# TRAFFIC IMPACT
# TECHNICAL MEMORANDUM

For

## Lakeview Farms

City of Belmont, North Carolina

Prepared For:

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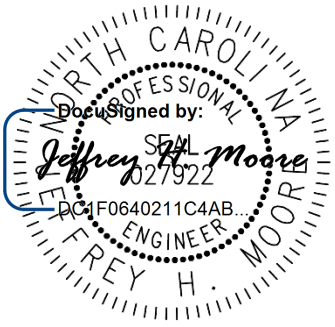


19 December 2022
(Gannett Fleming Project No. 072448)

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## INTRODUCTION

The purpose of this Memorandum is to discuss the impacts of the anticipated traffic generated by the proposed Lakeview Farms residential development on the traffic conditions at the affected intersections along NC 273 (South Point Road) in Belmont, NC. The Development is planned to consist of 155 single family homes (ITE Land Use Code 210), 115 units of senior adult housing detached (LUC 251), and 115 units of multifamily low-rise (townhomes) (LUC 220).

The City of Belmont Land Development Code requires a Traffic Impact Analysis (TIA) if a development is expected to generate 1,000 or more daily trips, or 100 trips in a peak hour. Due to the constraints of the area known as the South Point Peninsula, the threshold is reduced to 500 daily trips, and 50 Peak Hour trips.

A TIA was completed by Kimley Horn and Associates (KHA) dated 4-18-22 for the subject development, and specific traffic improvements were recommended. After the completion of the KHA TIA, TriPointe Homes reduced the density of the units proposed for the development (See Appendix C Site Plan dated 6-27-22). Additionally, newer traffic count data (collected by Quality Counts on 4-28-22) was obtained by the City of Belmont on the subject intersections. This memorandum references the KHA TIA, and it is the intention of Gannett Fleming that it be viewed as an update to the KHA TIA based on revised (lowered) densities of the development and the recent traffic volume counts changes.

This Memorandum further addresses the concerns that were raised by the KHA TIA and recommends alternative traffic improvements that mitigate site generated traffic and discusses constructability of the KHA and Gannett Fleming recommended improvements.

## EXECUTIVE SUMMARY

Gannett Fleming was originally engaged by TriPointe Homes to review the TIA prepared by KHA with the objective of understanding and interpreting the information and recommendations contained therein. The TIA prepared by KHA contained recommendations for roadway improvements based on the results of the analyses conducted by KHA. While the recommendations would have yielded improvements in the levels of service and decreased delays along the South Point Road corridor, they are not constructional by TriPointe due to insufficient right of way and the proximity of existing development on South Point Road. The KHA recommended improvements will be discussed in relation to each intersection studied in this Memorandum.

During the course of the review and subsequent meetings with the Client, NCDOT, City of Belmont, and KHA, new traffic counts became available. Also, in the time since the KHA TIA was performed, existing Belwood Drive was realigned as part of an adjacent development and added to the existing intersection of South Point Road and the Belmont Middle School driveway. Further, TriPointe Homes reduced the overall density of their proposed development. As a result of the combination of these factors, it was agreed by all parties that additional analyses should be performed to include the updated traffic counts and the additional changed conditions. It was further agreed that the analyses would be conducted as to reflect existing conditions in the field, which include allowing right turns on red and protected/permitted left turns at signalized intersections. The results of the analyses and effects of the traffic on the existing infrastructure that would be expected to be caused by the construction of this development are submitted in the form of this Technical Memorandum.

The 2026 background traffic conditions include anticipated traffic from the following approved developments that were included in the KHA TIA. Additionally, Gannett Fleming included the anticipated traffic from the proposed Smith Farms development.

- Amberley
- Rivermist
- Belmont Town Square
- McLean
- Belmont Town Center
- Belmont Middle School

Recommended improvements to the affected streets and intersections to mitigate the development generated traffic are listed in the body of this report. The intersections studied for this Memorandum are illustrated in Figures 1A and 1B. The subject intersections are as follows:

1. NC 273 (South Point Road) at NC 273 (Armstrong Road) (unsignalized intersection)
2. NC 273 (South Point Road) at Belmont Middle School/Belwood Drive (signalized intersection)
3. NC 273 (South Point Road) at McKee Farm Road/Stowe Road (unsignalized intersection)
4. NC 273 (South Point Road) at South Point High School/Red Raider Run (signalized intersection)
5. NC 273 (South Point Road) at RL Stowe Road/Nixon Road (signalized intersection)

During 2026 background conditions, the signalized intersections were modeled as coordinated in keeping with the existing signal plans provided by NCDOT. For 2026 future buildout conditions, the traffic signals at NC 273 (South Point Road) and South Point High School / Red Raider Run and at NC 273 (South Point Road) and R. L. Stowe Road / Nixon Road were modeled as coordinated as part of a two-signal system. The coordination improves the functionality and traffic flow between these two signals. Coordination works by adjusting the timing and offset of the green phases along the main route so that when vehicles are released by the upstream signal, they travel in a group or "platoon" to the downstream signal, receiving a green phase in time to keep flowing. This helps reduce the number of stops and minimizes delay. It is Gannett Fleming's opinion that the traffic signal at the intersection of NC 273 (South Point Road) and Belmont MS / Belwood Drive was far enough away that coordination would not be considered beneficial to the efficient operation of the system.

The intersection of NC 273 (South Point Road) and McKee Farm Road / Stowe Road was not included in the KHA TIA. Gannett Fleming added this intersection to the analysis in order to show the results of extending the southbound right lane to this intersection.

This Memorandum demonstrates that the recommended improvements, if constructed, will result in an overall increase in efficiency and decrease in delays along the NC 273 (South Point Road) corridor, even with the addition of the traffic expected to be generated by the Lakeview Farms residential development.

To mitigate the traffic-related impacts caused by the Lakeview Farms multifamily residential development and to provide for safe, efficient, and reliable traffic flow, Gannett Fleming recommends the following:

**NC 273 (South Point Road) / NC 273 (Armstrong Road)**
Gannett Fleming recommends the installation of a fully actuated uncoordinated traffic signal in this intersection, and a dedicated right turn lane with 150 feet of full storage be constructed on the southbound NC 273 approach of this intersection.

**NC 273 (South Point Road) / Belmont Middle School / Belwood Drive**
Gannett Fleming recommends a dedicated northbound thru/right turn lane with 200 feet of storage on South Point Road which will carry through the intersection and extend to the intersection of South Point Road and McKee Farm Road / Stowe Road. It will act as a right turn lane onto Stowe Road and will drop at that intersection. This lane will be approximately 1,500 feet in total length. Gannett Fleming recommends the addition of a second dedicated left turn lane with 175 feet of storage to the eastbound Belmont MS approach to allow for dual left movements into the dual northbound lanes.

**NC 273 (South Point Road) / McKee Farm Road / Stowe Road**
Gannett Fleming recommends a dedicated left turn lane with 150 feet of full storage be striped on the existing pavement width of the eastbound McKee Farms Road approach to this intersection. Gannett Fleming recommends a dedicated southbound right turn lane on South Point Road be constructed that extends through the intersection of South Point Road and South Point High School / Red Raider Run to the intersection of South Point Road and Nixon Road / R. L. Stowe Road and will act as a drop lane.

**NC 273 (South Point Road) / South Point High School / Red Raider Run**
Gannett Fleming recommends a dedicated southbound right turn lane on South Point Road be constructed that extends to the intersection of South Point Road and Nixon Road / R. L. Stowe Road and will serve as a receptor lane for westbound left turns from that intersection and will terminate as a right turn lane at the intersection of South Point Road and McKee Farm Road/Stowe Road). This lane will be approximately 1,200 feet in length.

**NC 273 (South Point Road) / Nixon Road / R. L. Stowe Road**
Gannett Fleming recommends the addition of a second westbound dedicated left turn lane on R/ L. Stowe Road with 225 feet of full storage.

**ANTICIPATED COSTS PER INTERSECTION**

1. NC 273 (South Point Road) / NC 273 (Armstrong Road): $130,000
2. NC 273 (South Point Road) / Belmont Middle School / Belwood Drive: $670,000
3. NC 273 (South Point Road) / McKee Farm Road / Stowe Road: $320,000
4. NC 273 (South Point Road) / South Point High School / Red Raider Run: $725,000
5. NC 273 (South Point Road) / Nixon Road / R. L. Stowe Road: $125,000

**The recommended improvements are further illustrated in Figures 3, 4, and 5.**

**Figure 1A – Study Intersections**

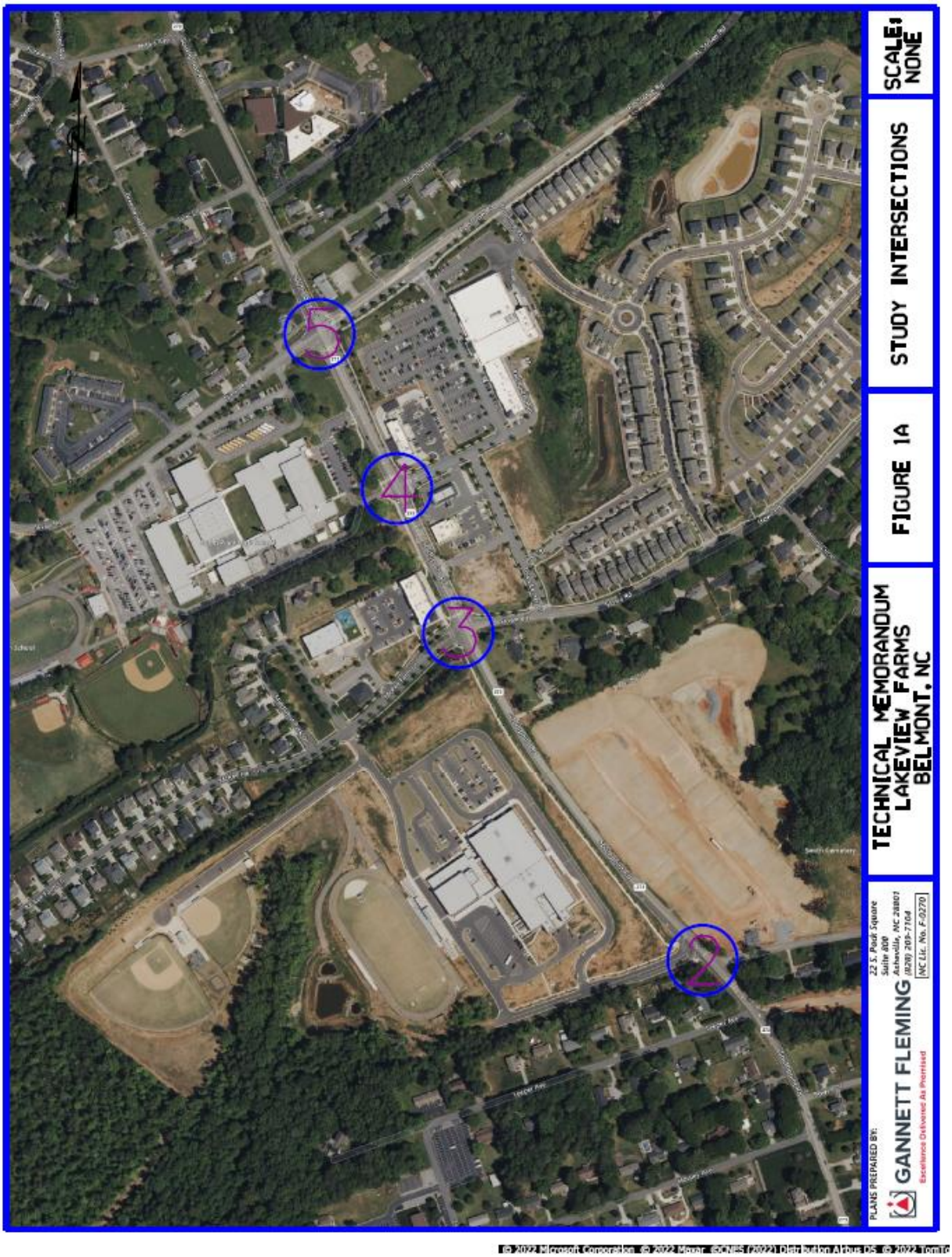


**Figure 1B – Study Intersections**

## TRIP GENERATION

Gannett Fleming conducted trip generation for the proposed development using the data and procedures recommended by the Institute of Transportation Engineers in the *Trip Generation Manual 11th Edition*[2]. The land use codes utilized in the exercise were (LUC 210) Single Family Detached, (LUC 220) Multifamily Low-Rise (townhomes), and (LUC 251) Senior Adult Housing Detached. Gannett Fleming followed the recommendations contained in the *NCDOT Rate vs Equation Spreadsheet*[3] provided by NCDOT Congestion Management Section.

The predicted AM Peak Hour trips generated by the Lakeview Farms development are 57 entering and 156 exiting for a total of 213. The predicted PM Peak Hour trips generated are 168 entering and 101 exiting for a total of 269. The average number of trips generated by the development would be 2,989 on a typical weekday. As a result of the reduction in density of the development and the revised formulas contained in *Version 11*, there is a net decrease in expected trips of 777 daily, 54 AM Peak Hour, and 73 PM Peak Hour trips. The resulting Trip Generation is shown in Table 1. The proposed development would not reach the NCDOT TIA trigger threshold of 3,000 trips per day.

### Table 1 - ITE Trip Generation Summary

| Table 1 - ITE Trip Generation Summary | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | AM | | | PM | |
| LUC | Description | Density | Variable | PK HR | METHOD | Daily | In | Out | Total | In | Out | Total |
| 210 | Single Family Detached | 155 | Units | Adj | EQN | 1510 | 29 | 82 | 111 | 94 | 56 | 150 |
| | | Pass-by Adjustment AM (0%) PM (0%) | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | Single Family Home New | Trips | | | | | 29 | 82 | 111 | 94 | 56 | 150 |
| 251 | Senior Adult Housing | 115 | Units | Adj | EQN | 667 | 14 | 29 | 43 | 30 | 19 | 49 |
| | Detached | Pass-by Adjustment AM (0%) PM (0%) | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | Senior Adult New Trips | | | | | | 14 | 29 | 43 | 30 | 19 | 49 |
| 220 | Multifamily Low | 115 | Units | Adj | EQN | 812 | 14 | 45 | 59 | 44 | 26 | 70 |
| | | Pass-by Adjustment AM (0%) PM (0%) | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | Multifamily Low-Rise New | Trips | | | | | 14 | 45 | 59 | 44 | 26 | 70 |
| | | Total New Trips | | | | 2989 | 57 | 156 | 213 | 168 | 101 | 269 |

## TRIP DISTRIBUTION

Gannett Fleming consulted the KHA TIA and utilized the same distribution patterns contained therein. The trip distribution was accepted by NCDOT and the City of Belmont as part of the scoping of the original TIA. Gannett Fleming is not aware of any changed circumstances that modify this distribution.

## CAPACITY ANALYSIS

The study area intersections were analyzed using the methods outlined in the ***Highway Capacity Manual***[1] and Synchro Version 11 Software. The ***Highway Capacity Manual***[1] defines capacity as "the maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform section of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions, usually expressed as vehicles per hour or persons per hour".

Level of service (LOS) is a term used to represent different traffic conditions and is defined as a "qualitative measure describing operational conditions within a traffic stream, and their perception by motorist/or passengers". Level of Service varies from Level A, representing free flow, to Level F where traffic breakdown conditions are evident. Level B represents good progression with minimal congestion. At Level

C, the number of vehicles stopping is significant, although many still pass through the intersection without stopping. Level D represents more congestion, but the overall operations are acceptable. At Level E, freedom to maneuver within the traffic stream is extremely difficult with driver frustration being generally high.

For signalized intersections, service levels pertain to each approach as well as an overall value. The unsignalized intersection analysis method in the ***Highway Capacity Manual***[1] assigns LOS values for each movement that yields the right-of-way, but not to the overall intersection. This movement is generally a secondary movement from a minor street. At an unsignalized intersection, the primary traffic on the main roadway is virtually uninterrupted. Therefore, the overall level of service is usually much greater than what is represented by the results of the minor street movements. Synchro Version 11 will calculate an amount of delay for the overall intersection but will not assign an LOS value. Therefore, the overall intersection delay is not reported in the summary tables of this report. Generally, Level of Service D is acceptable for signalized intersections in suburban areas during peak periods. With the current method of reporting levels of service for unsignalized intersections, it is not uncommon for some of the minor street movements to be operating at LOS F during the peak hours.

Tables 2 and 3 present the signalized and unsignalized level of service criteria of each level of service as indicated in the ***Highway Capacity Manual***[1]**.**

**Table 2- Signalized Intersection Level of Service Criteria**

| Signalized Intersection Level of Service Criteria | |
|---|---|
| **Level of Service** | **Stopped Delay Per Vehicle (sec)** |
| A | ≤10.0 |
| B | >10.0 and ≤20.0 |
| C | >20.0 and ≤35.0 |
| D | >35.0 and ≤55.0 |
| E | >55.0 and ≤80.0 |
| F | >80.0 |

**Table 3 - Unsignalized Intersection Level of Service Criteria**

| Unsignalized Intersection Level of Service Criteria | |
|---|---|
| **Level of Service** | **Average Total Delay (sec/veh)** |
| A | ≤10 |
| B | >10 and ≤15 |
| C | >15 and ≤25 |
| D | >25 and ≤35 |
| E | >35 and ≤50 |
| F | >50 |

Capacity analyses were performed for 2026 background conditions and 2026 future buildout conditions for the following intersections:

- NC 273 (South Point Road) at NC 273 (Armstrong Road) (unsignalized intersection)
- NC 273 (South Point Road) at Belmont Middle School/Belwood Drive (signalized intersection)
- NC 273 (South Point Road) at McKee Farm Road/Stowe Road (unsignalized intersection)
- NC 273 (South Point Road) at South Point High School/Red Raider Run (signalized intersection)
- NC 273 (South Point Road) at RL Stowe Road/Nixon Road (signalized intersection)

Gannett Fleming conducted computer modeling and simulations to determine the effects of the traffic volumes generated by the Lakeview Farms development to the operation of the subject intersections. The simulations and modeling were conducted under AM and PM Peak Hour conditions. The 3% growth factor established and used by KHA in the preparation of the TIA was utilized. Gannett Fleming applied the approved 3% growth factor from the KHA TIA to the traffic volumes from the updated traffic counts. Gannett Fleming then added volumes from currently approved developments on and in the vicinity of the South Point peninsula that were also contained in the KHA TIA in order to derive 2026 background traffic volumes. Site traffic was added to the 2026 background traffic volumes to obtain 2026 future buildout traffic volumes.

Per NCDOT Congestion Management Guidelines, the signalized intersections were modeled in preparation of the KHA TIA with the prohibition of right turns on red. Additionally, all left turns from dedicated left turn lanes were modeled as being protected only, with no permitted left turns. This is intended to represent a "worst-case scenario" for the traffic signals but is not consistent with conditions in the field. Restricting rights on red adds additional delay to an approach and may add delay to the operation of the intersection as a whole. The same is true with protected only left turns. Implementing either of these constraints in the field is generally the result of an engineering study and would require further improvements to the intersection to mitigate the delay that would be caused by the implementation. Right turns are currently allowed on red indications at all of the subject signalized intersections as are protected/permitted left turns. Gannett Fleming is not aware of any plans to restrict rights on red or protected/permitted left turns at any of the study intersections (except at the proposed dual left turn lanes at the intersection of South Point Road and R. L. Stowe Road/Nixon Road). During a meeting between City of Belmont Staff, Kimley-Horn, TriPointe, and Gannett Fleming on 7-21-22, it was agreed that for the purposes of this memorandum, modeling and simulation would be conducted under existing conditions, allowing rights on red and protected/permitted left turns (except for dual left turn lanes) in order to replicate field conditions for use in the determination of recommendations.

**1. South Point Road / Armstrong Road – Study Intersection 1**

The intersection of South Point Road and Armstrong Road is currently an unsignalized three-approach intersection. Because of existing traffic, the intersection has been identified for improvements. An NCDOT STIP project, U-6150, has been developed and is currently funded for right of way and utilities in the year 2028 but unfunded for construction of a roundabout in future years. As planned, this project will construct a single-lane roundabout in the subject intersection. Gannett Fleming analyzed this intersection with the installation of an actuated uncoordinated traffic signal and a single-lane roundabout.

KHA recommended in their TIA the construction of a multi-lane roundabout. There was also a southbound right turn slip lane with 200 feet of storage, an additional eastbound shared left/through/right lane with 200 feet of storage, and two northbound receiving lanes with 600 feet of storage. Currently, there is insufficient right of way at this intersection to accommodate the recommended improvements. Additionally, there would be significant impacts to existing utilities. This was confirmed by the NCDOT District Engineer during a meeting with Gannett Fleming, KHA, and City Staff.

During the 2026 background traffic conditions, assuming no improvements, the eastbound Armstrong Road approach is expected to function at LOS F, with delays of 588.4 and 581.5 seconds in the AM and PM Peak Hours, respectively. The northbound South Point Road approach is predicted to operate at LOS A with delays of 2.2 seconds and 3.5 seconds in the AM and PM Peak Hours respectively.

Under 2026 future buildout conditions, if a traffic signal is installed at this intersection, the AM and PM Peak Hour LOS of the intersection is expected to be C and B with 30.8 and 14.1 seconds of delay respectively. The north and south bound South Point Road approaches, which under 2026 background conditions experience very little delay, would see more delay because the traffic signal balances the delay between the approaches. The northbound approach (which will include site traffic exiting the development) is predicted to operate at LOS C in the AM Peak Hour and C in the PM Peak Hour, with delays of 33.8 and 27.6 seconds respectively. So, while this approach is expected to see more delay compared to unsignalized conditions, the intersection, overall, will function more efficiently, with substantial improvements in LOS and reduced delay for the eastbound Armstrong Road approach.

For 2026 future buildout conditions, if a single-lane roundabout is installed at this intersection, the analyses demonstrate that a single-lane roundabout would allow the intersection as a whole to operate more efficiently than with the existing unsignalized stop controlled intersection. The roundabout will cause additional delay for some approaches. In fact, the south bound South Point Road approach, which under 2026 background conditions experience minimal delay, would see increased delay due to the eastbound Armstrong Road approach traffic conflicting with the southbound South Point Road traffic. The AM Peak Hour delays, with the exception of the southbound South Point Road approach, are predicted to be less than they would be under a signalized condition. However, the PM Peak Hour conditions are the opposite, with a signalized intersection providing less delay.

The eastbound Armstrong Road queues are expected to improve with either the installation of a traffic signal or a roundabout.

Either signalization or a roundabout at this intersection provide similar operational improvements. A signal can be accommodated within the existing NCDOT right of way and will not negatively impact the adjacent properties. Therefore, ***Gannett Fleming recommends the installation of a fully actuated uncoordinated traffic signal at this intersection, and a dedicated right turn lane with 150 feet of full storage be constructed on the southbound NC 273 (South Point Road) approach of this intersection.*** These

improvements are estimated to cost **$130,000.00** for the traffic signal and turn lane. A breakdown of the estimated cost is contained in Appendix D of this Memorandum.

Table 4 documents the level of service and delay for the subject intersection for 2026 background conditions and 2026 future buildout conditions. Sim Traffic queue reports are contained in Appendix B of this memorandum.

