s)	13.3	13.7	13.2	28.4
Total Split (s)	13.0	27.0	13.0	33.0
Total Split (%)	11%	23%	11%	28%
Maximum Green (s)	6.7	20.3	6.8	27.6
Yellow Time (s)	3.0	4.3	3.0	4.4
All-Red Time (s)	3.3	2.4	3.2	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min
Walk Time (s)				7.0
Flash Dont Walk (s)				16.0
Pedestrian Calls (#/hr)				0
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		40.2						39.6		9.9	2.4	
Queue Delay		0.1						0.1		0.2	0.1	
Total Delay		40.3						39.7		10.1	2.5	
LOS		D						D		B	A	
Approach Delay		40.3						39.7			4.6	
Approach LOS		D						D			A	
Queue Length 50th (ft)		282						164		32	4	
Queue Length 95th (ft)		358						205		55	7	
Internal Link Dist (ft)		1696			811			702			118	
Turn Bay Length (ft)												
Base Capacity (vph)		1139						1736		800	1470	
Starvation Cap Reductn		0						0		281	369	
Spillback Cap Reductn		19						142		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.72						0.52		0.26	0.32	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 31.9

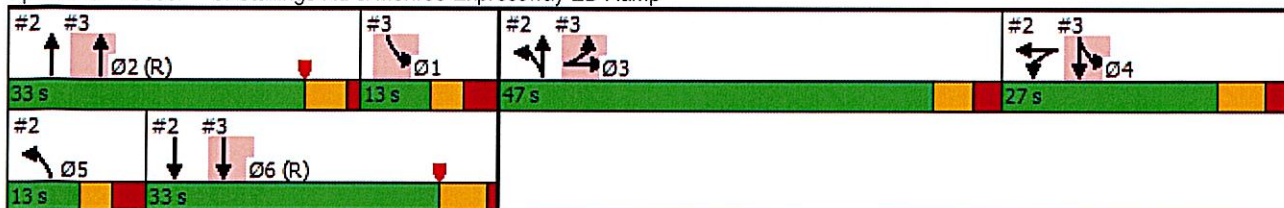
Intersection LOS: C

Intersection Capacity Utilization 66.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Stallings Rd & Monroe Expressway EB Ramp



Lane Group	Ø1	Ø4	Ø5	Ø6
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

4: Stallings Rd & Matthews-Indian Trail Rd

2022 Build PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	61	111	80	31	131	32	519	60	91	519	36
Future Volume (vph)	24	61	111	80	31	131	32	519	60	91	519	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	140		0	120		0	110		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			75			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		1.00		
Frt		0.903			0.878			0.984			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1682	0	1770	1635	0	1770	1814	0	1770	1810	0
Flt Permitted	0.644			0.637			0.350			0.330		
Satd. Flow (perm)	1200	1682	0	1187	1635	0	652	1814	0	614	1810	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			35			35	
Link Distance (ft)		2002			586			1267			718	
Travel Time (s)		30.3			11.4			24.7			14.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	10%	2%	4%	3%
Adj. Flow (vph)	27	68	123	89	34	146	36	577	67	101	577	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	191	0	89	180	0	36	644	0	101	617	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.3	12.3		12.7	12.7		34.4	34.4		15.3	15.3	
Total Split (s)	19.0	19.0		19.0	19.0		41.0	41.0		41.0	41.0	
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	
Maximum Green (s)	13.7	13.7		13.3	13.3		35.6	35.6		35.7	35.7	
Yellow Time (s)	3.6	3.6		4.0	4.0		3.8	3.8		3.6	3.6	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.7	1.7	
Lost Time Adjust (s)	-0.3	-0.3		-0.7	-0.7		-0.4	-0.4		-0.3	-0.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							22.0	22.0				
Pedestrian Calls (#/hr)							1	1				
Act Effct Green (s)	10.0	10.0		10.1	10.1		25.1	25.1		25.1	25.1	
Actuated g/C Ratio	0.24	0.24		0.25	0.25		0.61	0.61		0.61	0.61	
v/c Ratio	0.09	0.46		0.30	0.45		0.09	0.58		0.27	0.56	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	15.8	19.4		18.3	19.2		6.1	9.8		8.4	9.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.8	19.4		18.3	19.2		6.1	9.8		8.4	9.4	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		19.0			18.9			9.6			9.3	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	5	35		16	33		4	93		11	87	
Queue Length 95th (ft)	24	108		59	103		15	213		40	200	
Internal Link Dist (ft)		1922			506			1187			638	
Turn Bay Length (ft)	140			140			120			110		
Base Capacity (vph)	435	610		430	592		565	1572		532	1569	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.31		0.21	0.30		0.06	0.41		0.19	0.39	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 40.9

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 11.9

Intersection LOS: B

Intersection Capacity Utilization 71.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Stallings Rd & Matthews-Indian Trail Rd

 Ø2	 Ø4
41 s	19 s
 Ø6	 Ø8
41 s	19 s

Lanes, Volumes, Timings
5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕		↕	↕	
Traffic Volume (vph)	10	6	4	7	4	53	4	102	60	118	39	4
Future Volume (vph)	10	6	4	7	4	53	4	102	60	118	39	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	125		0	0		0	150		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			125			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.860			0.951			0.987	
Flt Protected		0.976		0.950				0.999		0.950		
Satd. Flow (prot)	0	1585	0	1770	1587	0	0	1727	0	1770	1822	0
Flt Permitted		0.976		0.950				0.999		0.950		
Satd. Flow (perm)	0	1585	0	1770	1587	0	0	1727	0	1770	1822	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		823			709			904			459	
Travel Time (s)		16.0			13.8			17.6			8.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	40%	2%	2%	2%	3%	33%	2%	7%	2%	3%	2%
Adj. Flow (vph)	11	7	4	8	4	59	4	113	67	131	43	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	8	63	0	0	184	0	131	47	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 33.6%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	6	4	7	4	53	4	102	60	118	39	4
Future Volume (Veh/h)	10	6	4	7	4	53	4	102	60	118	39	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	7	4	8	4	59	4	113	67	131	43	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	522	495	45	467	464	146	47			180		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	522	495	45	467	464	146	47			180		
tC, single (s)	7.1	6.9	6.2	7.1	6.5	6.2	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.4	3.3	3.5	4.0	3.3	2.5			2.2		
p0 queue free %	97	98	100	98	99	93	100			91		
cM capacity (veh/h)	400	384	1025	460	448	898	1383			1396		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	22	8	63	184	131	47						
Volume Left	11	8	0	4	131	0						
Volume Right	4	0	59	67	0	4						
cSH	443	460	844	1383	1396	1700						
Volume to Capacity	0.05	0.02	0.07	0.00	0.09	0.03						
Queue Length 95th (ft)	4	1	6	0	8	0						
Control Delay (s)	13.5	13.0	9.6	0.2	7.8	0.0						
Lane LOS	B	B	A	A	A							
Approach Delay (s)	13.5	10.0		0.2	5.8							
Approach LOS	B	A										
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Utilization			33.6%		ICU Level of Service		A					
Analysis Period (min)			15									

Lanes, Volumes, Timings
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build PM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	467	304	71	238	128	85
Future Volume (vph)	467	304	71	238	128	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.947				0.946	
Flt Protected				0.989	0.971	
Satd. Flow (prot)	1737	0	0	1799	1711	0
Flt Permitted				0.989	0.971	
Satd. Flow (perm)	1737	0	0	1799	1711	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	940			594	925	
Travel Time (s)	14.2			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	6%	6%	4%	2%	2%
Adj. Flow (vph)	519	338	79	264	142	94
Shared Lane Traffic (%)						
Lane Group Flow (vph)	857	0	0	343	236	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 81.9% ICU Level of Service D
Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	467	304	71	238	128	85
Future Volume (Veh/h)	467	304	71	238	128	85
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	519	338	79	264	142	94
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			857		1110	688
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			857		1110	688
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			90		32	79
cM capacity (veh/h)			767		208	446
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	857	343	236			
Volume Left	0	79	142			
Volume Right	338	0	94			
cSH	1700	767	264			
Volume to Capacity	0.50	0.10	0.89			
Queue Length 95th (ft)	0	9	196			
Control Delay (s)	0.0	3.3	72.6			
Lane LOS		A	F			
Approach Delay (s)	0.0	3.3	72.6			
Approach LOS			F			
Intersection Summary						
Average Delay		12.7				
Intersection Capacity Utilization		81.9%		ICU Level of Service		D
Analysis Period (min)		15				

Lanes, Volumes, Timings
7: Public Road 1 & Stevens Mill Rd

Willows at Stallings TIA
2022 Build PM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	176	9	26	51	6	17
Future Volume (vph)	176	9	26	51	6	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.901	
Flt Protected				0.983	0.987	
Satd. Flow (prot)	1783	0	0	1831	1657	0
Flt Permitted				0.983	0.987	
Satd. Flow (perm)	1783	0	0	1831	1657	0
Link Speed (mph)	45			45	25	
Link Distance (ft)	1311			439	372	
Travel Time (s)	19.9			6.7	10.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	2%	2%	2%	2%	2%
Adj. Flow (vph)	196	10	29	57	7	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	206	0	0	86	26	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 27.3%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 7: Public Road 1 & Stevens Mill Rd

Willows at Stallings TIA
2022 Build PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	176	9	26	51	6	17
Future Volume (Veh/h)	176	9	26	51	6	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	196	10	29	57	7	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			206		316	201
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			206		316	201
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	98
cM capacity (veh/h)			1365		663	840
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	206	86	26			
Volume Left	0	29	7			
Volume Right	10	0	19			
cSH	1700	1365	783			
Volume to Capacity	0.12	0.02	0.03			
Queue Length 95th (ft)	0	2	3			
Control Delay (s)	0.0	2.7	9.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.7	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay		1.5				
Intersection Capacity Utilization		27.3%	ICU Level of Service	A		
Analysis Period (min)		15				

Lanes, Volumes, Timings
8: Public Road 2 & Stevens Mill Rd

Willows at Stallings TIA
2022 Build PM

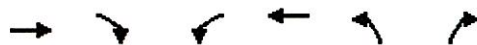
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	189	4	49	74	3	31
Future Volume (vph)	189	4	49	74	3	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.876	
Flt Protected				0.981	0.996	
Satd. Flow (prot)	1788	0	0	1827	1625	0
Flt Permitted				0.981	0.996	
Satd. Flow (perm)	1788	0	0	1827	1625	0
Link Speed (mph)	45			45	25	
Link Distance (ft)	499			1189	364	
Travel Time (s)	7.6			18.0	9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	2%	2%	2%	2%	2%
Adj. Flow (vph)	210	4	54	82	3	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	214	0	0	136	37	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 30.1% ICU Level of Service A
Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 8: Public Road 2 & Stevens Mill Rd

Willows at Stallings TIA
2022 Build PM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (veh/h)	189	4	49	74	3	31
Future Volume (Veh/h)	189	4	49	74	3	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	210	4	54	82	3	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			214		402	212
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			214		402	212
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		99	96
cM capacity (veh/h)			1356		580	828
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	214	136	37			
Volume Left	0	54	3			
Volume Right	4	0	34			
cSH	1700	1356	800			
Volume to Capacity	0.13	0.04	0.05			
Queue Length 95th (ft)	0	3	4			
Control Delay (s)	0.0	3.3	9.7			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.3	9.7			
Approach LOS			A			
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			30.1%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
9: Public Road 1 & Access 1

Willows at Stallings TIA
2022 Build PM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	23	0	0	35	0
Future Volume (vph)	0	23	0	0	35	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.950
Satd. Flow (prot)	1611	0	1863	0	0	1770
Flt Permitted						0.950
Satd. Flow (perm)	1611	0	1863	0	0	1770
Link Speed (mph)	25		25			25
Link Distance (ft)	498		280			372
Travel Time (s)	13.6		7.6			10.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	26	0	0	39	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	0	0	0	39
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
9: Public Road 1 & Access 1

Willows at Stallings TIA
2022 Build PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	23	0	0	35	0
Future Volume (Veh/h)	0	23	0	0	35	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	26	0	0	39	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	78	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			98	
cM capacity (veh/h)	903	1085			1623	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	26	0	39			
Volume Left	0	0	39			
Volume Right	26	0	0			
cSH	1085	1700	1623			
Volume to Capacity	0.02	0.00	0.02			
Queue Length 95th (ft)	2	0	2			
Control Delay (s)	8.4	0.0	7.3			
Lane LOS	A		A			
Approach Delay (s)	8.4	0.0	7.3			
Approach LOS	A					
Intersection Summary						
Average Delay		7.7				
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				

Lanes, Volumes, Timings
10: Public Road 2 & Access 2

Willows at Stallings TIA
2022 Build PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	0	0	0	0	53
Future Volume (vph)	34	0	0	0	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1863	1611	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1863	1611	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	413			501	364	
Travel Time (s)	11.3			13.7	9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	0	0	0	0	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	0	0	59	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 10: Public Road 2 & Access 2

Willows at Stallings TIA
2022 Build PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	0	0	0	0	53
Future Volume (Veh/h)	34	0	0	0	0	53
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	38	0	0	0	0	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	30	30	59			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	30	30	59			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	100	100			
cM capacity (veh/h)	985	1045	1545			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	38	0	59			
Volume Left	38	0	0			
Volume Right	0	0	59			
cSH	985	1700	1700			
Volume to Capacity	0.04	0.00	0.03			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	8.8	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.8	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		3.4				
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)		15				

2022 Build-out Improved Conditions

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build IMP AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	63	106	203	169	298	44	126	98	281	189	36
Future Volume (vph)	35	63	106	203	169	298	44	126	98	281	189	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		300	150		0	150		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00		1.00				1.00	
Frt		0.927				0.850		0.930			0.980	
Flt Protected		0.991			0.974		0.950			0.950		
Satd. Flow (prot)	0	1644	0	0	1814	1553	1770	1653	0	1752	1802	0
Flt Permitted		0.785			0.700		0.523			0.561		
Satd. Flow (perm)	0	1302	0	0	1302	1553	972	1653	0	1035	1802	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1672			940			3692			1502	
Travel Time (s)		25.3			14.2			55.9			22.8	
Confl. Peds. (#/hr)			3	3			3					3
Peak Hour Factor	0.77	0.84	0.75	0.81	0.78	0.71	0.79	0.84	0.74	0.69	0.69	0.84
Heavy Vehicles (%)	9%	2%	5%	2%	2%	4%	2%	5%	9%	3%	3%	3%
Adj. Flow (vph)	45	75	141	251	217	420	56	150	132	407	274	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	261	0	0	468	420	56	282	0	407	317	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0		19.0	19.0	
Total Split (s)	28.0	28.0		28.0	28.0	28.0	32.0	32.0		32.0	32.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%	46.7%	53.3%	53.3%		53.3%	53.3%	
Maximum Green (s)	21.0	21.0		21.0	21.0	21.0	25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		22.9			22.9	22.9	25.7	25.7		25.7	25.7	
Actuated g/C Ratio		0.39			0.39	0.39	0.44	0.44		0.44	0.44	
v/c Ratio		0.51			0.92	0.69	0.13	0.39		0.90	0.40	
Control Delay		18.5			45.7	23.0	10.7	13.0		42.1	13.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		18.5			45.7	23.0	10.7	13.0		42.1	13.0	

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build IMP AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B			D	C	B	B		D	B	
Approach Delay		18.5			35.0			12.6			29.4	
Approach LOS		B			C			B			C	
Queue Length 50th (ft)		70			158	124	11	64		126	72	
Queue Length 95th (ft)		121			#257	151	26	105		154	89	
Internal Link Dist (ft)		1592			860			3612			1422	
Turn Bay Length (ft)						300	150			150		
Base Capacity (vph)		512			512	610	448	762		477	831	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.51			0.91	0.69	0.13	0.37		0.85	0.38	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 58.6

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 27.8

Intersection LOS: C

Intersection Capacity Utilization 76.9%

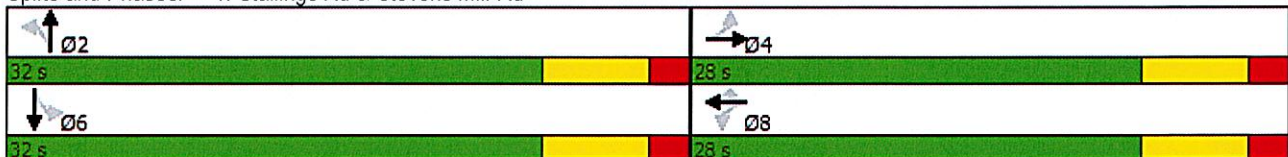
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Stallings Rd & Stevens Mill Rd



Lanes, Volumes, Timings
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build IMP AM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	246	310	150	512	212	70
Future Volume (vph)	246	310	150	512	212	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.937					0.850
Flt Protected				0.990	0.950	
Satd. Flow (prot)	1718	0	0	1844	1719	1429
Flt Permitted				0.990	0.950	
Satd. Flow (perm)	1718	0	0	1844	1719	1429
Link Speed (mph)	45			45	35	
Link Distance (ft)	940			594	925	
Travel Time (s)	14.2			9.0	18.0	
Peak Hour Factor	0.59	0.86	0.80	0.73	0.90	0.79
Heavy Vehicles (%)	5%	2%	2%	2%	5%	13%
Adj. Flow (vph)	417	360	188	701	236	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	777	0	0	889	236	89
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 88.9%

ICU Level of Service E

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build IMP AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	246	310	150	512	212	70
Future Volume (Veh/h)	246	310	150	512	212	70
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.86	0.80	0.73	0.90	0.79
Hourly flow rate (vph)	417	360	188	701	236	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	940					
pX, platoon unblocked			0.84		0.84	0.84
vC, conflicting volume			777		1674	597
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			644		1706	431
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			76		0	82
cM capacity (veh/h)			795		64	508
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	777	889	325			
Volume Left	0	188	236			
Volume Right	360	0	89			
cSH	1700	795	84			
Volume to Capacity	0.46	0.24	3.88			
Queue Length 95th (ft)	0	23	Err			
Control Delay (s)	0.0	5.8	Err			
Lane LOS		A	F			
Approach Delay (s)	0.0	5.8	Err			
Approach LOS			F			
Intersection Summary						
Average Delay		1634.8				
Intersection Capacity Utilization		88.9%	ICU Level of Service	E		
Analysis Period (min)		15				

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build IMP PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	167	65	134	52	84	74	160	256	286	158	21
Future Volume (vph)	15	167	65	134	52	84	74	160	256	286	158	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		300	150		0	150		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98						
Frt		0.965				0.850		0.908			0.983	
Flt Protected		0.997			0.965		0.950			0.950		
Satd. Flow (prot)	0	1780	0	0	1760	1583	1671	1685	0	1687	1815	0
Flt Permitted		0.970			0.591		0.633			0.428		
Satd. Flow (perm)	0	1732	0	0	1078	1550	1114	1685	0	760	1815	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1672			940			3692			1502	
Travel Time (s)		25.3			14.2			55.9			22.8	
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	2%	5%	2%	2%	8%	3%	2%	7%	3%	2%
Adj. Flow (vph)	17	186	72	149	58	93	82	178	284	318	176	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	275	0	0	207	93	82	462	0	318	199	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0		19.0	19.0	
Total Split (s)	22.0	22.0		22.0	22.0	22.0	38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%	36.7%	63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	15.0	15.0		15.0	15.0	15.0	31.0	31.0		31.0	31.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		15.4			15.4	15.4	27.0	27.0		27.0	27.0	
Actuated g/C Ratio		0.29			0.29	0.29	0.51	0.51		0.51	0.51	
v/c Ratio		0.55			0.66	0.21	0.14	0.54		0.82	0.21	
Control Delay		22.2			31.3	17.5	7.4	11.3		31.1	7.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		22.2			31.3	17.5	7.4	11.3		31.1	7.7	

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build IMP PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			C	B	A	B		C	A	
Approach Delay		22.2			27.0			10.7			22.1	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)		82			64	25	13	93		80	33	
Queue Length 95th (ft)		150			#154	57	31	159		#220	61	
Internal Link Dist (ft)		1592			860			3612			1422	
Turn Bay Length (ft)						300	150			150		
Base Capacity (vph)		580			361	519	724	1095		494	1180	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.47			0.57	0.18	0.11	0.42		0.64	0.17	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 52.8

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 19.2

Intersection LOS: B

Intersection Capacity Utilization 80.4%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Stallings Rd & Stevens Mill Rd

 Ø2	 Ø4
38 s	22 s
 Ø6	 Ø8
38 s	22 s

Lanes, Volumes, Timings
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build IMP PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	467	304	71	238	128	85
Future Volume (vph)	467	304	71	238	128	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.947					0.850
Flt Protected				0.989	0.950	
Satd. Flow (prot)	1737	0	0	1799	1770	1583
Flt Permitted				0.989	0.950	
Satd. Flow (perm)	1737	0	0	1799	1770	1583
Link Speed (mph)	45			45	35	
Link Distance (ft)	940			594	925	
Travel Time (s)	14.2			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	6%	6%	4%	2%	2%
Adj. Flow (vph)	519	338	79	264	142	94
Shared Lane Traffic (%)						
Lane Group Flow (vph)	857	0	0	343	142	94
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 76.7%