**Table 4 – South Point Road / Armstrong Road Level of Service**

| TABLE 4 | | | | |
|---|---|---|---|---|
| **S. Point Rd at Armstrong Rd** | | **AM Peak Hour** | **AM Peak Hour** | **AM Peak Hour** |
| | | **2026 Background** | **2026 Future** | **2026 Future** |
| | | | **Buildout** | **Buildout** |
| | | | **W/Signal** | **W/Roundabout** |
| **Intersection Level of Service (LOS)** | | **N/A** | **C** | **C** |
| **Total Intersection Delay (Seconds)** | | **N/A** | **30.8** | **15.4** |
| Armstrong Rd Eastbound | LOS | F | D | B |
| | Approach Delay | 588.4 | 45.0 | 14.3 |
| | LOS | | | |
| | Approach Delay | | | |
| S. Point Rd Northbound | LOS | A | C | D |
| | Approach Delay | 2.2 | 33.8 | 26.7 |
| S. Point Rd Southbound | LOS | A | A | A |
| | Approach Delay | 0.0 | 7.1 | 6.4 |
| | | **PM Peak Hour** | **PM Peak Hour** | **PM Peak Hour** |
| | | **2026 Background** | **2026 Future** | **2026 Future** |
| | | | **Buildout** | **Buildout** |
| | | | **W/Signal** | **W/Roundabout** |
| **Intersection Level of Service (LOS)** | | **N/A** | **B** | **C** |
| **Total Intersection Delay (Seconds)** | | **N/A** | **14.1** | **22.5** |
| Armstrong Rd Eastbound | LOS | F | C | C |
| | Approach Delay | 581.5 | 21.6 | 15.8 |
| | LOS | | | |
| | Approach Delay | | | |
| S. Point Rd Northbound | LOS | A | C | B |
| | Approach Delay | 3.5 | 27.6 | 10.5 |
| S. Point Rd Southbound | LOS | A | A | D |
| | Approach Delay | 0.0 | 6.2 | 29.6 |

| | |
|---|---|
| | Delay Decrease or LOS Improvement |
| | Delay Increase > 25% or LOS Decrease by 1 Letter Grade |

**2. South Point Road / Belmont Middle School / Belwood Drive – Study Intersection 2**

The intersection of South Point Road and Belmont Middle School / Belwood Drive is currently a signalized three-approach intersection. The intersection is being modified by an adjacent development, which will realign Belwood Drive to become the fourth stem of the intersection, which includes a southbound left turn lane. The original TIA by KHA does not include this modification in the background conditions.

KHA recommended in their TIA the construction of an additional northbound through lane with 500 feet of storage south of the intersection and extending north to the intersection of South Point Road and South Point High School/Red Raider Run. Additionally, it recommended a southbound through/right lane that would extend from the intersection of South Point Road and South Point High School/Red Raider Run. The lane would extend beyond the intersection for an additional 600 feet. Due to the proximity of adjacent development next to the roadway, these improvements would require substantial impacts to adjoining businesses and property along South Point Road.

For the 2026 background conditions, the AM Peak Hour delay for the intersection is predicted to be 83.7 seconds, with LOS F. The PM Peak Hour delay is expected to be 17.0 seconds with LOS B. The eastbound Belmont MS approach is expected to experience an LOS F during the AM Peak Hour, with a delay of 153.4 seconds. The PM LOS of this approach is predicted to be D with a delay of 48.3 seconds.

Under 2026 future buildout conditions, the AM Peak Hour LOS for the intersection is expected to be C with a delay of 25.8 seconds. The PM Peak Hour delay is expected to be 24.3 seconds seconds, with the LOS becoming C. The northbound South Point Road approach is expected to experience less delay, decreasing from 111.7 seconds with LOS F during the AM Peak Hour 2026 background conditions to 25.5 seconds, with the LOS improving to C. In the PM Peak hour, the approach delay is predicted to be 9.1 seconds with LOS A. The eastbound Belmont MS approach is expected to decrease from 153.4 seconds to 38.5 seconds during the AM Peak Hour with the LOS improving from F to D. The PM Peak Hour LOS of this approach is predicted to be E with a delay of 65.7 seconds.

***Gannett Fleming recommends a dedicated northbound thru/right turn lane with 200 feet of storage on South Point Road which will carry through the intersection and extend to the intersection of South Point Road and McKee Farm Road / Stowe Road. It will act as a right turn lane onto Stowe Road and will drop at that intersection. This lane will be approximately 1,500 feet in total length. Gannett Fleming recommends the addition of a second dedicated left turn lane with 175 feet of storage to the eastbound Belmont MS approach to allow for dual left movements into the dual northbound lanes.*** Gannett Fleming estimates that these improvements will cost **$670,000.00**. A breakdown of the estimated cost is contained in Appendix D of this Memorandum.

*NOTE: Gannett Fleming considered the continuation of the second northbound thru lane to the intersection of South Point Road / South Point High School / Red Raider Run. This proves impractical due to the large number of utilities, lack of existing right of way, and the proximity of development to the roadway.*

Table 5 documents the level of service and delay for the subject intersection for 2026 background conditions and 2026 future buildout conditions. Sim Traffic queue reports are contained in Appendix B of this memorandum.

**Table 5 – South Point Road / Belmont Middle School / Belwood Drive Level of Service**

| TABLE 5 | | | |
|---|---|---|---|
| **S. Point Rd at Belmont MS/Belwood Drive** | | **AM Peak Hour 2026 Background** | **AM Peak Hour 2026 Future Buildout** |
| **Intersection Level of Service (LOS)** | | **F** | **C** |
| **Total Intersection Delay (Seconds)** | | **83.7** | **25.8** |
| Belmont MS Eastbound | LOS | F | D |
| | Approach Delay | 153.4 | 38.5 |
| Belwood Dr Westbound | LOS | B | C |
| | Approach Delay | 12.2 | 23.9 |
| S. Point Rd Northbound | LOS | F | C |
| | Approach Delay | 111.7 | 25.5 |
| S. Point Rd Southbound | LOS | C | B |
| | Approach Delay | 20.9 | 19.8 |
| | | **PM Peak Hour 2026 Background** | **PM Peak Hour 2026 Future Buildout** |
| **Intersection Level of Service (LOS)** | | **B** | **C** |
| **Total Intersection Delay (Seconds)** | | **17.0** | **24.3** |
| Belmont MS Eastbound | LOS | D | E |
| | Approach Delay | 48.3 | 65.7 |
| Belwood Dr Westbound | LOS | C | C |
| | Approach Delay | 25.4 | 32.1 |
| S. Point Rd Northbound | LOS | B | A |
| | Approach Delay | 16.5 | 9.1 |
| S. Point Rd Southbound | LOS | B | C |
| | Approach Delay | 16.4 | 34.8 |

Delay Decrease or LOS Improvement

Delay Increase > 25% or LOS Decrease by 1 Letter Grade

### 3. South Point Road / McKee Farm Road / Stowe Road – Study Intersection 3

The intersection of South Point Road and McKee Farms Road / Stowe Road is currently an unsignalized four-legged intersection. During the 2026 Background traffic conditions, the McKee Farm Road and Stowe Road approaches are predicted to operate at an LOS of F. Entering the intersection from either of these approaches to make through or left turn movements would be very difficult, as evidenced by the delays. The delays for the eastbound McKee Farm Road and westbound Stowe Road approaches are excessive to the point that Synchro is unable to calculate a realistic value.

Gannett Fleming recommends striping a left turn lane on McKee Farm Road. It appears that there is sufficient pavement width available for at least a 150-foot turn lane. Gannett Fleming recommends a dedicated southbound right turn lane on South Point Road be constructed that extends to the intersection of South Point Road and Nixon Road / R. L. Stowe Road and will act as a drop lane. Even with the recommended improvements, the delays for the eastbound McKee Farm Road and westbound Stowe Road approaches are excessive to the point that Synchro is unable to calculate a realistic value. It is the opinion of Gannett Fleming that the delays will not increase with the construction of the recommended improvements. North and south bound South Point Road LOS and delays do not change as a result of the Lakeview Farms development.

***Gannett Fleming recommends a dedicated left turn lane with 150 feet of full storage be striped on the existing pavement width of the eastbound McKee Farms Road approach to this intersection. Gannett Fleming recommends a dedicated southbound right turn lane on South Point Road be constructed that extends through the intersection of South Point Road and South Point High School / Red Raider Run to the intersection of South Point Road and Nixon Road / R. L. Stowe Road and will act as a drop lane.*** The estimated cost for these improvements is expected to be **$320,000.00** for the turn lanes. A breakdown of the estimated cost is contained in Appendix D of this Memorandum.

Table 6 displays the Level of Service and Delay for the subject intersection for the 2026 Background conditions and 2026 Future Buildout conditions. Sim Traffic queue reports are contained in Appendix B of this memorandum.

Gannett Fleming recommends a dedicated left turn lane with 150 feet of full storage be striped on the existing pavement width of the eastbound McKee Farms Road approach to this intersection. Gannett Fleming recommends a dedicated southbound right turn lane on South Point Road be constructed that extends through the intersection of South Point Road and South Point High School / Red Raider Run to the intersection of South Point Road and Nixon Road / R. L. Stowe Road and will act as a drop lane.

**Table 6 – South Point Road / McKee Farm Road / Stowe Road Level of Service**

| TABLE 6 | | | |
|---|---|---|---|
| **S. Point Rd at Stowe Rd - McKee Farm Rd** | | **AM Peak Hour** | **AM Peak Hour** |
| | | **2026 Background** | **2026 Future** |
| | | | **Buildout** |
| **Intersection Level of Service (LOS)** | | **N/A** | **N/A** |
| **Total Intersection Delay (Seconds)** | | **N/A** | **N/A** |
| McKee Farm Rd Eastbound | LOS | F | F |
| | Approach Delay | * | * |
| Stowe Rd Westbound | LOS | F | F |
| | Approach Delay | * | * |
| S. Point Rd Northbound | LOS | A | A |
| | Approach Delay | 0.2 | 0.2 |
| S. Point Rd Southbound | LOS | A | A |
| | Approach Delay | 0.6 | 0.6 |
| **S. Point Rd at Stowe Rd - McKee Farm Rd** | | **PM Peak Hour** | **PM Peak Hour** |
| | | **2026 Background** | **2026 Future** |
| | | | **Buildout** |
| **Intersection Level of Service (LOS)** | | **N/A** | **N/A** |
| **Total Intersection Delay (Seconds)** | | **N/A** | **N/A** |
| McKee Farm Rd Eastbound | LOS | F | F |
| | Approach Delay | * | * |
| Stowe Rd Westbound | LOS | F | F |
| | Approach Delay | * | * |
| S. Point Rd Northbound | LOS | A | A |
| | Approach Delay | 0.1 | 0.1 |
| S. Point Rd Southbound | LOS | A | A |
| | Approach Delay | 0.6 | 0.6 |

* Due to excessive delay for the east and west bound side streets, Synchro was unable to calculate realistic values of LOS or Delay

Delay Decrease or LOS Improvement

Delay Increase > 25% or LOS Decrease by 1 Letter Grade

## 4. South Point Road /South Point High School /Red Raider Run – Study Intersection 4

The intersection of South Point Road and South Point High School / Red Raider Run is currently a signalized four-approach intersection.

KHA recommended in their TIA the construction of additional northbound and southbound through lanes that extend north to the intersection of South Point Road and Nixon Road/R. L. Stowe Road and south to the intersection of South Point Road at Belmont Middle School/Belwood Drive. Due to the proximity of adjacent development east of the roadway, the northbound lane would cause substantial impacts to adjoining businesses and property along South Point Road.

During the 2026 background traffic conditions, the intersection is predicted to operate at LOS D in the AM Peak Hour and D in the PM Peak Hour with delays of 46.9 and 51.0 seconds respectively. The northbound South Point Road approach is expected to operate at LOS E in the AM Peak Hour and D in the PM Peak Hour with delays of 70.0 and 53.2 seconds respectively. The southbound approach of South Point Road is expected to operate at LOS B in the AM Peak Hour and D in the PM Peak Hour with delays of 10.4 and 40.9 seconds respectively. The westbound Red Raider Run approach is predicted to operate at an LOS E for both the AM and PM Peak Hour with delays of 62.3 and 69.8 seconds respectively.

Under 2026 future buildout conditions, the intersection is predicted to operate at LOS D with 52.6 seconds of delay in the AM Peak Hour, and LOS C with 34.8 seconds of delay in the PM Peak Hour. The AM Peak Hour delay for the northbound South Point Road approach is predicted to become 77.5 seconds, with LOS E. The PM Peak Hour delay for this approach is expected to become 64.1 seconds with LOS becoming E. The southbound approach of South Point Road is predicted to operate at LOS A in the AM Peak Hour and B in the PM Peak Hour with delays of 10.0 and 10.6 seconds respectively. The westbound Red Raider Run approach is predicted to operate at LOS E for both the AM and PM Peak Hour with delays of 74.3 and 789.8 seconds respectively.

The improvements recommended and modeled at this intersection consist of a dedicated southbound right turn lane on South Point Road that extends to the intersection of South Point Road and Nixon Road / R. L. Stowe Road and will serve as a receptor lane for westbound left turns from that intersection.

***Gannett Fleming recommends a dedicated southbound right turn lane on South Point Road be constructed that extends to the intersection of South Point Road and Nixon Road / R. L. Stowe Road and will serve as a receptor lane for westbound left turns from that intersection and will terminate as a right turn lane at the intersection of South Point Road and McKee Farm Road/Stowe Road). This lane will be approximately 1,200 feet in length.*** The estimated cost for these improvements is expected to be **$725,000.00** for the turn lane and necessary traffic signal modifications. A breakdown of the estimated cost is contained in Appendix D of this Memorandum.

Table 6 documents the level of service and delay for the subject intersection for 2026 background conditions and 2026 future buildout conditions. Sim Traffic queue reports are contained in Appendix B of this memorandum.

**Table 7 – South Point Road /South Point HS /Red Raider Run**

| TABLE 7 | | | |
|---|---|---|---|
| **S. Point Rd at South Point HS** | | **AM Peak Hour** | **AM Peak Hour** |
| | | **2026 Background** | **2026 Future** |
| | | | **Buildout** |
| | | | |
| **Intersection Level of Service (LOS)** | | **D** | **D** |
| **Total Intersection Delay (Seconds)** | | **46.9** | **52.6** |
| South Point HS Eastbound | LOS | | |
| | Approach Delay | | |
| Red Raider Run Westbound | LOS | E | E |
| | Approach Delay | 62.3 | 74.3 |
| S. Point Rd Northbound | LOS | E | E |
| | Approach Delay | 70.0 | 77.5 |
| S. Point Rd Southbound | LOS | B | A |
| | Approach Delay | 10.4 | 10.0 |
| **S. Point Rd at South Point HS** | | **PM Peak Hour** | **PM Peak Hour** |
| | | **2026 Background** | **2026 Future** |
| | | | **Buildout** |
| | | | |
| **Intersection Level of Service (LOS)** | | **D** | **D** |
| **Total Intersection Delay (Seconds)** | | **51.0** | **41.7** |
| South Point HS Eastbound | LOS | | |
| | Approach Delay | | |
| Red Raider Run Westbound | LOS | E | E |
| | Approach Delay | 69.8 | 78.8 |
| S. Point Rd Northbound | LOS | D | E |
| | Approach Delay | 53.2 | 64.1 |
| S. Point Rd Southbound | LOS | D | B |
| | Approach Delay | 40.9 | 10.6 |

Delay Decrease or LOS Improvement

Delay Increase > 25% or LOS Decrease by 1 Letter Grade

**5. South Point Road / R. L. Stowe Road / Nixon Road – Study Intersection 5**

The intersection of South Point Road and Nixon Road / R. L. Stowe Road is currently a signalized four-approach intersection.

KHA recommended in their TIA the extension of the northbound through lane south to the intersection of South Point Road at South Point High School/Red Raider Run. Additionally, the KHA TIA recommended an additional westbound left turn lane with 275 feet of storage. Due to the proximity of adjacent development east of the roadway, the additional width required for the northbound lane would require substantial impacts to adjoining businesses and property along the east side of South Point Road.

For the 2026 background traffic conditions, the intersection is predicted to operate with LOS D in the AM Peak Hour and F in the PM Peak Hour with delays of 40.4 and 81.0 seconds respectively. The LOS for the westbound approach of R. L. Stowe Road is predicted to be E in the AM and F in the PM Peak Hours, with delays of 66.5 and 128.9 seconds respectively. The LOS for the northbound South Point Road approach is predicted to be B during the AM Peak Hour with a delay of 16.3 seconds and D during the PM Peak Hour with a delay of 41.9 seconds.

Under 2026 future buildout conditions with recommended improvements and the intersection of South Point Road and McKee Farms Road / Stowe Road remaining unsignalized, this intersection is predicted to operate at LOS C with 32.0 seconds of delay in the AM Peak Hour, and LOS D with 44.0 seconds of delay in the PM Peak Hour. The AM Peak Hour delay for the northbound South Point Road approach is predicted to become 16.6 seconds, with LOS B. The PM Peak Hour delay is expected to decrease significantly to 24.9 seconds, with the LOS becoming C. The southbound South Point Road approach is expected to have 37.0 seconds of delay in the AM Peak Hour and 39.9 seconds in the PM Peak Hour with LOS D for both Peak Hours.

***Gannett Fleming recommends the addition of a second westbound dedicated left turn lane with 225 feet of full storage to the R. L. Stowe approach to this intersection.*** The estimated cost for this improvement is **$125,000.00** for the turn lane and necessary traffic signal modifications. A breakdown of the estimated cost is contained in Appendix D of this Memorandum.

Table 7 documents the level of service and delay for the subject intersection for the 2026 background conditions and 2026 future buildout conditions. Sim Traffic queue reports are contained in Appendix B of this memorandum.

**Table 8 – South Point Road / R. L. Stowe Road / Nixon Road Level of Service**

| TABLE 8 | | | |
|---|---|---|---|
| **S. Point Rd at RL Stowe Rd Nixon Rd** | | **AM Peak Hour 2026 Background** | **AM Peak Hour 2026 Future Buildout** |
| **Intersection Level of Service (LOS)** | | **D** | **C** |
| **Total Intersection Delay (Seconds)** | | **40.4** | **32.0** |
| Nixon Rd Eastbound | LOS | E | E |
| | Approach Delay | 74.0 | 68.5 |
| RL Stowe Rd Westbound | LOS | E | D |
| | Approach Delay | 66.5 | 41.5 |
| S. Point Rd Northbound | LOS | B | B |
| | Approach Delay | 19.6 | 16.6 |
| S. Point Rd Southbound | LOS | D | D |
| | Approach Delay | 43.5 | 37.0 |
| **S. Point Rd at RL Stowe Rd Nixon Rd** | | **PM Peak Hour 2026 Background** | **PM Peak Hour 2026 Future Buildout** |
| **Intersection Level of Service (LOS)** | | **F** | **D** |
| **Total Intersection Delay (Seconds)** | | **81.0** | **44.0** |
| Nixon Rd Eastbound | LOS | E | E |
| | Approach Delay | 73.9 | 75.3 |
| RL Stowe Rd Westbound | LOS | F | E |
| | Approach Delay | 128.9 | 75.1 |
| S. Point Rd Northbound | LOS | D | C |
| | Approach Delay | 51.1 | 31.9 |
| S. Point Rd Southbound | LOS | F | D |
| | Approach Delay | 87.2 | 51.6 |

| | |
|---|---|
| | Delay Decrease or LOS Improvement |
| | Delay Increase > 25% or LOS Decrease by 1 Letter Grade |

## RECOMMENDATIONS

To mitigate the traffic-related impacts caused by the Lakeview Farms multifamily residential development and to provide for safe, efficient, and reliable traffic flow, Gannett Fleming recommends the following:

**NC 273 (South Point Road) / NC 273 (Armstrong Road)**
Gannett Fleming recommends the installation of a fully actuated uncoordinated traffic signal in this intersection, and a dedicated right turn lane with 150 feet of full storage be constructed on the southbound NC 273 approach of this intersection.

**NC 273 (South Point Road) / Belmont Middle School / Belwood Drive**
Gannett Fleming recommends a dedicated northbound thru/right turn lane with 200 feet of storage on South Point Road which will carry through the intersection and extend to the intersection of South Point Road and McKee Farm Road / Stowe Road. It will act as a right turn lane onto Stowe Road and will drop at that intersection. This lane will be approximately 1,500 feet in total length. Gannett Fleming recommends the addition of a second dedicated left turn lane with 175 feet of storage to the eastbound Belmont MS approach to allow for dual left movements into the dual northbound lanes.

**NC 273 (South Point Road) / McKee Farm Road / Stowe Road**
Gannett Fleming recommends a dedicated left turn lane with 150 feet of full storage be striped on the existing pavement width of the eastbound McKee Farms Road approach to this intersection. Gannett Fleming recommends a dedicated southbound right turn lane on South Point Road be constructed that extends through the intersection of South Point Road and South Point High School / Red Raider Run to the intersection of South Point Road and Nixon Road / R. L. Stowe Road and will act as a drop lane.

**NC 273 (South Point Road) / South Point High School / Red Raider Run**
Gannett Fleming recommends a dedicated southbound right turn lane on South Point Road be constructed that extends to the intersection of South Point Road and Nixon Road / R. L. Stowe Road and will serve as a receptor lane for westbound left turns from that intersection and will terminate as a right turn lane at the intersection of South Point Road and McKee Farm Road/Stowe Road). This lane will be approximately 1,200 feet in length.

**NC 273 (South Point Road) / Nixon Road / R. L. Stowe Road**
Gannett Fleming recommends the addition of a second westbound dedicated left turn lane on R/ L. Stowe Road with 225 feet of full storage.