ICU Level of Service D

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2022 Build IMP PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	467	304	71	238	128	85
Future Volume (Veh/h)	467	304	71	238	128	85
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	519	338	79	264	142	94
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	940					
pX, platoon unblocked			0.94		0.94	0.94
vC, conflicting volume			857		1110	688
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			817		1085	637
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			89		30	79
cM capacity (veh/h)			747		202	449
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	857	343	236			
Volume Left	0	79	142			
Volume Right	338	0	94			
cSH	1700	747	335			
Volume to Capacity	0.50	0.11	0.70			
Queue Length 95th (ft)	0	9	127			
Control Delay (s)	0.0	3.4	40.2			
Lane LOS		A	E			
Approach Delay (s)	0.0	3.4	40.2			
Approach LOS			E			
Intersection Summary						
Average Delay		7.4				
Intersection Capacity Utilization		76.7%	ICU Level of Service	D		
Analysis Period (min)		15				

2027 Build-out +5 Conditions

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build IMP AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	74	115	239	201	354	49	149	116	333	223	43
Future Volume (vph)	39	74	115	239	201	354	49	149	116	333	223	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		300	150		0	150		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00		1.00				1.00	
Frt		0.929				0.850		0.929			0.980	
Flt Protected		0.991			0.974		0.950			0.950		
Satd. Flow (prot)	0	1648	0	0	1814	1553	1770	1651	0	1752	1802	0
Flt Permitted		0.617			0.652		0.455			0.494		
Satd. Flow (perm)	0	1026	0	0	1213	1553	846	1651	0	911	1802	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1672			940			3692			1502	
Travel Time (s)		25.3			14.2			55.9			22.8	
Confl. Peds. (#/hr)			3	3			3					3
Peak Hour Factor	0.77	0.84	0.75	0.81	0.78	0.71	0.79	0.84	0.74	0.69	0.69	0.84
Heavy Vehicles (%)	9%	2%	5%	2%	2%	4%	2%	5%	9%	3%	3%	3%
Adj. Flow (vph)	51	88	153	295	258	499	62	177	157	483	323	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	292	0	0	553	499	62	334	0	483	374	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0		19.0	19.0	
Total Split (s)	35.0	35.0		35.0	35.0	35.0	40.0	40.0		40.0	40.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%	46.7%	53.3%	53.3%		53.3%	53.3%	
Maximum Green (s)	28.0	28.0		28.0	28.0	28.0	33.0	33.0		33.0	33.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		30.0			30.0	30.0	35.0	35.0		35.0	35.0	
Actuated g/C Ratio		0.40			0.40	0.40	0.47	0.47		0.47	0.47	
v/c Ratio		0.71			1.14	0.80	0.16	0.43		1.14	0.45	
Control Delay		30.8			110.6	32.1	12.9	15.6		110.0	15.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		30.8			110.6	32.1	12.9	15.6		110.0	15.6	

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build IMP AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			F	C	B	B		F	B	
Approach Delay		30.8			73.3			15.2			68.8	
Approach LOS		C			E			B			E	
Queue Length 50th (ft)		111			~306	199	16	99		~267	112	
Queue Length 95th (ft)		185			#392	221	33	148		#290	125	
Internal Link Dist (ft)		1592			860			3612			1422	
Turn Bay Length (ft)						300	150			150		
Base Capacity (vph)		410			485	621	394	770		425	840	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.71			1.14	0.80	0.16	0.43		1.14	0.45	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.14

Intersection Signal Delay: 58.2

Intersection LOS: E

Intersection Capacity Utilization 87.1%

ICU Level of Service E

Analysis Period (min) 15

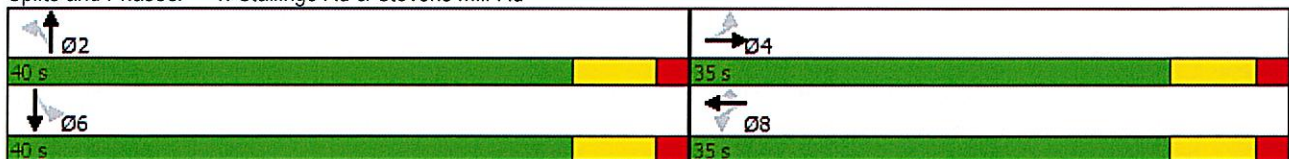
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Stallings Rd & Stevens Mill Rd



Lanes, Volumes, Timings

Willows at Stallings TIA

2: Stallings Rd & Monroe Expressway WB Ramp

2027 Build IMP AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	232	119	153	563	285	0	0	375	184
Future Volume (vph)	0	0	0	232	119	153	563	285	0	0	375	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		50	0		0	200		0
Storage Lanes	0		0	1		0	2		0	2		0
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	1.00	1.00	0.86	0.86
Frt					0.917						0.954	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1719	3180	0	3273	3343	0	0	6018	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1719	3180	0	3273	3343	0	0	6018	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			45			35			45	
Link Distance (ft)		1788			2381			198			998	
Travel Time (s)		40.6			36.1			3.9			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.87	0.80	0.83	0.96	0.84	0.90	0.90	0.86	0.96
Heavy Vehicles (%)	2%	2%	2%	5%	3%	5%	7%	8%	2%	2%	3%	5%
Adj. Flow (vph)	0	0	0	267	149	184	586	339	0	0	436	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	267	333	0	586	339	0	0	628	0
Turn Type				Split	NA		Prot	NA			NA	
Protected Phases				4	4		3 5	2 3			6	
Permitted Phases												
Detector Phase				4	4		3 5	2 3			6	
Switch Phase												
Minimum Initial (s)				7.0	7.0						12.0	
Minimum Split (s)				13.7	13.7						28.4	
Total Split (s)				32.0	32.0						30.0	
Total Split (%)				26.7%	26.7%						25.0%	
Maximum Green (s)				25.3	25.3						24.6	
Yellow Time (s)				4.3	4.3						4.4	
All-Red Time (s)				2.4	2.4						1.0	
Lost Time Adjust (s)				-1.7	-1.7						-0.4	
Total Lost Time (s)				5.0	5.0						5.0	
Lead/Lag				Lag	Lag						Lag	
Lead-Lag Optimize?				Yes	Yes						Yes	
Vehicle Extension (s)				3.0	3.0						3.0	
Recall Mode				None	None						C-Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											16.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				24.7	24.7		47.2	66.3			25.3	
Actuated g/C Ratio				0.21	0.21		0.39	0.55			0.21	
v/c Ratio				0.76	0.51		0.46	0.18			0.50	
Control Delay				58.8	44.8		20.9	1.1			43.7	
Queue Delay				0.0	0.0		18.0	0.3			0.0	

Lanes, Volumes, Timings
 2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
 2027 Build IMP AM

Lane Group	Ø1	Ø2	Ø3	Ø5
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	3	5
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	10.0	7.0	7.0
Minimum Split (s)	13.3	24.2	13.4	13.2
Total Split (s)	13.0	30.0	45.0	13.0
Total Split (%)	11%	25%	38%	11%
Maximum Green (s)	6.7	24.8	38.6	6.8
Yellow Time (s)	3.0	3.9	3.8	3.0
All-Red Time (s)	3.3	1.3	2.6	3.2
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	None	None
Walk Time (s)		7.0		
Flash Dont Walk (s)		12.0		
Pedestrian Calls (#/hr)		0		
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

Lanes, Volumes, Timings

Willows at Stallings TIA

2: Stallings Rd & Monroe Expressway WB Ramp

2027 Build IMP AM

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay				58.8	44.8		39.0	1.4			43.7	
LOS				E	D		D	A			D	
Approach Delay					51.0			25.2			43.7	
Approach LOS					D			C			D	
Queue Length 50th (ft)				191	118		160	3			129	
Queue Length 95th (ft)				275	144		m211	m5			150	
Internal Link Dist (ft)		1708			2301			118			918	
Turn Bay Length (ft)				325								
Base Capacity (vph)				386	715		1305	1894			1341	
Starvation Cap Reductn				0	0		714	988			0	
Spillback Cap Reductn				0	0		0	0			0	
Storage Cap Reductn				0	0		0	0			0	
Reduced v/c Ratio				0.69	0.47		0.99	0.37			0.47	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 37.8

Intersection LOS: D

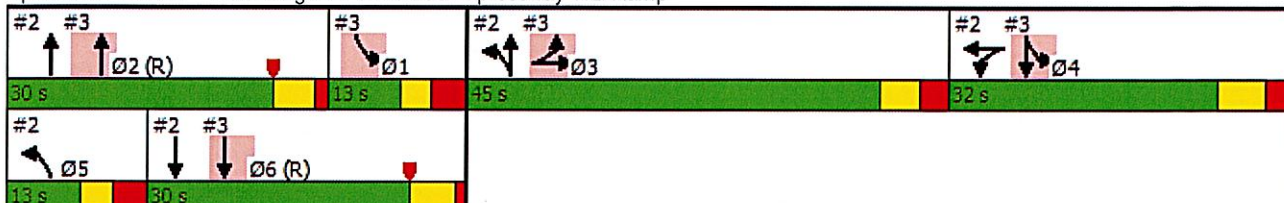
Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Stallings Rd & Monroe Expressway WB Ramp



Lane Group	Ø1	Ø2	Ø3	Ø5
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

3: Stallings Rd & Monroe Expressway EB Ramp

2027 Build IMP AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	140	377	0	0	0	0	649	56	147	459	0
Future Volume (vph)	200	140	377	0	0	0	0	649	56	147	459	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		325	0		0	425		0	0		0
Storage Lanes	0		0	0		0	2		0	2		0
Taper Length (ft)	100			25			225			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.95	1.00
Frt		0.923						0.984				
Flt Protected		0.986								0.950		
Satd. Flow (prot)	0	3135	0	0	0	0	0	5973	0	3335	3505	0
Flt Permitted		0.986								0.950		
Satd. Flow (perm)	0	3135	0	0	0	0	0	5973	0	3335	3505	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		1776			891			782			198	
Travel Time (s)		34.6			20.3			15.2			3.9	
Peak Hour Factor	0.78	0.77	0.81	0.90	0.90	0.90	0.90	0.92	0.66	0.77	0.92	0.90
Heavy Vehicles (%)	4%	8%	4%	2%	2%	2%	2%	8%	5%	5%	3%	2%
Adj. Flow (vph)	256	182	465	0	0	0	0	705	85	191	499	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	903	0	0	0	0	0	790	0	191	499	0
Turn Type	Split	NA						NA		Prot	NA	
Protected Phases	3	3						2		1 4	4 6	
Permitted Phases												
Detector Phase	3	3						2		1 4	4 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						10.0				
Minimum Split (s)	13.4	13.4						24.2				
Total Split (s)	45.0	45.0						30.0				
Total Split (%)	37.5%	37.5%						25.0%				
Maximum Green (s)	38.6	38.6						24.8				
Yellow Time (s)	3.8	3.8						3.9				
All-Red Time (s)	2.6	2.6						1.3				
Lost Time Adjust (s)		-1.4						-0.2				
Total Lost Time (s)		5.0						5.0				
Lead/Lag	Lead	Lead						Lead				
Lead-Lag Optimize?	Yes	Yes						Yes				
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Min				
Walk Time (s)								7.0				
Flash Dont Walk (s)								12.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		40.4						26.4		30.7	46.6	
Actuated g/C Ratio		0.34						0.22		0.26	0.39	
v/c Ratio		0.86						0.60		0.22	0.37	
Control Delay		46.5						45.1		8.0	2.7	
Queue Delay		1.7						1.2		0.5	0.2	

Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2027 Build IMP AM

Lane Group	Ø1	Ø4	Ø5	Ø6
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	4	5	6
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	12.0
Minimum Split (s)	13.3	13.7	13.2	28.4
Total Split (s)	13.0	32.0	13.0	30.0
Total Split (%)	11%	27%	11%	25%
Maximum Green (s)	6.7	25.3	6.8	24.6
Yellow Time (s)	3.0	4.3	3.0	4.4
All-Red Time (s)	3.3	2.4	3.2	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min
Walk Time (s)				7.0
Flash Dont Walk (s)				16.0
Pedestrian Calls (#/hr)				0
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2027 Build IMP AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		48.1						46.3		8.4	2.9	
LOS		D						D		A	A	
Approach Delay		48.1						46.3			4.4	
Approach LOS		D						D			A	
Queue Length 50th (ft)		331						169		25	6	
Queue Length 95th (ft)		343						200		54	20	
Internal Link Dist (ft)		1696			811			702			118	
Turn Bay Length (ft)												
Base Capacity (vph)		1071						1362		916	1470	
Starvation Cap Reductn		0						0		407	387	
Spillback Cap Reductn		64						337		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.90						0.77		0.38	0.46	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 34.9

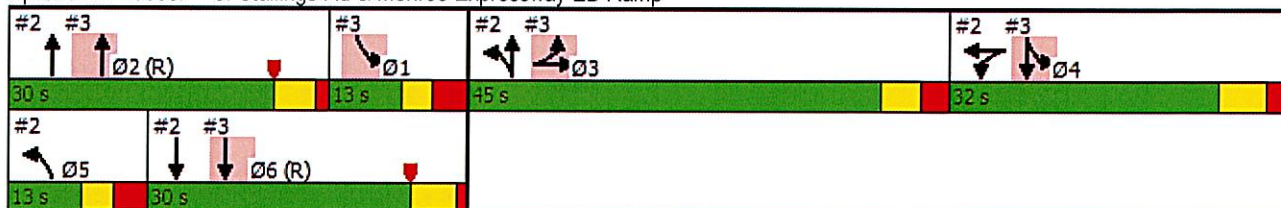
Intersection LOS: C

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Stallings Rd & Monroe Expressway EB Ramp



Lane Group	Ø1	Ø4	Ø5	Ø6
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	23	65	90	52	97	122	587	80	141	546	48
Future Volume (vph)	19	23	65	90	52	97	122	587	80	141	546	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	140		0	120		0	110		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			75			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.892			0.905			0.981			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	1616	0	1467	1640	0	1770	1726	0	1770	1806	0
Flt Permitted	0.630			0.682			0.303			0.227		
Satd. Flow (perm)	1023	1616	0	1053	1640	0	564	1726	0	423	1806	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			35			35	
Link Distance (ft)		2002			586			1248			718	
Travel Time (s)		30.3			11.4			24.3			14.0	
Peak Hour Factor	0.78	0.69	0.77	0.67	0.70	0.75	0.80	0.86	0.80	0.86	0.89	0.82
Heavy Vehicles (%)	17%	2%	6%	23%	8%	3%	2%	8%	8%	2%	4%	2%
Adj. Flow (vph)	24	33	84	134	74	129	153	683	100	164	613	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	117	0	134	203	0	153	783	0	164	672	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.3	12.3		12.7	12.7		34.4	34.4		15.3	15.3	
Total Split (s)	19.0	19.0		19.0	19.0		41.0	41.0		41.0	41.0	
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	
Maximum Green (s)	13.7	13.7		13.3	13.3		35.6	35.6		35.7	35.7	
Yellow Time (s)	3.6	3.6		4.0	4.0		3.8	3.8		3.6	3.6	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.7	1.7	
Lost Time Adjust (s)	-0.3	-0.3		-0.7	-0.7		-0.4	-0.4		-0.3	-0.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							22.0	22.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	11.1	11.1		11.1	11.1		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.58	0.58		0.58	0.58	
v/c Ratio	0.11	0.33		0.58	0.57		0.47	0.79		0.67	0.65	
Control Delay	19.1	20.9		30.6	25.6		12.5	15.7		25.8	10.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	19.1	20.9		30.6	25.6		12.5	15.7		25.8	10.9	
LOS	B	C		C	C		B	B		C	B	
Approach Delay		20.6			27.6			15.2			13.9	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	6	29		35	53		23	155		29	116	
Queue Length 95th (ft)	20	55		64	90		56	284		#120	221	
Internal Link Dist (ft)		1922			506			1168			638	
Turn Bay Length (ft)	140			140			120			110		
Base Capacity (vph)	292	462		300	468		414	1268		310	1327	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.25		0.45	0.43		0.37	0.62		0.53	0.51	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 50.4

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 72.4%

ICU Level of Service C

Analysis Period (min) 15

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

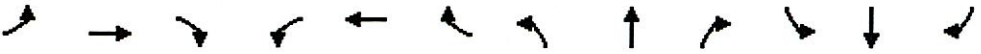
Queue shown is maximum after two cycles.

Splits and Phases: 4: Stallings Rd & Matthews-Indian Trail Rd

 Ø2	 Ø4
41 s	19 s
 Ø6	 Ø8
41 s	19 s

Lanes, Volumes, Timings
5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build IMP AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	4	3	51	9	317	8	120	57	158	80	21
Future Volume (vph)	8	4	3	51	9	317	8	120	57	158	80	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	125		0	0		0	150		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			125			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.967			0.857			0.959			0.964	
Flt Protected		0.979		0.950				0.996		0.950		
Satd. Flow (prot)	0	1380	0	1752	1490	0	0	1753	0	1770	1750	0
Flt Permitted		0.979		0.950				0.996		0.950		
Satd. Flow (perm)	0	1380	0	1752	1490	0	0	1753	0	1770	1750	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		831			703			907			461	
Travel Time (s)		16.2			13.7			17.7			9.0	
Peak Hour Factor	0.38	0.25	0.25	0.61	0.44	0.75	0.38	0.65	0.63	0.65	0.69	0.57
Heavy Vehicles (%)	17%	33%	50%	3%	57%	7%	2%	2%	7%	2%	2%	13%
Adj. Flow (vph)	21	16	12	84	20	423	21	185	90	243	116	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	84	443	0	0	296	0	243	153	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 49.1%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build IMP AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	4	3	51	9	317	8	120	57	158	80	21
Future Volume (Veh/h)	8	4	3	51	9	317	8	120	57	158	80	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.25	0.25	0.61	0.44	0.75	0.38	0.65	0.63	0.65	0.69	0.57
Hourly flow rate (vph)	21	16	12	84	20	423	21	185	90	243	116	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1326	938	134	894	911	230	153			275		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1326	938	134	894	911	230	153			275		
tC, single (s)	7.3	6.8	6.7	7.1	7.1	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.3	3.8	3.5	4.5	3.4	2.2			2.2		
p0 queue free %	53	91	99	59	89	47	99			81		
cM capacity (veh/h)	45	188	801	204	179	797	1428			1288		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	49	84	443	296	243	153						
Volume Left	21	84	0	21	243	0						
Volume Right	12	0	423	90	0	37						
cSH	86	204	689	1428	1288	1700						
Volume to Capacity	0.57	0.41	0.64	0.01	0.19	0.09						
Queue Length 95th (ft)	64	47	117	1	17	0						
Control Delay (s)	91.4	34.6	19.1	0.7	8.4	0.0						
Lane LOS	F	D	C	A	A							
Approach Delay (s)	91.4	21.6		0.7	5.2							
Approach LOS	F	C										
Intersection Summary												
Average Delay			14.3									
Intersection Capacity Utilization			49.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build IMP AM

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	↖
Traffic Volume (vph)	291	367	178	607	252	83
Future Volume (vph)	291	367	178	607	252	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.937					0.850
Flt Protected				0.990	0.950	
Satd. Flow (prot)	1718	0	0	1844	1719	1429
Flt Permitted				0.990	0.950	
Satd. Flow (perm)	1718	0	0	1844	1719	1429
Link Speed (mph)	45			45	35	
Link Distance (ft)	940			594	925	
Travel Time (s)	14.2			9.0	18.0	
Peak Hour Factor	0.59	0.86	0.80	0.73	0.90	0.79
Heavy Vehicles (%)	5%	2%	2%	2%	5%	13%
Adj. Flow (vph)	493	427	223	832	280	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	920	0	0	1055	280	105
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 103.5%

ICU Level of Service G

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build IMP AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	291	367	178	607	252	83
Future Volume (Veh/h)	291	367	178	607	252	83
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.86	0.80	0.73	0.90	0.79
Hourly flow rate (vph)	493	427	223	832	280	105
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)					4	
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	940					
pX, platoon unblocked			0.80		0.80	0.80
vC, conflicting volume			920		1984	706
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			772		2108	504
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			67		0	76
cM capacity (veh/h)			672		29	435
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	920	1055	385			
Volume Left	0	223	280			
Volume Right	427	0	105			
cSH	1700	672	39			
Volume to Capacity	0.54	0.33	9.77			
Queue Length 95th (ft)	0	36	Err			
Control Delay (s)	0.0	9.4	Err			
Lane LOS		A	F			
Approach Delay (s)	0.0	9.4	Err			
Approach LOS			F			
Intersection Summary						
Average Delay		1635.4				
Intersection Capacity Utilization		103.5%	ICU Level of Service		G	
Analysis Period (min)		15				

Lanes, Volumes, Timings
7: Public Road 1 & Stevens Mill Rd

Willows at Stallings TIA
2027 Build IMP AM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	126	3	9	262	9	25
Future Volume (vph)	126	3	9	262	9	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.901	
Flt Protected				0.998	0.987	
Satd. Flow (prot)	1774	0	0	1824	1657	0
Flt Permitted				0.998	0.987	
Satd. Flow (perm)	1774	0	0	1824	1657	0
Link Speed (mph)	45			45	25	
Link Distance (ft)	1311			439	372	
Travel Time (s)	19.9			6.7	10.1	
Peak Hour Factor	0.75	0.90	0.90	0.92	0.90	0.90
Heavy Vehicles (%)	7%	2%	2%	4%	2%	2%
Adj. Flow (vph)	168	3	10	285	10	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	0	0	295	38	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 31.1%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 7: Public Road 1 & Stevens Mill Rd