*NOTE: Gannett Fleming considered the continuation of the second northbound thru lane to the intersection of South Point Road / South Point High School / Red Raider Run. This proves impractical due to the large number of utilities, lack of existing right of way, and the proximity of development to the roadway.*

**The recommended improvements are further illustrated in Figures 3, 4, and 5.**

**Figure 2A – Recommended Improvements**

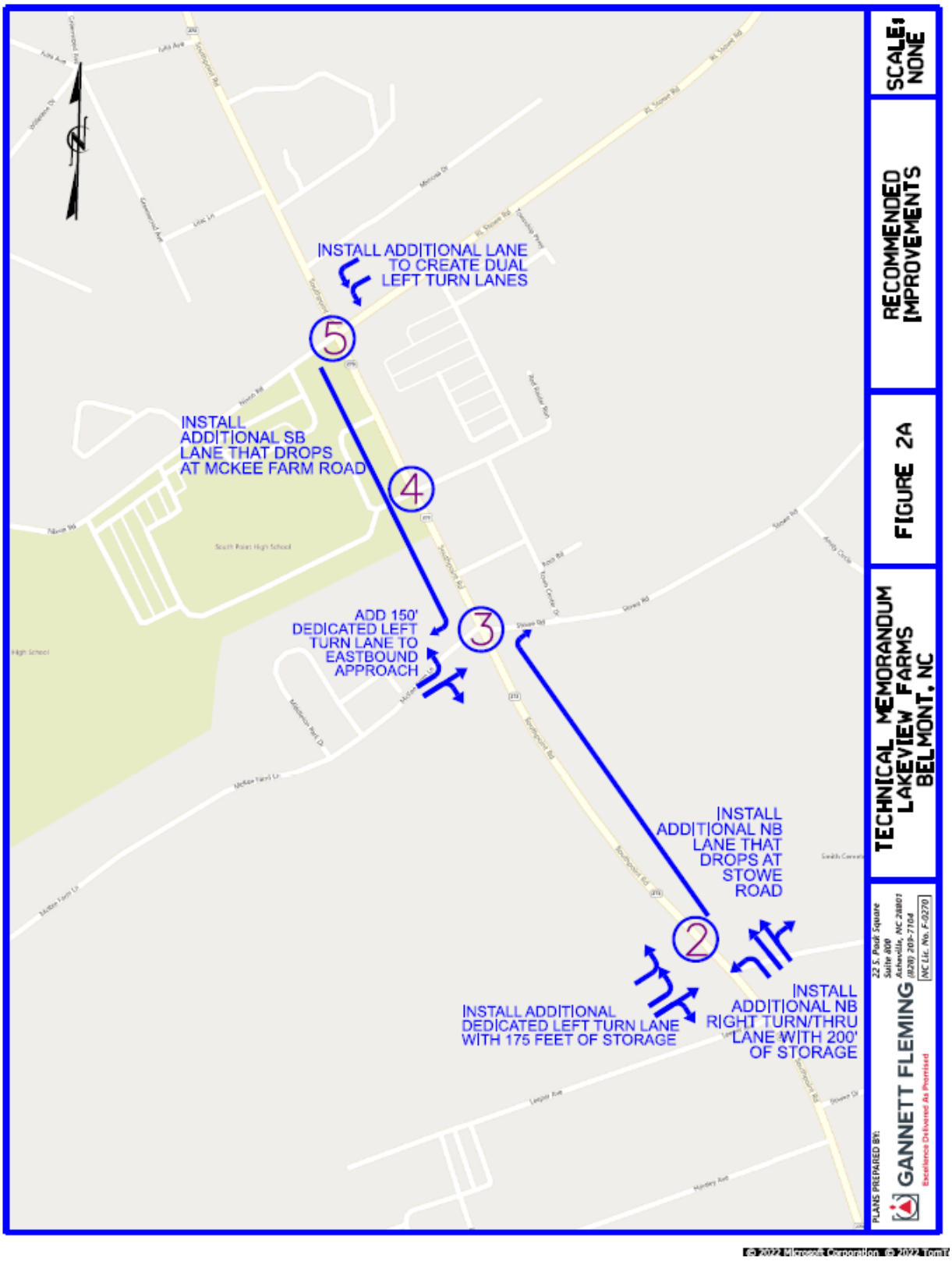


**Figure 2B – Recommended Improvements**

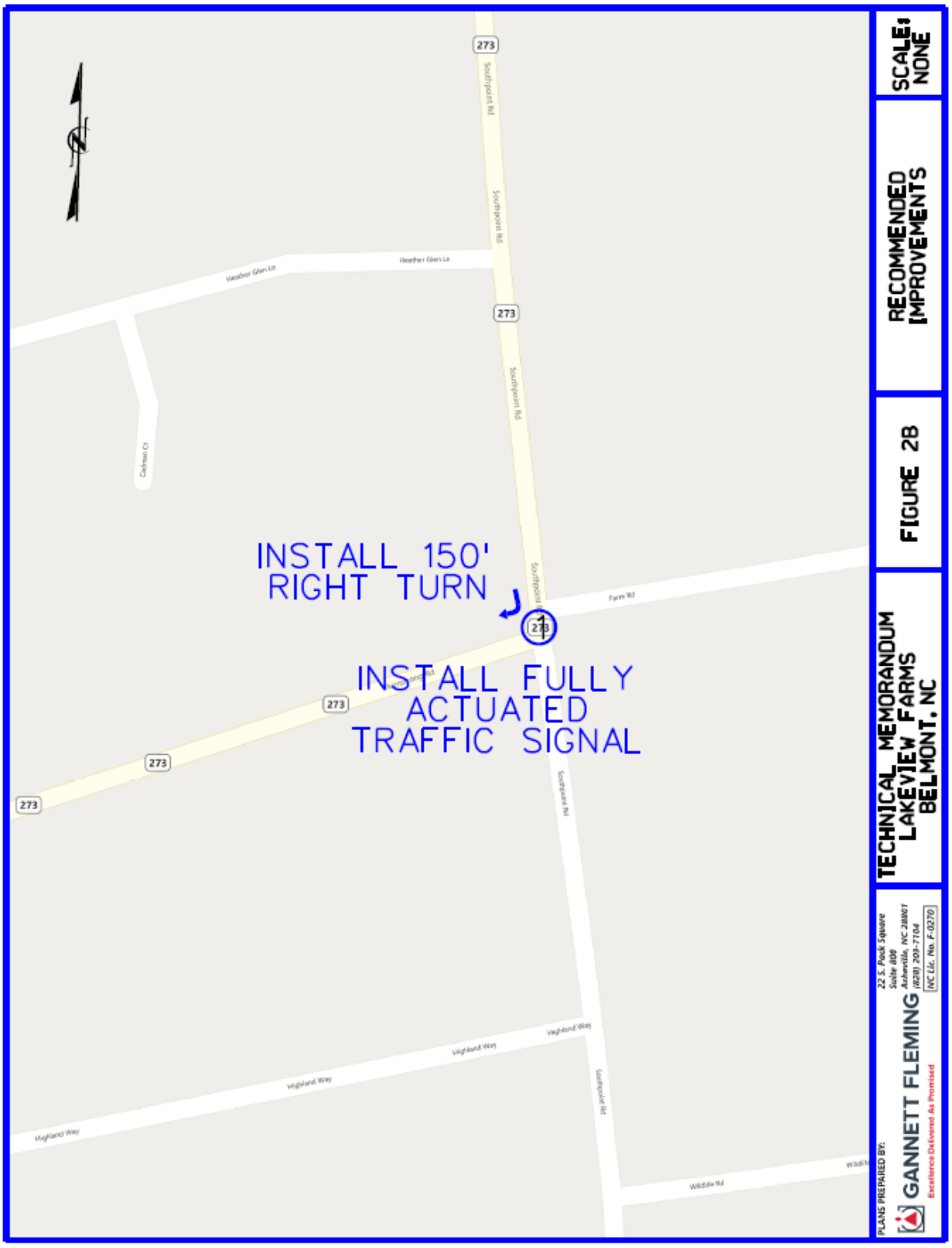


**Figure 3 – Recommended Improvements**

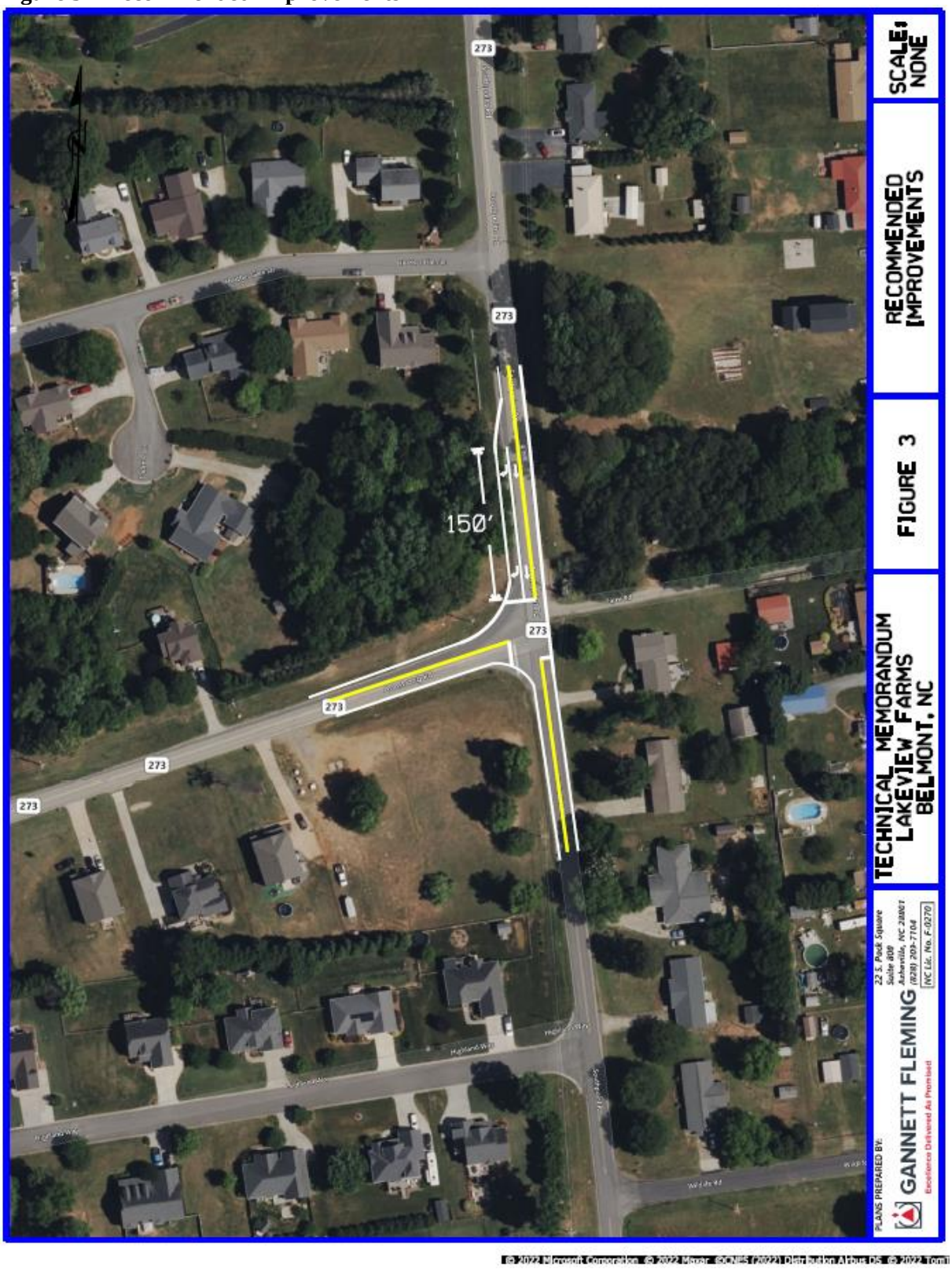


**Figure 4 – Recommended Improvements**

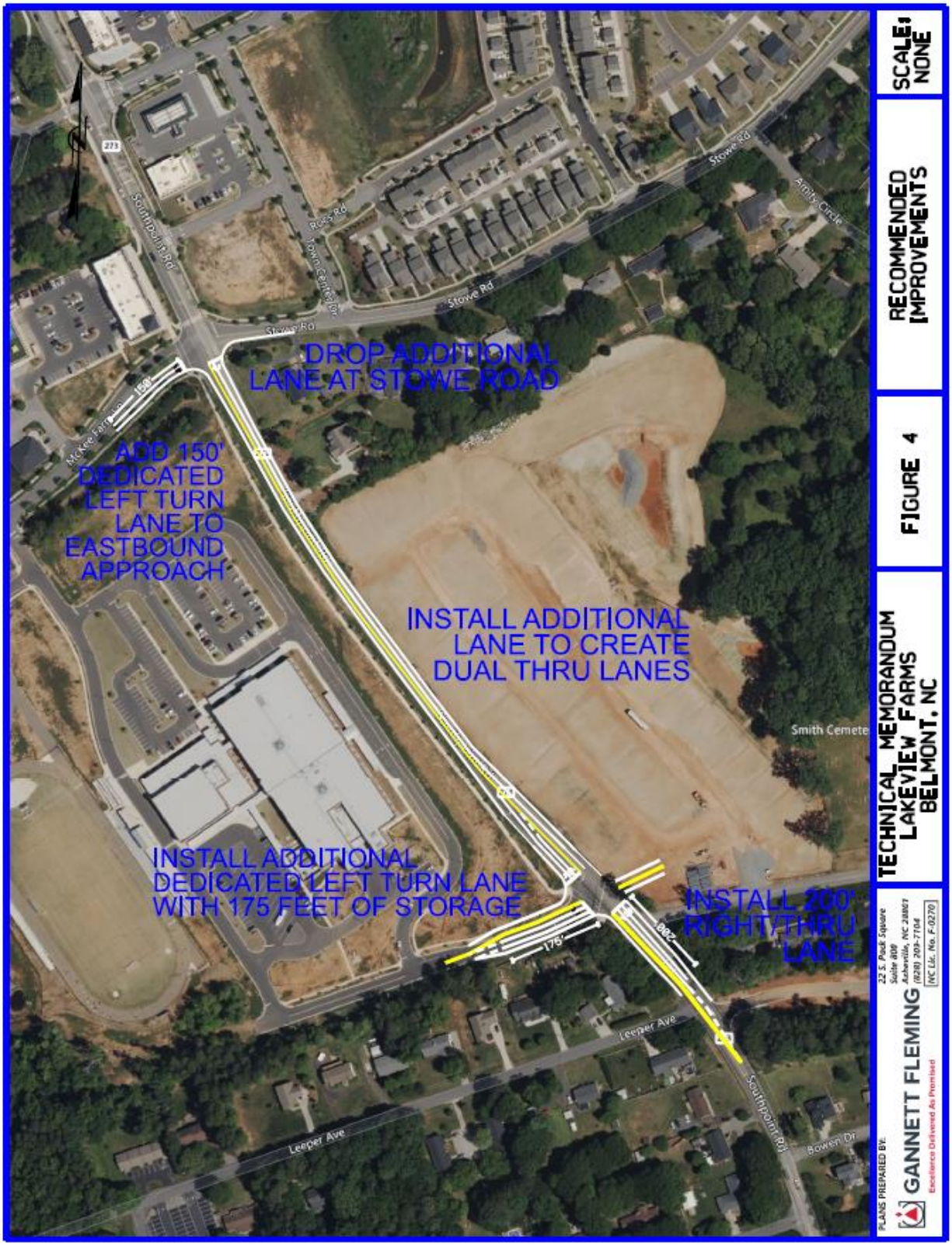
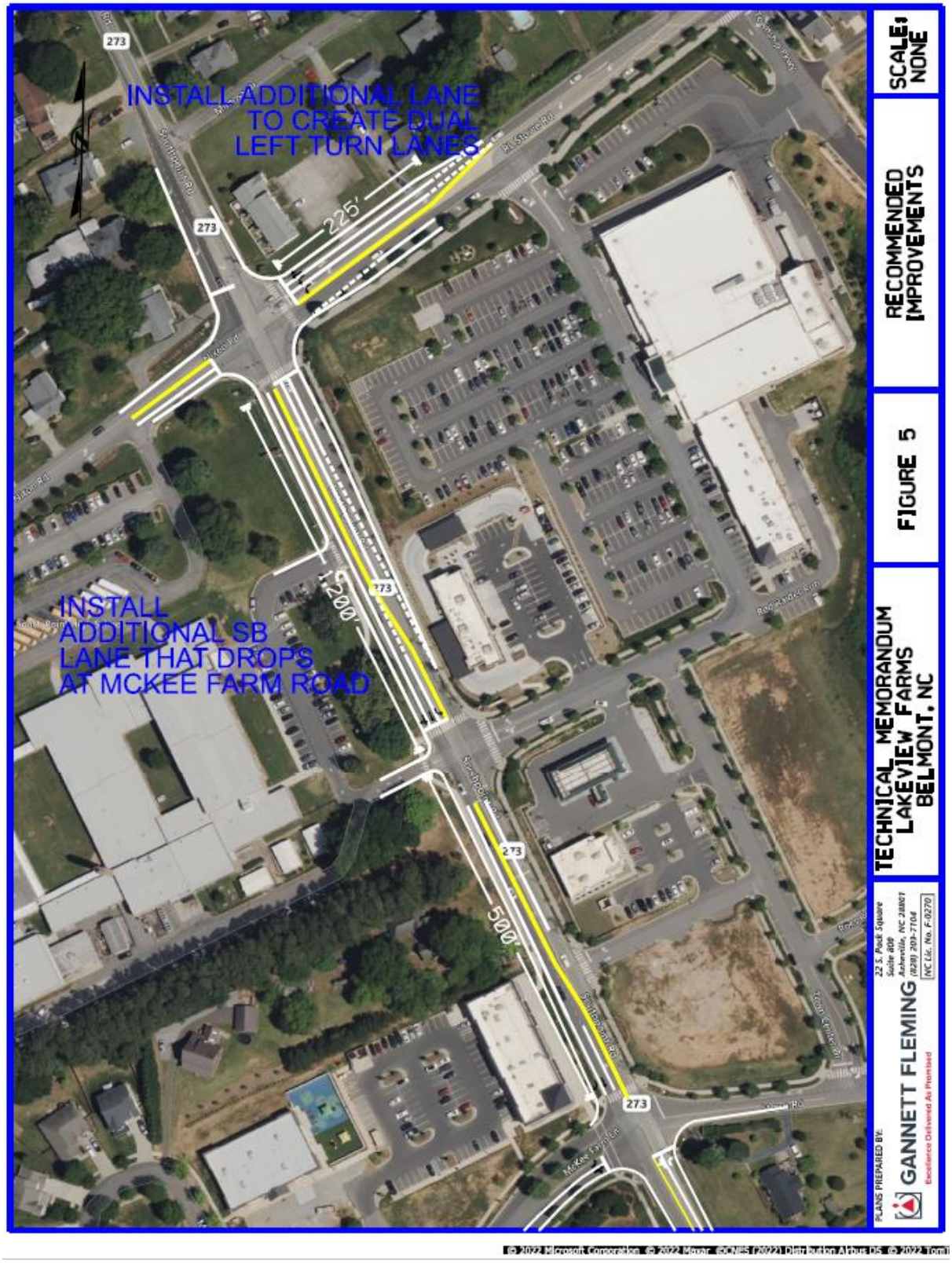


**Figure 5 – Recommended Improvements**



## CONCLUSIONS

This Memorandum was prepared to discuss the impacts of the anticipated traffic impact of the proposed Lakeview Farm residential development. Based on the information available and the results of the trip generation exercise and capacity analyses, it is the opinion of Gannett Fleming that there is no indication that the proposed development at the full proposed density will have an undue adverse impact on the corridor analyzed for this Memorandum if the recommended improvements are constructed.

References:

[1] ***Highway Capacity Manual,*** Transportation Research Board, 6th Edition, Washington, DC, 2019.
[2] ***Trip Generation Manual***, Institute of Transportation Engineers, 11th Edition, Washington, D. C., 2017.
[3] ***A policy on Street and Driveway Access to North Carolina Highways,*** NCDOT, Raleigh, NC, July 2003.
[4] NCDOT Rate vs. Equation Spreadsheet

Appendix A – Traffic Data
Appendix B – Capacity Software Reports
Appendix C – Site Plan
Appendix D – Construction Cost Estimates

# Appendix A: Traffic Data

A

GANNETT FLEMING
Excellence Delivered As Promised

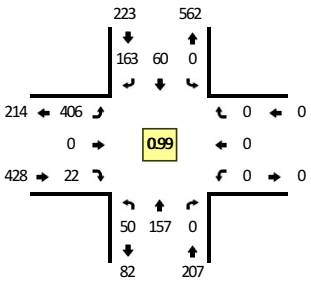
Type of peak hour being reported: Intersection Peak

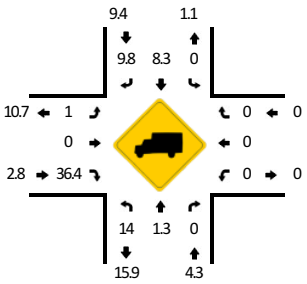
Method for determining peak hour: Total Entering Volume

**LOCATION:** S Point Road (NC 273) -- Armstrong Road (NC 273)
**CITY/STATE:** Gaston, NC

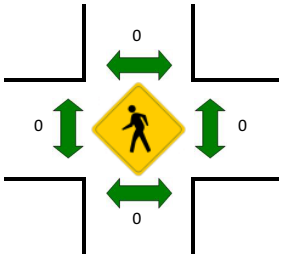
**QC JOB #:** 15795902
**DATE:** Thu, Apr 28 2022

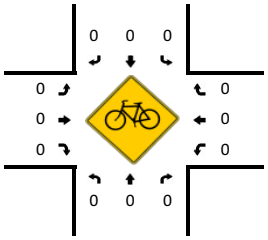
**Peak-Hour: 7:00 AM -- 8:00 AM**
**Peak 15-Min: 7:15 AM -- 7:30 AM**

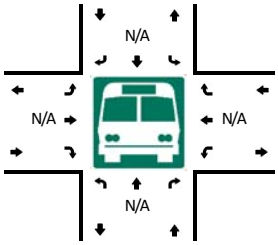


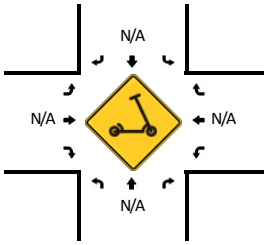




Quality Counts
DATA THAT DRIVES COMMUNITIES




| 15-Min Count Period Beginning At | S Point Road (NC 273) (Northbound) | | | | S Point Road (NC 273) (Southbound) | | | | Armstrong Road (NC 273) (Eastbound) | | | | Armstrong Road (NC 273) (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 6:30 AM | 3 | 20 | 0 | 0 | 0 | 8 | 17 | 0 | 74 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 123 | |
| 6:45 AM | 3 | 39 | 0 | 0 | 0 | 13 | 21 | 0 | 99 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 178 | |
| 7:00 AM | 9 | 50 | 0 | 0 | 0 | 11 | 27 | 0 | 114 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 214 | |
| 7:15 AM | 12 | 39 | 0 | 0 | 0 | 13 | 35 | 0 | 114 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 216 | 731 |
| 7:30 AM | 15 | 32 | 0 | 0 | 0 | 18 | 46 | 0 | 95 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 215 | 823 |
| 7:45 AM | 14 | 36 | 0 | 0 | 0 | 18 | 55 | 0 | 82 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 213 | 858 |
| 8:00 AM | 8 | 38 | 0 | 0 | 0 | 16 | 46 | 0 | 80 | 0 | 11 | 0 | 0 | 0 | 1 | 0 | 200 | 844 |
| 8:15 AM | 5 | 18 | 0 | 0 | 0 | 13 | 45 | 0 | 58 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 147 | 775 |

| 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 | 48 | 156 | 0 | 0 | 0 | 52 | 140 | 0 | 456 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 864 |
| Heavy Trucks | 0 | 0 | 0 | | 0 | 8 | 20 | | 0 | 0 | 4 | | 0 | 0 | 0 | | 32 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 5/9/2022 10:46 AM

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

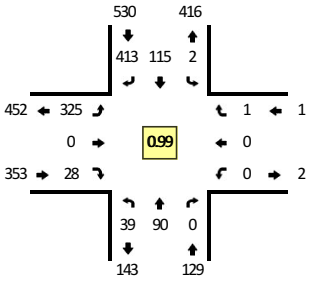
Type of peak hour being reported: Intersection Peak

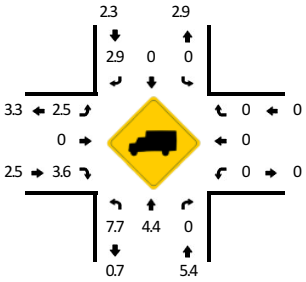
Method for determining peak hour: Total Entering Volume

**LOCATION:** S Point Road (NC 273) -- Armstrong Road (NC 273)
**CITY/STATE:** Gaston, NC

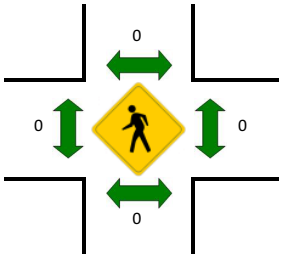
**QC JOB #:** 15795903
**DATE:** Thu, Apr 28 2022

**Peak-Hour: 4:45 PM -- 5:45 PM**
**Peak 15-Min: 5:30 PM -- 5:45 PM**

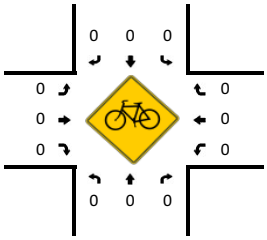


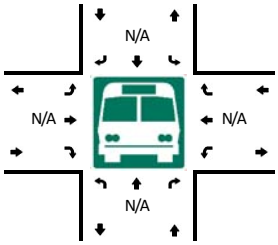




Quality Counts
DATA THAT DRIVES COMMUNITIES

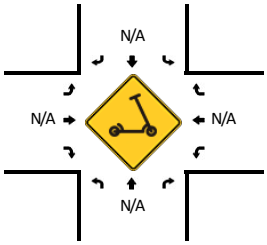











| 15-Min Count Period Beginning At | S Point Road (NC 273) (Northbound) | | | | S Point Road (NC 273) (Southbound) | | | | Armstrong Road (NC 273) (Eastbound) | | | | Armstrong Road (NC 273) (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 2:30 PM | 5 | 18 | 0 | 0 | 0 | 18 | 61 | 0 | 44 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 157 | |
| 2:45 PM | 6 | 15 | 0 | 0 | 0 | 24 | 60 | 0 | 45 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 167 | |
| 3:00 PM | 9 | 20 | 0 | 0 | 0 | 15 | 62 | 0 | 47 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 162 | |
| 3:15 PM | 5 | 17 | 0 | 0 | 0 | 25 | 78 | 0 | 57 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 191 | 677 |
| 3:30 PM | 8 | 20 | 0 | 0 | 0 | 31 | 84 | 0 | 61 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 211 | 731 |
| 3:45 PM | 6 | 11 | 0 | 0 | 0 | 29 | 75 | 0 | 45 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 174 | 738 |
| 4:00 PM | 6 | 24 | 0 | 0 | 1 | 28 | 89 | 0 | 51 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 203 | 779 |
| 4:15 PM | 5 | 27 | 0 | 0 | 0 | 30 | 101 | 0 | 80 | 0 | 9 | 0 | 0 | 0 | 1 | 0 | 253 | 841 |
| 4:30 PM | 9 | 18 | 1 | 0 | 0 | 28 | 98 | 0 | 78 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 235 | 865 |
| 4:45 PM | 7 | 16 | 0 | 0 | 1 | 31 | 95 | 0 | 93 | 0 | 9 | 0 | 0 | 0 | 1 | 0 | 253 | 944 |
| 5:00 PM | 11 | 25 | 0 | 0 | 1 | 25 | 119 | 0 | 69 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 255 | 996 |
| 5:15 PM | 9 | 26 | 0 | 0 | 0 | 26 | 110 | 0 | 68 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 249 | 992 |
| 5:30 PM | 12 | 23 | 0 | 0 | 0 | 33 | 89 | 0 | 95 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 256 | 1013 |
| 5:45 PM | 6 | 29 | 0 | 0 | 0 | 21 | 97 | 0 | 91 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 249 | 1009 |
| 6:00 PM | 4 | 15 | 0 | 0 | 0 | 38 | 112 | 0 | 75 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 251 | 1005 |
| 6:15 PM | 4 | 30 | 0 | 0 | 0 | 32 | 71 | 0 | 71 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 213 | 969 |
| 6:30 PM | 6 | 17 | 0 | 0 | 0 | 20 | 52 | 0 | 65 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 169 | 882 |
| 6:45 PM | 6 | 19 | 0 | 0 | 0 | 28 | 43 | 0 | 64 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 165 | 798 |

| 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 | 48 | 92 | 0 | 0 | 0 | 132 | 356 | 0 | 380 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 1024 |
| Heavy Trucks | 0 | 0 | 0 | | 0 | 0 | 8 | | 8 | 0 | 0 | | 0 | 0 | 0 | | 16 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