Willows at Stallings TIA
2027 Build IMP AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	126	3	9	262	9	25
Future Volume (Veh/h)	126	3	9	262	9	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.90	0.90	0.92	0.90	0.90
Hourly flow rate (vph)	168	3	10	285	10	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			171		474	170
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			171		474	170
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	97
cM capacity (veh/h)			1406		545	874
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	171	295	38			
Volume Left	0	10	10			
Volume Right	3	0	28			
cSH	1700	1406	754			
Volume to Capacity	0.10	0.01	0.05			
Queue Length 95th (ft)	0	1	4			
Control Delay (s)	0.0	0.3	10.0			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.3	10.0			
Approach LOS			B			
Intersection Summary						
Average Delay		0.9				
Intersection Capacity Utilization		31.1%	ICU Level of Service	A		
Analysis Period (min)		15				

Lanes, Volumes, Timings
8: Public Road 2 & Stevens Mill Rd

Willows at Stallings TIA
2027 Build IMP AM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	149	2	16	267	4	47
Future Volume (vph)	149	2	16	267	4	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.875	
Flt Protected				0.997	0.996	
Satd. Flow (prot)	1775	0	0	1823	1623	0
Flt Permitted				0.997	0.996	
Satd. Flow (perm)	1775	0	0	1823	1623	0
Link Speed (mph)	45			45	25	
Link Distance (ft)	499			1189	364	
Travel Time (s)	7.6			18.0	9.9	
Peak Hour Factor	0.77	0.90	0.90	0.92	0.90	0.90
Heavy Vehicles (%)	7%	2%	2%	4%	2%	2%
Adj. Flow (vph)	194	2	18	290	4	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	196	0	0	308	56	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 36.2%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

8: Public Road 2 & Stevens Mill Rd

Willows at Stallings TIA
2027 Build IMP AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	149	2	16	267	4	47
Future Volume (Veh/h)	149	2	16	267	4	47
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.90	0.90	0.92	0.90	0.90
Hourly flow rate (vph)	194	2	18	290	4	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			196		521	195
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			196		521	195
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	94
cM capacity (veh/h)			1377		509	846
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	196	308	56			
Volume Left	0	18	4			
Volume Right	2	0	52			
cSH	1700	1377	808			
Volume to Capacity	0.12	0.01	0.07			
Queue Length 95th (ft)	0	1	6			
Control Delay (s)	0.0	0.6	9.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.6	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay		1.3				
Intersection Capacity Utilization		36.2%	ICU Level of Service	A		
Analysis Period (min)		15				

Lanes, Volumes, Timings
9: Public Road 1 & Access 1

Willows at Stallings TIA
2027 Build IMP AM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	34	0	0	12	0
Future Volume (vph)	0	34	0	0	12	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.950
Satd. Flow (prot)	1611	0	1863	0	0	1770
Flt Permitted						0.950
Satd. Flow (perm)	1611	0	1863	0	0	1770
Link Speed (mph)	25		25			25
Link Distance (ft)	498		400			372
Travel Time (s)	13.6		10.9			10.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	38	0	0	13	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	0	0	0	13
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 13.3%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
9: Public Road 1 & Access 1

Willows at Stallings TIA
2027 Build IMP AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	34	0	0	12	0
Future Volume (Veh/h)	0	34	0	0	12	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	38	0	0	13	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	26	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	26	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			99	
cM capacity (veh/h)	981	1085			1623	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	38	0	13			
Volume Left	0	0	13			
Volume Right	38	0	0			
cSH	1085	1700	1623			
Volume to Capacity	0.04	0.00	0.01			
Queue Length 95th (ft)	3	0	1			
Control Delay (s)	8.4	0.0	7.2			
Lane LOS	A		A			
Approach Delay (s)	8.4	0.0	7.2			
Approach LOS	A					
Intersection Summary						
Average Delay		8.1				
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				

Lanes, Volumes, Timings
10: Public Road 2 & Access 2

Willows at Stallings TIA
2027 Build IMP AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	51	0	0	0	0	18
Future Volume (vph)	51	0	0	0	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1863	1611	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1863	1611	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	413			501	364	
Travel Time (s)	11.3			13.7	9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	0	0	0	0	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	0	0	0	20	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 13.3%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 10: Public Road 2 & Access 2

Willows at Stallings TIA
2027 Build IMP AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	51	0	0	0	0	18
Future Volume (Veh/h)	51	0	0	0	0	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	57	0	0	0	0	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	10	10	20			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	10	10	20			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	100	100			
cM capacity (veh/h)	1010	1071	1596			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	57	0	20			
Volume Left	57	0	0			
Volume Right	0	0	20			
cSH	1010	1700	1700			
Volume to Capacity	0.06	0.00	0.01			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	8.8	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.8	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		6.5				
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build Imp PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	197	70	158	61	100	77	189	303	340	187	23
Future Volume (vph)	17	197	70	158	61	100	77	189	303	340	187	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		300	150		0	150		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98						
Frt		0.967				0.850		0.908			0.983	
Flt Protected		0.997			0.965		0.950			0.950		
Satd. Flow (prot)	0	1784	0	0	1760	1583	1671	1685	0	1687	1815	0
Flt Permitted		0.970			0.478		0.613			0.367		
Satd. Flow (perm)	0	1735	0	0	872	1550	1078	1685	0	652	1815	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1672			940			3692			1502	
Travel Time (s)		25.3			14.2			55.9			22.8	
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	2%	5%	2%	2%	8%	3%	2%	7%	3%	2%
Adj. Flow (vph)	19	219	78	176	68	111	86	210	337	378	208	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	316	0	0	244	111	86	547	0	378	234	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0		19.0	19.0	
Total Split (s)	25.0	25.0		25.0	25.0	25.0	45.0	45.0		45.0	45.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%	35.7%	64.3%	64.3%		64.3%	64.3%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	38.0	38.0		38.0	38.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		20.0			20.0	20.0	40.0	40.0		40.0	40.0	
Actuated g/C Ratio		0.29			0.29	0.29	0.57	0.57		0.57	0.57	
v/c Ratio		0.64			0.98	0.25	0.14	0.57		1.02	0.23	
Control Delay		28.7			81.8	21.1	7.8	12.4		70.8	8.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		28.7			81.8	21.1	7.8	12.4		70.8	8.1	

Lanes, Volumes, Timings
1: Stallings Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build Imp PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			F	C	A	B		E	A	
Approach Delay		28.7			62.9			11.8			46.8	
Approach LOS		C			E			B			D	
Queue Length 50th (ft)		118			104	37	16	135		~155	45	
Queue Length 95th (ft)		199			#239	75	35	221		#330	78	
Internal Link Dist (ft)		1592			860			3612			1422	
Turn Bay Length (ft)						300	150			150		
Base Capacity (vph)		495			249	442	616	962		372	1037	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.64			0.98	0.25	0.14	0.57		1.02	0.23	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 35.2

Intersection LOS: D

Intersection Capacity Utilization 91.6%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Stallings Rd & Stevens Mill Rd

	Ø2			Ø4
45 s			25 s	
	Ø6			Ø8
45 s			25 s	

Lanes, Volumes, Timings

Willows at Stallings TIA

2: Stallings Rd & Monroe Expressway WB Ramp

2027 Build Imp PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	125	151	600	444	0	0	333	181
Future Volume (vph)	0	0	0	179	125	151	600	444	0	0	333	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	325		50	0		0	200		0
Storage Lanes	0		0	1		0	2		0	2		0
Taper Length (ft)	25			100			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	1.00	1.00	0.86	0.86
Frt					0.918						0.947	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1719	3249	0	3433	3539	0	0	6030	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1719	3249	0	3433	3539	0	0	6030	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			45			35			45	
Link Distance (ft)		1788			2381			198			998	
Travel Time (s)		40.6			36.1			3.9			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%	3%	2%
Adj. Flow (vph)	0	0	0	199	139	168	667	493	0	0	370	201
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	199	307	0	667	493	0	0	571	0
Turn Type				Split	NA		Prot	NA			NA	
Protected Phases				4	4		3 5	2 3			6	
Permitted Phases												
Detector Phase				4	4		3 5	2 3			6	
Switch Phase												
Minimum Initial (s)				7.0	7.0						12.0	
Minimum Split (s)				13.7	13.7						28.4	
Total Split (s)				27.0	27.0						33.0	
Total Split (%)				22.5%	22.5%						27.5%	
Maximum Green (s)				20.3	20.3						27.6	
Yellow Time (s)				4.3	4.3						4.4	
All-Red Time (s)				2.4	2.4						1.0	
Lost Time Adjust (s)				-1.7	-1.7						-0.4	
Total Lost Time (s)				5.0	5.0						5.0	
Lead/Lag				Lag	Lag						Lag	
Lead-Lag Optimize?				Yes	Yes						Yes	
Vehicle Extension (s)				3.0	3.0						3.0	
Recall Mode				None	None						C-Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											16.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				19.8	19.8		49.2	71.4			28.3	
Actuated g/C Ratio				0.16	0.16		0.41	0.60			0.24	
v/c Ratio				0.70	0.57		0.47	0.23			0.40	
Control Delay				60.9	50.3		22.4	1.0			40.2	
Queue Delay				0.0	0.0		27.0	0.3			0.0	

Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2027 Build Imp PM

Lane Group	Ø1	Ø2	Ø3	Ø5
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	3	5
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	10.0	7.0	7.0
Minimum Split (s)	13.3	24.2	13.4	13.2
Total Split (s)	13.0	33.0	47.0	13.0
Total Split (%)	11%	28%	39%	11%
Maximum Green (s)	6.7	27.8	40.6	6.8
Yellow Time (s)	3.0	3.9	3.8	3.0
All-Red Time (s)	3.3	1.3	2.6	3.2
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	None	None
Walk Time (s)		7.0		
Flash Dont Walk (s)		12.0		
Pedestrian Calls (#/hr)		0		
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				

Lanes, Volumes, Timings

2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA

2027 Build Imp PM

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay				60.9	50.3		49.4	1.4			40.2	
LOS				E	D		D	A			D	
Approach Delay					54.5			29.0			40.2	
Approach LOS					D			C			D	
Queue Length 50th (ft)				144	114		184	5			112	
Queue Length 95th (ft)				226	161		m239	m7			138	
Internal Link Dist (ft)		1708			2301			118			918	
Turn Bay Length (ft)				325								
Base Capacity (vph)				315	595		1428	2154			1496	
Starvation Cap Reductn				0	0		780	1073			0	
Spillback Cap Reductn				0	0		0	0			0	
Storage Cap Reductn				0	0		0	0			0	
Reduced v/c Ratio				0.63	0.52		1.03	0.46			0.38	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 37.6

Intersection LOS: D

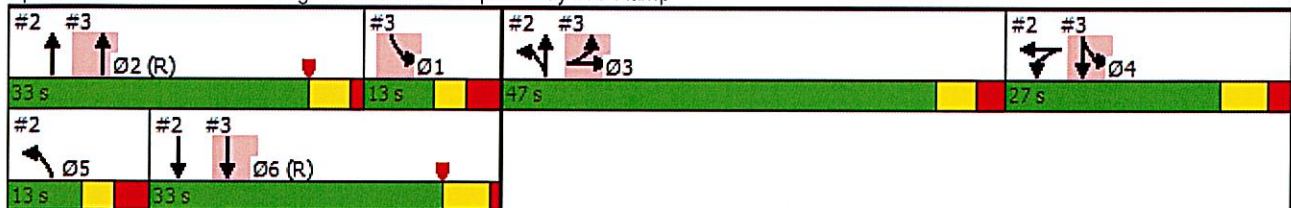
Intersection Capacity Utilization 71.8%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Stallings Rd & Monroe Expressway WB Ramp



Lanes, Volumes, Timings
2: Stallings Rd & Monroe Expressway WB Ramp

Willows at Stallings TIA
2027 Build Imp PM

Lane Group	Ø1	Ø2	Ø3	Ø5
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings
3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
2027 Build Imp PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	307	135	410	0	0	0	0	737	125	141	370	0
Future Volume (vph)	307	135	410	0	0	0	0	737	125	141	370	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		325	0		0	425		0	0		0
Storage Lanes	0		0	0		0	2		0	2		0
Taper Length (ft)	100			25			225			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.95	1.00
Ped Bike Factor		1.00						1.00		1.00		
Frt		0.928						0.978				
Flt Protected		0.982								0.950		
Satd. Flow (prot)	0	3195	0	0	0	0	0	6254	0	3433	3471	0
Flt Permitted		0.982								0.950		
Satd. Flow (perm)	0	3194	0	0	0	0	0	6254	0	3430	3471	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		1776			891			782			198	
Travel Time (s)		34.6			20.3			15.2			3.9	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	4%	2%
Adj. Flow (vph)	341	150	456	0	0	0	0	819	139	157	411	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	947	0	0	0	0	0	958	0	157	411	0
Turn Type	Split	NA						NA		Prot	NA	
Protected Phases	3	3						2		1 4	4 6	
Permitted Phases												
Detector Phase	3	3						2		1 4	4 6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						10.0				
Minimum Split (s)	13.4	13.4						24.2				
Total Split (s)	47.0	47.0						33.0				
Total Split (%)	39.2%	39.2%						27.5%				
Maximum Green (s)	40.6	40.6						27.8				
Yellow Time (s)	3.8	3.8						3.9				
All-Red Time (s)	2.6	2.6						1.3				
Lost Time Adjust (s)		-1.4						-0.2				
Total Lost Time (s)		5.0						5.0				
Lead/Lag	Lead	Lead						Lead				
Lead-Lag Optimize?	Yes	Yes						Yes				
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Min				
Walk Time (s)								7.0				
Flash Dont Walk (s)								12.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		42.4						29.4		25.6	44.6	
Actuated g/C Ratio		0.35						0.24		0.21	0.37	
v/c Ratio		0.84						0.63		0.21	0.32	

Lanes, Volumes, Timings
 3: Stallings Rd & Monroe Expressway EB Ramp

Willows at Stallings TIA
 2027 Build Imp PM

Lane Group	Ø1	Ø4	Ø5	Ø6
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	4	5	6
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	12.0
Minimum Split (s)	13.3	13.7	13.2	28.4
Total Split (s)	13.0	27.0	13.0	33.0
Total Split (%)	11%	23%	11%	28%
Maximum Green (s)	6.7	20.3	6.8	27.6
Yellow Time (s)	3.0	4.3	3.0	4.4
All-Red Time (s)	3.3	2.4	3.2	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Min
Walk Time (s)				7.0
Flash Dont Walk (s)				16.0
Pedestrian Calls (#/hr)				0
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		43.5						43.2		10.0	2.7	
Queue Delay		1.0						1.6		0.3	0.2	
Total Delay		44.5						44.8		10.4	2.9	
LOS		D						D		B	A	
Approach Delay		44.5						44.8			5.0	
Approach LOS		D						D			A	
Queue Length 50th (ft)		342						203		39	5	
Queue Length 95th (ft)		442						235		68	17	
Internal Link Dist (ft)		1696			811			702			118	
Turn Bay Length (ft)												
Base Capacity (vph)		1149						1578		795	1399	
Starvation Cap Reductn		0						0		302	363	
Spillback Cap Reductn		59						418		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.87						0.83		0.32	0.40	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 35.5

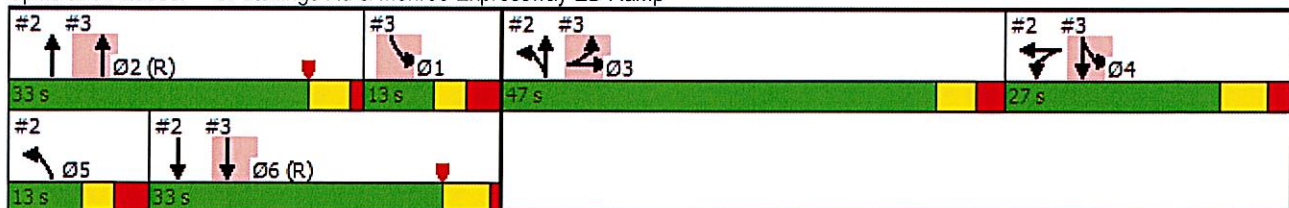
Intersection LOS: D

Intersection Capacity Utilization 71.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Stallings Rd & Monroe Expressway EB Ramp



Lane Group	Ø1	Ø4	Ø5	Ø6
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings

Willows at Stallings TIA

4: Stallings Rd & Matthews-Indian Trail Rd

2027 Build Imp PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	72	132	89	36	150	38	612	68	106	610	43
Future Volume (vph)	29	72	132	89	36	150	38	612	68	106	610	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	140		0	120		0	110		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			75			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00		1.00		
Frt		0.903			0.879			0.985			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1682	0	1770	1637	0	1770	1817	0	1770	1810	0
Flt Permitted	0.628			0.596			0.279			0.259		
Satd. Flow (perm)	1170	1682	0	1110	1637	0	520	1817	0	482	1810	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			35			35	
Link Distance (ft)		2002			586			1267			718	
Travel Time (s)		30.3			11.4			24.7			14.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	10%	2%	4%	3%
Adj. Flow (vph)	32	80	147	99	40	167	42	680	76	118	678	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	227	0	99	207	0	42	756	0	118	726	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.3	12.3		12.7	12.7		34.4	34.4		15.3	15.3	
Total Split (s)	19.0	19.0		19.0	19.0		41.0	41.0		41.0	41.0	
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	
Maximum Green (s)	13.7	13.7		13.3	13.3		35.6	35.6		35.7	35.7	
Yellow Time (s)	3.6	3.6		4.0	4.0		3.8	3.8		3.6	3.6	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.7	1.7	
Lost Time Adjust (s)	-0.3	-0.3		-0.7	-0.7		-0.4	-0.4		-0.3	-0.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							22.0	22.0				
Pedestrian Calls (#/hr)							1	1				
Act Effct Green (s)	11.1	11.1		11.3	11.3		28.6	28.6		28.6	28.6	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.64	0.64		0.64	0.64	
v/c Ratio	0.11	0.54		0.35	0.50		0.13	0.65		0.38	0.62	

Lanes, Volumes, Timings
4: Stallings Rd & Matthews-Indian Trail Rd

Willows at Stallings TIA
2027 Build Imp PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	17.8	22.9		21.4	22.2		6.6	11.0		11.2	10.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.8	22.9		21.4	22.2		6.6	11.0		11.2	10.5	
LOS	B	C		C	C		A	B		B	B	
Approach Delay		22.3			21.9			10.8			10.6	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	6	52		21	47		5	133		16	124	
Queue Length 95th (ft)	28	135		69	124		18	276		55	258	
Internal Link Dist (ft)		1922			506			1187			638	
Turn Bay Length (ft)	140			140			120			110		
Base Capacity (vph)	407	586		387	570		417	1458		386	1452	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.39		0.26	0.36		0.10	0.52		0.31	0.50	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 44.5

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 13.6

Intersection LOS: B

Intersection Capacity Utilization 79.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 4: Stallings Rd & Matthews-Indian Trail Rd

 Ø2	 Ø4
41 s	19 s
 Ø6	 Ø8
41 s	19 s

Lanes, Volumes, Timings
5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build Imp PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	7	1	8	1	61	4	121	71	138	46	1
Future Volume (vph)	12	7	1	8	1	61	4	121	71	138	46	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	125		0	0		0	150		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			125			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.852			0.951			0.997	
Flt Protected		0.971		0.950				0.999		0.950		
Satd. Flow (prot)	0	1583	0	1770	1572	0	0	1729	0	1770	1839	0
Flt Permitted		0.971		0.950				0.999		0.950		
Satd. Flow (perm)	0	1583	0	1770	1572	0	0	1729	0	1770	1839	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		823			709			904			459	
Travel Time (s)		16.0			13.8			17.6			8.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	40%	2%	2%	2%	3%	33%	2%	7%	2%	3%	2%
Adj. Flow (vph)	13	8	1	9	1	68	4	134	79	153	51	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	9	69	0	0	217	0	153	52	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 36.3%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
5: Mt. Harmony Church Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build Imp PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	7	1	8	1	61	4	121	71	138	46	1
Future Volume (Veh/h)	12	7	1	8	1	61	4	121	71	138	46	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	8	1	9	1	68	4	134	79	153	51	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	608	578	52	544	540	174	52			213		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	608	578	52	544	540	174	52			213		
tC, single (s)	7.1	6.9	6.2	7.1	6.5	6.2	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.4	3.3	3.5	4.0	3.3	2.5			2.2		
p0 queue free %	96	98	100	98	100	92	100			89		
cM capacity (veh/h)	342	335	1016	403	397	867	1377			1357		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	22	9	69	217	153	52						
Volume Left	13	9	0	4	153	0						
Volume Right	1	0	68	79	0	1						
cSH	350	403	853	1377	1357	1700						
Volume to Capacity	0.06	0.02	0.08	0.00	0.11	0.03						
Queue Length 95th (ft)	5	2	7	0	10	0						
Control Delay (s)	16.0	14.1	9.6	0.2	8.0	0.0						
Lane LOS	C	B	A	A	A							
Approach Delay (s)	16.0	10.1		0.2	6.0							
Approach LOS	C	B										
Intersection Summary												
Average Delay			4.6									
Intersection Capacity Utilization			36.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build Imp PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	↩
Traffic Volume (vph)	553	360	84	281	151	101
Future Volume (vph)	553	360	84	281	151	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	100
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.947					0.850
Flt Protected				0.989	0.950	
Satd. Flow (prot)	1737	0	0	1799	1770	1583
Flt Permitted				0.989	0.950	
Satd. Flow (perm)	1737	0	0	1799	1770	1583
Link Speed (mph)	45			45	35	
Link Distance (ft)	940			594	925	
Travel Time (s)	14.2			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	6%	6%	4%	2%	2%
Adj. Flow (vph)	614	400	93	312	168	112
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1014	0	0	405	168	112
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 88.9% ICU Level of Service E
Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 6: Oakspring Rd & Stevens Mill Rd