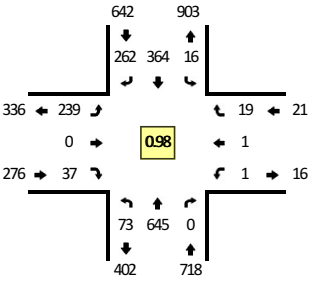
Report generated on 5/9/2022 10:46 AM

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

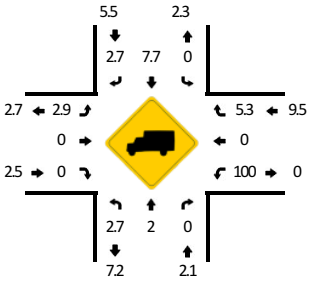
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

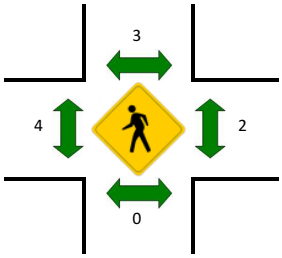
**LOCATION:** S Point Road (NC 273) -- Belmont Middle School/Belwood Drive | **QC JOB #:** 15795910
**CITY/STATE:** Gaston, NC | **DATE:** Thu, Apr 28 2022

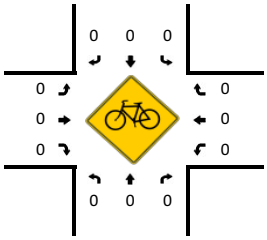
**Peak-Hour: 7:30 AM -- 8:30 AM**
**Peak 15-Min: 8:00 AM -- 8:15 AM**

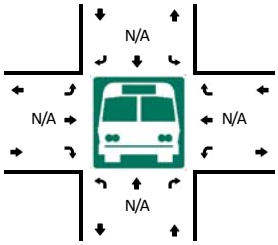


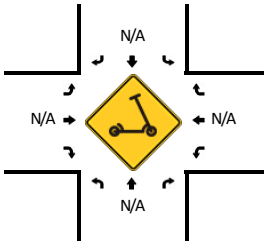

Quality Counts
DATA THAT DRIVES COMMUNITIES




| 15-Min Count Period Beginning At | S Point Road (NC 273) (Northbound) | | | | S Point Road (NC 273) (Southbound) | | | | Belmont Middle School/Belwood Drive (Eastbound) | | | | Belmont Middle School/Belwood Drive (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 6:30 AM | 0 | 154 | 0 | 0 | 1 | 82 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 240 | |
| 6:45 AM | 0 | 195 | 0 | 0 | 3 | 68 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 10 | 0 | 280 | |
| 7:00 AM | 1 | 259 | 0 | 0 | 6 | 51 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 332 | |
| 7:15 AM | 9 | 250 | 0 | 0 | 2 | 107 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 407 | 1259 |
| 7:30 AM | 13 | 196 | 0 | 0 | 6 | 91 | 55 | 0 | 27 | 0 | 5 | 0 | 1 | 0 | 3 | 0 | 397 | 1416 |
| 7:45 AM | 18 | 153 | 0 | 0 | 2 | 82 | 79 | 0 | 67 | 0 | 9 | 0 | 0 | 1 | 5 | 0 | 416 | 1552 |
| 8:00 AM | 24 | 140 | 0 | 0 | 5 | 93 | 59 | 0 | 83 | 0 | 11 | 0 | 0 | 0 | 7 | 0 | 422 | 1642 |
| 8:15 AM | 18 | 156 | 0 | 0 | 3 | 98 | 69 | 0 | 62 | 0 | 12 | 0 | 0 | 0 | 4 | 0 | 422 | 1657 |

| 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 | 96 | 560 | 0 | 0 | 20 | 372 | 236 | 0 | 332 | 0 | 44 | 0 | 0 | 0 | 28 | 0 | 1688 |
| Heavy Trucks | 0 | 8 | 0 | | 0 | 32 | 4 | | 4 | 0 | 0 | | 0 | 0 | 0 | | 48 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 8 | | | | 4 | | | | 4 | | | 16 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 5/9/2022 10:46 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

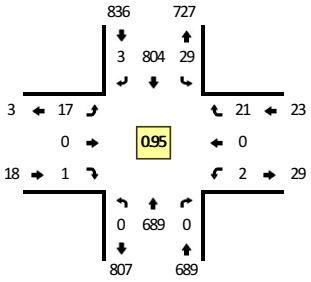
Type of peak hour being reported: Intersection Peak

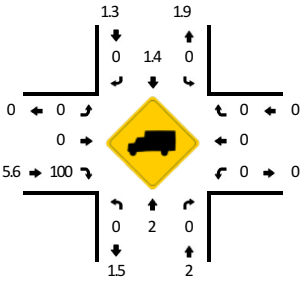
Method for determining peak hour: Total Entering Volume

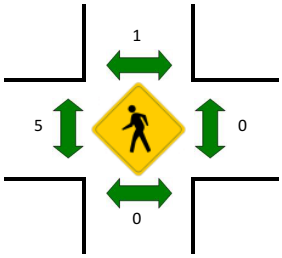
**LOCATION:** S Point Road (NC 273) -- Belmont Middle School/Belwood Drive
**CITY/STATE:** Gaston, NC

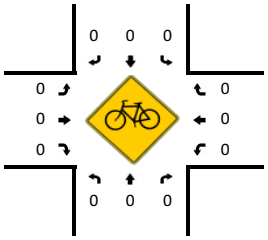
**QC JOB #:** 15795911
**DATE:** Thu, Apr 28 2022

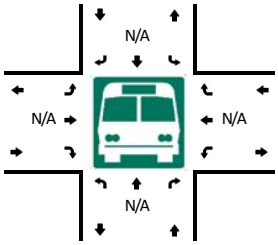
**Peak-Hour: 5:00 PM -- 6:00 PM**
**Peak 15-Min: 5:00 PM -- 5:15 PM**

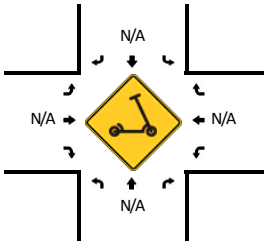



| 15-Min Count Period Beginning At | S Point Road (NC 273) (Northbound) | | | | S Point Road (NC 273) (Southbound) | | | | Belmont Middle School/Belwood Drive (Eastbound) | | | | Belmont Middle School/Belwood Drive (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 2:30 PM | 3 | 96 | 0 | 0 | 8 | 151 | 12 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 281 | |
| 2:45 PM | 2 | 103 | 0 | 0 | 4 | 133 | 14 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 265 | |
| 3:00 PM | 2 | 89 | 0 | 0 | 5 | 135 | 19 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 263 | |
| 3:15 PM | 2 | 122 | 0 | 0 | 14 | 131 | 19 | 0 | 6 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 296 | 1105 |
| 3:30 PM | 2 | 103 | 0 | 0 | 4 | 191 | 26 | 0 | 62 | 1 | 13 | 0 | 0 | 0 | 5 | 0 | 407 | 1231 |
| 3:45 PM | 2 | 111 | 0 | 0 | 6 | 175 | 17 | 0 | 37 | 0 | 4 | 0 | 0 | 0 | 6 | 0 | 358 | 1324 |
| 4:00 PM | 3 | 113 | 0 | 0 | 5 | 189 | 5 | 0 | 3 | 0 | 2 | 0 | 1 | 0 | 6 | 0 | 327 | 1388 |
| 4:15 PM | 1 | 138 | 0 | 0 | 7 | 199 | 3 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 359 | 1451 |
| 4:30 PM | 2 | 159 | 1 | 0 | 3 | 168 | 6 | 0 | 18 | 0 | 7 | 0 | 2 | 0 | 4 | 0 | 370 | 1414 |
| 4:45 PM | 1 | 154 | 0 | 0 | 6 | 195 | 6 | 0 | 12 | 0 | 8 | 0 | 0 | 0 | 2 | 0 | 384 | 1440 |
| 5:00 PM | 0 | 166 | 0 | 0 | 6 | 224 | 1 | 0 | 6 | 0 | 1 | 0 | 2 | 0 | 4 | 0 | 410 | 1523 |
| 5:15 PM | 0 | 159 | 0 | 0 | 10 | 200 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 375 | 1539 |
| 5:30 PM | 0 | 171 | 0 | 0 | 6 | 194 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 385 | 1554 |
| 5:45 PM | 0 | 193 | 0 | 0 | 7 | 186 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 396 | 1566 |
| 6:00 PM | 0 | 149 | 0 | 0 | 5 | 212 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 369 | 1525 |
| 6:15 PM | 0 | 139 | 0 | 0 | 9 | 153 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 308 | 1458 |
| 6:30 PM | 0 | 123 | 1 | 0 | 9 | 146 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 288 | 1361 |
| 6:45 PM | 11 | 119 | 1 | 0 | 6 | 139 | 50 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 338 | 1303 |

| 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 | 664 | 0 | 0 | 24 | 896 | 4 | 0 | 24 | 0 | 4 | 0 | 8 | 0 | 16 | 0 | 1640 |
| Heavy Trucks | 0 | 12 | 0 | | 0 | 4 | 0 | | 0 | 0 | 4 | | 0 | 0 | 0 | | 20 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

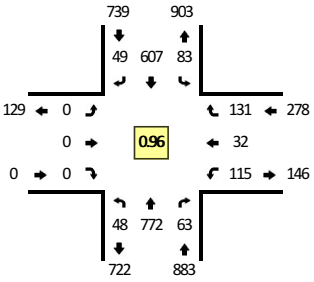
Report generated on 5/9/2022 10:46 AM

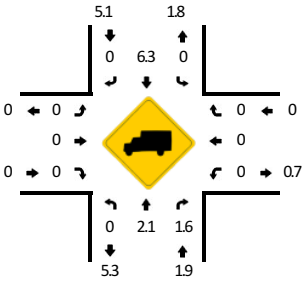
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

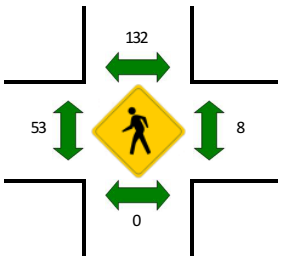
**LOCATION:** S Point Road (NC 273) -- South Point High School driveway/Red Raider Run | **QC JOB #:** 15795914
**CITY/STATE:** Belmont, NC | **DATE:** Thu, Apr 28 2022

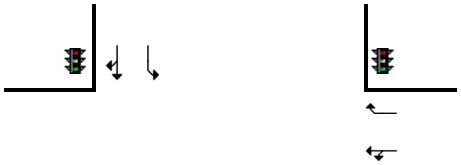
**Peak-Hour: 7:30 AM -- 8:30 AM**
**Peak 15-Min: 8:15 AM -- 8:30 AM**

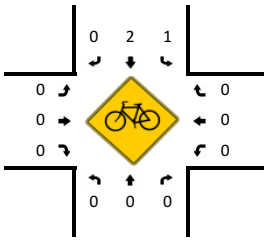


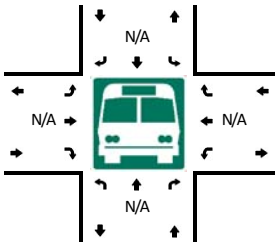



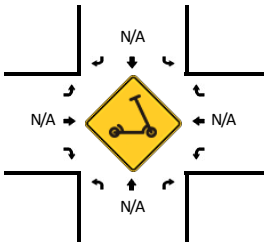

Quality Counts
DATA THAT DRIVES COMMUNITIES






| 15-Min Count Period Beginning At | S Point Road (NC 273) (Northbound) | | | | S Point Road (NC 273) (Southbound) | | | | South Point High School driveway/Red Raider Run (Eastbound) | | | | South Point High School driveway/Red Raider Run (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 6:30 AM | 0 | 143 | 13 | 0 | 12 | 82 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 14 | 0 | 271 | |
| 6:45 AM | 1 | 193 | 15 | 0 | 6 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 13 | 0 | 296 | |
| 7:00 AM | 0 | 248 | 16 | 0 | 13 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 23 | 0 | 368 | |
| 7:15 AM | 0 | 245 | 11 | 0 | 17 | 134 | 2 | 0 | 0 | 0 | 0 | 0 | 20 | 1 | 29 | 0 | 459 | 1394 |
| 7:30 AM | 3 | 212 | 16 | 0 | 32 | 153 | 3 | 0 | 0 | 0 | 0 | 0 | 26 | 2 | 30 | 0 | 477 | 1600 |
| 7:45 AM | 10 | 195 | 18 | 0 | 25 | 159 | 14 | 0 | 0 | 0 | 0 | 0 | 31 | 1 | 34 | 0 | 487 | 1791 |
| 8:00 AM | 11 | 188 | 11 | 0 | 15 | 140 | 11 | 0 | 0 | 0 | 0 | 0 | 22 | 11 | 31 | 0 | 440 | 1863 |
| 8:15 AM | 24 | 177 | 18 | 0 | 11 | 155 | 21 | 0 | 0 | 0 | 0 | 0 | 36 | 18 | 36 | 0 | 496 | 1900 |

| 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 | 96 | 708 | 72 | 0 | 44 | 620 | 84 | 0 | 0 | 0 | 0 | 0 | 144 | 72 | 144 | 0 | 1984 |
| Heavy Trucks | 0 | 16 | 4 | | 0 | 60 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 80 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 256 | | | | 36 | | | | 4 | | | 296 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

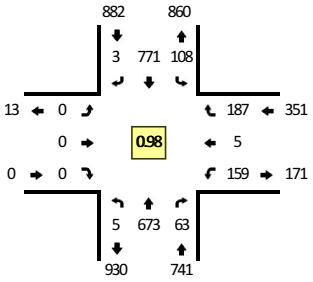
*Comments:*

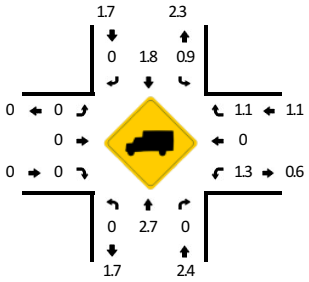
Report generated on 5/9/2022 10:46 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

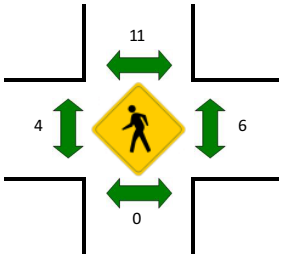
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

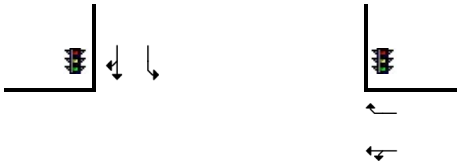
**LOCATION:** S Point Road (NC 273) -- South Point High School driveway/Red Raider Run | **QC JOB #:** 15795915
**CITY/STATE:** Belmont, NC | **DATE:** Thu, Apr 28 2022

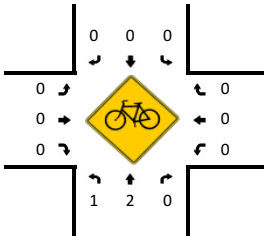
**Peak-Hour: 4:45 PM -- 5:45 PM**
**Peak 15-Min: 4:45 PM -- 5:00 PM**

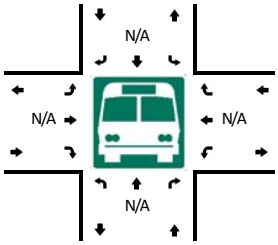


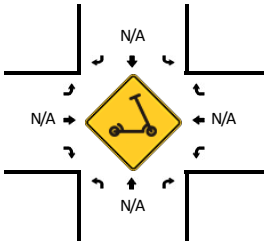






| 15-Min Count Period Beginning At | S Point Road (NC 273) (Northbound) | | | | S Point Road (NC 273) (Southbound) | | | | South Point High School driveway/Red Raider Run (Eastbound) | | | | South Point High School driveway/Red Raider Run (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 2:30 PM | 0 | 108 | 11 | 0 | 17 | 156 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 41 | 0 | 366 | |
| 2:45 PM | 0 | 104 | 12 | 0 | 18 | 136 | 3 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 25 | 0 | 314 | |
| 3:00 PM | 1 | 111 | 12 | 0 | 20 | 152 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 30 | 0 | 356 | |
| 3:15 PM | 3 | 102 | 14 | 0 | 28 | 170 | 3 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 37 | 0 | 386 | 1422 |
| 3:30 PM | 2 | 133 | 8 | 0 | 26 | 172 | 5 | 0 | 0 | 0 | 0 | 0 | 55 | 3 | 55 | 0 | 459 | 1515 |
| 3:45 PM | 4 | 158 | 16 | 0 | 35 | 183 | 1 | 0 | 0 | 0 | 0 | 0 | 23 | 1 | 48 | 0 | 469 | 1670 |
| 4:00 PM | 4 | 121 | 15 | 0 | 30 | 190 | 5 | 0 | 0 | 0 | 0 | 0 | 25 | 1 | 46 | 0 | 437 | 1751 |
| 4:15 PM | 5 | 131 | 15 | 0 | 28 | 184 | 2 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 39 | 0 | 443 | 1808 |
| 4:30 PM | 2 | 162 | 21 | 0 | 32 | 170 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 3 | 37 | 0 | 455 | 1804 |
| 4:45 PM | 2 | 173 | 12 | 0 | 30 | 209 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | 1 | 46 | 0 | 503 | 1838 |
| 5:00 PM | 1 | 156 | 18 | 0 | 32 | 192 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 2 | 53 | 0 | 500 | 1901 |
| 5:15 PM | 2 | 166 | 16 | 0 | 24 | 191 | 1 | 0 | 0 | 0 | 0 | 0 | 46 | 1 | 37 | 0 | 484 | 1942 |
| 5:30 PM | 0 | 178 | 17 | 0 | 22 | 179 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | 1 | 51 | 0 | 487 | 1974 |
| 5:45 PM | 3 | 180 | 19 | 0 | 27 | 183 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 41 | 0 | 492 | 1963 |
| 6:00 PM | 2 | 128 | 19 | 0 | 25 | 195 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 36 | 0 | 447 | 1910 |
| 6:15 PM | 2 | 145 | 20 | 0 | 24 | 155 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 43 | 0 | 416 | 1842 |
| 6:30 PM | 2 | 123 | 15 | 0 | 29 | 158 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 43 | 0 | 394 | 1749 |
| 6:45 PM | 0 | 112 | 19 | 0 | 19 | 154 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | 0 | 44 | 0 | 399 | 1656 |

| 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 | 8 | 692 | 48 | 0 | 120 | 836 | 4 | 0 | 0 | 0 | 0 | 0 | 116 | 4 | 184 | 0 | 2012 |
| Heavy Trucks | 0 | 16 | 0 | | 4 | 28 | 0 | | 0 | 0 | 0 | | 4 | 0 | 4 | | 56 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 4 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 4 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 5/9/2022 10:46 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

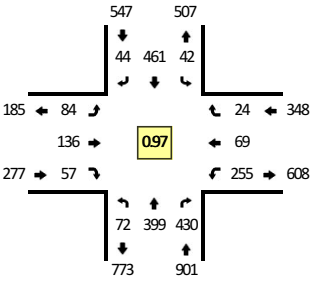
Type of peak hour being reported: Intersection Peak

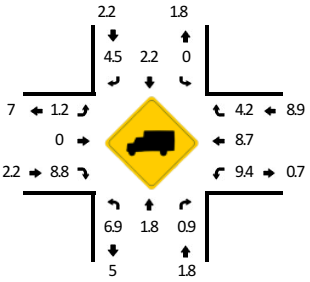
Method for determining peak hour: Total Entering Volume

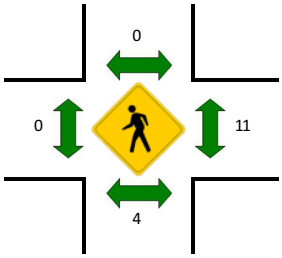
**LOCATION:** S Point Road (NC 273) -- R L Stowe Road/Nixon Road
**CITY/STATE:** Belmont, NC

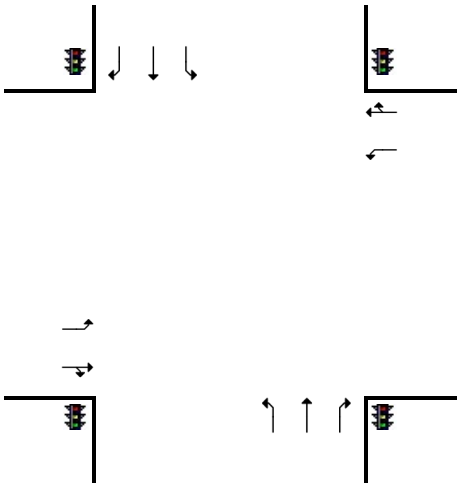
**QC JOB #:** 15795916
**DATE:** Thu, Apr 28 2022

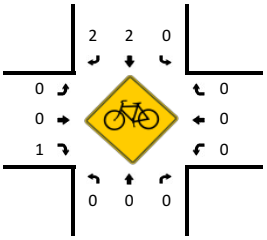
**Peak-Hour: 7:30 AM -- 8:30 AM**
**Peak 15-Min: 8:15 AM -- 8:30 AM**

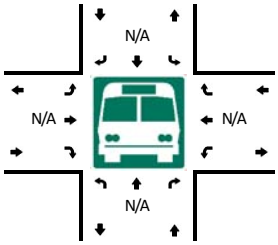


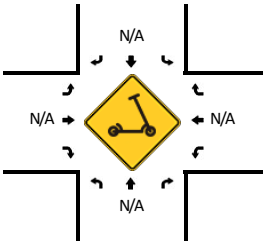








| 15-Min Count Period Beginning At | S Point Road (NC 273) (Northbound) | | | | S Point Road (NC 273) (Southbound) | | | | R L Stowe Road/Nixon Road (Eastbound) | | | | R L Stowe Road/Nixon Road (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 6:30 AM | 2 | 48 | 106 | 0 | 1 | 32 | 3 | 0 | 7 | 16 | 4 | 0 | 56 | 0 | 1 | 0 | 276 | |
| 6:45 AM | 0 | 70 | 131 | 0 | 4 | 35 | 1 | 0 | 11 | 17 | 3 | 0 | 25 | 1 | 3 | 0 | 301 | |
| 7:00 AM | 1 | 138 | 137 | 0 | 7 | 30 | 1 | 0 | 7 | 21 | 8 | 0 | 37 | 8 | 3 | 0 | 398 | |
| 7:15 AM | 1 | 125 | 142 | 0 | 8 | 96 | 8 | 0 | 19 | 23 | 4 | 0 | 55 | 11 | 6 | 0 | 498 | 1473 |
| 7:30 AM | 5 | 105 | 131 | 0 | 8 | 135 | 18 | 0 | 13 | 19 | 7 | 0 | 49 | 13 | 5 | 0 | 508 | 1705 |
| 7:45 AM | 15 | 106 | 105 | 0 | 7 | 122 | 8 | 0 | 19 | 44 | 14 | 0 | 72 | 8 | 4 | 0 | 524 | 1928 |
| 8:00 AM | 16 | 104 | 101 | 0 | 13 | 117 | 8 | 0 | 20 | 43 | 11 | 0 | 58 | 14 | 4 | 0 | 509 | 2039 |
| 8:15 AM | 36 | 84 | 93 | 0 | 14 | 87 | 10 | 0 | 32 | 30 | 25 | 0 | 76 | 34 | 11 | 0 | 532 | 2073 |

| 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 | 336 | 372 | 0 | 56 | 348 | 40 | 0 | 128 | 120 | 100 | 0 | 304 | 136 | 44 | 0 | 2128 |
| Heavy Trucks | 16 | 0 | 0 | | 0 | 12 | 4 | | 0 | 0 | 12 | | 40 | 8 | 0 | | 92 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 8 | | | | 0 | | | | 0 | | | | 0 | | | 8 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 5/9/2022 10:46 AM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

**LOCATION:** S Point Road (NC 273) -- R L Stowe Road/Nixon Road

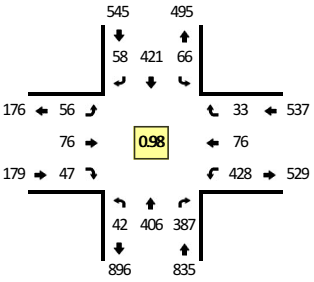
**QC JOB #:** 15795917

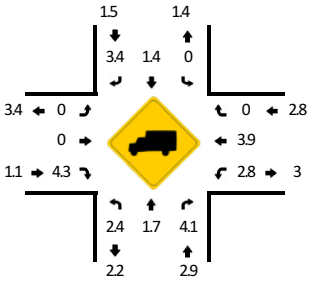
**CITY/STATE:** Belmont, NC

**DATE:** Thu, Apr 28 2022

**Peak-Hour: 4:30 PM -- 5:30 PM**

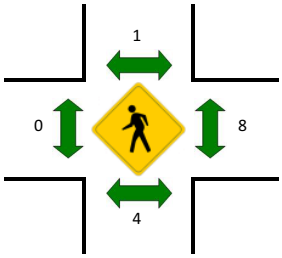
**Peak 15-Min: 5:00 PM -- 5:15 PM**

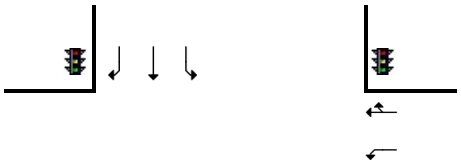


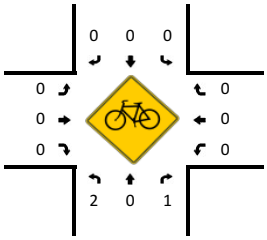



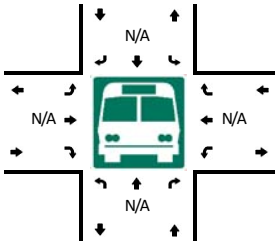

Quality Counts

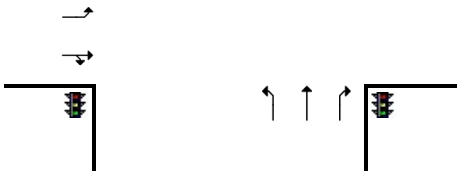
DATA THAT DRIVES COMMUNITIES

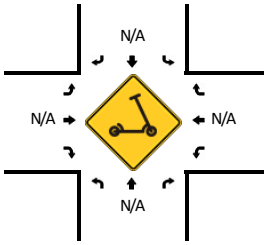







| 15-Min Count Period Beginning At | S Point Road (NC 273) (Northbound) | | | | S Point Road (NC 273) (Southbound) | | | | R L Stowe Road/Nixon Road (Eastbound) | | | | R L Stowe Road/Nixon Road (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 2:30 PM | 7 | 79 | 64 | 0 | 20 | 107 | 10 | 0 | 6 | 12 | 0 | 0 | 65 | 14 | 5 | 0 | 389 | |
| 2:45 PM | 3 | 67 | 63 | 0 | 18 | 68 | 6 | 0 | 8 | 6 | 5 | 0 | 86 | 12 | 5 | 0 | 347 | |
| 3:00 PM | 7 | 73 | 56 | 0 | 24 | 86 | 12 | 0 | 8 | 17 | 4 | 0 | 80 | 12 | 5 | 0 | 384 | |
| 3:15 PM | 8 | 73 | 59 | 0 | 18 | 103 | 14 | 0 | 18 | 17 | 13 | 0 | 90 | 7 | 2 | 0 | 422 | 1542 |
| 3:30 PM | 16 | 107 | 75 | 0 | 19 | 91 | 8 | 0 | 36 | 24 | 32 | 0 | 78 | 16 | 2 | 0 | 504 | 1657 |
| 3:45 PM | 15 | 119 | 76 | 0 | 21 | 117 | 12 | 0 | 24 | 20 | 5 | 0 | 96 | 22 | 7 | 0 | 534 | 1844 |
| 4:00 PM | 8 | 106 | 52 | 0 | 16 | 113 | 14 | 0 | 12 | 10 | 3 | 0 | 108 | 8 | 5 | 0 | 455 | 1915 |
| 4:15 PM | 8 | 78 | 93 | 0 | 17 | 109 | 23 | 0 | 17 | 14 | 13 | 0 | 91 | 16 | 7 | 0 | 486 | 1979 |
| 4:30 PM | 12 | 101 | 96 | 0 | 15 | 118 | 16 | 0 | 8 | 25 | 18 | 0 | 83 | 17 | 13 | 0 | 522 | 1997 |
| 4:45 PM | 7 | 101 | 102 | 0 | 20 | 103 | 16 | 0 | 12 | 14 | 7 | 0 | 122 | 18 | 7 | 0 | 529 | 1992 |
| 5:00 PM | 10 | 96 | 103 | 0 | 14 | 105 | 13 | 0 | 17 | 18 | 10 | 0 | 124 | 17 | 8 | 0 | 535 | 2072 |
| 5:15 PM | 13 | 108 | 86 | 0 | 17 | 95 | 13 | 0 | 19 | 19 | 12 | 0 | 99 | 24 | 5 | 0 | 510 | 2096 |
| 5:30 PM | 12 | 107 | 108 | 0 | 15 | 92 | 14 | 0 | 12 | 21 | 10 | 0 | 103 | 17 | 4 | 0 | 515 | 2089 |
| 5:45 PM | 9 | 117 | 106 | 0 | 8 | 100 | 16 | 0 | 12 | 30 | 11 | 0 | 102 | 19 | 4 | 0 | 534 | 2094 |
| 6:00 PM | 8 | 73 | 85 | 0 | 22 | 100 | 15 | 0 | 16 | 26 | 14 | 0 | 99 | 16 | 4 | 0 | 478 | 2037 |
| 6:15 PM | 11 | 84 | 86 | 0 | 13 | 89 | 10 | 0 | 12 | 12 | 6 | 0 | 79 | 4 | 5 | 0 | 411 | 1938 |
| 6:30 PM | 4 | 105 | 62 | 0 | 16 | 111 | 9 | 0 | 14 | 11 | 10 | 0 | 67 | 14 | 3 | 0 | 426 | 1849 |
| 6:45 PM | 10 | 89 | 52 | 0 | 10 | 92 | 15 | 0 | 11 | 13 | 12 | 0 | 74 | 5 | 6 | 0 | 389 | 1704 |

| 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 | 40 | 384 | 412 | 0 | 56 | 420 | 52 | 0 | 68 | 72 | 40 | 0 | 496 | 68 | 32 | 0 | 2140 |
| Heavy Trucks | 0 | 8 | 8 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 4 | 0 | 0 | | 20 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 12 | | | | 4 | | | | 0 | | | | 12 | | | 28 |
| Bicycles | 4 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 4 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

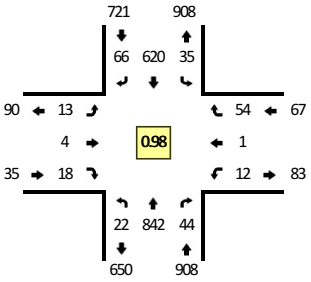
Report generated on 5/9/2022 10:46 AM

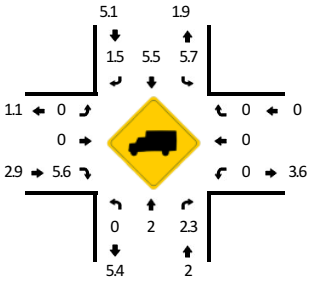
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

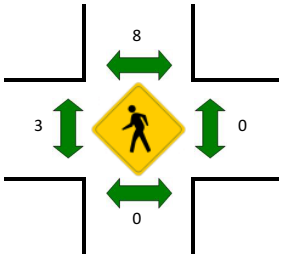
**LOCATION:** S Point Road (NC 273) -- Stowe Road/McKee Farm Lane | **QC JOB #:** 15795912
**CITY/STATE:** Belmont, NC | **DATE:** Thu, Apr 28 2022

**Peak-Hour: 7:30 AM -- 8:30 AM**
**Peak 15-Min: 8:15 AM -- 8:30 AM**

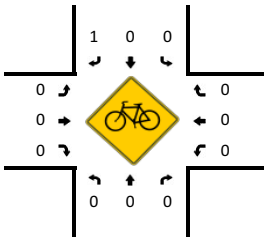


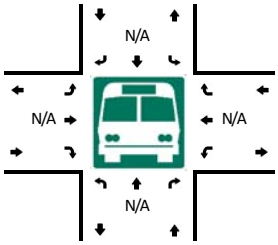




Quality Counts
DATA THAT DRIVES COMMUNITIES

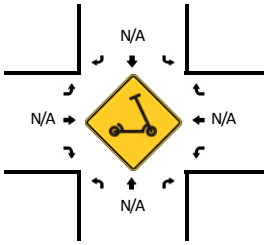











| 15-Min Count Period Beginning At | S Point Road (NC 273) (Northbound) | | | | S Point Road (NC 273) (Southbound) | | | | Stowe Road/McKee Farm Lane (Eastbound) | | | | Stowe Road/McKee Farm Lane (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 6:30 AM | 0 | 151 | 3 | 0 | 1 | 84 | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 6 | 0 | 253 | |
| 6:45 AM | 2 | 190 | 9 | 0 | 1 | 66 | 1 | 0 | 11 | 2 | 1 | 0 | 2 | 0 | 15 | 0 | 300 | |
| 7:00 AM | 1 | 227 | 28 | 0 | 8 | 58 | 2 | 0 | 13 | 5 | 2 | 0 | 0 | 0 | 31 | 0 | 375 | |
| 7:15 AM | 1 | 233 | 20 | 0 | 9 | 133 | 9 | 0 | 4 | 2 | 3 | 0 | 4 | 0 | 22 | 0 | 440 | 1368 |
| 7:30 AM | 3 | 220 | 6 | 0 | 11 | 148 | 17 | 0 | 4 | 0 | 3 | 1 | 5 | 0 | 17 | 0 | 435 | 1550 |
| 7:45 AM | 4 | 208 | 7 | 0 | 8 | 160 | 25 | 0 | 3 | 2 | 3 | 0 | 2 | 0 | 13 | 0 | 435 | 1685 |
| 8:00 AM | 9 | 205 | 18 | 0 | 8 | 140 | 14 | 0 | 3 | 2 | 5 | 0 | 4 | 0 | 11 | 0 | 419 | 1729 |
| 8:15 AM | 6 | 209 | 13 | 0 | 8 | 172 | 10 | 0 | 2 | 0 | 7 | 0 | 1 | 1 | 13 | 0 | 442 | 1731 |

| 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 | 24 | 836 | 52 | 0 | 32 | 688 | 40 | 0 | 8 | 0 | 28 | 0 | 4 | 4 | 52 | 0 | 1768 |
| Heavy Trucks | 0 | 20 | 0 | | 4 | 60 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 84 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 20 | | | | 0 | | | | 0 | | | 20 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 5/9/2022 10:46 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

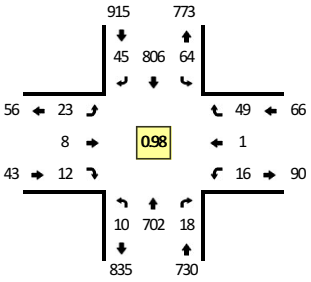
Type of peak hour being reported: Intersection Peak

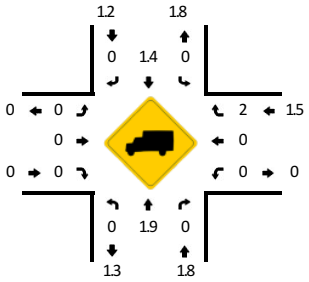
Method for determining peak hour: Total Entering Volume

**LOCATION:** S Point Road (NC 273) -- Stowe Road/McKee Farm Lane
**CITY/STATE:** Belmont, NC

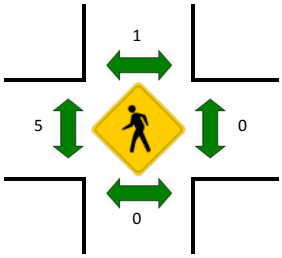
**QC JOB #:** 15795913
**DATE:** Thu, Apr 28 2022

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

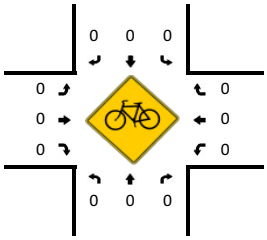


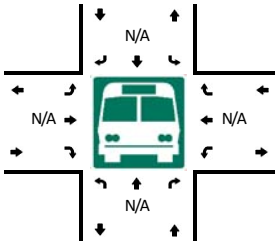




Quality Counts
DATA THAT DRIVES COMMUNITIES

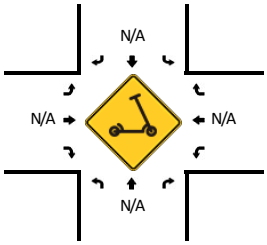











| 15-Min Count Period Beginning At | S Point Road (NC 273) (Northbound) | | | | S Point Road (NC 273) (Southbound) | | | | Stowe Road/McKee Farm Lane (Eastbound) | | | | Stowe Road/McKee Farm Lane (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 2:30 PM | 1 | 107 | 1 | 0 | 10 | 170 | 8 | 0 | 6 | 2 | 1 | 0 | 6 | 1 | 10 | 0 | 323 | |
| 2:45 PM | 5 | 100 | 1 | 0 | 4 | 143 | 7 | 0 | 9 | 1 | 0 | 0 | 4 | 0 | 12 | 0 | 286 | |
| 3:00 PM | 3 | 102 | 4 | 0 | 10 | 156 | 14 | 0 | 10 | 0 | 1 | 0 | 3 | 0 | 16 | 0 | 319 | |
| 3:15 PM | 9 | 109 | 5 | 0 | 10 | 166 | 22 | 0 | 3 | 1 | 2 | 0 | 1 | 0 | 14 | 0 | 342 | 1270 |
| 3:30 PM | 4 | 137 | 10 | 0 | 15 | 191 | 19 | 0 | 5 | 6 | 36 | 0 | 3 | 0 | 12 | 0 | 438 | 1385 |
| 3:45 PM | 3 | 163 | 10 | 0 | 13 | 182 | 13 | 0 | 6 | 3 | 1 | 0 | 4 | 0 | 8 | 0 | 406 | 1505 |
| 4:00 PM | 0 | 121 | 2 | 0 | 11 | 194 | 6 | 0 | 3 | 1 | 2 | 0 | 1 | 0 | 16 | 0 | 357 | 1543 |
| 4:15 PM | 5 | 140 | 5 | 0 | 16 | 202 | 10 | 1 | 7 | 0 | 2 | 1 | 5 | 1 | 15 | 0 | 410 | 1611 |
| 4:30 PM | 6 | 165 | 3 | 0 | 16 | 172 | 9 | 0 | 6 | 0 | 2 | 0 | 2 | 0 | 17 | 0 | 398 | 1571 |
| 4:45 PM | 2 | 162 | 3 | 0 | 16 | 207 | 11 | 0 | 5 | 4 | 1 | 0 | 3 | 0 | 13 | 0 | 427 | 1592 |
| 5:00 PM | 3 | 169 | 4 | 0 | 15 | 213 | 11 | 0 | 3 | 1 | 3 | 0 | 7 | 0 | 12 | 0 | 441 | 1676 |
| 5:15 PM | 4 | 167 | 0 | 0 | 18 | 205 | 15 | 0 | 4 | 2 | 5 | 0 | 1 | 0 | 14 | 0 | 435 | 1701 |
| 5:30 PM | 1 | 174 | 4 | 1 | 17 | 193 | 8 | 0 | 12 | 1 | 2 | 0 | 6 | 0 | 12 | 0 | 431 | 1734 |
| 5:45 PM | 1 | 192 | 10 | 0 | 14 | 195 | 11 | 0 | 3 | 4 | 2 | 1 | 2 | 1 | 11 | 0 | 447 | 1754 |
| 6:00 PM | 1 | 146 | 3 | 0 | 15 | 208 | 14 | 0 | 5 | 3 | 3 | 0 | 3 | 1 | 6 | 0 | 408 | 1721 |
| 6:15 PM | 0 | 138 | 5 | 0 | 13 | 158 | 11 | 0 | 8 | 0 | 6 | 0 | 3 | 0 | 13 | 0 | 355 | 1641 |
| 6:30 PM | 0 | 122 | 3 | 0 | 14 | 153 | 15 | 0 | 10 | 0 | 4 | 0 | 4 | 0 | 12 | 0 | 337 | 1547 |
| 6:45 PM | 1 | 116 | 12 | 0 | 12 | 184 | 6 | 0 | 5 | 0 | 5 | 0 | 6 | 2 | 14 | 0 | 363 | 1463 |

| 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 | 4 | 768 | 40 | 0 | 56 | 780 | 44 | 0 | 12 | 16 | 8 | 4 | 8 | 4 | 44 | 0 | 1788 |
| Heavy Trucks | 0 | 8 | 0 | | 0 | 12 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 20 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 5/9/2022 10:46 AM

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

# Appendix B: Capacity Software Reports

B

GANNETT FLEMING
Excellence Delivered As Promised

| Intersection | |
|---|---|
| Int Delay, s/veh | 303.9 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 752 | 28 | 64 | 185 | 128 | 355 |
| Future Vol, veh/h | 752 | 28 | 64 | 185 | 128 | 355 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 836 | 31 | 71 | 206 | 142 | 394 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 687 | 339 | 536 | 0 | - | 0 |
| Stage 1 | 339 | - | - | - | - | - |
| Stage 2 | 348 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | ~ 413 | 703 | 1032 | - | - | - |
| Stage 1 | ~ 722 | - | - | - | - | - |
| Stage 2 | ~ 715 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 381 | 703 | 1032 | - | - | - |
| Mov Cap-2 Maneuver | ~ 381 | - | - | - | - | - |
| Stage 1 | ~ 666 | - | - | - | - | - |
| Stage 2 | ~ 715 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 588.4 | 2.2 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1032 | - | 387 | - | - |
| HCM Lane V/C Ratio | 0.069 | - | 2.239 | - | - |
| HCM Control Delay (s) | 8.7 | 0 | $ 588.4 | - | - |
| HCM Lane LOS | A | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 65 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 269 | 4 | 42 | 10 | 4 | 56 | 82 | 1026 | 4 | 28 | 518 | 295 |
| Future Volume (vph) | 269 | 4 | 42 | 10 | 4 | 56 | 82 | 1026 | 4 | 28 | 518 | 295 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 3% | | | 0% | | | 1% | | | 0% | |
| Storage Length (ft) | 0 | | 175 | 0 | | 100 | 200 | | 0 | 100 | | 200 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 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 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.891 | | | 0.999 | | | | 0.850 |
| Flt Protected | | 0.953 | | | 0.993 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1749 | 1560 | 0 | 1648 | 0 | 1761 | 1834 | 0 | 1770 | 1863 | 1583 |
| Flt Permitted | | 0.679 | | | 0.683 | | 0.255 | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 1246 | 1560 | 0 | 1134 | 0 | 473 | 1834 | 0 | 1770 | 1863 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 52 | | 62 | | | | | | | 448 |
| Link Speed (mph) | | 25 | | | 30 | | | 45 | | | 45 | |
| Link Distance (ft) | | 1001 | | | 1020 | | | 1186 | | | 1341 | |
| Travel Time (s) | | 27.3 | | | 23.2 | | | 18.0 | | | 20.3 | |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.90 | 0.90 | 0.90 | 0.50 | 0.90 | 0.90 | 0.90 | 0.90 | 0.50 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 538 | 8 | 84 | 11 | 4 | 62 | 164 | 1140 | 4 | 31 | 576 | 590 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 546 | 84 | 0 | 77 | 0 | 164 | 1144 | 0 | 31 | 576 | 590 |
| Turn Type | Perm | NA | pm+ov | Perm | NA | | pm+pt | NA | | Prot | NA | Perm |
| Protected Phases | | 4 | 5 | | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 10.0 | | 7.0 | 10.0 | 10.0 |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | 14.0 | 17.0 | | 14.0 | 17.0 | 17.0 |
| Total Split (s) | 55.0 | 55.0 | 14.0 | 55.0 | 55.0 | | 14.0 | 81.0 | | 14.0 | 81.0 | 81.0 |
| Total Split (%) | 36.7% | 36.7% | 9.3% | 36.7% | 36.7% | | 9.3% | 54.0% | | 9.3% | 54.0% | 54.0% |
| Yellow Time (s) | 5.0 | 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 | 2.0 |
| Lost Time Adjust (s) | | -2.0 | -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 | 5.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | Min |
| Act Effct Green (s) | | 50.1 | 64.1 | | 50.1 | | 81.4 | 76.2 | | 9.0 | 70.2 | 70.2 |
| Actuated g/C Ratio | | 0.35 | 0.44 | | 0.35 | | 0.56 | 0.53 | | 0.06 | 0.49 | 0.49 |
| v/c Ratio | | 1.26 | 0.12 | | 0.18 | | 0.47 | 1.18 | | 0.28 | 0.64 | 0.59 |
| Control Delay | | 175.2 | 11.7 | | 12.2 | | 18.5 | 125.1 | | 73.6 | 31.2 | 8.1 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 175.2 | 11.7 | | 12.2 | | 18.5 | 125.1 | | 73.6 | 31.2 | 8.1 |
| LOS | | F | B | | B | | B | F | | E | C | A |
| Approach Delay | | 153.4 | | | 12.2 | | | 111.7 | | | 20.9 | |
| Approach LOS | | F | | | B | | | F | | | C | |