Willows at Stallings TIA
2027 Build Imp PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	553	360	84	281	151	101
Future Volume (Veh/h)	553	360	84	281	151	101
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	614	400	93	312	168	112
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	940					
pX, platoon unblocked			0.84		0.84	0.84
vC, conflicting volume			1014		1312	814
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			924		1277	687
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			85		0	70
cM capacity (veh/h)			610		131	377
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	1014	405	280			
Volume Left	0	93	168			
Volume Right	400	0	112			
cSH	1700	610	191			
Volume to Capacity	0.60	0.15	1.46			
Queue Length 95th (ft)	0	13	429			
Control Delay (s)	0.0	4.5	280.1			
Lane LOS		A	F			
Approach Delay (s)	0.0	4.5	280.1			
Approach LOS			F			
Intersection Summary						
Average Delay		47.2				
Intersection Capacity Utilization		88.9%	ICU Level of Service	E		
Analysis Period (min)		15				

Lanes, Volumes, Timings
7: Public Road 1 & Stevens Mill Rd

Willows at Stallings TIA
2027 Build Imp PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	208	9	26	60	6	17
Future Volume (vph)	208	9	26	60	6	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.901	
Flt Protected				0.985	0.987	
Satd. Flow (prot)	1784	0	0	1835	1657	0
Flt Permitted				0.985	0.987	
Satd. Flow (perm)	1784	0	0	1835	1657	0
Link Speed (mph)	45			45	25	
Link Distance (ft)	1311			439	372	
Travel Time (s)	19.9			6.7	10.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	2%	2%	2%	2%	2%
Adj. Flow (vph)	231	10	29	67	7	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	241	0	0	96	26	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 29.4%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 7: Public Road 1 & Stevens Mill Rd

Willows at Stallings TIA
2027 Build Imp PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↰	↰	
Traffic Volume (veh/h)	208	9	26	60	6	17
Future Volume (Veh/h)	208	9	26	60	6	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	231	10	29	67	7	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			241		361	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			241		361	236
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	98
cM capacity (veh/h)			1326		624	803
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	241	96	26			
Volume Left	0	29	7			
Volume Right	10	0	19			
cSH	1700	1326	745			
Volume to Capacity	0.14	0.02	0.03			
Queue Length 95th (ft)	0	2	3			
Control Delay (s)	0.0	2.5	10.0			
Lane LOS		A	B			
Approach Delay (s)	0.0	2.5	10.0			
Approach LOS			B			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		29.4%		ICU Level of Service	A	
Analysis Period (min)		15				

Lanes, Volumes, Timings
8: Public Road 2 & Stevens Mill Rd

Willows at Stallings TIA
2027 Build Imp PM

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	221	4	49	83	3	31
Future Volume (vph)	221	4	49	83	3	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.876	
Flt Protected				0.982	0.996	
Satd. Flow (prot)	1790	0	0	1829	1625	0
Flt Permitted				0.982	0.996	
Satd. Flow (perm)	1790	0	0	1829	1625	0
Link Speed (mph)	45			45	25	
Link Distance (ft)	499			1189	364	
Travel Time (s)	7.6			18.0	9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	2%	2%	2%	2%	2%
Adj. Flow (vph)	246	4	54	92	3	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	250	0	0	146	37	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 32.3% ICU Level of Service A
Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
8: Public Road 2 & Stevens Mill Rd

Willows at Stallings TIA
2027 Build Imp PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	221	4	49	83	3	31
Future Volume (Veh/h)	221	4	49	83	3	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	246	4	54	92	3	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			250		448	248
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		448	248
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		99	96
cM capacity (veh/h)			1316		545	791
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	250	146	37			
Volume Left	0	54	3			
Volume Right	4	0	34			
cSH	1700	1316	763			
Volume to Capacity	0.15	0.04	0.05			
Queue Length 95th (ft)	0	3	4			
Control Delay (s)	0.0	3.1	10.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.1	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			32.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
9: Public Road 1 & Access 1

Willows at Stallings TIA
2027 Build Imp PM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	23	0	0	35	0
Future Volume (vph)	0	23	0	0	35	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.950
Satd. Flow (prot)	1611	0	1863	0	0	1770
Flt Permitted						0.950
Satd. Flow (perm)	1611	0	1863	0	0	1770
Link Speed (mph)	25		25			25
Link Distance (ft)	498		280			372
Travel Time (s)	13.6		7.6			10.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	26	0	0	39	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	0	0	0	39
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 13.3% ICU Level of Service A
Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
9: Public Road 1 & Access 1

Willows at Stallings TIA
2027 Build Imp PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	23	0	0	35	0
Future Volume (Veh/h)	0	23	0	0	35	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	26	0	0	39	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	78	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			98	
cM capacity (veh/h)	903	1085			1623	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	26	0	39			
Volume Left	0	0	39			
Volume Right	26	0	0			
cSH	1085	1700	1623			
Volume to Capacity	0.02	0.00	0.02			
Queue Length 95th (ft)	2	0	2			
Control Delay (s)	8.4	0.0	7.3			
Lane LOS	A		A			
Approach Delay (s)	8.4	0.0	7.3			
Approach LOS	A					
Intersection Summary						
Average Delay			7.7			
Intersection Capacity Utilization			13.3%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
10: Public Road 2 & Access 2

Willows at Stallings TIA
2027 Build Imp PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	0	0	0	0	53
Future Volume (vph)	34	0	0	0	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1863	1611	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1863	1611	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	413			501	364	
Travel Time (s)	11.3			13.7	9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	0	0	0	0	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	0	0	59	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 10: Public Road 2 & Access 2

Willows at Stallings TIA
2027 Build Imp PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	0	0	0	0	53
Future Volume (Veh/h)	34	0	0	0	0	53
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	38	0	0	0	0	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	30	30	59			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	30	30	59			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	100	100			
cM capacity (veh/h)	985	1045	1545			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	38	0	59			
Volume Left	38	0	0			
Volume Right	0	0	59			
cSH	985	1700	1700			
Volume to Capacity	0.04	0.00	0.03			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	8.8	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.8	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		3.4				
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				

Queuing and Blocking Reports

2019 Existing Conditions

Intersection: 1: Stallings Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	67	290	116	29	109	147	112
Average Queue (ft)	36	72	51	7	52	54	43
95th Queue (ft)	59	156	84	27	86	102	85
Link Distance (ft)	1603	860			3636		1457
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300	150		150	
Storage Blk Time (%)		0				0	
Queuing Penalty (veh)		0				0	

Intersection: 2: Stallings Rd & Monroe Expressway WB Ramp

Movement	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	T	TR
Maximum Queue (ft)	124	195	100	179	31	378	250
Average Queue (ft)	67	91	72	165	6	58	135
95th Queue (ft)	126	170	113	172	25	190	231
Link Distance (ft)	2337	2337		159	159	916	
Upstream Blk Time (%)				37			
Queuing Penalty (veh)				111			
Storage Bay Dist (ft)			50				150
Storage Blk Time (%)		24	42			1	9
Queuing Penalty (veh)		27	38			2	12

Intersection: 3: Stallings Rd & Monroe Expressway EB Ramp

Movement	EB	EB	EB	NB	NB	SB	SB
Directions Served	L	T	TR	T	TR	L	T
Maximum Queue (ft)	274	413	100	250	1435	146	50
Average Queue (ft)	153	209	94	249	1335	59	13
95th Queue (ft)	267	356	110	250	1693	113	36
Link Distance (ft)		1742			1412	159	159
Upstream Blk Time (%)					46	0	
Queuing Penalty (veh)					229	0	
Storage Bay Dist (ft)	175		50	150			
Storage Blk Time (%)	0	12	50	91			
Queuing Penalty (veh)	1	52	94	244			

Intersection: 4: Stallings Rd & Matthews-Indian Trail Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	46	93	86	181	220	1268	91	229
Average Queue (ft)	12	38	38	75	135	951	34	98
95th Queue (ft)	33	81	70	147	297	1691	71	193
Link Distance (ft)	1964		516		1216		1412	
Upstream Blk Time (%)						59		
Queuing Penalty (veh)						0		
Storage Bay Dist (ft)	140	140		120		110		
Storage Blk Time (%)				1	78		0	4
Queuing Penalty (veh)				1	74		0	3

Intersection: 5: Mt. Harmony Church Rd & Stevens Mill Rd

Movement	EB	WB	WB	SB
Directions Served	LTR	L	TR	L
Maximum Queue (ft)	59	66	79	43
Average Queue (ft)	10	20	39	10
95th Queue (ft)	36	43	64	30
Link Distance (ft)	776		622	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		125		150
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Oakspring Rd & Stevens Mill Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	22	316	928
Average Queue (ft)	5	64	388
95th Queue (ft)	21	168	977
Link Distance (ft)	860	576	888
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 887

Intersection: 1: Stallings Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	60	72	70	48	171	111	85
Average Queue (ft)	31	42	28	7	85	57	33
95th Queue (ft)	57	66	48	28	150	86	56
Link Distance (ft)	1587	856			3636		1456
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300	150		150	
Storage Blk Time (%)					1		
Queuing Penalty (veh)					0		

Intersection: 2: Stallings Rd & Monroe Expressway WB Ramp

Movement	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	T	TR
Maximum Queue (ft)	174	238	100	177	95	255	242
Average Queue (ft)	65	111	69	165	22	42	126
95th Queue (ft)	128	206	109	173	59	133	218
Link Distance (ft)	2337	2337		159	159	916	
Upstream Blk Time (%)				33			
Queuing Penalty (veh)				112			
Storage Bay Dist (ft)			50				150
Storage Blk Time (%)		29	45			1	6
Queuing Penalty (veh)		29	43			2	7

Intersection: 3: Stallings Rd & Monroe Expressway EB Ramp

Movement	EB	EB	EB	NB	NB	SB	SB
Directions Served	L	T	TR	T	TR	L	T
Maximum Queue (ft)	275	560	100	250	1434	159	52
Average Queue (ft)	167	278	93	249	1190	51	11
95th Queue (ft)	299	461	113	250	1794	107	39
Link Distance (ft)		1742			1412	159	159
Upstream Blk Time (%)					26	0	
Queuing Penalty (veh)					151	1	
Storage Bay Dist (ft)	175		50	150			
Storage Blk Time (%)	1	12	53	90	5		
Queuing Penalty (veh)	3	61	138	288	13		

Intersection: 4: Stallings Rd & Matthews-Indian Trail Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	93	139	91	117	220	1298	92	172
Average Queue (ft)	21	71	36	52	40	628	36	89
95th Queue (ft)	64	127	76	95	162	1537	77	152
Link Distance (ft)	1964		516		1235		1412	
Upstream Blk Time (%)					39			
Queuing Penalty (veh)					0			
Storage Bay Dist (ft)	140	140		120		110		
Storage Blk Time (%)	1				53		0	4
Queuing Penalty (veh)	0				18		0	2

Intersection: 5: Mt. Harmony Church Rd & Stevens Mill Rd

Movement	EB	WB	WB	SB
Directions Served	LTR	L	TR	L
Maximum Queue (ft)	51	21	36	41
Average Queue (ft)	6	3	14	7
95th Queue (ft)	26	16	23	26
Link Distance (ft)	773		629	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		125		150
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Oakspring Rd & Stevens Mill Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	22	115	213
Average Queue (ft)	3	41	75
95th Queue (ft)	15	80	146
Link Distance (ft)	856	576	885
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 867

2022 Background Conditions

Intersection: 1: Stallings Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	104	184	161	52	194	246	154
Average Queue (ft)	39	76	59	15	74	72	51
95th Queue (ft)	76	129	104	44	134	152	101
Link Distance (ft)	1603	860			3635		1457
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300	150		150	
Storage Blk Time (%)					1	4	0
Queuing Penalty (veh)					0	14	0

Intersection: 2: Stallings Rd & Monroe Expressway WB Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	TR	L	L	T	T	T	T	TR
Maximum Queue (ft)	356	320	270	180	182	75	41	58	184	143
Average Queue (ft)	179	72	119	149	152	5	14	5	71	76
95th Queue (ft)	338	171	214	184	180	30	36	24	138	129
Link Distance (ft)		2318	2318	154	154	154			912	912
Upstream Blk Time (%)				24	25					
Queuing Penalty (veh)				43	44					
Storage Bay Dist (ft)	325						200	200		
Storage Blk Time (%)	2	0							0	
Queuing Penalty (veh)	1	0							0	

Intersection: 3: Stallings Rd & Monroe Expressway EB Ramp

Movement	EB	EB	NB	NB	NB	NB	B14	SB	SB	SB	SB
Directions Served	LT	TR	T	T	T	TR	T	L	L	T	T
Maximum Queue (ft)	666	702	537	650	781	710	664	93	49	93	24
Average Queue (ft)	240	286	231	276	227	125	69	43	9	17	2
95th Queue (ft)	492	546	515	613	642	427	394	87	35	60	12
Link Distance (ft)	1721	1721			710	710	648	154	154	154	154
Upstream Blk Time (%)					12	0	5				
Queuing Penalty (veh)					32	0	29				
Storage Bay Dist (ft)			425	425							
Storage Blk Time (%)			21	23	4						
Queuing Penalty (veh)			28	31	9						

Intersection: 4: Stallings Rd & Matthews-Indian Trail Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	46	95	109	199	220	563	97	228
Average Queue (ft)	9	33	49	78	64	153	52	97
95th Queue (ft)	31	67	94	140	131	328	89	186
Link Distance (ft)	1963		516		1216		648	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	140	140		120		110		
Storage Blk Time (%)				2	0	12	0	4
Queuing Penalty (veh)				2	1	12	0	5

Intersection: 5: Mt. Harmony Church Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	L	TR	LTR	L
Maximum Queue (ft)	33	66	143	26	61
Average Queue (ft)	5	22	47	2	15
95th Queue (ft)	20	46	96	13	41
Link Distance (ft)	776		622	858	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125		150	
Storage Blk Time (%)			1		
Queuing Penalty (veh)			0		

Intersection: 6: Oakspring Rd & Stevens Mill Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	50	591	927
Average Queue (ft)	10	123	462
95th Queue (ft)	34	374	1054
Link Distance (ft)	860	576	888
Upstream Blk Time (%)		1	34
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 254

Intersection: 1: Stallings Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	119	54	88	250	288	171	86
Average Queue (ft)	47	38	31	22	163	88	39
95th Queue (ft)	97	56	56	98	263	156	69
Link Distance (ft)	1587	856			3636		1456
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300	150		150	
Storage Blk Time (%)					20	1	
Queuing Penalty (veh)					3	2	

Intersection: 2: Stallings Rd & Monroe Expressway WB Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	TR	L	L	T	T	T	T	T	TR
Maximum Queue (ft)	214	157	182	176	167	88	72	61	39	182	144
Average Queue (ft)	115	60	98	142	148	19	3	14	8	82	85
95th Queue (ft)	183	113	157	177	178	61	27	37	24	156	152
Link Distance (ft)		2318	2318	154	154	154	154			912	912
Upstream Blk Time (%)				17	18						
Queuing Penalty (veh)				35	39						
Storage Bay Dist (ft)	325							200	200		
Storage Blk Time (%)										0	
Queuing Penalty (veh)										0	

Intersection: 3: Stallings Rd & Monroe Expressway EB Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	TR	T	T	T	TR	L	L	T	T
Maximum Queue (ft)	587	693	537	623	649	443	92	77	92	45
Average Queue (ft)	220	278	172	187	175	118	37	19	19	2
95th Queue (ft)	439	499	410	441	428	267	79	54	57	18
Link Distance (ft)	1721	1721			710	710	154	154	154	154
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			425	425						
Storage Blk Time (%)			9	9	4					
Queuing Penalty (veh)			14	13	11					

Intersection: 4: Stallings Rd & Matthews-Indian Trail Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	93	154	155	117	74	236	112	270
Average Queue (ft)	16	79	57	73	26	125	50	122
95th Queue (ft)	52	139	103	114	60	212	84	216
Link Distance (ft)		1963		516		1235		648
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	140		140		120		110	
Storage Blk Time (%)		1	0			5	0	6
Queuing Penalty (veh)		0	0			2	1	5

Intersection: 5: Mt. Harmony Church Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	L	TR	LTR	L
Maximum Queue (ft)	52	22	39	19	43
Average Queue (ft)	8	5	12	1	13
95th Queue (ft)	29	19	24	7	34
Link Distance (ft)	773		629	856	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125		150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Oakspring Rd & Stevens Mill Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	46	148	263
Average Queue (ft)	8	46	80
95th Queue (ft)	28	102	178
Link Distance (ft)	856	576	885
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 125

2022 Build-out Conditions

Intersection: 1: Stallings Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	136	222	250	249	350	250	392
Average Queue (ft)	55	98	77	36	112	92	73
95th Queue (ft)	105	175	178	106	255	206	197
Link Distance (ft)	1603	860			3635		1457
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300	150		150	
Storage Blk Time (%)					13	13	
Queuing Penalty (veh)					7	38	

Intersection: 2: Stallings Rd & Monroe Expressway WB Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	TR	L	L	T	T	T	T	T	TR
Maximum Queue (ft)	424	371	326	166	170	50	45	62	59	167	149
Average Queue (ft)	197	121	181	151	154	11	3	18	10	83	79
95th Queue (ft)	360	257	302	187	188	35	19	45	36	157	153
Link Distance (ft)		2318	2318	154	154	154	154			912	912
Upstream Blk Time (%)				32	33						
Queuing Penalty (veh)				59	60						
Storage Bay Dist (ft)	325							200	200		
Storage Blk Time (%)	3	0									
Queuing Penalty (veh)	2	0									

Intersection: 3: Stallings Rd & Monroe Expressway EB Ramp

Movement	EB	EB	NB	NB	NB	NB	B14	SB	SB	SB	SB
Directions Served	LT	TR	T	T	T	TR	T	L	L	T	T
Maximum Queue (ft)	538	615	537	650	824	710	654	117	106	104	50
Average Queue (ft)	234	288	232	266	224	140	42	51	28	24	4
95th Queue (ft)	382	482	514	579	655	465	278	102	79	77	26
Link Distance (ft)	1721	1721			710	710	648	154	154	154	154
Upstream Blk Time (%)					9	0	2				
Queuing Penalty (veh)					26	0	9				
Storage Bay Dist (ft)			425	425							
Storage Blk Time (%)			14	19	4						
Queuing Penalty (veh)			19	26	12						

Intersection: 4: Stallings Rd & Matthews-Indian Trail Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	27	89	153	161	219	367	145	152
Average Queue (ft)	7	30	56	65	59	144	59	92
95th Queue (ft)	25	66	118	124	139	281	108	151
Link Distance (ft)		1963		516		1216		648
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	140		140		120		110	
Storage Blk Time (%)			0	1	0	10	3	3
Queuing Penalty (veh)			1	1	1	11	16	4

Intersection: 5: Mt. Harmony Church Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	L	TR	LTR	L
Maximum Queue (ft)	30	47	181	28	63
Average Queue (ft)	6	24	51	1	15
95th Queue (ft)	24	43	106	10	43
Link Distance (ft)	776		624	858	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125		150	
Storage Blk Time (%)			1		
Queuing Penalty (veh)			1		

Intersection: 6: Oakspring Rd & Stevens Mill Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	52	628	952
Average Queue (ft)	10	165	486
95th Queue (ft)	35	453	1086
Link Distance (ft)	860	576	888
Upstream Blk Time (%)		3	38
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Public Road 1 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	28	31
Average Queue (ft)	1	20
95th Queue (ft)	10	44
Link Distance (ft)	396	321
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Public Road 2 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	25	49
Average Queue (ft)	1	28
95th Queue (ft)	9	46
Link Distance (ft)	1136	299
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Public Road 1 & Access 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	53
Average Queue (ft)	22
95th Queue (ft)	49
Link Distance (ft)	470
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Public Road 2 & Access 2

Movement	EB
Directions Served	LR
Maximum Queue (ft)	49
Average Queue (ft)	26
95th Queue (ft)	48
Link Distance (ft)	384
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 291

Intersection: 1: Stallings Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	167	155	54	250	343	250	364
Average Queue (ft)	65	67	26	56	181	108	66
95th Queue (ft)	130	129	45	189	304	221	202
Link Distance (ft)	1587	856			3636		1456
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300	150		150	
Storage Blk Time (%)					26	15	
Queuing Penalty (veh)					20	28	

Intersection: 2: Stallings Rd & Monroe Expressway WB Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	TR	L	L	T	T	T	T	TR
Maximum Queue (ft)	406	323	355	184	164	54	67	79	145	142
Average Queue (ft)	254	138	238	159	157	11	13	8	49	55
95th Queue (ft)	367	252	356	168	163	37	42	36	120	142
Link Distance (ft)		2318	2318	154	154	154			912	912
Upstream Blk Time (%)				63	63					
Queuing Penalty (veh)				141	141					
Storage Bay Dist (ft)	325						200	200		
Storage Blk Time (%)	7	0								
Queuing Penalty (veh)	3	0								