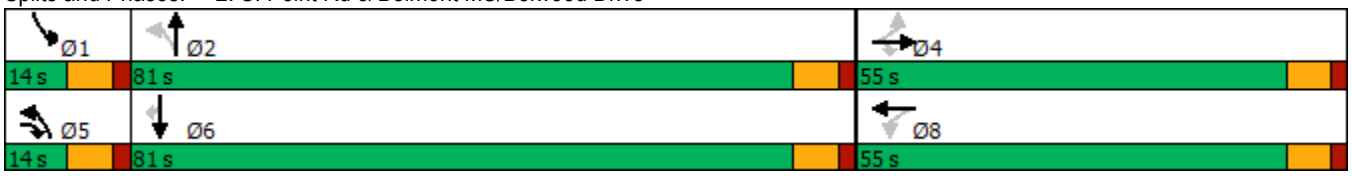
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | | ~686 | 18 | | 10 | | 68 | ~1378 | | 30 | 394 | 77 |
| Queue Length 95th (ft) | | 340 | 15 | | 50 | | 54 | #1644 | | 66 | 520 | 0 |
| Internal Link Dist (ft) | | 921 | | | 940 | | | 1106 | | | 1261 | |
| Turn Bay Length (ft) | | | 175 | | | | 200 | | | 100 | | 200 |
| Base Capacity (vph) | | 432 | 721 | | 434 | | 347 | 967 | | 110 | 982 | 1047 |
| 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 | | 1.26 | 0.12 | | 0.18 | | 0.47 | 1.18 | | 0.28 | 0.59 | 0.56 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 150 | | | |
| Actuated Cycle Length: 144.4 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.26 | | | |
| Intersection Signal Delay: 83.7 | | Intersection LOS: F | |
| Intersection Capacity Utilization 94.4% | | 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: 2: S. Point Rd & Belmont MS/Belwood Drive



| Intersection | |
|---|---|
| Int Delay, s/veh | 61.2 |

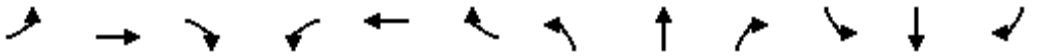
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 18 | 6 | 19 | 13 | 4 | 58 | 24 | 1280 | 48 | 38 | 807 | 71 |
| Future Vol, veh/h | 18 | 6 | 19 | 13 | 4 | 58 | 24 | 1280 | 48 | 38 | 807 | 71 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | -1 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 7 | 21 | 14 | 4 | 64 | 27 | 1422 | 53 | 42 | 897 | 79 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2558 | 2550 | 937 | 2538 | 2563 | 1449 | 976 | 0 | 0 | 1475 | 0 | 0 |
| Stage 1 | 1021 | 1021 | - | 1503 | 1503 | - | - | - | - | - | - | - |
| Stage 2 | 1537 | 1529 | - | 1035 | 1060 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | ~ 18 | 27 | 321 | 18 | 26 | 161 | 707 | - | - | 457 | - | - |
| Stage 1 | 285 | 314 | - | 152 | 184 | - | - | - | - | - | - | - |
| Stage 2 | 145 | 179 | - | 280 | 301 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 6 | 17 | 321 | ~ 8 | 16 | 161 | 707 | - | - | 457 | - | - |
| Mov Cap-2 Maneuver | ~ 6 | 17 | - | ~ 8 | 16 | - | - | - | - | - | - | - |
| Stage 1 | 223 | 250 | - | 119 | 144 | - | - | - | - | - | - | - |
| Stage 2 | 66 | 140 | - | 202 | 239 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 1789.6 | $ 910 | 0.2 | 0.6 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 707 | - | - | 13 | 34 | 457 | - | - |
| HCM Lane V/C Ratio | 0.038 | - | - | 3.675 | 2.451 | 0.092 | - | - |
| HCM Control Delay (s) | 10.3 | 0 | - | $ 1789.6 | $ 910 | 13.7 | 0 | - |
| HCM Lane LOS | B | A | - | F | F | B | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 6.9 | 9.5 | 0.3 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

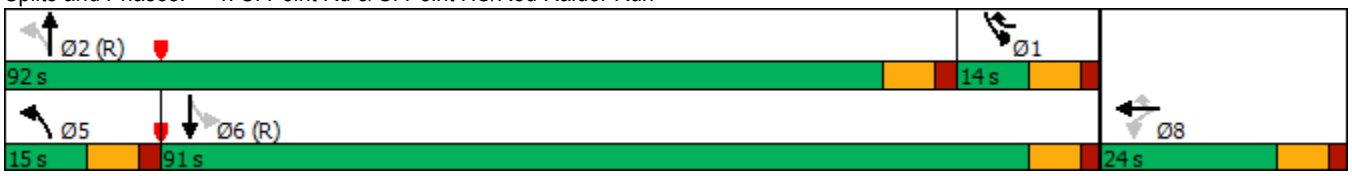


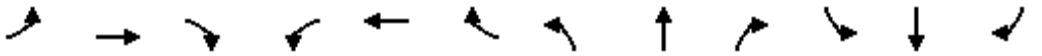
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 152 | 36 | 175 | 74 | 1018 | 97 | 128 | 727 | 55 |
| Future Volume (vph) | 0 | 0 | 0 | 152 | 36 | 175 | 74 | 1018 | 97 | 128 | 727 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 1% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 175 | | 100 | 100 | | 100 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 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 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.987 | | | 0.982 | |
| Flt Protected | | | | | 0.966 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1763 | 1552 | 1778 | 1848 | 0 | 1761 | 1745 | 0 |
| Flt Permitted | | | | | 0.966 | | 0.133 | | | 0.052 | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1763 | 1552 | 249 | 1848 | 0 | 96 | 1745 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 117 | | 8 | | | 11 | |
| Link Speed (mph) | | 30 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 1012 | | | 1004 | | | 539 | | | 597 | |
| Travel Time (s) | | 23.0 | | | 19.6 | | | 10.5 | | | 11.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.50 | 0.90 | 0.50 | 0.90 | 0.90 | 0.90 | 0.90 | 0.50 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 7% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 169 | 72 | 194 | 148 | 1131 | 108 | 142 | 808 | 110 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 241 | 194 | 148 | 1239 | 0 | 142 | 918 | 0 |
| Turn Type | | | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | 6 | | |
| Detector Phase | | | | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | | | | 14.0 | 14.0 | 14.0 | 14.0 | 17.0 | | 14.0 | 17.0 | |
| Total Split (s) | | | | 24.0 | 24.0 | 14.0 | 15.0 | 92.0 | | 14.0 | 91.0 | |
| Total Split (%) | | | | 18.5% | 18.5% | 10.8% | 11.5% | 70.8% | | 10.8% | 70.0% | |
| Yellow Time (s) | | | | 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 | |
| Lost Time Adjust (s) | | | | | -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 | |
| Lead/Lag | | | | | | Lag | Lead | Lead | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | | | | None | None | None | None | C-Max | | None | C-Max | |
| Act Effct Green (s) | | | | | 19.0 | 33.0 | 87.0 | 87.0 | | 86.2 | 86.2 | |
| Actuated g/C Ratio | | | | | 0.15 | 0.25 | 0.67 | 0.67 | | 0.66 | 0.66 | |
| v/c Ratio | | | | | 0.94 | 0.40 | 0.52 | 1.00 | | 0.80 | 0.79 | |
| Control Delay | | | | | 97.1 | 18.9 | 14.7 | 47.5 | | 42.4 | 4.9 | |
| Queue Delay | | | | | 0.0 | 0.0 | 0.0 | 29.1 | | 0.0 | 0.6 | |
| Total Delay | | | | | 97.1 | 19.0 | 14.7 | 76.6 | | 42.4 | 5.5 | |
| LOS | | | | | F | B | B | E | | D | A | |
| Approach Delay | | | | | 62.3 | | | 70.0 | | | 10.4 | |
| Approach LOS | | | | | E | | | E | | | B | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | | | | | 204 | 51 | 42 | 961 | | 71 | 68 | |
| Queue Length 95th (ft) | | | | | 153 | 123 | 35 | #1350 | | m82 | m83 | |
| Internal Link Dist (ft) | | 932 | | | 924 | | | 459 | | | 517 | |
| Turn Bay Length (ft) | | | | | | 100 | 175 | | | 100 | | |
| Base Capacity (vph) | | | | | 257 | 481 | 284 | 1239 | | 178 | 1160 | |
| Starvation Cap Reductn | | | | | 0 | 0 | 0 | 0 | | 0 | 54 | |
| Spillback Cap Reductn | | | | | 0 | 5 | 0 | 96 | | 0 | 0 | |
| Storage Cap Reductn | | | | | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | | | | 0.94 | 0.41 | 0.52 | 1.08 | | 0.80 | 0.83 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 130 | | | |
| Actuated Cycle Length: 130 | | | |
| Offset: 106 (82%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 110 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.00 | | | |
| Intersection Signal Delay: 46.9 | | Intersection LOS: D | |
| Intersection Capacity Utilization 89.4% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 4: S. Point Rd & S. Point HS/Red Raider Run





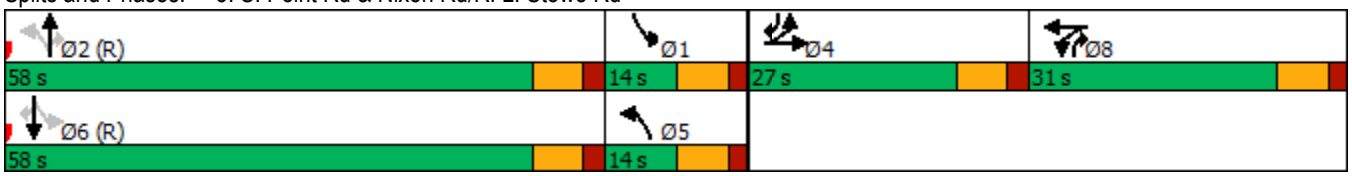
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 95 | 168 | 83 | 276 | 89 | 49 | 100 | 592 | 499 | 58 | 596 | 50 |
| Future Volume (vph) | 95 | 168 | 83 | 276 | 89 | 49 | 100 | 592 | 499 | 58 | 596 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | 1% | | | 1% | | | 1% | |
| Storage Length (ft) | 200 | | 0 | 225 | | 0 | 280 | | 225 | 25 | | 100 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 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 | 1.00 | 1.00 |
| Frt | | 0.951 | | | 0.947 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1761 | 1763 | 0 | 1761 | 1755 | 0 | 1761 | 1853 | 1575 | 1761 | 1853 | 1575 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.112 | | | 0.112 | | |
| Satd. Flow (perm) | 1761 | 1763 | 0 | 1761 | 1755 | 0 | 208 | 1853 | 1575 | 208 | 1853 | 1575 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 16 | | | 19 | | | | 332 | | | 92 |
| Link Speed (mph) | | 25 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 1336 | | | 1784 | | | 597 | | | 1080 | |
| Travel Time (s) | | 36.4 | | | 34.8 | | | 11.6 | | | 21.0 | |
| 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 |
| Adj. Flow (vph) | 106 | 187 | 92 | 307 | 99 | 54 | 111 | 658 | 554 | 64 | 662 | 56 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 106 | 279 | 0 | 307 | 153 | 0 | 111 | 658 | 554 | 64 | 662 | 56 |
| Turn Type | Split | NA | | Split | NA | | pm+pt | NA | pm+ov | pm+pt | NA | pm+ov |
| Protected Phases | 4 | 4 | | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | | | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 17.0 | 14.0 | 14.0 | 17.0 | 14.0 |
| Total Split (s) | 27.0 | 27.0 | | 31.0 | 31.0 | | 14.0 | 58.0 | 31.0 | 14.0 | 58.0 | 27.0 |
| Total Split (%) | 20.8% | 20.8% | | 23.8% | 23.8% | | 10.8% | 44.6% | 23.8% | 10.8% | 44.6% | 20.8% |
| Yellow Time (s) | 5.0 | 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 | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | | -2.0 | -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 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | | | | | | Lag | Lead | | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | C-Max | None | None | C-Max | None |
| Act Effct Green (s) | 21.7 | 21.7 | | 25.6 | 25.6 | | 63.7 | 56.5 | 87.1 | 62.7 | 53.7 | 75.4 |
| Actuated g/C Ratio | 0.17 | 0.17 | | 0.20 | 0.20 | | 0.49 | 0.43 | 0.67 | 0.48 | 0.41 | 0.58 |
| v/c Ratio | 0.36 | 0.91 | | 0.89 | 0.42 | | 0.53 | 0.82 | 0.48 | 0.31 | 0.87 | 0.06 |
| Control Delay | 51.8 | 82.5 | | 77.8 | 43.9 | | 29.2 | 26.7 | 1.7 | 30.7 | 48.4 | 0.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 5.9 | 0.5 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.8 | 82.5 | | 77.8 | 43.9 | | 29.2 | 32.6 | 2.2 | 30.7 | 48.4 | 0.4 |
| LOS | D | F | | E | D | | C | C | A | C | D | A |
| Approach Delay | | 74.0 | | | 66.5 | | | 19.6 | | | 43.5 | |
| Approach LOS | | E | | | E | | | B | | | D | |
| Queue Length 50th (ft) | 80 | 221 | | 253 | 99 | | 31 | 440 | 10 | 26 | 508 | 0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 95th (ft) | 138 | #386 | | #415 | 168 | | m37 | m474 | m18 | 51 | #734 | 4 |
| Internal Link Dist (ft) | | 1256 | | | 1704 | | | 517 | | | 1000 | |
| Turn Bay Length (ft) | 200 | | | 225 | | | 280 | | 225 | 25 | | 100 |
| Base Capacity (vph) | 298 | 311 | | 352 | 366 | | 209 | 805 | 1159 | 207 | 765 | 955 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 103 | 251 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.36 | 0.90 | | 0.87 | 0.42 | | 0.53 | 0.94 | 0.61 | 0.31 | 0.87 | 0.06 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 130 | |
| Actuated Cycle Length: 130 | |
| Offset: 128 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.91 | |
| Intersection Signal Delay: 40.4 | Intersection LOS: D |
| Intersection Capacity Utilization 83.1% | ICU Level of Service E |
| Analysis Period (min) 15 | |

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: S. Point Rd & Nixon Rd/R. L. Stowe Rd



## Intersection: 1: S. Point Rd & Armstrong Rd

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | LR | LT | TR |
| Maximum Queue (ft) | 2564 | 116 | 20 |
| Average Queue (ft) | 2550 | 38 | 1 |
| 95th Queue (ft) | 2564 | 93 | 7 |
| Link Distance (ft) | 2530 | 1804 | 2161 |
| Upstream Blk Time (%) | 98 | | |
| Queuing Penalty (veh) | 0 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 2: S. Point Rd & Belmont MS/Belwood Drive

| Movement | EB | EB | WB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LTR | L | TR | L | T | R |
| Maximum Queue (ft) | 1017 | 200 | 119 | 225 | 1184 | 125 | 1111 | 225 |
| Average Queue (ft) | 931 | 82 | 49 | 133 | 1164 | 39 | 456 | 180 |
| 95th Queue (ft) | 1121 | 229 | 104 | 277 | 1177 | 98 | 921 | 289 |
| Link Distance (ft) | 954 | | 986 | | 1145 | | 1285 | |
| Upstream Blk Time (%) | 56 | | | | 59 | | | |
| Queuing Penalty (veh) | 0 | | | | 0 | | | |
| Storage Bay Dist (ft) | | 175 | | 200 | | 100 | | 200 |
| Storage Blk Time (%) | 71 | 0 | | 1 | 49 | 1 | 34 | 0 |
| Queuing Penalty (veh) | 59 | 0 | | 13 | 81 | 14 | 212 | 1 |

## Intersection: 3: S. Point Rd & McKee Farm Rd/Stowe Rd

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 922 | 1006 | 1288 | 512 |
| Average Queue (ft) | 517 | 676 | 521 | 306 |
| 95th Queue (ft) | 885 | 1092 | 1170 | 626 |
| Link Distance (ft) | 1008 | 969 | 1285 | 482 |
| Upstream Blk Time (%) | | 19 | 1 | 13 |
| Queuing Penalty (veh) | | 0 | 10 | 130 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 4: S. Point Rd & S. Point HS/Red Raider Run

| Movement | WB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | TR | L | TR |
| Maximum Queue (ft) | 1022 | 125 | 200 | 495 | 124 | 534 |
| Average Queue (ft) | 904 | 102 | 108 | 390 | 69 | 369 |
| 95th Queue (ft) | 1178 | 169 | 229 | 631 | 132 | 661 |
| Link Distance (ft) | 970 | | | 482 | | 522 |
| Upstream Blk Time (%) | 68 | | | 5 | | 6 |
| Queuing Penalty (veh) | 0 | | | 82 | | 61 |
| Storage Bay Dist (ft) | | 100 | 175 | | 100 | |
| Storage Blk Time (%) | 78 | 21 | 4 | 22 | 5 | 35 |
| Queuing Penalty (veh) | 151 | 51 | 44 | 33 | 42 | 50 |

## Intersection: 5: S. Point Rd & Nixon Rd/R. L. Stowe Rd

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | L | T | R | L | T | R |
| Maximum Queue (ft) | 225 | 496 | 250 | 1776 | 139 | 531 | 250 | 50 | 1080 | 125 |
| Average Queue (ft) | 156 | 284 | 249 | 1355 | 60 | 230 | 136 | 34 | 1053 | 47 |
| 95th Queue (ft) | 286 | 490 | 251 | 2277 | 107 | 443 | 291 | 61 | 1174 | 142 |
| Link Distance (ft) | | 1289 | | 1737 | | 522 | | | 1046 | |
| Upstream Blk Time (%) | | | | 50 | | 1 | | | 79 | |
| Queuing Penalty (veh) | | | | 0 | | 8 | | | 0 | |
| Storage Bay Dist (ft) | 200 | | 225 | | 280 | | 225 | 25 | | 100 |
| Storage Blk Time (%) | 2 | 36 | 79 | 3 | | 6 | 0 | 38 | 60 | 0 |
| Queuing Penalty (veh) | 5 | 39 | 120 | 10 | | 39 | 2 | 275 | 72 | 0 |

## Network Summary

Network wide Queuing Penalty: 1605

| Intersection | |
|---|---|
| Int Delay, s/veh | 213.5 |

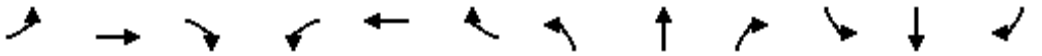
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 590 | 43 | 51 | 106 | 136 | 801 |
| Future Vol, veh/h | 590 | 43 | 51 | 106 | 136 | 801 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 656 | 48 | 57 | 118 | 151 | 890 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 828 | 596 | 1041 | 0 | - | 0 |
| Stage 1 | 596 | - | - | - | - | - |
| Stage 2 | 232 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | ~ 341 | 504 | 668 | - | - | - |
| Stage 1 | ~ 550 | - | - | - | - | - |
| Stage 2 | 807 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 310 | 504 | 668 | - | - | - |
| Mov Cap-2 Maneuver | ~ 310 | - | - | - | - | - |
| Stage 1 | ~ 500 | - | - | - | - | - |
| Stage 2 | 807 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 581.5 | 3.5 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 668 | - | 318 | - | - |
| HCM Lane V/C Ratio | 0.085 | - | 2.212 | - | - |
| HCM Control Delay (s) | 10.9 | 0 | $ 581.5 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 53.1 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 19 | 4 | 4 | 7 | 4 | 44 | 4 | 996 | 8 | 65 | 1243 | 4 |
| Future Volume (vph) | 19 | 4 | 4 | 7 | 4 | 44 | 4 | 996 | 8 | 65 | 1243 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 3% | | | 0% | | | 1% | | | 0% | |
| Storage Length (ft) | 0 | | 175 | 0 | | 100 | 200 | | 0 | 100 | | 200 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 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 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.892 | | | 0.999 | | | | 0.850 |
| Flt Protected | | 0.960 | | | 0.993 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1761 | 1560 | 0 | 1650 | 0 | 1761 | 1834 | 0 | 1770 | 1863 | 1583 |
| Flt Permitted | | 0.732 | | | 0.949 | | 0.045 | | | 0.129 | | |
| Satd. Flow (perm) | 0 | 1343 | 1560 | 0 | 1577 | 0 | 83 | 1834 | 0 | 240 | 1863 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 36 | | 49 | | | 1 | | | | 100 |
| Link Speed (mph) | | 35 | | | 30 | | | 45 | | | 45 | |
| Link Distance (ft) | | 1001 | | | 1004 | | | 1186 | | | 1345 | |
| Travel Time (s) | | 19.5 | | | 22.8 | | | 18.0 | | | 20.4 | |
| 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% | 3% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 21 | 4 | 4 | 8 | 4 | 49 | 4 | 1107 | 9 | 72 | 1381 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 25 | 4 | 0 | 61 | 0 | 4 | 1116 | 0 | 72 | 1381 | 4 |
| Turn Type | Perm | NA | pm+ov | Perm | NA | | pm+pt | NA | | pm+pt | NA | Perm |
| Protected Phases | | 4 | 5 | | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 10.0 | | 7.0 | 10.0 | 10.0 |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | 14.0 | 17.0 | | 14.0 | 17.0 | 17.0 |
| Total Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | 14.0 | 92.0 | | 14.0 | 92.0 | 92.0 |
| Total Split (%) | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | | 11.7% | 76.7% | | 11.7% | 76.7% | 76.7% |
| Yellow Time (s) | 5.0 | 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 | 2.0 |
| Lost Time Adjust (s) | | -2.0 | -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 | 5.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | Min |
| Act Effct Green (s) | | 9.0 | 20.2 | | 9.0 | | 91.6 | 85.5 | | 94.6 | 94.0 | 94.0 |
| Actuated g/C Ratio | | 0.08 | 0.18 | | 0.08 | | 0.82 | 0.77 | | 0.85 | 0.84 | 0.84 |
| v/c Ratio | | 0.23 | 0.01 | | 0.35 | | 0.02 | 0.80 | | 0.22 | 0.88 | 0.00 |
| Control Delay | | 56.0 | 0.0 | | 25.4 | | 1.8 | 16.5 | | 3.3 | 17.2 | 0.0 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 56.0 | 0.0 | | 25.4 | | 1.8 | 16.5 | | 3.3 | 17.2 | 0.0 |
| LOS | | E | A | | C | | A | B | | A | B | A |
| Approach Delay | | 48.3 | | | 25.4 | | | 16.5 | | | 16.4 | |
| Approach LOS | | D | | | C | | | B | | | B | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | | 16 | 0 | | 8 | | 1 | 534 | | 7 | 483 | 0 |
| Queue Length 95th (ft) | | 48 | 0 | | 53 | | 2 | 786 | | 13 | #1400 | 0 |
| Internal Link Dist (ft) | | 921 | | | 924 | | | 1106 | | | 1265 | |
| Turn Bay Length (ft) | | | 175 | | | | 200 | | | 100 | | 200 |
| Base Capacity (vph) | | 108 | 311 | | 172 | | 203 | 1502 | | 326 | 1567 | 1348 |
| 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 | | 0.23 | 0.01 | | 0.35 | | 0.02 | 0.74 | | 0.22 | 0.88 | 0.00 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 111.7 | | | |
| Natural Cycle: 120 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.88 | | | |
| Intersection Signal Delay: 17.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization 89.6% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

Splits and Phases: 2: S. Point Rd & Belmont MS/Belwood Drive

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

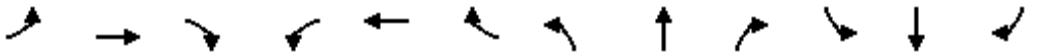
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 26 | 10 | 13 | 17 | 4 | 54 | 11 | 1036 | 19 | 69 | 1279 | 49 |
| Future Vol, veh/h | 26 | 10 | 13 | 17 | 4 | 54 | 11 | 1036 | 19 | 69 | 1279 | 49 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | -1 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 29 | 11 | 14 | 19 | 4 | 60 | 12 | 1151 | 21 | 77 | 1421 | 54 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2820 | 2798 | 1448 | 2801 | 2815 | 1162 | 1475 | 0 | 0 | 1172 | 0 | 0 |
| Stage 1 | 1602 | 1602 | - | 1186 | 1186 | - | - | - | - | - | - | - |
| Stage 2 | 1218 | 1196 | - | 1615 | 1629 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | ~ 11 | 18 | 161 | ~ 12 | 18 | 237 | 457 | - | - | 596 | - | - |
| Stage 1 | 133 | 165 | - | 230 | 262 | - | - | - | - | - | - | - |
| Stage 2 | 221 | 259 | - | 131 | 160 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | ~ 4 | 161 | - | ~ 4 | 237 | 457 | - | - | 596 | - | - |
| Mov Cap-2 Maneuver | - | ~ 4 | - | - | ~ 4 | - | - | - | - | - | - | - |
| Stage 1 | 123 | 43 | - | 213 | 242 | - | - | - | - | - | - | - |
| Stage 2 | 150 | 239 | - | 23 | 41 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | | 0.1 | 0.6 |
| HCM LOS | - | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 457 | - | - | - | - | 596 | - | - |
| HCM Lane V/C Ratio | 0.027 | - | - | - | - | 0.129 | - | - |
| HCM Control Delay (s) | 13.1 | 0 | - | - | - | 11.9 | 0 | - |
| HCM Lane LOS | B | A | - | - | - | B | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | - | 0.4 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

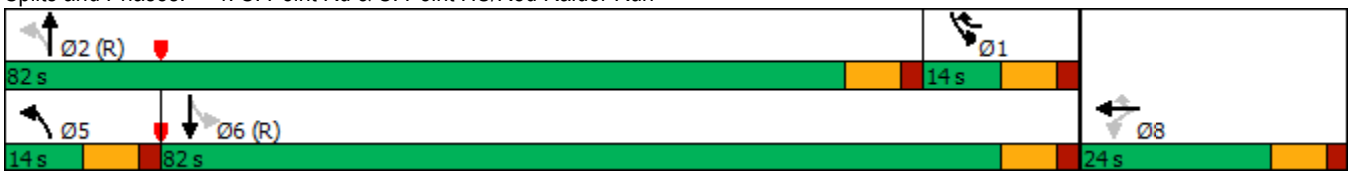


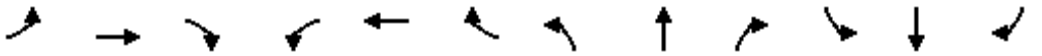
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 252 | 6 | 271 | 11 | 896 | 108 | 150 | 1056 | 4 |
| Future Volume (vph) | 0 | 0 | 0 | 252 | 6 | 271 | 11 | 896 | 108 | 150 | 1056 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 1% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 175 | | 100 | 100 | | 100 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 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 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.984 | | | 0.999 | |
| Flt Protected | | | | | 0.953 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1740 | 1552 | 1778 | 1842 | 0 | 1761 | 1765 | 0 |
| Flt Permitted | | | | | 0.953 | | 0.059 | | | 0.059 | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1740 | 1552 | 110 | 1842 | 0 | 109 | 1765 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 141 | | 10 | | | | |
| Link Speed (mph) | | 30 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 1012 | | | 1004 | | | 535 | | | 597 | |
| Travel Time (s) | | 23.0 | | | 19.6 | | | 10.4 | | | 11.6 | |
| 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% | 2% | 2% | 7% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 280 | 7 | 301 | 12 | 996 | 120 | 167 | 1173 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 287 | 301 | 12 | 1116 | 0 | 167 | 1177 | 0 |
| Turn Type | | | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | 6 | | |
| Detector Phase | | | | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | | | | 14.0 | 14.0 | 14.0 | 14.0 | 17.0 | | 14.0 | 17.0 | |
| Total Split (s) | | | | 24.0 | 24.0 | 14.0 | 14.0 | 82.0 | | 14.0 | 82.0 | |
| Total Split (%) | | | | 20.0% | 20.0% | 11.7% | 11.7% | 68.3% | | 11.7% | 68.3% | |
| Yellow Time (s) | | | | 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 | |
| Lost Time Adjust (s) | | | | | -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 | |
| Lead/Lag | | | | | | Lag | Lead | Lead | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | | | | None | None | None | None | C-Max | | None | C-Max | |
| Act Effct Green (s) | | | | | 19.0 | 33.0 | 77.0 | 77.0 | | 85.4 | 85.4 | |
| Actuated g/C Ratio | | | | | 0.16 | 0.28 | 0.64 | 0.64 | | 0.71 | 0.71 | |
| v/c Ratio | | | | | 1.04 | 0.57 | 0.06 | 0.94 | | 0.83 | 0.94 | |
| Control Delay | | | | | 115.2 | 24.0 | 8.5 | 35.8 | | 30.5 | 11.9 | |
| Queue Delay | | | | | 0.0 | 2.4 | 0.0 | 17.9 | | 0.0 | 30.5 | |
| Total Delay | | | | | 115.2 | 26.5 | 8.5 | 53.7 | | 30.5 | 42.3 | |
| LOS | | | | | F | C | A | D | | C | D | |
| Approach Delay | | | | | 69.8 | | | 53.2 | | | 40.9 | |
| Approach LOS | | | | | E | | | D | | | D | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | | | | | ~241 | 105 | 3 | 721 | | 57 | 177 | |
| Queue Length 95th (ft) | | | | | #416 | 199 | 10 | #1099 | | m52 | m175 | |
| Internal Link Dist (ft) | | 932 | | | 924 | | | 455 | | | 517 | |
| Turn Bay Length (ft) | | | | | | 100 | 175 | | | 100 | | |
| Base Capacity (vph) | | | | | 275 | 529 | 195 | 1185 | | 201 | 1256 | |
| Starvation Cap Reductn | | | | | 0 | 0 | 0 | 0 | | 0 | 151 | |
| Spillback Cap Reductn | | | | | 0 | 125 | 0 | 103 | | 0 | 0 | |
| Storage Cap Reductn | | | | | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | | | | 1.04 | 0.75 | 0.06 | 1.03 | | 0.83 | 1.07 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 70 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 130 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.04 | | | |
| Intersection Signal Delay: 51.0 | | Intersection LOS: D | |
| Intersection Capacity Utilization 88.8% | | 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. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 4: S. Point Rd & S. Point HS/Red Raider Run





| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 119 | 162 | 100 | 515 | 101 | 49 | 76 | 592 | 472 | 93 | 637 | 65 |
| Future Volume (vph) | 119 | 162 | 100 | 515 | 101 | 49 | 76 | 592 | 472 | 93 | 637 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | 1% | | | 1% | | | 1% | |
| Storage Length (ft) | 200 | | 0 | 225 | | 0 | 280 | | 225 | 25 | | 100 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 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 | 1.00 | 1.00 |
| Frt | | 0.943 | | | 0.951 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1761 | 1748 | 0 | 1761 | 1763 | 0 | 1761 | 1853 | 1575 | 1761 | 1853 | 1575 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.127 | | | 0.127 | | |
| Satd. Flow (perm) | 1761 | 1748 | 0 | 1761 | 1763 | 0 | 235 | 1853 | 1575 | 235 | 1853 | 1575 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 22 | | | 20 | | | | 281 | | | 100 |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 1336 | | | 1784 | | | 597 | | | 1080 | |
| Travel Time (s) | | 26.0 | | | 34.8 | | | 11.6 | | | 21.0 | |
| 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 |
| Adj. Flow (vph) | 132 | 180 | 111 | 572 | 112 | 54 | 84 | 658 | 524 | 103 | 708 | 72 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 132 | 291 | 0 | 572 | 166 | 0 | 84 | 658 | 524 | 103 | 708 | 72 |
| Turn Type | Split | NA | | Split | NA | | pm+pt | NA | pm+ov | pm+pt | NA | pm+ov |
| Protected Phases | 4 | 4 | | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | | | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 25.0 | 25.0 | | 25.0 | 25.0 | | 14.0 | 25.0 | 25.0 | 14.0 | 25.0 | 25.0 |
| Total Split (s) | 25.0 | 25.0 | | 37.0 | 37.0 | | 14.0 | 44.0 | 37.0 | 14.0 | 44.0 | 25.0 |
| Total Split (%) | 20.8% | 20.8% | | 30.8% | 30.8% | | 11.7% | 36.7% | 30.8% | 11.7% | 36.7% | 20.8% |
| Yellow Time (s) | 5.0 | 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 | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | | -2.0 | -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 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | | | | | | Lag | Lag | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | C-Max | None | None | C-Max | None |
| Act Effct Green (s) | 20.0 | 20.0 | | 32.0 | 32.0 | | 39.0 | 39.0 | 71.0 | 41.8 | 41.8 | 62.8 |
| Actuated g/C Ratio | 0.17 | 0.17 | | 0.27 | 0.27 | | 0.32 | 0.32 | 0.59 | 0.35 | 0.35 | 0.52 |
| v/c Ratio | 0.45 | 0.94 | | 1.22 | 0.34 | | 0.44 | 1.09 | 0.50 | 0.53 | 1.10 | 0.08 |
| Control Delay | 50.7 | 84.5 | | 155.3 | 33.4 | | 41.4 | 89.8 | 3.1 | 38.7 | 103.0 | 1.0 |
| Queue Delay | 0.0 | 0.0 | | 1.3 | 0.0 | | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 50.7 | 84.5 | | 156.6 | 33.4 | | 41.4 | 90.6 | 3.1 | 38.7 | 103.0 | 1.0 |
| LOS | D | F | | F | C | | D | F | A | D | F | A |
| Approach Delay | | 73.9 | | | 128.9 | | | 51.1 | | | 87.2 | |
| Approach LOS | | E | | | F | | | D | | | F | |
| Queue Length 50th (ft) | 93 | 210 | | ~544 | 91 | | 45 | ~575 | 56 | 57 | ~656 | 0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 95th (ft) | 157 | #384 | | #763 | 155 | | m56 | m#687 | m58 | 101 | #890 | 8 |
| Internal Link Dist (ft) | | 1256 | | | 1704 | | | 517 | | | 1000 | |
| Turn Bay Length (ft) | 200 | | | 225 | | | 280 | | 225 | 25 | | 100 |
| Base Capacity (vph) | 293 | 309 | | 469 | 484 | | 190 | 602 | 1046 | 196 | 645 | 872 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 1 | 9 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 63 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.45 | 0.94 | | 1.41 | 0.34 | | 0.44 | 1.09 | 0.51 | 0.53 | 1.10 | 0.08 |

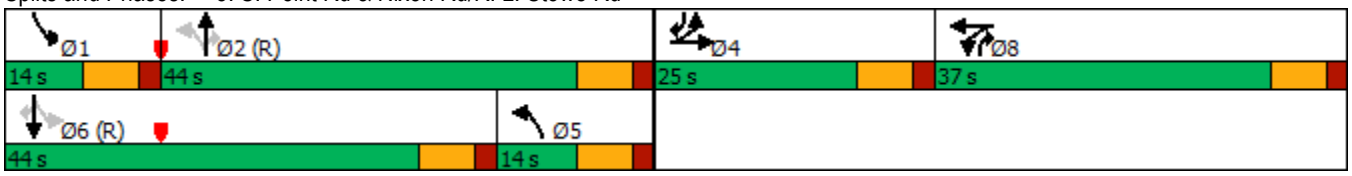
| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 1.22 | |
| Intersection Signal Delay: 81.0 | Intersection LOS: F |
| Intersection Capacity Utilization 99.2% | 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.

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

Splits and Phases: 5: S. Point Rd & Nixon Rd/R. L. Stowe Rd



## Intersection: 1: S. Point Rd & Armstrong Rd

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | LR | LT | TR |
| Maximum Queue (ft) | 2564 | 284 | 50 |
| Average Queue (ft) | 2396 | 127 | 13 |
| 95th Queue (ft) | 2878 | 267 | 42 |
| Link Distance (ft) | 2530 | 1804 | 2161 |
| Upstream Blk Time (%) | 74 | | |
| Queuing Penalty (veh) | 0 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 2: S. Point Rd & Belmont MS/Belwood Drive

| Movement | EB | EB | WB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LTR | L | TR | L | T | R |
| Maximum Queue (ft) | 69 | 20 | 235 | 25 | 1184 | 124 | 325 | 22 |
| Average Queue (ft) | 21 | 3 | 63 | 1 | 881 | 24 | 125 | 1 |
| 95th Queue (ft) | 56 | 14 | 143 | 9 | 1567 | 70 | 278 | 7 |
| Link Distance (ft) | 954 | | 970 | | 1145 | | 1289 | |
| Upstream Blk Time (%) | | | | | 47 | | | |
| Queuing Penalty (veh) | | | | | 0 | | | |
| Storage Bay Dist (ft) | | 175 | | 200 | | 100 | | 200 |
| Storage Blk Time (%) | | | | | 46 | | 7 | |
| Queuing Penalty (veh) | | | | | 2 | | 5 | |

## Intersection: 3: S. Point Rd & McKee Farm Rd/Stowe Rd

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 997 | 981 | 1312 | 503 |
| Average Queue (ft) | 721 | 733 | 1122 | 408 |
| 95th Queue (ft) | 1146 | 1207 | 1656 | 675 |
| Link Distance (ft) | 984 | 966 | 1289 | 478 |
| Upstream Blk Time (%) | 32 | 43 | 18 | 27 |
| Queuing Penalty (veh) | 0 | 0 | 207 | 394 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 4: S. Point Rd & S. Point HS/Red Raider Run

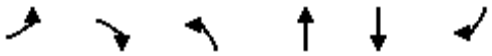
| Movement | WB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | TR | L | TR |
| Maximum Queue (ft) | 1022 | 125 | 25 | 490 | 125 | 539 |
| Average Queue (ft) | 988 | 98 | 2 | 443 | 69 | 413 |
| 95th Queue (ft) | 1004 | 174 | 12 | 610 | 140 | 635 |
| Link Distance (ft) | 970 | | | 478 | | 522 |
| Upstream Blk Time (%) | 95 | | | 11 | | 13 |
| Queuing Penalty (veh) | 0 | | | 141 | | 185 |
| Storage Bay Dist (ft) | | 100 | 175 | | 100 | |
| Storage Blk Time (%) | 84 | 22 | | 26 | 5 | 40 |
| Queuing Penalty (veh) | 253 | 64 | | 3 | 53 | 66 |

## Intersection: 5: S. Point Rd & Nixon Rd/R. L. Stowe Rd

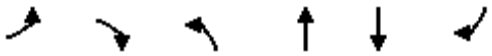
| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | L | T | R | L | T | R |
| Maximum Queue (ft) | 225 | 1304 | 250 | 1791 | 304 | 535 | 250 | 49 | 1109 | 125 |
| Average Queue (ft) | 203 | 903 | 249 | 1676 | 79 | 253 | 104 | 41 | 1068 | 47 |
| 95th Queue (ft) | 297 | 1430 | 250 | 2080 | 235 | 518 | 266 | 60 | 1089 | 143 |
| Link Distance (ft) | | 1289 | | 1737 | | 522 | | | 1046 | |
| Upstream Blk Time (%) | | 10 | | 84 | | 1 | | | 89 | |
| Queuing Penalty (veh) | | 0 | | 0 | | 12 | | | 0 | |
| Storage Bay Dist (ft) | 200 | | 225 | | 280 | | 225 | 25 | | 100 |
| Storage Blk Time (%) | 5 | 83 | 80 | 2 | | 8 | 0 | 38 | 62 | 0 |
| Queuing Penalty (veh) | 15 | 110 | 133 | 12 | | 50 | 0 | 297 | 109 | 0 |

## Network Summary

Network wide Queuing Penalty: 2112



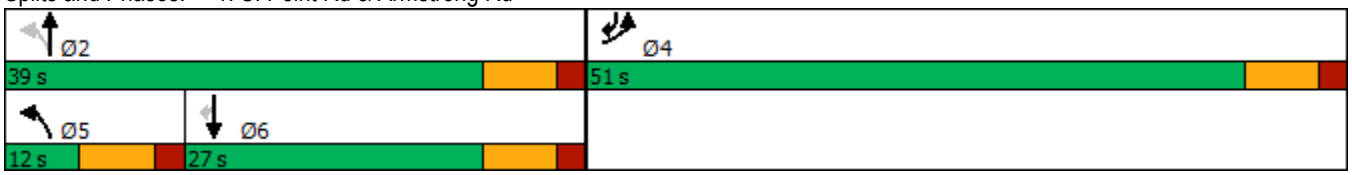
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 752 | 39 | 95 | 310 | 173 | 355 |
| Future Volume (vph) | 752 | 39 | 95 | 310 | 173 | 355 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 0 | | | 150 |
| Storage Lanes | 1 | 0 | 0 | | | 1 |
| Taper Length (ft) | 25 | | 25 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 0.993 | | | | | 0.850 |
| Flt Protected | 0.955 | | | 0.988 | | |
| Satd. Flow (prot) | 1766 | 0 | 0 | 1840 | 1863 | 1583 |
| Flt Permitted | 0.955 | | | 0.862 | | |
| Satd. Flow (perm) | 1766 | 0 | 0 | 1606 | 1863 | 1583 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 4 | | | | | 394 |
| Link Speed (mph) | 45 | | | 45 | 45 | |
| Link Distance (ft) | 2559 | | | 1826 | 2196 | |
| Travel Time (s) | 38.8 | | | 27.7 | 33.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 836 | 43 | 106 | 344 | 192 | 394 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 879 | 0 | 0 | 450 | 192 | 394 |
| Turn Type | Prot | | pm+pt | NA | NA | pm+ov |
| Protected Phases | 4 | | 5 | 2 | 6 | 4 |
| Permitted Phases | | | 2 | | | 6 |
| Detector Phase | 4 | | 5 | 2 | 6 | 4 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | | 5.0 | 12.0 | 12.0 | 7.0 |
| Minimum Split (s) | 20.0 | | 12.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 51.0 | | 12.0 | 39.0 | 27.0 | 51.0 |
| Total Split (%) | 56.7% | | 13.3% | 43.3% | 30.0% | 56.7% |
| Yellow Time (s) | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | | | -2.0 | -2.0 | -2.0 |
| Total Lost Time (s) | 5.0 | | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | | Lead | | Lag | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Recall Mode | None | | None | Min | Min | None |
| Act Effct Green (s) | 45.6 | | | 32.9 | 32.9 | 88.6 |
| Actuated g/C Ratio | 0.51 | | | 0.37 | 0.37 | 1.00 |
| v/c Ratio | 0.96 | | | 0.75 | 0.28 | 0.25 |
| Control Delay | 45.0 | | | 33.8 | 20.8 | 0.4 |
| Queue Delay | 0.0 | | | 0.0 | 0.0 | 0.0 |
| Total Delay | 45.0 | | | 33.8 | 20.8 | 0.4 |
| LOS | D | | | C | C | A |
| Approach Delay | 45.0 | | | 33.8 | 7.1 | |
| Approach LOS | D | | | C | A | |
| Queue Length 50th (ft) | 460 | | | 217 | 74 | 0 |
| Queue Length 95th (ft) | #739 | | | 336 | 125 | 0 |

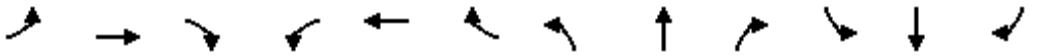


| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 2479 | | | 1746 | 2116 | |
| Turn Bay Length (ft) | | | | | | 150 |
| Base Capacity (vph) | 919 | | | 616 | 692 | 1574 |
| Starvation Cap Reductn | 0 | | | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | | | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | | | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.96 | | | 0.73 | 0.28 | 0.25 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 88.6 | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.96 | | | |
| Intersection Signal Delay: 30.8 | | Intersection LOS: C | |
| Intersection Capacity Utilization 88.1% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

Splits and Phases: 1: S. Point Rd & Armstrong Rd



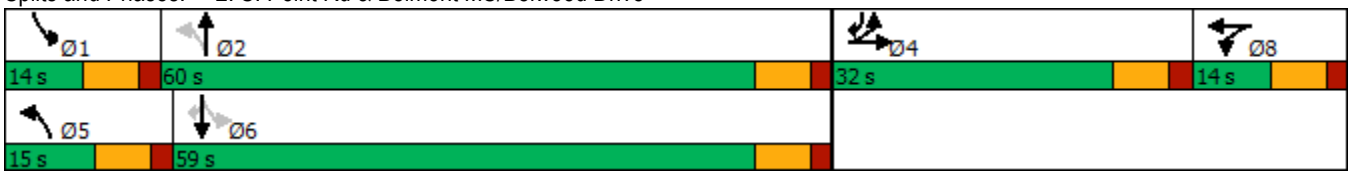


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 269 | 4 | 42 | 10 | 4 | 58 | 79 | 1123 | 4 | 26 | 563 | 295 |
| Future Volume (vph) | 269 | 4 | 42 | 10 | 4 | 58 | 79 | 1123 | 4 | 26 | 563 | 295 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 3% | | | 0% | | | 1% | | | 0% | |
| Storage Length (ft) | 175 | | 0 | 0 | | 0 | 200 | | 200 | 100 | | 200 |
| Storage Lanes | 2 | | 0 | 0 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.863 | | | 0.891 | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.993 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3382 | 1586 | 0 | 0 | 1681 | 0 | 1761 | 3556 | 0 | 1805 | 1863 | 1583 |
| Flt Permitted | 0.950 | | | | 0.993 | | 0.154 | | | 0.110 | | |
| Satd. Flow (perm) | 3382 | 1586 | 0 | 0 | 1681 | 0 | 285 | 3556 | 0 | 209 | 1863 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 84 | | | 64 | | | | | | | 590 |
| Link Speed (mph) | | 30 | | | 30 | | | 35 | | | 35 | |
| Link Distance (ft) | | 1001 | | | 1020 | | | 909 | | | 1349 | |
| Travel Time (s) | | 22.8 | | | 23.2 | | | 17.7 | | | 26.3 | |
| Peak Hour Factor | 0.50 | 0.50 | 0.50 | 0.90 | 0.90 | 0.90 | 0.50 | 0.90 | 0.90 | 0.90 | 0.90 | 0.50 |
| Heavy Vehicles (%) | 2% | 0% | 2% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 2% | 2% |
| Adj. Flow (vph) | 538 | 8 | 84 | 11 | 4 | 64 | 158 | 1248 | 4 | 29 | 626 | 590 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 538 | 92 | 0 | 0 | 79 | 0 | 158 | 1252 | 0 | 29 | 626 | 590 |
| Turn Type | Split | NA | | Split | NA | | pm+pt | NA | | pm+pt | NA | pm+ov |
| Protected Phases | 4 | 4 | | 8 | 8 | | 5 | 2 | | 1 | 6 | 4 |
| Permitted Phases | | | | | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | | 8 | 8 | | 5 | 2 | | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 10.0 | | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 17.0 | | 14.0 | 17.0 | 14.0 |
| Total Split (s) | 32.0 | 32.0 | | 14.0 | 14.0 | | 15.0 | 60.0 | | 14.0 | 59.0 | 32.0 |
| Total Split (%) | 26.7% | 26.7% | | 11.7% | 11.7% | | 12.5% | 50.0% | | 11.7% | 49.2% | 26.7% |
| 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 | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | | | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | None |
| Act Effct Green (s) | 25.2 | 25.2 | | | 9.5 | | 56.9 | 51.6 | | 52.9 | 43.4 | 73.9 |
| Actuated g/C Ratio | 0.24 | 0.24 | | | 0.09 | | 0.54 | 0.49 | | 0.50 | 0.41 | 0.70 |
| v/c Ratio | 0.66 | 0.21 | | | 0.38 | | 0.53 | 0.72 | | 0.12 | 0.81 | 0.46 |
| Control Delay | 43.1 | 11.3 | | | 23.9 | | 18.8 | 26.3 | | 12.4 | 37.3 | 1.6 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.1 | 11.3 | | | 23.9 | | 18.8 | 26.3 | | 12.4 | 37.3 | 1.6 |
| LOS | D | B | | | C | | B | C | | B | D | A |
| Approach Delay | | 38.5 | | | 23.9 | | | 25.5 | | | 19.8 | |
| Approach LOS | | D | | | C | | | C | | | B | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 190 | 5 | | | 11 | | 54 | 417 | | 9 | 393 | 0 |
| Queue Length 95th (ft) | 130 | 3 | | | 61 | | 46 | 506 | | 23 | 542 | 0 |
| Internal Link Dist (ft) | | 921 | | | 940 | | | 829 | | | 1269 | |
| Turn Bay Length (ft) | 175 | | | | | | 200 | | | 100 | | 200 |
| Base Capacity (vph) | 914 | 489 | | | 209 | | 302 | 1958 | | 249 | 1007 | 1318 |
| 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 | 0.59 | 0.19 | | | 0.38 | | 0.52 | 0.64 | | 0.12 | 0.62 | 0.45 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 105.1 | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 25.8 | | Intersection LOS: C | |
| Intersection Capacity Utilization 63.8% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: S. Point Rd & Belmont MS/Belwood Drive



| Intersection | |
|---|---|
| Int Delay, s/veh | 36 |

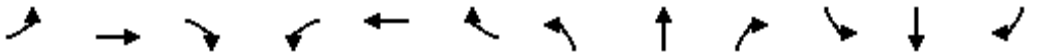
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 18 | 6 | 19 | 13 | 4 | 58 | 24 | 1353 | 48 | 38 | 829 | 95 |
| Future Vol, veh/h | 18 | 6 | 19 | 13 | 4 | 58 | 24 | 1353 | 48 | 38 | 829 | 95 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | - | - | - | - | 100 | - | 0 | 125 | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | -1 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 2 | 2 |
| Mvmt Flow | 20 | 7 | 21 | 14 | 4 | 64 | 27 | 1503 | 53 | 42 | 921 | 106 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2623 | 2615 | 921 | 2629 | 2668 | 1503 | 1027 | 0 | 0 | 1556 | 0 | 0 |
| Stage 1 | 1005 | 1005 | - | 1557 | 1557 | - | - | - | - | - | - | - |
| Stage 2 | 1618 | 1610 | - | 1072 | 1111 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.1 | 6.5 | 6.2 | 4.12 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.5 | 4 | 3.3 | 2.218 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 16 | 24 | 328 | 16 | 23 | 151 | 676 | - | - | 431 | - | - |
| Stage 1 | 291 | 319 | - | 143 | 175 | - | - | - | - | - | - | - |
| Stage 2 | 130 | 163 | - | 269 | 287 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 7 | 21 | 328 | ~ 10 | 20 | 151 | 676 | - | - | 431 | - | - |
| Mov Cap-2 Maneuver | ~ 7 | 21 | - | ~ 10 | 20 | - | - | - | - | - | - | - |
| Stage 1 | 279 | 288 | - | 137 | 168 | - | - | - | - | - | - | - |
| Stage 2 | 70 | 156 | - | 222 | 259 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 822.6 | $ 717.9 | 0.2 | 0.6 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 676 | - | - | 7 | 73 | 40 | 431 | - | - |
| HCM Lane V/C Ratio | 0.039 | - | - | 2.857 | 0.381 | 2.083 | 0.098 | - | - |
| HCM Control Delay (s) | 10.5 | - | - | $ 1851.4 | 81.9 | $ 717.9 | 14.3 | - | - |
| HCM Lane LOS | B | - | - | F | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 3.7 | 1.5 | 8.9 | 0.3 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