Intersection: 3: Stallings Rd & Monroe Expressway EB Ramp

Movement	EB	EB	NB	NB	NB	NB	B24	SB	SB	SB	SB
Directions Served	LT	TR	T	T	T	TR	T	L	L	T	T
Maximum Queue (ft)	1784	1755	537	650	781	780	665	119	94	114	45
Average Queue (ft)	1217	1287	491	590	643	515	363	73	44	38	4
95th Queue (ft)	2026	2022	601	762	981	896	872	114	86	108	23
Link Distance (ft)	1721	1721			710	710	648	154	154	154	154
Upstream Blk Time (%)	29	32			49	0	27				
Queuing Penalty (veh)	0	0			169	2	183				
Storage Bay Dist (ft)			425	425							
Storage Blk Time (%)			83	85	21						
Queuing Penalty (veh)			133	136	71						

Intersection: 4: Stallings Rd & Matthews-Indian Trail Rd

Movement	EB	EB	WB	WB	B31	NB	NB	SB	SB
Directions Served	L	TR	L	TR	T	L	TR	L	TR
Maximum Queue (ft)	113	155	215	607	373	220	1287	209	240
Average Queue (ft)	42	66	79	226	47	45	518	53	115
95th Queue (ft)	98	126	210	611	209	165	1372	133	227
Link Distance (ft)		1963		516	660		1235		648
Upstream Blk Time (%)				21			27		
Queuing Penalty (veh)				0			0		
Storage Bay Dist (ft)	140		140			120		110	
Storage Blk Time (%)		1	1	34			40	0	5
Queuing Penalty (veh)		0	2	27			13	0	5

Intersection: 5: Mt. Harmony Church Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	L	TR	LTR	L
Maximum Queue (ft)	38	22	33	19	44
Average Queue (ft)	8	7	14	1	10
95th Queue (ft)	25	23	26	6	30
Link Distance (ft)	773		628	856	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125		150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Oakspring Rd & Stevens Mill Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	22	205	159
Average Queue (ft)	3	63	86
95th Queue (ft)	16	152	154
Link Distance (ft)	856	576	885
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Public Road 1 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	28	30
Average Queue (ft)	5	17
95th Queue (ft)	23	41
Link Distance (ft)	396	320
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Public Road 2 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	30	30
Average Queue (ft)	8	19
95th Queue (ft)	28	42
Link Distance (ft)	1136	299
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Public Road 1 & Access 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	32
Average Queue (ft)	16
95th Queue (ft)	41
Link Distance (ft)	470
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Public Road 2 & Access 2

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	19
95th Queue (ft)	42
Link Distance (ft)	384
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1075

2022 Build-out Improved Conditions

Intersection: 1: Stallings Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	200	292	191	72	228	245	468
Average Queue (ft)	81	122	94	26	88	133	121
95th Queue (ft)	153	220	166	61	170	233	381
Link Distance (ft)	1603	860			3635		1457
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300	150		150	
Storage Blk Time (%)		0			1	13	1
Queuing Penalty (veh)		1			0	36	4

Intersection: 2: Stallings Rd & Monroe Expressway WB Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	TR	L	L	T	T	T	T	T	TR
Maximum Queue (ft)	415	514	516	172	184	70	13	70	64	184	191
Average Queue (ft)	229	163	198	149	151	13	0	17	10	77	80
95th Queue (ft)	433	507	448	191	188	50	6	48	38	160	165
Link Distance (ft)		2318	2318	154	154	154	154			912	912
Upstream Blk Time (%)				37	37						
Queuing Penalty (veh)				67	67						
Storage Bay Dist (ft)	325							200	200		
Storage Blk Time (%)	18	0								0	
Queuing Penalty (veh)	9	0								0	

Intersection: 3: Stallings Rd & Monroe Expressway EB Ramp

Movement	EB	EB	NB	NB	NB	NB	B14	SB	SB	SB	SB
Directions Served	LT	TR	T	T	T	TR	T	L	L	T	T
Maximum Queue (ft)	1111	1223	530	624	732	622	501	146	116	96	52
Average Queue (ft)	443	538	291	339	301	192	140	63	32	22	3
95th Queue (ft)	1177	1312	582	703	811	580	563	120	84	70	26
Link Distance (ft)	1721	1721			710	710	648	154	154	154	154
Upstream Blk Time (%)	4	4			20	0	10	0			
Queuing Penalty (veh)	0	0			61	0	58	1			
Storage Bay Dist (ft)			425	425							
Storage Blk Time (%)			30	32	10						
Queuing Penalty (veh)			42	45	27						

Intersection: 4: Stallings Rd & Matthews-Indian Trail Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	65	84	166	288	164	757	167	235
Average Queue (ft)	14	32	60	82	61	268	57	92
95th Queue (ft)	44	71	138	210	149	875	121	188
Link Distance (ft)	1963		516		1216		648	
Upstream Blk Time (%)			0		9			
Queuing Penalty (veh)			0		0			
Storage Bay Dist (ft)	140		140		120		110	
Storage Blk Time (%)			1	7	0	18	3	3
Queuing Penalty (veh)			1	6	1	19	15	3

Intersection: 5: Mt. Harmony Church Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	L	TR	LTR	L
Maximum Queue (ft)	39	54	154	25	53
Average Queue (ft)	5	19	54	1	15
95th Queue (ft)	24	42	110	13	40
Link Distance (ft)	776		624	858	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125		150	
Storage Blk Time (%)			1		
Queuing Penalty (veh)			1		

Intersection: 6: Oakspring Rd & Stevens Mill Rd

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	32	591	934	200
Average Queue (ft)	7	214	552	83
95th Queue (ft)	27	552	1098	235
Link Distance (ft)	860	563	889	
Upstream Blk Time (%)		12	37	
Queuing Penalty (veh)		0	0	
Storage Bay Dist (ft)			100	
Storage Blk Time (%)			79	0
Queuing Penalty (veh)			57	0

Intersection: 7: Public Road 1 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	19	34
Average Queue (ft)	1	21
95th Queue (ft)	9	44
Link Distance (ft)	396	321
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Public Road 2 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	18	50
Average Queue (ft)	1	24
95th Queue (ft)	12	46
Link Distance (ft)	1136	299
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Public Road 1 & Access 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	46
Average Queue (ft)	23
95th Queue (ft)	46
Link Distance (ft)	470
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Public Road 2 & Access 2

Movement	EB
Directions Served	LR
Maximum Queue (ft)	55
Average Queue (ft)	25
95th Queue (ft)	48
Link Distance (ft)	384
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 521

Intersection: 1: Stallings Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	163	230	112	96	218	249	452
Average Queue (ft)	88	100	44	36	119	150	103
95th Queue (ft)	150	181	90	80	201	255	347
Link Distance (ft)	1587	856			3636		1456
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300	150		150	
Storage Blk Time (%)		0			3	20	0
Queuing Penalty (veh)		0			2	36	1

Intersection: 2: Stallings Rd & Monroe Expressway WB Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	TR	L	L	T	T	T	T	T	TR
Maximum Queue (ft)	295	264	358	172	168	76	43	69	46	164	215
Average Queue (ft)	149	86	194	147	149	21	4	18	7	70	84
95th Queue (ft)	275	209	411	187	185	62	21	50	25	150	174
Link Distance (ft)		2318	2318	154	154	154	154			912	912
Upstream Blk Time (%)				29	29						
Queuing Penalty (veh)				66	67						
Storage Bay Dist (ft)	325							200	200		
Storage Blk Time (%)	2	0								0	
Queuing Penalty (veh)	1	0								0	

Intersection: 3: Stallings Rd & Monroe Expressway EB Ramp

Movement	EB	EB	NB	NB	NB	NB	B24	SB	SB	SB	SB
Directions Served	LT	TR	T	T	T	TR	T	L	L	T	T
Maximum Queue (ft)	1050	1105	369	437	510	485	333	128	99	84	30
Average Queue (ft)	594	631	242	285	294	228	131	61	28	17	1
95th Queue (ft)	1579	1603	544	650	749	589	554	109	76	58	12
Link Distance (ft)	1721	1721			710	710	648	154	154	154	154
Upstream Blk Time (%)	11	11			17	0	10	0			
Queuing Penalty (veh)	0	0			56	1	69	0			
Storage Bay Dist (ft)			425	425							
Storage Blk Time (%)			27	28	12						
Queuing Penalty (veh)			42	45	38						

Intersection: 4: Stallings Rd & Matthews-Indian Trail Rd

Movement	EB	EB	WB	WB	B31	NB	NB	SB	SB
Directions Served	L	TR	L	TR	T	L	TR	L	TR
Maximum Queue (ft)	90	136	143	267	37	118	598	167	237
Average Queue (ft)	32	63	54	117	7	29	263	49	116
95th Queue (ft)	111	121	141	358	59	109	865	110	209
Link Distance (ft)		1963		516	660		1235		648
Upstream Blk Time (%)				5			11		
Queuing Penalty (veh)				0			0		
Storage Bay Dist (ft)	140		140			120		110	
Storage Blk Time (%)	7	0	1	14			19	0	6
Queuing Penalty (veh)	12	0	2	11			6	3	5

Intersection: 5: Mt. Harmony Church Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	L	TR	LTR	L
Maximum Queue (ft)	50	22	51	22	50
Average Queue (ft)	9	4	16	1	13
95th Queue (ft)	30	18	39	10	36
Link Distance (ft)	773		628	856	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125		150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Oakspring Rd & Stevens Mill Rd

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	45	287	459	177
Average Queue (ft)	8	84	153	57
95th Queue (ft)	29	217	404	177
Link Distance (ft)	856	563	885	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)			33	0
Queuing Penalty (veh)			29	0

Intersection: 7: Public Road 1 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	36	34
Average Queue (ft)	4	16
95th Queue (ft)	21	40
Link Distance (ft)	396	320
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Public Road 2 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	36	41
Average Queue (ft)	7	20
95th Queue (ft)	27	45
Link Distance (ft)	1136	299
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Public Road 1 & Access 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	41
Average Queue (ft)	17
95th Queue (ft)	44
Link Distance (ft)	470
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Public Road 2 & Access 2

Movement	EB
Directions Served	LR
Maximum Queue (ft)	38
Average Queue (ft)	21
95th Queue (ft)	45
Link Distance (ft)	384
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 494

2027 Build-out +5 Conditions

Intersection: 1: Stallings Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	264	296	257	108	218	249	1074
Average Queue (ft)	104	139	110	27	91	167	316
95th Queue (ft)	219	254	205	75	178	279	993
Link Distance (ft)	1603	860			3635		1457
Upstream Blk Time (%)							3
Queuing Penalty (veh)							0
Storage Bay Dist (ft)			300	150		150	
Storage Blk Time (%)		1			2	26	3
Queuing Penalty (veh)		3			1	81	13

Intersection: 2: Stallings Rd & Monroe Expressway WB Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	TR	L	L	T	T	T	T	T	TR
Maximum Queue (ft)	416	919	874	181	175	58	4	65	119	193	211
Average Queue (ft)	302	406	366	158	159	12	0	15	13	73	79
95th Queue (ft)	509	1001	829	175	170	42	4	47	58	165	184
Link Distance (ft)		2318	2318	154	154	154	154			912	912
Upstream Blk Time (%)				50	50						
Queuing Penalty (veh)				107	107						
Storage Bay Dist (ft)	325							200	200		
Storage Blk Time (%)	42	1								0	
Queuing Penalty (veh)	26	3								0	

Intersection: 3: Stallings Rd & Monroe Expressway EB Ramp

Movement	EB	EB	NB	NB	NB	NB	B14	SB	SB	SB	SB
Directions Served	LT	TR	T	T	T	TR	T	L	L	T	T
Maximum Queue (ft)	1762	1755	537	650	810	710	666	156	138	95	62
Average Queue (ft)	932	1034	420	506	539	290	368	75	47	27	6
95th Queue (ft)	2013	2052	670	831	1055	748	894	134	111	80	34
Link Distance (ft)	1721	1721			710	710	648	154	154	154	154
Upstream Blk Time (%)	22	25			48	0	32	1	0		0
Queuing Penalty (veh)	0	0			172	1	230	2	0		0
Storage Bay Dist (ft)			425	425							
Storage Blk Time (%)			61	67	8						
Queuing Penalty (veh)			100	110	27						

Intersection: 4: Stallings Rd & Matthews-Indian Trail Rd

Movement	EB	EB	WB	WB	B24	NB	NB	SB	SB
Directions Served	L	TR	L	TR	T	L	TR	L	TR
Maximum Queue (ft)	137	136	214	529	133	220	1263	173	230
Average Queue (ft)	39	39	96	191	37	85	678	61	101
95th Queue (ft)	134	91	222	483	274	221	1566	124	192
Link Distance (ft)		1963		516	660		1216		648
Upstream Blk Time (%)				8	3		42		
Queuing Penalty (veh)				0	0		0		
Storage Bay Dist (ft)	140		140			120		110	
Storage Blk Time (%)	9	0	3	32		0	49	2	4
Queuing Penalty (veh)	7	0	5	31		2	61	12	5

Intersection: 5: Mt. Harmony Church Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	L	TR	LTR	L
Maximum Queue (ft)	65	60	140	33	83
Average Queue (ft)	8	20	56	3	20
95th Queue (ft)	37	43	107	18	56
Link Distance (ft)	776		624	858	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125		150	
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 6: Oakspring Rd & Stevens Mill Rd

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	40	611	928	125
Average Queue (ft)	10	339	856	37
95th Queue (ft)	32	698	1066	130
Link Distance (ft)	860	563	889	
Upstream Blk Time (%)		26	82	
Queuing Penalty (veh)		0	0	
Storage Bay Dist (ft)			100	
Storage Blk Time (%)			98	0
Queuing Penalty (veh)			82	0

Intersection: 7: Public Road 1 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	28	38
Average Queue (ft)	1	22
95th Queue (ft)	12	45
Link Distance (ft)	396	321
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Public Road 2 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	27	46
Average Queue (ft)	2	25
95th Queue (ft)	14	47
Link Distance (ft)	1136	299
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Public Road 1 & Access 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	53
Average Queue (ft)	23
95th Queue (ft)	50
Link Distance (ft)	470
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Public Road 2 & Access 2

Movement	EB
Directions Served	LR
Maximum Queue (ft)	55
Average Queue (ft)	26
95th Queue (ft)	49
Link Distance (ft)	384
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1190

Intersection: 1: Stallings Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	269	421	174	144	287	250	753
Average Queue (ft)	119	171	50	36	127	203	278
95th Queue (ft)	214	359	138	104	243	297	694
Link Distance (ft)	1587	856			3636		1456
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			300	150		150	
Storage Blk Time (%)		7			4	47	1
Queuing Penalty (veh)		7			3	99	2

Intersection: 2: Stallings Rd & Monroe Expressway WB Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	TR	L	L	T	T	T	T	T	TR
Maximum Queue (ft)	424	852	818	174	168	79	38	63	64	165	196
Average Queue (ft)	321	368	398	159	158	18	2	15	8	59	66
95th Queue (ft)	510	860	799	168	167	58	16	46	35	140	158
Link Distance (ft)		2318	2318	154	154	154	154			912	912
Upstream Blk Time (%)				58	58						
Queuing Penalty (veh)				152	151						
Storage Bay Dist (ft)	325							200	200		
Storage Blk Time (%)	43	0								0	
Queuing Penalty (veh)	27	0								0	

Intersection: 3: Stallings Rd & Monroe Expressway EB Ramp

Movement	EB	EB	NB	NB	NB	NB	B24	SB	SB	SB	SB
Directions Served	LT	TR	T	T	T	TR	T	L	L	T	T
Maximum Queue (ft)	1761	1771	537	650	792	737	664	162	133	97	49
Average Queue (ft)	1321	1352	456	552	613	417	418	87	58	30	6
95th Queue (ft)	2254	2259	661	821	1048	869	924	144	122	87	28
Link Distance (ft)	1721	1721			710	710	648	154	154	154	154
Upstream Blk Time (%)	51	52			55	1	35	1	0		
Queuing Penalty (veh)	0	0			219	3	280	2	0		
Storage Bay Dist (ft)			425	425							
Storage Blk Time (%)			75	76	25						
Queuing Penalty (veh)			139	141	92						

Intersection: 4: Stallings Rd & Matthews-Indian Trail Rd

Movement	EB	EB	WB	WB	B31	NB	NB	SB	SB
Directions Served	L	TR	L	TR	T	L	TR	L	TR
Maximum Queue (ft)	136	185	214	586	503	218	1281	159	256
Average Queue (ft)	53	86	99	293	114	48	737	50	111
95th Queue (ft)	149	159	232	682	448	172	1625	120	217
Link Distance (ft)		1963		516	660		1235		648
Upstream Blk Time (%)				31	4		47		
Queuing Penalty (veh)				0	0		0		
Storage Bay Dist (ft)	140		140			120		110	
Storage Blk Time (%)	13	1	3	46			55	0	6
Queuing Penalty (veh)	26	0	5	42			21	3	6

Intersection: 5: Mt. Harmony Church Rd & Stevens Mill Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	L	TR	LTR	L
Maximum Queue (ft)	54	26	54	11	57
Average Queue (ft)	10	5	16	1	19
95th Queue (ft)	33	21	35	7	47
Link Distance (ft)	773		628	856	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125		150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Oakspring Rd & Stevens Mill Rd

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	50	305	865	125
Average Queue (ft)	9	104	635	84
95th Queue (ft)	32	232	1126	176
Link Distance (ft)	856	563	885	
Upstream Blk Time (%)			36	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)			100	
Storage Blk Time (%)			86	1
Queuing Penalty (veh)			87	2

Intersection: 7: Public Road 1 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	40	30
Average Queue (ft)	4	14
95th Queue (ft)	22	38
Link Distance (ft)	396	320
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Public Road 2 & Stevens Mill Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	52	51
Average Queue (ft)	8	21
95th Queue (ft)	30	46
Link Distance (ft)	1136	299
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Public Road 1 & Access 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	15
95th Queue (ft)	40
Link Distance (ft)	470
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Public Road 2 & Access 2

Movement	EB
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	21
95th Queue (ft)	48
Link Distance (ft)	384
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

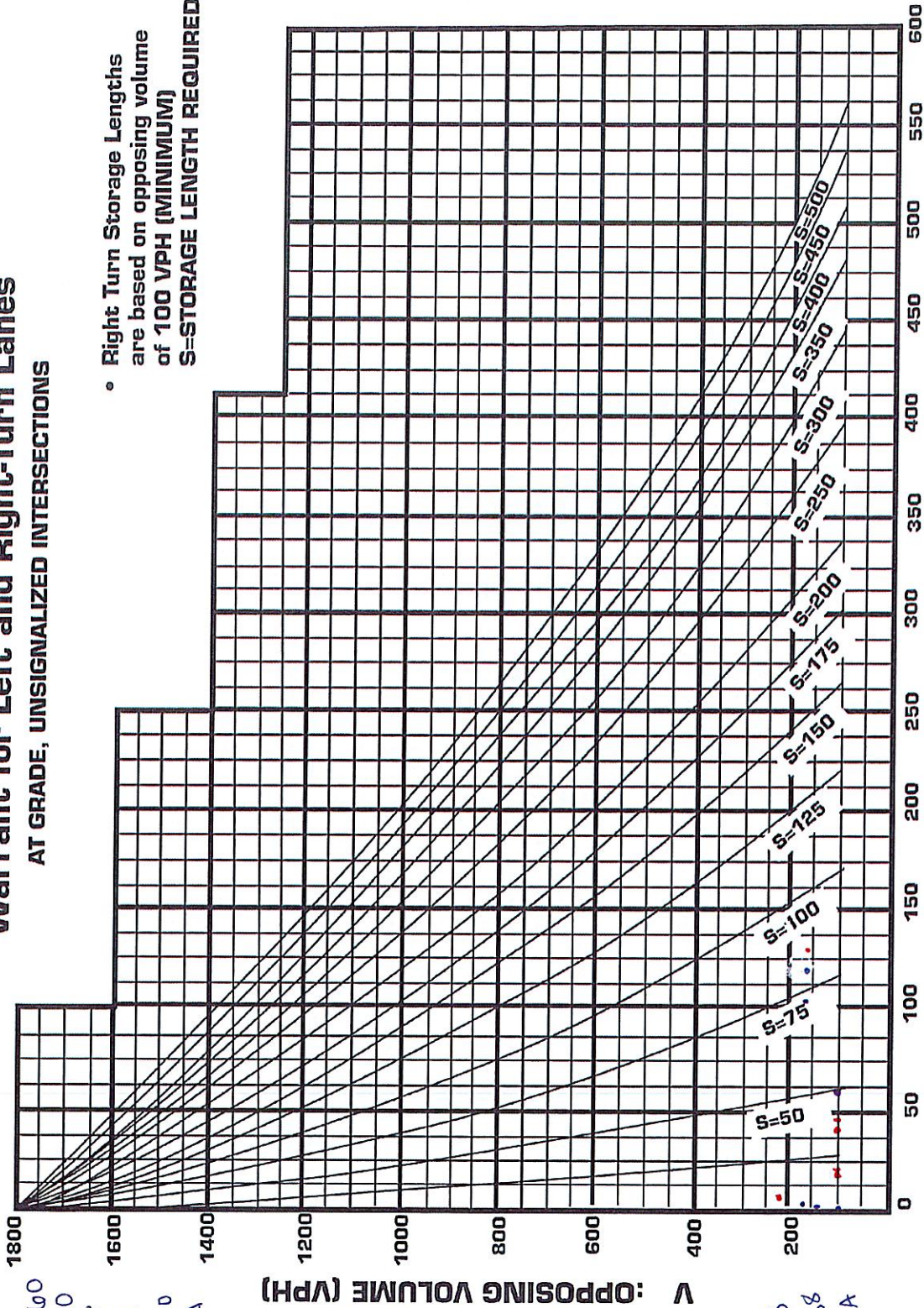
Network Summary

Network wide Queuing Penalty: 1511

Turn Lane Warrants

Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
- S=STORAGE LENGTH REQUIRED



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V_L: LEFT TURNING VOLUME (VPH)
V_R: RIGHT TURNING VOLUME (VPH)

AM PM
V_{NBR} = 43 V_{NBR} = 60
V_O = 100 V_O = 100
S = 50' S = 50'
V_{SR} = 18 V_{SR} = 1
V_O = 100 V_O = 100
S = N/A S = N/A
V_{NBL} = 7 V_{NBL} = 3
V_O = 215 V_O = 145
S = N/A S = N/A
V_{SL} = 124 V_{SL} = 105
V_O = 156 V_O = 165
S = 100' S = 75'

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Build

V_{NBR} = 48 V_{NBR} = 60
V_O = 100 V_O = 100
S = 50' S = 50'
V_{SR} = 18 V_{SR} = 1
V_O = 100 V_O = 100
S = N/A S = N/A
V_{NBL} = 7 V_{NBL} = 3
V_O = 220 V_O = 158
S = N/A S = N/A

July 2003

V_{SL} = 118 V_{SL} = 134
V_O = 105 V_O = 156
S = 100' S = 100'

Stevens Mill Rd + Mt Harmony Church Rd

2022 Background

AM PM

$V_{EBR} = 306$

$V_0 = 100$

$S = 200'$

$V_{WBL} = 150$

$V_0 = 548$

$S = 150'$

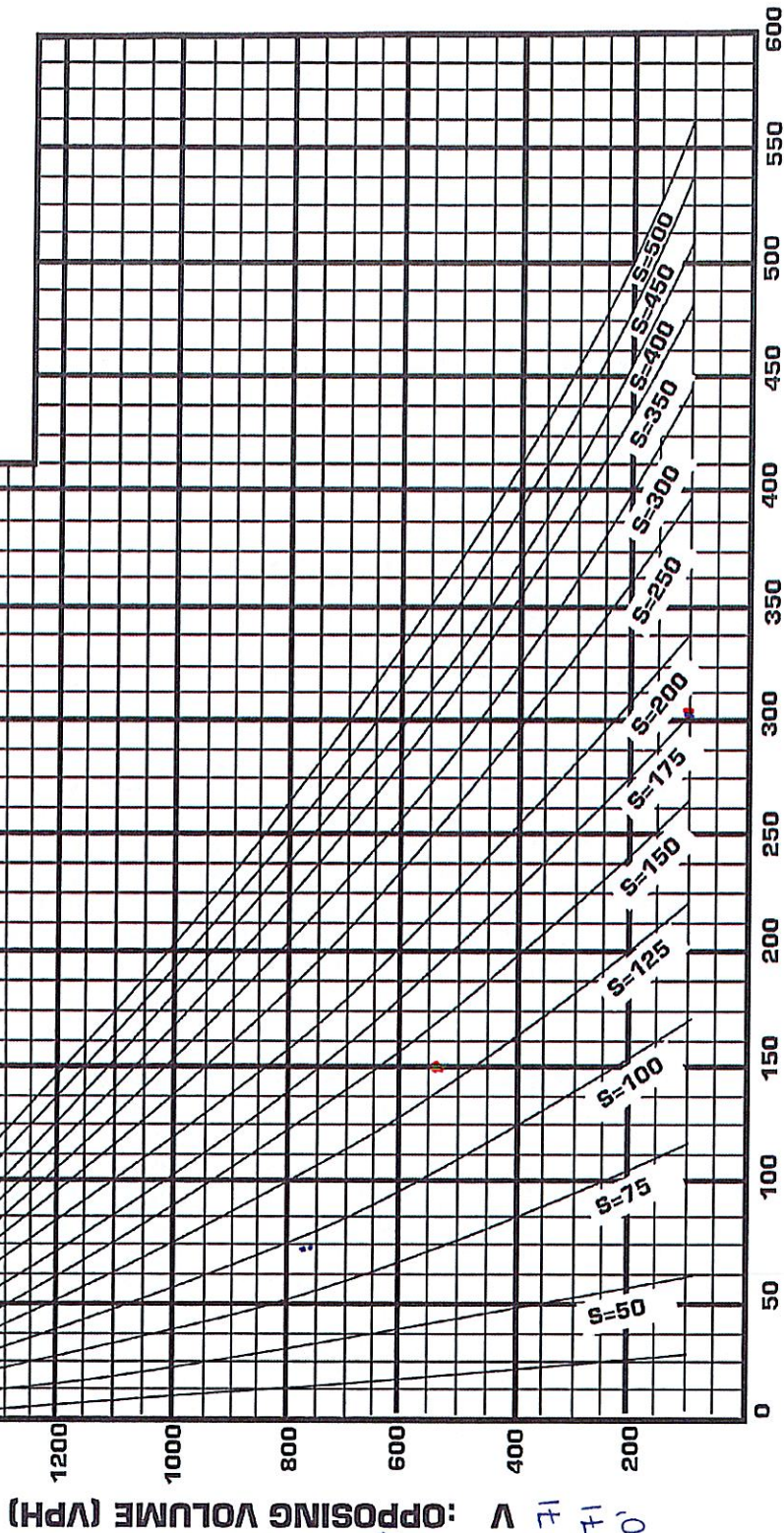
$V_{WBL} = 71$

$V_0 = 765$

$S = 100'$

Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V_L : LEFT TURNING VOLUME (VPH)
 V_R : RIGHT TURNING VOLUME (VPH)

Build

$V_{EBR} = 310$

$V_0 = 100$

$S = 200'$

$V_{WBL} = 150$

$V_0 = 556$

$S = 150'$

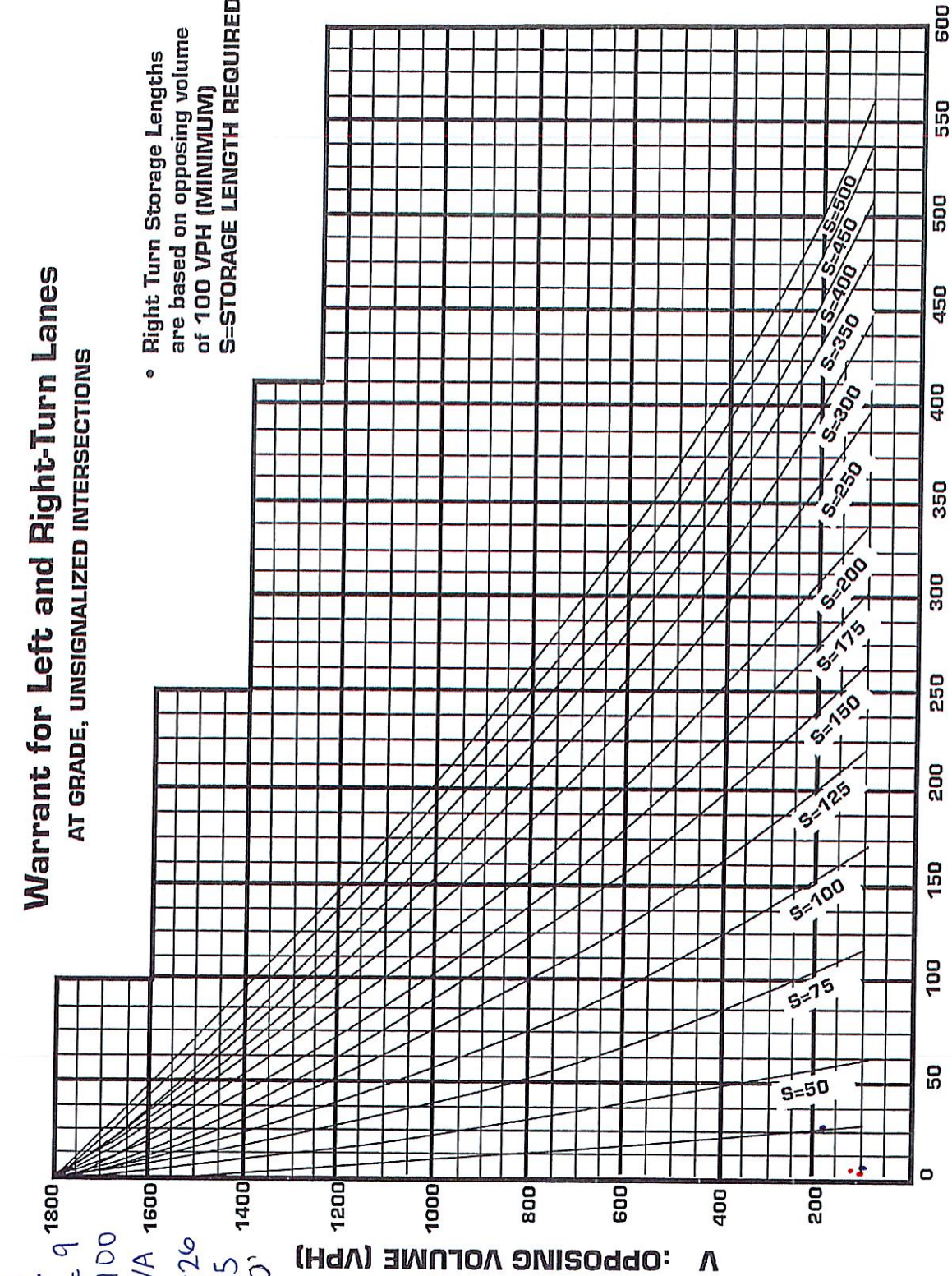
$V_{WBL} = 71$

$V_0 = 771$

$S = 100'$

Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V_L : LEFT TURNING VOLUME (VPH)
 V_R : RIGHT TURNING VOLUME (VPH)

AM

$V_{EBL} = 2$

$V_0 = 100$

$S = N/A$

$V_{WBL} = 16$

$V_0 = 132$

$S = N/A$

PM

$V_{EBL} = 4$

$V_0 = 100$

$S = N/A$

$V_{WBL} = 49$

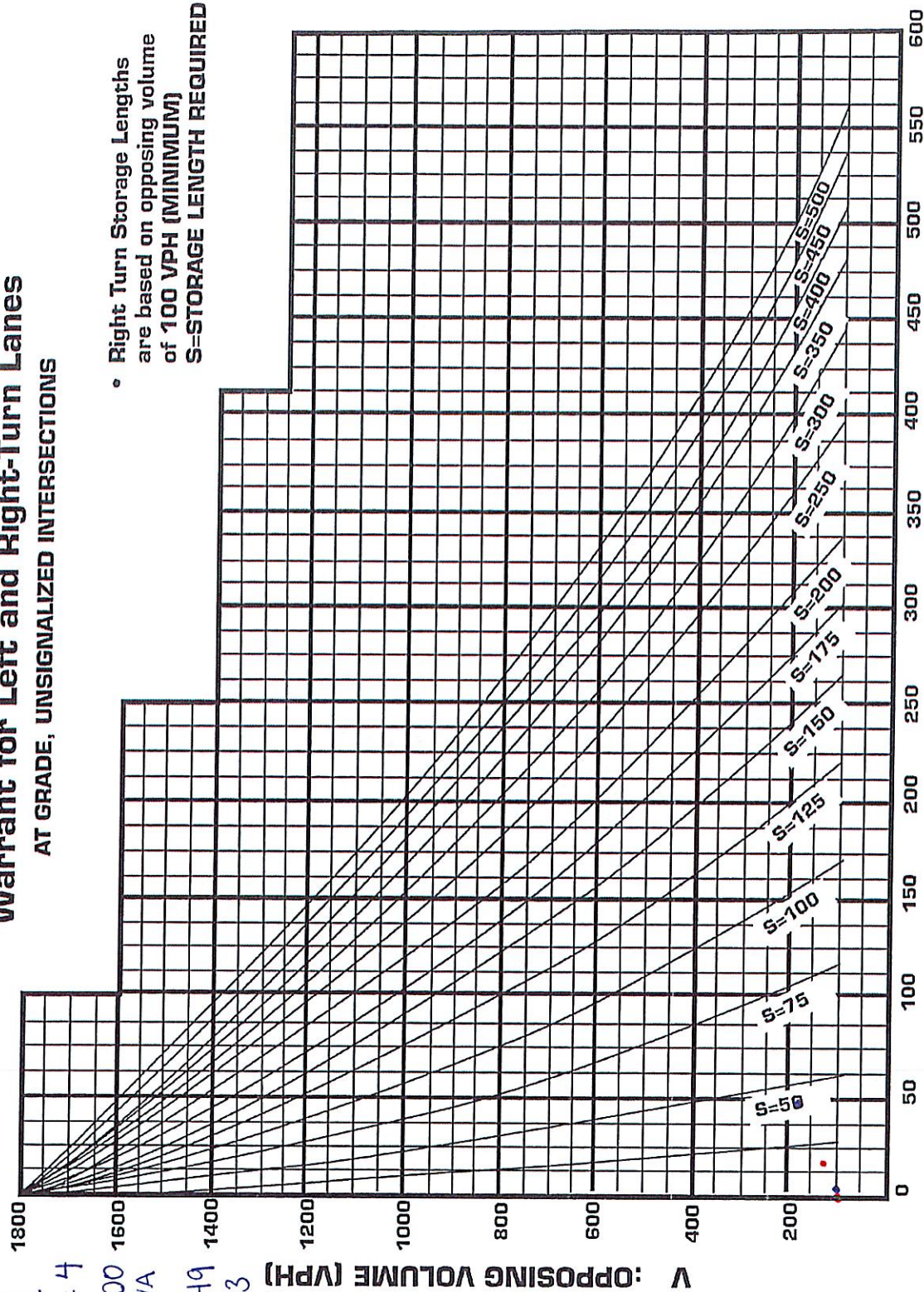
$V_0 = 193$

$S = 50'$

Warrant for Left and Right-Turn Lanes

AT GRADE, UNSIGNALIZED INTERSECTIONS

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
- S=STORAGE LENGTH REQUIRED



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V_L: LEFT TURNING VOLUME (VPH)
V_R: RIGHT TURNING VOLUME (VPH)

AM

$V_{NB\>R} = 0$
 $V_0 = 100$
 $S = N/A$

$V_{SBL} = 12$
 $V_0 = 0$
 $S = N/A$

PM

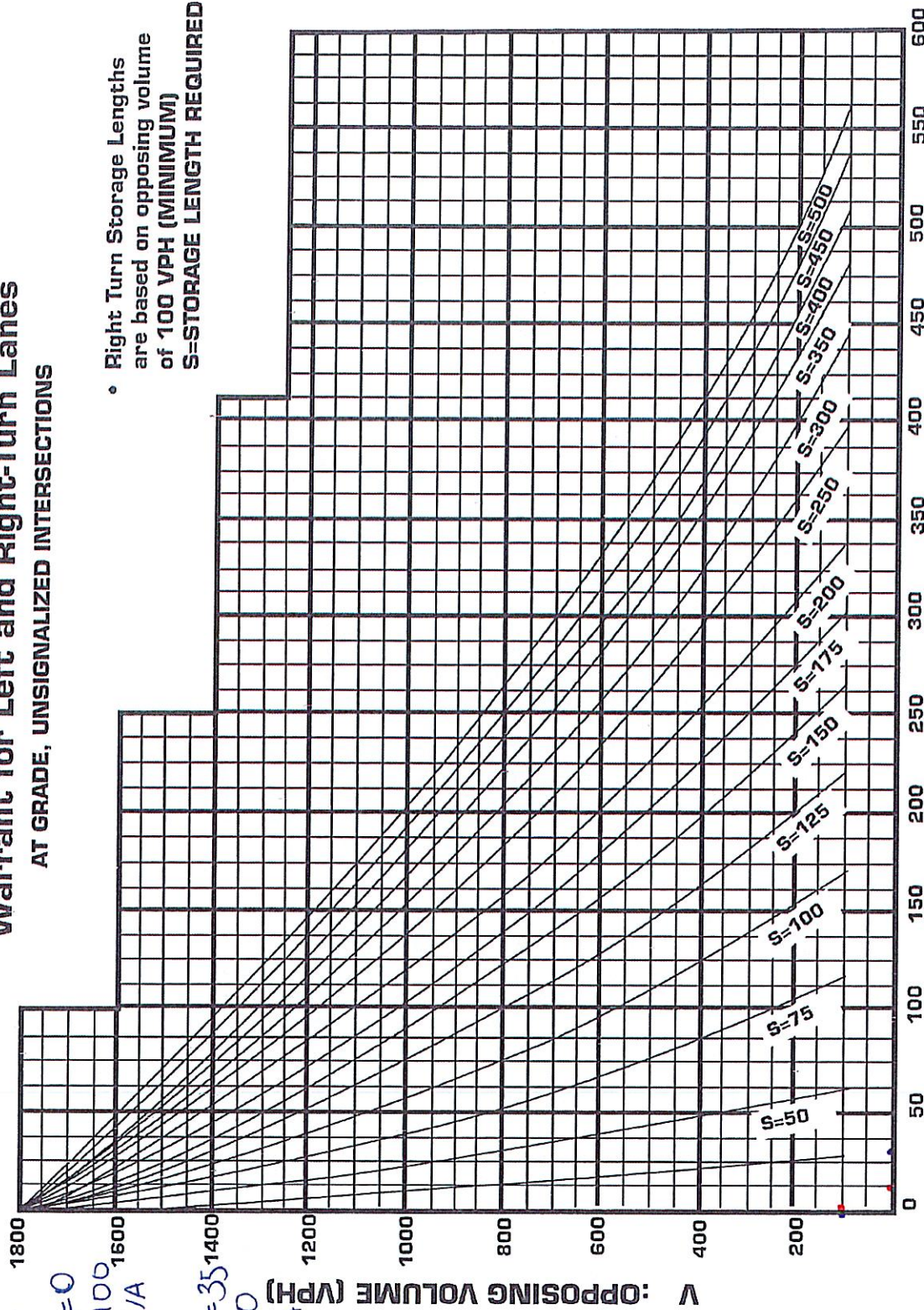
$V_{NB\>R} = 0$
 $V_0 = 100$
 $S = N/A$

$V_{SBL} = 35$
 $V_0 = 0$
 $S = N/A$

Warrant for Left and Right-Turn Lanes

AT GRADE, UNSIGNALIZED INTERSECTIONS

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

2022

Build

AM

$V_{SBR} = 18$

$V_0 = 100$

$S = N/A$

$V_{NBL} = 0$

$V_0 = 18$

$S = N/A$

PM

$V_{SBR} = 53$

$V_0 = 100$

$S = 50'$

$V_{NBL} = 0$

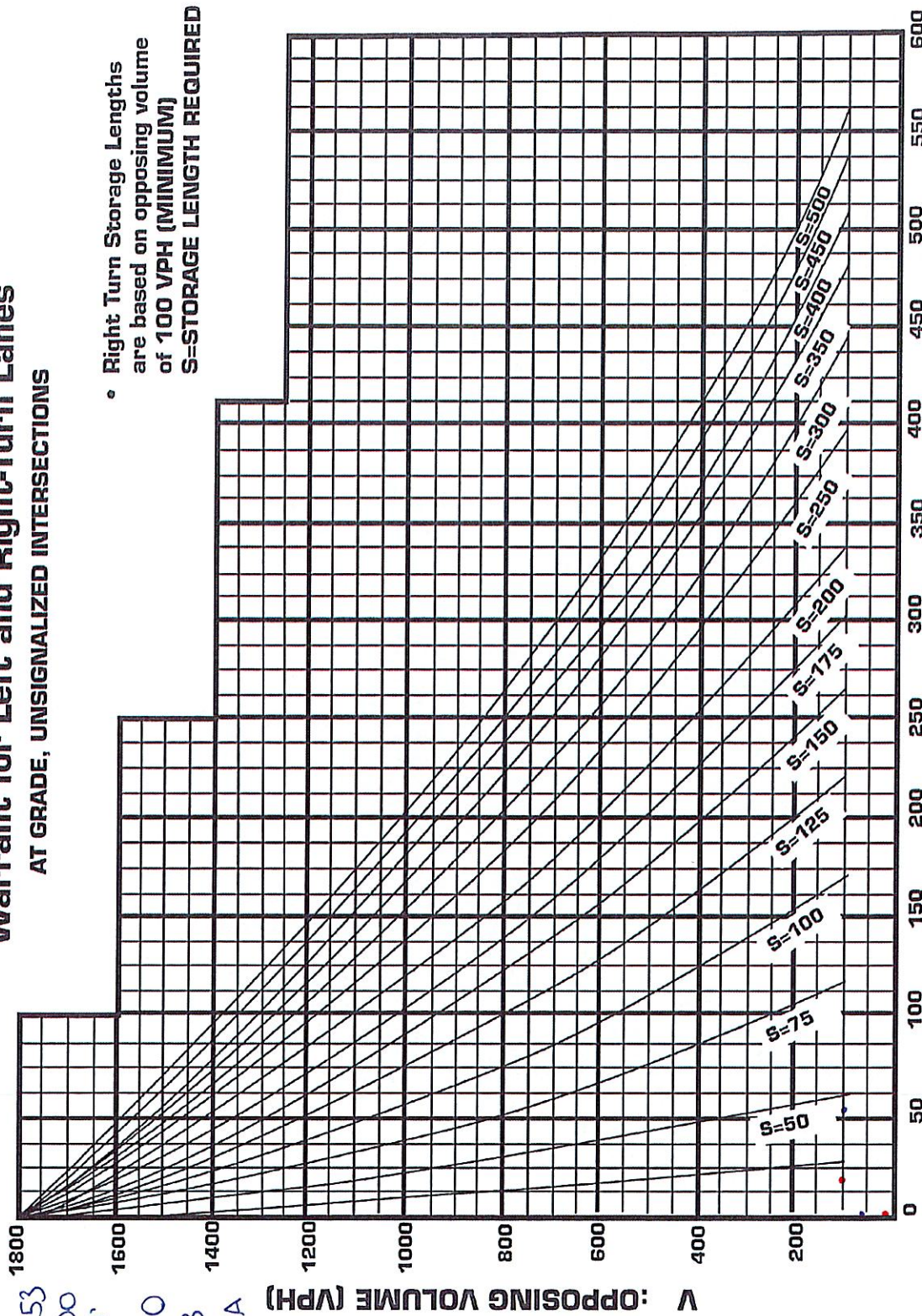
$V_0 = 53$

$S = N/A$

Warrant for Left and Right-Turn Lanes

AT GRADE, UNSIGNALIZED INTERSECTIONS

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
 $S = \text{STORAGE LENGTH REQUIRED}$



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V_L : LEFT TURNING VOLUME (VPH)
 V_R : RIGHT TURNING VOLUME (VPH)

Pedestrian LOS Worksheets

Stallings Road and Stevens Mill Road						
PM PEAK HOUR						
		Crossing NB Approach	Crossing SB Approach	Crossing EB Approach	Crossing WB Approach	
Major Street (Free Flow)		Y	Y	Y	Y	Y
Crosswalk Length (ft)	L _c	44	35	48	48	72
Walking Speed (ft/sec)	S _w	3.5	3.5	3.5	3.5	3.5
Start Up Time	t ₀	3	3	3	3	3
Crosswalk Headway	h _c	15.57	18.71	16.14	16.14	23.57
3 Stage Crossing (Median = Y or N)		N	N	N	N	N
Leading Vehicles (Spillage = Y or N)		N	N	N	N	N
2019 Existing Traffic						
Probability of Blocked Lane	P _b	45%	52%	34%		45%
Probability of Delayed Crossing	P _d	75%	77%	56%		75%
Average Gap Delay	d _g	14.66	23.41	9.00		22.31
Non-zero Delay	d _{np}	21.02	30.42	15.55		31.59
2022 Background Traffic						
Probability of Blocked Lane	P _b	50%	56%	37%		49%
Probability of Delayed Crossing	P _d	75%	81%	60%		74%
Average Gap Delay	d _g	17.90	29.09	10.33		26.09
Non-zero Delay	d _{np}	23.87	36.07	17.13		35.28
2022 Buildout Total						
Probability of Blocked Lane	P _b	50%	56%	39%		51%
Probability of Delayed Crossing	P _d	75%	81%	63%		76%
Average Gap Delay	d _g	17.90	29.09	11.31		28.55
Non-zero Delay	d _{np}	23.87	36.07	18.01		36.10
2027 Buildout Total						
Probability of Blocked Lane	P _b	50%	62%	44%		57%
Probability of Delayed Crossing	P _d	81%	86%	69%		82%
Average Gap Delay	d _g	25.54	39.32	14.28		38.04
Non-zero Delay	d _{np}	29.19	45.96	20.80		46.67
2034 Buildout Total - Phase 1 Alt 2						
Probability of Blocked Lane	P _b	50%	60%	39%		51%
Probability of Delayed Crossing	P _d	81%	86%	69%		82%
Average Gap Delay	d _g	20.88	34.43	11.38		29.16
Non-zero Delay	d _{np}	25.89	40.28	16.58		35.77
2034 Buildout Total - Phase 1 Alt 3						
Probability of Blocked Lane	P _b	50%	60%	39%		51%
Probability of Delayed Crossing	P _d	81%	86%	69%		82%
Average Gap Delay	d _g	20.88	34.43	11.38		29.16
Non-zero Delay	d _{np}	25.89	40.28	16.58		35.77
2034 Buildout Total - Phase 1 Alt 4						
Probability of Blocked Lane	P _b	50%	60%	39%		51%
Probability of Delayed Crossing	P _d	81%	86%	69%		82%
Average Gap Delay	d _g	20.88	34.43	11.38		29.16
Non-zero Delay	d _{np}	25.89	40.28	16.58		35.77
2021 Buildout Total - Phase 1 Alt 1						
Probability of Blocked Lane	P _b	49%	55%	36%		48%
Probability of Delayed Crossing	P _d	74%	80%	59%		73%
Average Gap Delay	d _g	17.12	27.71	9.86		24.72
Non-zero Delay	d _{np}	23.14	34.75	16.70		33.88
2021 Buildout Total - Phase 1 Alt 2						
Probability of Blocked Lane	P _b	49%	55%	36%		48%
Probability of Delayed Crossing	P _d	74%	80%	59%		73%
Average Gap Delay	d _g	17.12	27.71	9.86		24.72
Non-zero Delay	d _{np}	23.14	34.75	16.70		33.88
2021 Buildout Total - Phase 1 Alt 3						
Probability of Blocked Lane	P _b	49%	55%	36%		48%
Probability of Delayed Crossing	P _d	74%	80%	59%		73%
Average Gap Delay	d _g	17.12	27.71	9.86		24.72
Non-zero Delay	d _{np}	23.14	34.75	16.70		33.88
2021 Buildout Total - Phase 1 Alt 4						
Probability of Blocked Lane	P _b	49%	55%	36%		48%
Probability of Delayed Crossing	P _d	74%	80%	59%		73%
Average Gap Delay	d _g	17.12	27.71	9.86		24.72
Non-zero Delay	d _{np}	23.14	34.75	16.70		33.88
2029 Buildout Total - Phase 3 Alt 1						
Probability of Blocked Lane	P _b	60%	66%	44%		57%
Probability of Delayed Crossing	P _d	74%	80%	59%		73%
Average Gap Delay	d _g	28.48	45.56	14.52		38.82
Non-zero Delay	d _{np}	35.46	60.89	24.59		53.21
2029 Buildout Total - Phase 3 Alt 2						
Probability of Blocked Lane	P _b	60%	66%	44%		57%
Probability of Delayed Crossing	P _d	81%	86%	69%		82%
Average Gap Delay	d _g	28.48	45.56	14.52		38.82
Non-zero Delay	d _{np}	35.29	56.76	21.15		47.63
2029 Buildout Total - Phase 3 Alt 3						
Probability of Blocked Lane	P _b	60%	66%	44%		57%
Probability of Delayed Crossing	P _d	81%	86%	69%		82%
Average Gap Delay	d _g	28.48	45.56	14.52		38.82
Non-zero Delay	d _{np}	35.29	56.76	21.15		47.63
2029 Buildout Total - Phase 3 Alt 4						
Probability of Blocked Lane	P _b	60%	66%	44%		57%
Probability of Delayed Crossing	P _d	81%	86%	69%		82%
Average Gap Delay	d _g	28.48	45.56	14.52		38.82
Non-zero Delay	d _{np}	35.29	56.76	21.15		47.63
2034 Buildout Total - Phase 3 Alt 1						
Probability of Blocked Lane	P _b	66%	72%	50%		64%
Probability of Delayed Crossing	P _d	88%	92%	75%		87%
Average Gap Delay	d _g	38.68	69.03	18.87		53.22
Non-zero Delay	d _{np}	43.96	74.90	25.16		61.14
2034 Buildout Total - Phase 3 Alt 2						
Probability of Blocked Lane	P _b	66%	72%	50%		64%
Probability of Delayed Crossing	P _d	88%	92%	75%		87%
Average Gap Delay	d _g	38.68	69.03	18.87		53.22
Non-zero Delay	d _{np}	43.96	74.90	25.16		61.14
2034 Buildout Total - Phase 3 Alt 3						
Probability of Blocked Lane	P _b	66%	72%	50%		64%
Probability of Delayed Crossing	P _d	88%	92%	75%		87%
Average Gap Delay	d _g	38.68	69.03	18.87		53.22
Non-zero Delay	d _{np}	43.96	74.90	25.16		61.14
2034 Buildout Total - Phase 3 Alt 4						
Probability of Blocked Lane	P _b	66%	72%	50%		64%
Probability of Delayed Crossing	P _d	88%	92%	75%		87%
Average Gap Delay	d _g	38.68	69.03	18.87		53.22
Non-zero Delay	d _{np}	43.96	74.90	25.16		61.14
2021 Background Traffic						
Probability of Blocked Lane	P _b	45%	54%	36%		48%
Probability of Delayed Crossing	P _d	73%	79%	59%		73%
Average Gap Delay	d _g	16.27	26.72	9.86		24.72
Non-zero Delay	d _{np}	33.90	48.56	27.39		51.50
2029 Background Traffic						
Probability of Blocked Lane	P _b	57%	64%	44%		57%
Probability of Delayed Crossing	P _d	82%	87%	69%		82%
Average Gap Delay	d _g	25.41	42.78	14.52		38.82
Non-zero Delay	d _{np}	44.58	68.84	33.00		68.11
2034 Background Traffic						
Probability of Blocked Lane	P _b	64%	70%	50%		64%
Probability of Delayed Crossing	P _d	87%	91%	75%		87%

		2019 Existing Traffic				2022 Background Traffic				2022 Buildout Total				2027 Buildout Total				2024 Buildout Total - Phase 1 Alt 2				2024 Buildout Total - Phase 1 Alt 3				2024 Buildout Total - Phase 1 Alt 4				2021 Background Traffic			
		NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB				
Volume	1 Stage	279	279	185	185	318	318	205	205	318	318	219	219	376	376	258	258	350	350	220	220	350	350	220	220	350	350	220	220				
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Conflicting w/ flow rate (veh/sec)	1 Stage	0.08	0.08	0.05	0.05	0.09	0.09	0.06	0.06	0.09	0.09	0.06	0.06	0.10	0.10	0.07	0.07	0.10	0.10	0.06	0.06	0.10	0.10	0.06	0.06	0.10	0.10	0.06	0.06				
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
No. of lanes crossed	2 Stage	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				

		2021 Buildout Total - Phase 1 Alt 1				2021 Buildout Total - Phase 1 Alt 2				2021 Buildout Total - Phase 1 Alt 3				2021 Buildout Total - Phase 1 Alt 4				2029 Buildout Total - Phase 3 Alt 1				2029 Buildout Total - Phase 3 Alt 2				2029 Buildout Total - Phase 3 Alt 3				2029 Buildout Total - Phase 3 Alt 4			
		NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB				
Volume	1 Stage	309	309	198	198	308	308	198	198	308	308	198	198	308	308	198	198	419	419	261	261	419	419	261	261	419	419	261	261				
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Conflicting w/ flow rate (veh/sec)	1 Stage	0.09	0.09	0.06	0.06	0.09	0.09	0.06	0.06	0.09	0.09	0.06	0.06	0.09	0.09	0.06	0.06	0.12	0.12	0.07	0.07	0.12	0.12	0.07	0.07	0.12	0.12	0.07	0.07				
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
No. of lanes crossed	2 Stage	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				

Build +5		2034 Buildout Total - Phase 3 Alt 1				2034 Buildout Total - Phase 3 Alt 2				2034 Buildout Total - Phase 3 Alt 3				2034 Buildout Total - Phase 3 Alt 4				2029 Background Traffic				2029 Background Traffic with Superstreet (Alt 1 & 3)				2034 Background Traffic				2034 Background Traffic with Superstreet (Alt 1 & 3)			
		NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB				
Volume	1 Stage	494	494	310	310	494	494	310	310	494	494	310	310	494	494	310	310	393	393	261	261	393	393	261	261	468	468	310	310				
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Conflicting w/ flow rate (veh/sec)	1 Stage	0.14	0.14	0.09	0.09	0.14	0.14	0.09	0.09	0.14	0.14	0.09	0.09	0.14	0.14	0.09	0.09	0.11	0.11	0.07	0.07	0.11	0.11	0.07	0.07	0.13	0.13	0.09	0.09				
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
No. of lanes crossed	2 Stage	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				

LOS	Control Delay (seconds)	Comments	From HCM 6
A	5	Usually no conflicting traffic	
B	10	Occasionally some delay due to conflicting traffic	
C	20	Delay noticeable to pedestrians, but not inconveniencing	
D	30	Delay noticeable and irritating, increased likelihood of risk taking	
E	40	Delay approaches tolerance level, risk taking behavior likely	
F	>45	Delay exceeds tolerance level, high likelihood of pedestrian risk taking	

Results					
2019 Existing Traffic	Delay	14.7	23.4	9.9	22.3
	LOS	C	D	B	D
2022 Background Traffic					
	Delay	17.9	29.1	18.3	26.1
	LOS	C	D	C	D
2022 Buildout Total					
	Delay	17.9	29.1	11.3	29.9
	LOS	C	D	C	D
2027 Buildout Total					
	Delay	23.5	39.3	14.3	38.0
	LOS	D	E	C	E
2024 Buildout Total - Phase 1 Alt 2					
	Delay	20.9	34.5	11.4	29.2
	LOS	D	E	C	D
2024 Buildout Total - Phase 1 Alt 3					
	Delay	20.9	34.5	11.4	29.2
	LOS	D	E	C	D
2024 Buildout Total - Phase 1 Alt 4					
	Delay	20.9	34.5	11.4	29.2
	LOS	D	E	C	D
2021 Buildout Total - Phase 1 Alt 1					
	Delay	17.1	27.7	9.9	24.7
	LOS	C	D	B	D
2021 Buildout Total - Phase 1 Alt 2					
	Delay	17.0	27.6	9.9	24.7
	LOS	C	D	B	D
2021 Buildout Total - Phase 1 Alt 3					
	Delay	17.0	27.6	9.9	24.7
	LOS	C	D	B	D
2021 Buildout Total - Phase 1 Alt 4					
	Delay	17.0	27.6	9.9	24.7
	LOS	C	D	B	D
2029 Buildout Total - Phase 3 Alt 1					
	Delay	28.5	48.6	14.5	38.8
	LOS	D	F	C	E
2029 Buildout Total - Phase 3 Alt 2					
	Delay	28.5	48.6	14.5	38.8
	LOS	D	F	C	E
2029 Buildout Total - Phase 3 Alt 3					
	Delay	28.5	48.6	14.5	38.8
	LOS	D	F	C	E
2029 Buildout Total - Phase 3 Alt 4					
	Delay	28.5	48.6	14.5	38.8
	LOS	D	F	C	E
2034 Buildout Total - Phase 3 Alt 1					
	Delay	38.9	69.0	18.9	53.2
	LOS	E	F	C	F
2034 Buildout Total - Phase 3 Alt 2					
	Delay	38.9	69.0	18.9	53.2
	LOS	E	F	C	F
2034 Buildout Total - Phase 3 Alt 3					
	Delay	38.9	69.0	18.9	53.2
	LOS	E	F	C	F
2034 Buildout Total - Phase 3 Alt 4					
	Delay	38.9	69.0	18.9	53.2
	LOS	E	F	C	F
2021 Background Traffic					
	Delay	16.3	26.2	9.9	24.7
	LOS	C	D	B	D
2029 Background Traffic					
	Delay	25.4	42.8	14.5	38.8
	LOS	D	E	C	E
2029 Background Traffic with Superstreet (Alt 1 & 3)					
	Delay	25.4	42.8	14.5	38.8
	LOS	D	E	C	E
2034 Background Traffic					
	Delay	35.0	61.2	18.9	53.2
	LOS	E	F	C	F
2034 Background Traffic with Superstreet (Alt 1 & 3)					
	Delay	35.0	61.2	18.9	53.2
	LOS	E	F	C	F

M Harmony Church Rd and Stevens Mt Rd PM PEAK HOUR					
	Crossing NB Approach	Crossing SB Approach	Crossing EB Approach	Crossing WB Approach	
Major Street (Free Flow)	Y	Y	N	N	
Crosswalk Length (ft)	66	90	70	90	
Initial Speed (ft/sec)	3.5	3.5	3.5	3.5	
Start Up Time	1.5	3	3	3	
Critical Headway	1.5	21.57	25.66	23.00	20.14
2 Stage Crossing? (Median L or N)	N	N	N	N	N
Yielding Vehicles? (Signal = Y or N)	N	N	N	N	N
2019 Existing Traffic					
Probability of Blocked Lane	P _b	32%	31%	-	-
Probability of Delayed Crossing	P _d	54%	62%	-	-
Average Gap Delay	d _g	10.75	16.37	-	-
Non-zero Delay	d _{np}	20.00	27.14	-	-
2022 Background Traffic					
Probability of Blocked Lane	P _b	34%	42%	-	-
Probability of Delayed Crossing	P _d	56%	64%	-	-
Average Gap Delay	d _g	12.33	18.90	-	-
Non-zero Delay	d _{np}	21.85	29.53	-	-
2022 Buildout Total					
Probability of Blocked Lane	P _b	34%	42%	-	-
Probability of Delayed Crossing	P _d	56%	64%	-	-
Average Gap Delay	d _g	12.33	18.90	-	-
Non-zero Delay	d _{np}	21.85	29.53	-	-
2027 Background Traffic					
Probability of Blocked Lane	P _b	61%	70%	-	-
Probability of Delayed Crossing	P _d	61%	70%	-	-
Average Gap Delay	d _g	15.51	24.12	-	-
Non-zero Delay	d _{np}	24.70	34.58	-	-
2034 Buildout Total - Phase 1 Alt 2					
Probability of Blocked Lane	P _b	65%	72%	-	-
Probability of Delayed Crossing	P _d	65%	70%	-	-
Average Gap Delay	d _g	51.90	90.92	-	-
Non-zero Delay	d _{np}	82.66	130.35	-	-
2034 Buildout Total - Phase 1 Alt 3					
Probability of Blocked Lane	P _b	65%	72%	-	-
Probability of Delayed Crossing	P _d	65%	70%	-	-
Average Gap Delay	d _g	51.90	90.92	-	-
Non-zero Delay	d _{np}	82.66	130.35	-	-
2034 Buildout Total - Phase 1 Alt 4					
Probability of Blocked Lane	P _b	65%	72%	-	-
Probability of Delayed Crossing	P _d	65%	70%	-	-
Average Gap Delay	d _g	51.90	90.92	-	-
Non-zero Delay	d _{np}	82.66	130.35	-	-
2021 Buildout Total - Phase 1 Alt 1					
Probability of Blocked Lane	P _b	65%	67%	-	-
Probability of Delayed Crossing	P _d	64%	69%	-	-
Average Gap Delay	d _g	40.99	69.70	-	-
Non-zero Delay	d _{np}	46.60	78.22	-	-
2021 Buildout Total - Phase 1 Alt 2					
Probability of Blocked Lane	P _b	65%	67%	-	-
Probability of Delayed Crossing	P _d	64%	69%	-	-
Average Gap Delay	d _g	40.78	69.24	-	-
Non-zero Delay	d _{np}	46.51	77.70	-	-
2021 Buildout Total - Phase 1 Alt 3					
Probability of Blocked Lane	P _b	65%	67%	-	-
Probability of Delayed Crossing	P _d	64%	69%	-	-
Average Gap Delay	d _g	40.78	69.24	-	-
Non-zero Delay	d _{np}	46.51	77.70	-	-
2021 Buildout Total - Phase 1 Alt 4					
Probability of Blocked Lane	P _b	65%	67%	-	-
Probability of Delayed Crossing	P _d	64%	69%	-	-
Average Gap Delay	d _g	40.78	69.24	-	-
Non-zero Delay	d _{np}	46.51	77.70	-	-
2029 Buildout Total - Phase 3 Alt 1					
Probability of Blocked Lane	P _b	72%	78%	-	-
Probability of Delayed Crossing	P _d	64%	69%	-	-
Average Gap Delay	d _g	75.83	139.77	-	-
Non-zero Delay	d _{np}	90.04	156.85	-	-
2029 Buildout Total - Phase 3 Alt 2					
Probability of Blocked Lane	P _b	72%	78%	-	-
Probability of Delayed Crossing	P _d	63%	70%	-	-
Average Gap Delay	d _g	75.83	139.77	-	-
Non-zero Delay	d _{np}	120.45	200.39	-	-
2029 Buildout Total - Phase 3 Alt 3					
Probability of Blocked Lane	P _b	72%	78%	-	-
Probability of Delayed Crossing	P _d	63%	70%	-	-
Average Gap Delay	d _g	75.83	139.77	-	-
Non-zero Delay	d _{np}	120.45	200.39	-	-
2029 Buildout Total - Phase 3 Alt 4					
Probability of Blocked Lane	P _b	72%	78%	-	-
Probability of Delayed Crossing	P _d	63%	70%	-	-
Average Gap Delay	d _g	75.83	139.77	-	-
Non-zero Delay	d _{np}	120.45	200.39	-	-
2034 Buildout Total - Phase 3 Alt 1					
Probability of Blocked Lane	P _b	77%	83%	-	-
Probability of Delayed Crossing	P _d	95%	97%	-	-
Average Gap Delay	d _g	111.79	220.09	-	-
Non-zero Delay	d _{np}	118.03	226.64	-	-
2034 Buildout Total - Phase 3 Alt 2					
Probability of Blocked Lane	P _b	77%	83%	-	-
Probability of Delayed Crossing	P _d	95%	97%	-	-
Average Gap Delay	d _g	111.79	220.09	-	-
Non-zero Delay	d _{np}	145.18	255.17	-	-
2034 Buildout Total - Phase 3 Alt 3					
Probability of Blocked Lane	P _b	77%	83%	-	-
Probability of Delayed Crossing	P _d	95%	97%	-	-
Average Gap Delay	d _g	111.79	220.09	-	-
Non-zero Delay	d _{np}	118.03	226.64	-	-
2034 Buildout Total - Phase 3 Alt 4					
Probability of Blocked Lane	P _b	77%	83%	-	-
Probability of Delayed Crossing	P _d	95%	97%	-	-
Average Gap Delay	d _g	111.79	220.09	-	-
Non-zero Delay	d _{np}	145.18	255.17	-	-
2021 Background Traffic					
Probability of Blocked Lane	P _b	55%	66%	-	-
Probability of Delayed Crossing	P _d	63%	68%	-	-
Average Gap Delay	d _g	36.82	65.22	-	-
Non-zero Delay	d _{np}	65.46	98.82	-	-
2029 Background Traffic					
Probability of Blocked Lane	P _b	69%	76%	-	-
Probability of Delayed Crossing	P _d	90%	94%	-	-
Average Gap Delay	d _g	65.79	119.08	-	-
Non-zero Delay	d _{np}	95.35	156.68	-	-
2029 Background Traffic with Superstreet (Alt 1 & 3)					
Probability of Blocked Lane	P _b	69%	76%	-	-
Probability of Delayed Crossing	P _d	90%	94%	-	-
Average Gap Delay	d _g	65.79	119.08	-	-
Non-zero Delay	d _{np}	95.35	156.68	-	-
2034 Background Traffic					
Probability of Blocked Lane	P _b	75%	81%	-	-
Probability of Delayed Crossing	P _d	94%	96%	-	-

		2019 Existing Traffic				2022 Background Traffic				2022 Buildout Total				2027 Buildout Total				2034 Buildout Total - Phase 1 Alt 2				2034 Buildout Total - Phase 1 Alt 3				2034 Buildout Total - Phase 1 Alt 4				2021 Background Traffic			
		NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB				
Volume	1 Stage	127	127	-	-	141	141	-	-	141	141	-	-	167	167	-	-	360	360	-	-	360	360	-	-	360	360	-	-	299	299	-	-
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	1 Stage	0.04	0.04	-	-	0.04	0.04	-	-	0.04	0.04	-	-	0.05	0.05	-	-	0.10	0.10	-	-	0.10	0.10	-	-	0.10	0.10	-	-	0.08	0.08	-	-
No. of lanes crossed	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	2 Stage	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		

		2021 Buildout Total - Phase 1 Alt 1				2021 Buildout Total - Phase 1 Alt 2				2021 Buildout Total - Phase 1 Alt 3				2021 Buildout Total - Phase 1 Alt 4				2029 Buildout Total - Phase 3 Alt 1				2029 Buildout Total - Phase 3 Alt 2				2029 Buildout Total - Phase 3 Alt 3				2029 Buildout Total - Phase 3 Alt 4			
		NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB
Volume	1 Stage	309	309	-	-	308	308	-	-	308	308	-	-	308	308	-	-	419	419	-	-	419	419	-	-	419	419	-	-	419	419	-	-
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conflicting veh flow rate (veh/h/s)	1 Stage	0.09	0.09	-	-	0.09	0.09	-	-	0.09	0.09	-	-	0.09	0.09	-	-	0.12	0.12	-	-	0.12	0.12	-	-	0.12	0.12	-	-	0.12	0.12	-	-
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of lanes crossed		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

		2034 Buildout Total - Phase 3 Alt 1				2034 Buildout Total - Phase 3 Alt 2				2034 Buildout Total - Phase 3 Alt 3				2034 Buildout Total - Phase 3 Alt 4				2029 Background Traffic				2029 Background Traffic with Superstreet (Alt 1 & 3)				2034 Background Traffic				2034 Background Traffic with Superstreet (Alt 1 & 3)				
		NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	
Volume	1 Stage	494	494	-	-	494	494	-	-	494	494	-	-	494	494	-	-	393	393	-	-	393	393	-	-	468	468	-	-	468	468	-	-	
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Conflicting veh flow rate (veh/h/s)	1 Stage	0.14	0.14	-	-	0.14	0.14	-	-	0.14	0.14	-	-	0.14	0.14	-	-	0.11	0.11	-	-	0.11	0.11	-	-	0.13	0.13	-	-	0.13	0.13	-	-	
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
No. of lanes crossed		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

LOS	Control Delay (seconds)	Comments
A	5	Usually no conflicting traffic
B	10	Occasional, some delay due to conflicting traffic
C	20	Delay noticeable to pedestrians, but not inconveniencing
D	30	Delay noticeable and irritating, increased likelihood of risk taking
E	45	Delay approaches tolerance level, risk-taking behavior likely
F	>45	Delay exceeds tolerance level, high likelihood of pedestrian risk taking

Results					
2019 Existing Traffic	Delay	19.8	16.4	-	-
	LOS	C	C	-	-
2022 Background Traffic	Delay	12.3	18.9	-	-
	LOS	C	C	-	-
2022 Buildout Total	Delay	12.3	18.9	-	-
	LOS	C	C	-	-
2027 Buildout Total	Delay	15.5	24.1	-	-
	LOS	C	D	-	-
2024 Buildout Total - Phase 1 Alt 2	Delay	51.9	90.9	-	-
	LOS	F	F	-	-
2024 Buildout Total - Phase 1 Alt 3	Delay	51.9	90.9	-	-
	LOS	F	F	-	-
2024 Buildout Total - Phase 1 Alt 4	Delay	51.9	90.9	-	-
	LOS	F	F	-	-
2024 Buildout Total - Phase 1 Alt 1	Delay	41.0	69.7	-	-
	LOS	E	F	-	-
2021 Buildout Total - Phase 1 Alt 2	Delay	40.8	69.2	-	-
	LOS	E	F	-	-
2021 Buildout Total - Phase 1 Alt 3	Delay	40.8	69.2	-	-
	LOS	E	F	-	-
2021 Buildout Total - Phase 1 Alt 4	Delay	40.8	69.2	-	-
	LOS	E	F	-	-
2029 Buildout Total - Phase 3 Alt 1	Delay	75.6	139.8	-	-
	LOS	F	F	-	-
2029 Buildout Total - Phase 3 Alt 2	Delay	75.6	139.8	-	-
	LOS	F	F	-	-
2029 Buildout Total - Phase 3 Alt 3	Delay	75.6	139.8	-	-
	LOS	F	F	-	-
2029 Buildout Total - Phase 3 Alt 4	Delay	75.6	139.8	-	-
	LOS	F	F	-	-
2034 Buildout Total - Phase 3 Alt 1	Delay	111.8	220.1	-	-
	LOS	F	F	-	-
2034 Buildout Total - Phase 3 Alt 2	Delay	111.8	220.1	-	-
	LOS	F	F	-	-
2034 Buildout Total - Phase 3 Alt 3	Delay	111.8	220.1	-	-
	LOS	F	F	-	-
2034 Buildout Total - Phase 3 Alt 4	Delay	111.8	220.1	-	-
	LOS	F	F	-	-
2021 Background Traffic	Delay	53.8	119.1	-	-
	LOS	F	F	-	-
2029 Background Traffic	Delay	53.8	119.1	-	-
	LOS	F	F	-	-
2029 Background Traffic with Superspent (Alt 1 & 2)	Delay	97.8	185.2	-	-
	LOS	F	F	-	-
2034 Background Traffic	Delay	97.8	185.2	-	-
	LOS	F	F	-	-

		2019 Existing Traffic				2022 Background Traffic				2022 Buildout Total				2027 Buildout Total				2034 Buildout Total - Phase 1 Alt 2				2034 Buildout Total - Phase 1 Alt 3				2034 Buildout Total - Phase 1 Alt 4				2029 Background Traffic			
		NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB
Volume	1 Stage	-	-	622	622	-	-	698	698	-	-	705	705	-	-	834	834	-	-	220	220	-	-	220	220	-	-	220	220	-	-	198	198
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Conflicting veh flow rate (veh/sec) (v)	1 Stage	-	-	0.17	0.17	-	-	0.19	0.19	-	-	0.20	0.20	-	-	0.23	0.23	-	-	0.06	0.06	-	-	0.06	0.06	-	-	0.06	0.06	-	-	0.06	0.06
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
No. of lanes crossed		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

		2021 Buildout Total - Phase 1 Alt 1				2021 Buildout Total - Phase 1 Alt 2				2021 Buildout Total - Phase 1 Alt 3				2021 Buildout Total - Phase 1 Alt 4				2029 Buildout Total - Phase 3 Alt 1				2029 Buildout Total - Phase 3 Alt 2				2029 Buildout Total - Phase 3 Alt 3				2029 Buildout Total - Phase 3 Alt 4			
		NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB
Volume	1 Stage	-	-	198	198	-	-	198	198	-	-	198	198	-	-	198	198	-	-	261	261	-	-	261	261	-	-	261	261	-	-	261	261
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Conflicting veh flow rate (veh/sec) (v)	1 Stage	-	-	0.06	0.06	-	-	0.06	0.06	-	-	0.06	0.06	-	-	0.06	0.06	-	-	0.07	0.07	-	-	0.07	0.07	-	-	0.07	0.07	-	-	0.07	0.07
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
No. of lanes crossed		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

		2021 Buildout Total - Phase 3 Alt 1				2021 Buildout Total - Phase 3 Alt 2				2021 Buildout Total - Phase 3 Alt 3				2021 Buildout Total - Phase 3 Alt 4				2029 Buildout Total - Phase 3 Alt 1				2029 Buildout Total - Phase 3 Alt 2				2029 Buildout Total - Phase 3 Alt 3				2029 Buildout Total - Phase 3 Alt 4			
		NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB
Volume	1 Stage	-	-	310	310	-	-	310	310	-	-	310	310	-	-	310	310	-	-	261	261	-	-	261	261	-	-	261	261	-	-	310	310
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Conflicting veh flow rate (veh/sec) (v)	1 Stage	-	-	0.09	0.09	-	-	0.09	0.09	-	-	0.09	0.09	-	-	0.09	0.09	-	-	0.07	0.07	-	-	0.07	0.07	-	-	0.07	0.07	-	-	0.09	0.09
	2 Stage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
No. of lanes crossed		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

LOS	Control Delay (sec/veh)	Comments	From HCM 6
A	-	Usually no conflicting traffic	
B	10	Occasionally some delay due to conflicting traffic	
C	20	Delay noticeable to pedestrians, but not inconveniencing	
D	30	Delay noticeable and irritating, increased likelihood of risk taking	
E	45	Delay approaches tolerance level, risk-taking behavior likely	
F	>45	Delay exceeds tolerance level, high likelihood of pedestrian risk taking	

2019 Existing Traffic	Delay	-	-	17.5	17.5
	LOS	-	-	C	C
2022 Background Traffic	Delay	-	-	21.6	21.6
	LOS	-	-	B	D
2022 Buildout Total	Delay	-	-	22.0	22.0
	LOS	-	-	D	D
2027 Buildout Total	Delay	-	-	30.8	30.8
	LOS	-	-	E	E
2034 Buildout Total - Phase 1 Alt 2	Delay	-	-	3.9	3.9
	LOS	-	-	A	A
2034 Buildout Total - Phase 1 Alt 3	Delay	-	-	3.9	3.9
	LOS	-	-	A	A
2034 Buildout Total - Phase 1 Alt 4	Delay	-	-	3.9	3.9
	LOS	-	-	A	A
2021 Buildout Total - Phase 1 Alt 1	Delay	-	-	3.4	3.4
	LOS	-	-	A	A
2021 Buildout Total - Phase 1 Alt 2	Delay	-	-	3.4	3.4
	LOS	-	-	A	A
2021 Buildout Total - Phase 1 Alt 3	Delay	-	-	3.4	3.4
	LOS	-	-	A	A
2021 Buildout Total - Phase 1 Alt 4	Delay	-	-	3.4	3.4
	LOS	-	-	A	A
2029 Buildout Total - Phase 3 Alt 1	Delay	-	-	4.8	4.8
	LOS	-	-	A	A
2029 Buildout Total - Phase 3 Alt 2	Delay	-	-	4.8	4.8
	LOS	-	-	A	A
2029 Buildout Total - Phase 3 Alt 3	Delay	-	-	4.8	4.8
	LOS	-	-	A	A
2029 Buildout Total - Phase 3 Alt 4	Delay	-	-	4.8	4.8
	LOS	-	-	A	A
2034 Buildout Total - Phase 3 Alt 1	Delay	-	-	6.1	6.1
	LOS	-	-	B	B
2034 Buildout Total - Phase 3 Alt 2	Delay	-	-	6.1	6.1
	LOS	-	-	B	B
2034 Buildout Total - Phase 3 Alt 3	Delay	-	-	6.1	6.1
	LOS	-	-	B	B
2034 Buildout Total - Phase 3 Alt 4	Delay	-	-	6.1	6.1
	LOS	-	-	B	B
2021 Background Traffic	Delay	-	-	3.4	3.4
	LOS	-	-	A	A
2029 Background Traffic	Delay	-	-	4.8	4.8
	LOS	-	-	A	A
2029 Background Traffic with Superstreet (Alt 1 & 3)	Delay	-	-	4.8	4.8
	LOS	-	-	A	A
2034 Background Traffic	Delay	-	-	6.1	6.1
	LOS	-	-	B	B
2034 Background Traffic with Superstreet (Alt 1 & 3)	Delay	-	-	6.1	6.1
	LOS	-	-	B	B

Outgoing NB and Stevens Mill Rd AM PEAK HOUR									
	Crossing NB Approach		Crossing SB Approach		Crossing EB Approach		Crossing WB Approach		
Major Street (Free Flow)	L		R		L		R		
Crosswalk Length (ft)	28		28		28		28		
Warning Speed (mi/hr)	35		35		35		35		
Start Up Time	3		3		3		3		
Critical Highway	S		N		E		W		
2 Stage Crossing (1 Median x 1/2 N)	N		S		E		W		
2 Stage Crossing (1 Median x 1/2 S)	N		S		E		W		
2019 Existing Traffic									
Probability of Blocked Lane	P _b		-		61%		61%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		24.97		24.97		
Non-zero Delay	G _n		-		22.68		22.68		
2022 Background Traffic									
Probability of Blocked Lane	P _b		-		60%		60%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		24.97		24.97		
Non-zero Delay	G _n		-		22.68		22.68		
2027 Background Traffic									
Probability of Blocked Lane	P _b		-		60%		60%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		24.97		24.97		
Non-zero Delay	G _n		-		22.68		22.68		
2029 Background Traffic - Phase 1A 2									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 3									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 4									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 5									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 6									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 7									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 8									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 9									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 10									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 11									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 12									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 13									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 14									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 15									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 16									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 17									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 18									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 19									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 20									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 21									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 22									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 23									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 24									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 25									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 26									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 27									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 28									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 29									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 30									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 31									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 32									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 33									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 34									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 35									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 36									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 37									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 38									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 39									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 40									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 41									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 42									
Probability of Blocked Lane	P _b		-		26%		26%		
Probability of Delayed Crossing	P _d		-		80%		80%		
Average Gap Delay	G _d		-		4.28		4.28		
Non-zero Delay	G _n		-		4.94		4.94		
2034 Background Traffic - Phase 1A 43									
Probability of Blocked Lane									

Public Road 1 and Stevens Mill Rd									
AM PEAK HOUR									
	Crossing NB		Crossing SB		Crossing EB		Crossing WB		
	Approach	Approach	Approach	Approach	Approach	Approach	Approach	Approach	
Main Street (Free Flow)	N	W	N	W	N	W	N	W	
Control Length (ft)	25		25		25		25		
Starting Speed (mph)	3.5		3.5		3.5		3.5		
Start Up Time	3		3		3		3		
Control Length	10.14		10.00		10.00		10.00		
2 Stage Crossing (Median Y or N)	N		N		N		N		
Meeting Vehicles (3 Stage Y or N)	N		N		N		N		
2019 Existing Traffic									
Probability of Blocked Lane	P _B		-		41%		41%		
Probability of Delayed Crossing	P _D		-		72%		72%		
Average Gap Delay	G _g		-		16.01		16.01		
Non-zero Delay	G _z		-		22.25		22.25		
2022 Background Traffic									
Probability of Blocked Lane	P _B		-		51%		51%		
Probability of Delayed Crossing	P _D		-		76%		76%		
Average Gap Delay	G _g		-		19.14		19.14		
Non-zero Delay	G _z		-		25.19		25.19		
2027 Buildout Total									
Probability of Blocked Lane	P _B		-		51%		51%		
Probability of Delayed Crossing	P _D		-		76%		76%		
Average Gap Delay	G _g		-		19.11		19.11		
Non-zero Delay	G _z		-		25.94		25.94		
2024 Buildout Total - Phase 1 Aft 2									
Probability of Blocked Lane	P _B		-		41%		41%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		12.10		12.10		
Non-zero Delay	G _z		-		14.84		14.84		
2024 Buildout Total - Phase 1 Aft 3									
Probability of Blocked Lane	P _B		-		41%		41%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		12.10		12.10		
Non-zero Delay	G _z		-		14.84		14.84		
2024 Buildout Total - Phase 1 Aft 4									
Probability of Blocked Lane	P _B		-		41%		41%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		12.10		12.10		
Non-zero Delay	G _z		-		14.84		14.84		
2021 Buildout Total - Phase 1 Aft 1									
Probability of Blocked Lane	P _B		-		36%		36%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		10.57		10.57		
Non-zero Delay	G _z		-		17.17		17.17		
2021 Buildout Total - Phase 1 Aft 2									
Probability of Blocked Lane	P _B		-		36%		36%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		10.57		10.57		
Non-zero Delay	G _z		-		17.17		17.17		
2021 Buildout Total - Phase 1 Aft 3									
Probability of Blocked Lane	P _B		-		36%		36%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		10.57		10.57		
Non-zero Delay	G _z		-		17.17		17.17		
2021 Buildout Total - Phase 1 Aft 4									
Probability of Blocked Lane	P _B		-		36%		36%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		10.57		10.57		
Non-zero Delay	G _z		-		17.17		17.17		
2029 Buildout Total - Phase 3 Aft 1									
Probability of Blocked Lane	P _B		-		46%		46%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		15.67		15.67		
Non-zero Delay	G _z		-		25.45		25.45		
2029 Buildout Total - Phase 3 Aft 2									
Probability of Blocked Lane	P _B		-		46%		46%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		15.67		15.67		
Non-zero Delay	G _z		-		25.22		25.22		
2029 Buildout Total - Phase 3 Aft 3									
Probability of Blocked Lane	P _B		-		46%		46%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		15.67		15.67		
Non-zero Delay	G _z		-		25.22		25.22		
2029 Buildout Total - Phase 3 Aft 4									
Probability of Blocked Lane	P _B		-		46%		46%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		15.67		15.67		
Non-zero Delay	G _z		-		25.22		25.22		
2024 Buildout Total - Phase 3 Aft 1									
Probability of Blocked Lane	P _B		-		52%		52%		
Probability of Delayed Crossing	P _D		-		77%		77%		
Average Gap Delay	G _g		-		20.40		20.40		
Non-zero Delay	G _z		-		28.51		28.51		
2024 Buildout Total - Phase 3 Aft 2									
Probability of Blocked Lane	P _B		-		52%		52%		
Probability of Delayed Crossing	P _D		-		77%		77%		
Average Gap Delay	G _g		-		20.40		20.40		
Non-zero Delay	G _z		-		28.51		28.51		
2024 Buildout Total - Phase 3 Aft 3									
Probability of Blocked Lane	P _B		-		52%		52%		
Probability of Delayed Crossing	P _D		-		77%		77%		
Average Gap Delay	G _g		-		20.40		20.40		
Non-zero Delay	G _z		-		28.51		28.51		
2024 Buildout Total - Phase 3 Aft 4									
Probability of Blocked Lane	P _B		-		52%		52%		
Probability of Delayed Crossing	P _D		-		77%		77%		
Average Gap Delay	G _g		-		20.40		20.40		
Non-zero Delay	G _z		-		28.51		28.51		
2021 Background Traffic									
Probability of Blocked Lane	P _B		-		36%		36%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		10.57		10.57		
Non-zero Delay	G _z		-		17.52		17.52		
2029 Background Traffic									
Probability of Blocked Lane	P _B		-		46%		46%		
Probability of Delayed Crossing	P _D		-		62%		62%		
Average Gap Delay	G _g		-		15.67		15.67		
Non-zero Delay	G _z		-		19.57		19.57		
2029 Background Traffic with Supersaturated (AM 1 & 2)									
Probability of Blocked Lane	P _B		-		41%		41%		
Probability of Delayed Crossing	P _D		-		66%		66%		
Average Gap Delay	G _g		-		12.10		12.10		
Non-zero Delay	G _z		-		15.31		15.31		
2024 Background Traffic									
Probability of Blocked Lane	P _B		-		52%		52%		
Probability of Delayed Crossing	P _D		-		77%		77%		
Average Gap Delay	G _g		-		20.40		20.40		
Non-zero Delay	G _z		-		28.23		28.23		
2024 Background Traffic with Supersaturated (AM 1 & 2)									
Probability of Blocked Lane	P _B		-		52%		52%		
Probability of Delayed Crossing	P _D		-		77%		77%		
Average Gap Delay	G _g		-		20.40		20.40		
Non-zero Delay	G _z		-		28.23		28.23		