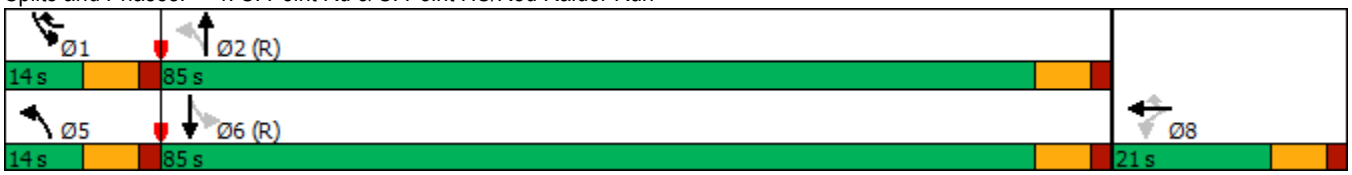


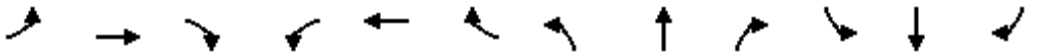
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 152 | 35 | 170 | 74 | 1143 | 97 | 128 | 773 | 55 |
| Future Volume (vph) | 0 | 0 | 0 | 152 | 35 | 170 | 74 | 1143 | 97 | 128 | 773 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 1% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 175 | | 100 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 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 | | 0.988 | | | 0.983 | |
| Flt Protected | | | | | 0.966 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1763 | 1552 | 1778 | 1850 | 0 | 1761 | 3317 | 0 |
| Flt Permitted | | | | | 0.966 | | 0.256 | | | 0.050 | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1763 | 1552 | 479 | 1850 | 0 | 93 | 3317 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 87 | | 8 | | | 25 | |
| Link Speed (mph) | | 30 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 1012 | | | 1004 | | | 531 | | | 597 | |
| Travel Time (s) | | 23.0 | | | 19.6 | | | 10.3 | | | 11.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.50 | 0.90 | 0.50 | 0.90 | 0.90 | 0.90 | 0.90 | 0.50 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 7% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 169 | 70 | 189 | 148 | 1270 | 108 | 142 | 859 | 110 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 239 | 189 | 148 | 1378 | 0 | 142 | 969 | 0 |
| Turn Type | | | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | 6 | | |
| Detector Phase | | | | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | | | | 14.0 | 14.0 | 14.0 | 14.0 | 17.0 | | 14.0 | 17.0 | |
| Total Split (s) | | | | 21.0 | 21.0 | 14.0 | 14.0 | 85.0 | | 14.0 | 85.0 | |
| Total Split (%) | | | | 17.5% | 17.5% | 11.7% | 11.7% | 70.8% | | 11.7% | 70.8% | |
| Yellow Time (s) | | | | 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 | |
| Lost Time Adjust (s) | | | | | -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 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | | | | None | None | None | None | C-Max | | None | C-Max | |
| Act Effct Green (s) | | | | | 16.0 | 30.0 | 89.0 | 80.0 | | 89.0 | 80.0 | |
| Actuated g/C Ratio | | | | | 0.13 | 0.25 | 0.74 | 0.67 | | 0.74 | 0.67 | |
| v/c Ratio | | | | | 1.02 | 0.42 | 0.33 | 1.11 | | 0.73 | 0.44 | |
| Control Delay | | | | | 114.8 | 23.1 | 5.2 | 84.9 | | 37.3 | 5.7 | |
| Queue Delay | | | | | 0.0 | 0.0 | 0.0 | 0.4 | | 0.0 | 0.3 | |
| Total Delay | | | | | 114.8 | 23.1 | 5.2 | 85.3 | | 37.3 | 6.0 | |
| LOS | | | | | F | C | A | F | | D | A | |
| Approach Delay | | | | | 74.3 | | | 77.5 | | | 10.0 | |
| Approach LOS | | | | | E | | | E | | | A | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | | | | | ~192 | 64 | 22 | ~1227 | | 42 | 105 | |
| Queue Length 95th (ft) | | | | | 144 | 135 | 19 | #1494 | | m74 | m131 | |
| Internal Link Dist (ft) | | 932 | | | 924 | | | 451 | | | 517 | |
| Turn Bay Length (ft) | | | | | | 100 | 175 | | | 100 | | |
| Base Capacity (vph) | | | | | 235 | 453 | 452 | 1236 | | 194 | 2219 | |
| Starvation Cap Reductn | | | | | 0 | 0 | 0 | 0 | | 0 | 569 | |
| Spillback Cap Reductn | | | | | 0 | 4 | 0 | 105 | | 0 | 0 | |
| Storage Cap Reductn | | | | | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | | | | 1.02 | 0.42 | 0.33 | 1.22 | | 0.73 | 0.59 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 88 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.11 | | | |
| Intersection Signal Delay: 52.6 | | Intersection LOS: D | |
| Intersection Capacity Utilization 95.9% | | 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. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 4: S. Point Rd & S. Point HS/Red Raider Run





| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 95 | 168 | 83 | 282 | 86 | 48 | 100 | 655 | 562 | 58 | 619 | 50 |
| Future Volume (vph) | 95 | 168 | 83 | 282 | 86 | 48 | 100 | 655 | 562 | 58 | 619 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | 1% | | | 1% | | | 1% | |
| Storage Length (ft) | 200 | | 75 | 225 | | 0 | 280 | | 225 | 50 | | 100 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 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 | 1.00 | 1.00 |
| Frt | | 0.951 | | | 0.947 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1600 | 1602 | 0 | 3201 | 1580 | 0 | 1585 | 1668 | 1418 | 1585 | 1668 | 1432 |
| Flt Permitted | 0.616 | | | 0.238 | | | 0.217 | | | 0.083 | | |
| Satd. Flow (perm) | 1038 | 1602 | 0 | 802 | 1580 | 0 | 362 | 1668 | 1418 | 138 | 1668 | 1432 |
| Right Turn on Red | | | No | | | No | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | | | | 360 | | | 100 |
| Link Speed (mph) | | 25 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 1336 | | | 1784 | | | 597 | | | 1080 | |
| Travel Time (s) | | 36.4 | | | 34.8 | | | 11.6 | | | 21.0 | |
| 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 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 1% |
| Adj. Flow (vph) | 106 | 187 | 92 | 313 | 96 | 53 | 111 | 728 | 624 | 64 | 688 | 56 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 106 | 279 | 0 | 313 | 149 | 0 | 111 | 728 | 624 | 64 | 688 | 56 |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | pm+ov | pm+pt | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | 4 | | | 8 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 17.0 | 14.0 | 14.0 | 17.0 | 14.0 |
| Total Split (s) | 14.0 | 28.0 | | 16.0 | 30.0 | | 14.0 | 62.0 | 16.0 | 14.0 | 62.0 | 14.0 |
| Total Split (%) | 11.7% | 23.3% | | 13.3% | 25.0% | | 11.7% | 51.7% | 13.3% | 11.7% | 51.7% | 11.7% |
| Yellow Time (s) | 5.0 | 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 | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | | -2.0 | -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 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lag | Lag | Lead | Lead | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | | None | None | | None | C-Max | None | None | C-Max | None |
| Act Effct Green (s) | 31.9 | 22.9 | | 35.9 | 24.9 | | 59.9 | 59.9 | 75.9 | 57.1 | 57.1 | 66.1 |
| Actuated g/C Ratio | 0.27 | 0.19 | | 0.30 | 0.21 | | 0.50 | 0.50 | 0.63 | 0.48 | 0.48 | 0.55 |
| v/c Ratio | 0.33 | 0.91 | | 0.68 | 0.46 | | 0.41 | 0.87 | 0.61 | 0.37 | 0.87 | 0.07 |
| Control Delay | 33.1 | 81.9 | | 39.0 | 46.8 | | 15.2 | 18.3 | 3.1 | 23.4 | 41.3 | 0.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 9.3 | 0.9 | 0.0 | 0.0 | 0.0 |
| Total Delay | 33.1 | 81.9 | | 39.0 | 46.8 | | 15.2 | 27.5 | 4.0 | 23.4 | 41.3 | 0.4 |
| LOS | C | F | | D | D | | B | C | A | C | D | A |
| Approach Delay | | 68.5 | | | 41.5 | | | 16.6 | | | 37.0 | |
| Approach LOS | | E | | | D | | | B | | | D | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 59 | 214 | | 90 | 102 | | 29 | 428 | 85 | 26 | 464 | 0 |
| Queue Length 95th (ft) | 105 | #375 | | 127 | 169 | | m30 | m373 | m63 | 52 | #703 | 2 |
| Internal Link Dist (ft) | | 1256 | | | 1704 | | | 517 | | | 1000 | |
| Turn Bay Length (ft) | 200 | | | 225 | | | 280 | | 225 | 50 | | 100 |
| Base Capacity (vph) | 317 | 307 | | 459 | 329 | | 272 | 833 | 1029 | 174 | 794 | 834 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 88 | 180 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.91 | | 0.68 | 0.45 | | 0.41 | 0.98 | 0.73 | 0.37 | 0.87 | 0.07 |

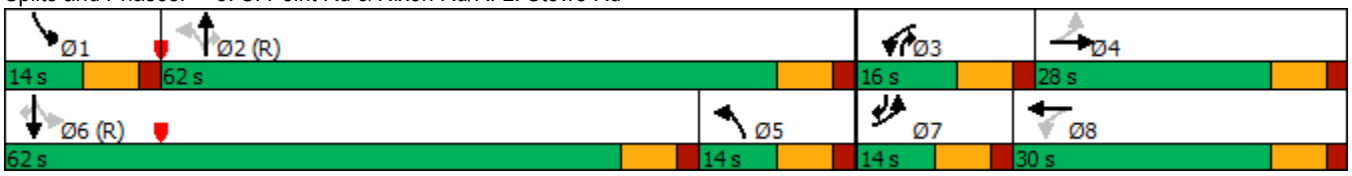
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | CBD | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.91 | | | |
| Intersection Signal Delay: 32.0 | | Intersection LOS: C | |
| Intersection Capacity Utilization 85.2% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 5: S. Point Rd & Nixon Rd/R. L. Stowe Rd



## Intersection: 1: S. Point Rd & Armstrong Rd

| Movement | EB | NB | SB | SB |
|---|---|---|---|---|
| Directions Served | LR | LT | T | R |
| Maximum Queue (ft) | 2531 | 1636 | 135 | 164 |
| Average Queue (ft) | 1682 | 1006 | 73 | 34 |
| 95th Queue (ft) | 2770 | 1686 | 132 | 83 |
| Link Distance (ft) | 2516 | 1804 | 2161 | |
| Upstream Blk Time (%) | 5 | | | |
| Queuing Penalty (veh) | 0 | | | |
| Storage Bay Dist (ft) | | | | 150 |
| Storage Blk Time (%) | | | 0 | 0 |
| Queuing Penalty (veh) | | | 0 | 0 |

## Intersection: 2: S. Point Rd & Belmont MS/Belwood Drive

| Movement | EB | EB | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | TR | LTR | L | T | TR | L | T | R |
| Maximum Queue (ft) | 187 | 200 | 994 | 75 | 224 | 908 | 225 | 125 | 1275 | 225 |
| Average Queue (ft) | 186 | 199 | 921 | 51 | 161 | 886 | 225 | 37 | 892 | 219 |
| 95th Queue (ft) | 190 | 200 | 1147 | 76 | 297 | 896 | 226 | 96 | 1171 | 271 |
| Link Distance (ft) | | | 955 | 974 | | 869 | | | 1275 | |
| Upstream Blk Time (%) | | | 78 | | | 52 | | | 0 | |
| Queuing Penalty (veh) | | | 0 | | | 0 | | | 2 | |
| Storage Bay Dist (ft) | 175 | 175 | | | 200 | | 200 | 100 | | 200 |
| Storage Blk Time (%) | 71 | 78 | | | 0 | 49 | 16 | 0 | 46 | 4 |
| Queuing Penalty (veh) | 66 | 72 | | | 0 | 383 | 122 | 0 | 286 | 25 |

## Intersection: 3: S. Point Rd & McKee Road/Stowe Road

| Movement | EB | EB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LTR | L | T | R | L | T |
| Maximum Queue (ft) | 175 | 912 | 1075 | 124 | 1299 | 1293 | 74 | 348 |
| Average Queue (ft) | 149 | 387 | 706 | 21 | 1288 | 1243 | 33 | 12 |
| 95th Queue (ft) | 193 | 869 | 1227 | 82 | 1298 | 1334 | 65 | 115 |
| Link Distance (ft) | | 1092 | 1060 | | 1275 | 1275 | | 468 |
| Upstream Blk Time (%) | | | 27 | | 23 | 3 | | |
| Queuing Penalty (veh) | | | 0 | | 210 | 28 | | |
| Storage Bay Dist (ft) | 150 | | | 100 | | | 125 | |
| Storage Blk Time (%) | 79 | | | | 35 | | | 1 |
| Queuing Penalty (veh) | 22 | | | | 9 | | | 0 |

## Intersection: 4: S. Point Rd & S. Point HS/Red Raider Run

| Movement | WB | WB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | TR | L | T | TR |
| Maximum Queue (ft) | 1033 | 125 | 200 | 487 | 125 | 455 | 323 |
| Average Queue (ft) | 949 | 106 | 92 | 476 | 102 | 177 | 123 |
| 95th Queue (ft) | 1096 | 166 | 211 | 486 | 148 | 342 | 268 |
| Link Distance (ft) | 970 | | | 468 | | 516 | 516 |
| Upstream Blk Time (%) | 59 | | | 14 | | | |
| Queuing Penalty (veh) | 0 | | | 230 | | | |
| Storage Bay Dist (ft) | | 100 | 175 | | 100 | | |
| Storage Blk Time (%) | 79 | 17 | 0 | 34 | 17 | 12 | |
| Queuing Penalty (veh) | 149 | 41 | 0 | 50 | 74 | 17 | |

## Intersection: 5: S. Point Rd & Nixon Rd/R. L. Stowe Rd

| Movement | EB | EB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | L | TR | L | T | R | L | T | R |
| Maximum Queue (ft) | 225 | 1305 | 172 | 174 | 194 | 304 | 356 | 250 | 74 | 1087 | 125 |
| Average Queue (ft) | 165 | 630 | 110 | 96 | 101 | 68 | 169 | 112 | 46 | 842 | 62 |
| 95th Queue (ft) | 294 | 1213 | 168 | 143 | 165 | 158 | 305 | 251 | 81 | 1219 | 157 |
| Link Distance (ft) | | 1290 | | | 1737 | | 516 | | | 1040 | |
| Upstream Blk Time (%) | | 9 | | | | | | | | 27 | |
| Queuing Penalty (veh) | | 0 | | | | | | | | 0 | |
| Storage Bay Dist (ft) | 200 | | 225 | 225 | | 280 | | 225 | 50 | | 100 |
| Storage Blk Time (%) | 1 | 73 | | | | | 3 | 0 | 17 | 49 | 0 |
| Queuing Penalty (veh) | 2 | 78 | | | | | 23 | 1 | 129 | 58 | 0 |

## Network Summary

Network wide Queuing Penalty: 2077

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 19 | 4 | 4 | 4 | 4 | 44 | 4 | 1077 | 8 | 65 | 1377 | 4 |
| Future Volume (vph) | 19 | 4 | 4 | 4 | 4 | 44 | 4 | 1077 | 8 | 65 | 1377 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 3% | | | 0% | | | 1% | | | 0% | |
| Storage Length (ft) | 175 | | 0 | 0 | | 100 | 200 | | 200 | 100 | | 200 |
| Storage Lanes | 2 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.925 | | | 0.884 | | | 0.999 | | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.997 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3382 | 1697 | 0 | 0 | 1642 | 0 | 1761 | 3484 | 0 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.950 | | | | 0.974 | | 0.034 | | | 0.190 | | |
| Satd. Flow (perm) | 3382 | 1697 | 0 | 0 | 1604 | 0 | 63 | 3484 | 0 | 354 | 1863 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 4 | | | 49 | | | 1 | | | | 71 |
| Link Speed (mph) | | 30 | | | 30 | | | 35 | | | 35 | |
| Link Distance (ft) | | 1001 | | | 1004 | | | 1186 | | | 1346 | |
| Travel Time (s) | | 22.8 | | | 22.8 | | | 23.1 | | | 26.2 | |
| 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% | 3% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 21 | 4 | 4 | 4 | 4 | 49 | 4 | 1197 | 9 | 72 | 1530 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 21 | 8 | 0 | 0 | 57 | 0 | 4 | 1206 | 0 | 72 | 1530 | 4 |
| Turn Type | Prot | NA | | Perm | NA | | pm+pt | NA | | pm+pt | NA | pm+ov |
| Protected Phases | 7 | 4 | | | 8 | | 5 | 2 | | 1 | 6 | 7 |
| Permitted Phases | | | | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 7 | 4 | | 8 | 8 | | 5 | 2 | | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 10.0 | | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 17.0 | | 14.0 | 17.0 | 14.0 |
| Total Split (s) | 14.0 | 28.0 | | 14.0 | 14.0 | | 14.0 | 128.0 | | 14.0 | 128.0 | 14.0 |
| Total Split (%) | 8.2% | 16.5% | | 8.2% | 8.2% | | 8.2% | 75.3% | | 8.2% | 75.3% | 8.2% |
| 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 | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | | | Lag | Lag | | Lead | Lag | | Lead | Lag | Lead |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | | | | | | | Yes |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | None |
| Act Effct Green (s) | 9.1 | 17.0 | | | 9.1 | | 121.6 | 112.5 | | 125.8 | 125.3 | 137.2 |
| Actuated g/C Ratio | 0.06 | 0.11 | | | 0.06 | | 0.81 | 0.75 | | 0.84 | 0.83 | 0.91 |
| v/c Ratio | 0.10 | 0.04 | | | 0.40 | | 0.03 | 0.46 | | 0.19 | 0.99 | 0.00 |
| Control Delay | 73.5 | 45.4 | | | 32.1 | | 3.8 | 9.1 | | 4.2 | 36.3 | 0.0 |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | 73.5 | 45.4 | | | 32.1 | | 3.8 | 9.1 | | 4.2 | 36.3 | 0.0 |
| LOS | E | D | | | C | | A | A | | A | D | A |
| Approach Delay | | 65.7 | | | 32.1 | | | 9.1 | | | 34.8 | |
| Approach LOS | | E | | | C | | | A | | | C | |

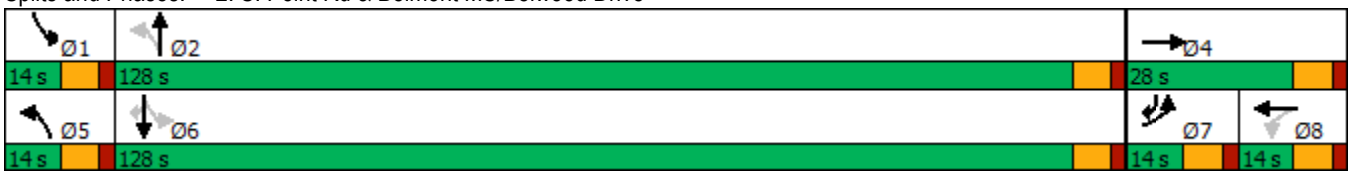
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 10 | 4 | | | 8 | | 1 | 275 | | 14 | ~1680 | 0 |
| Queue Length 95th (ft) | 28 | 22 | | | 60 | | 3 | 319 | | 25 | #2235 | 0 |
| Internal Link Dist (ft) | | 921 | | | 924 | | | 1106 | | | 1266 | |
| Turn Bay Length (ft) | 175 | | | | | | 200 | | | 100 | | 200 |
| Base Capacity (vph) | 204 | 265 | | | 142 | | 153 | 2903 | | 381 | 1552 | 1450 |
| 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 | 0.10 | 0.03 | | | 0.40 | | 0.03 | 0.42 | | 0.19 | 0.99 | 0.00 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 170 | | | |
| Actuated Cycle Length: 150.4 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.99 | | | |
| Intersection Signal Delay: 24.3 | | Intersection LOS: C | |
| Intersection Capacity Utilization 87.5% | | 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: 2: S. Point Rd & Belmont MS/Belwood Drive



| Intersection | |
|---|---|
| Int Delay, s/veh | 181.3 |

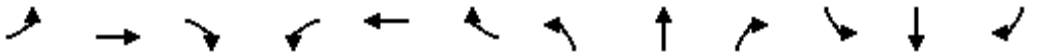
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 26 | 10 | 13 | 17 | 4 | 54 | 11 | 1071 | 19 | 69 | 1344 | 49 |
| Future Vol, veh/h | 26 | 10 | 13 | 17 | 4 | 54 | 11 | 1071 | 19 | 69 | 1344 | 49 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | - | - | - | - | 100 | - | 0 | 125 | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | -1 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 29 | 11 | 14 | 19 | 4 | 60 | 12 | 1190 | 21 | 77 | 1493 | 54 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2904 | 2882 | 1493 | 2901 | 2915 | 1190 | 1547 | 0 | 0 | 1211 | 0 | 0 |
| Stage 1 | 1647 | 1647 | - | 1214 | 1214 | - | - | - | - | - | - | - |
| Stage 2 | 1257 | 1235 | - | 1687 | 1701 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | ~ 10 | 16 | 151 | ~ 10 | 15 | 229 | 429 | - | - | 576 | - | - |
| Stage 1 | 125 | 157 | - | 222 | 254 | - | - | - | - | - | - | - |
| Stage 2 | 210 | 249 | - | 119 | 147 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 5 | 13 | 151 | ~ 2 | 13 | 229 | 429 | - | - | 576 | - | - |
| Mov Cap-2 Maneuver | ~ 5 | 13 | - | ~ 2 | 13 | - | - | - | - | - | - | - |
| Stage 1 | 122 | 136 | - | 216 | 247 | - | - | - | - | - | - | - |
| Stage 2 | 148 | 242 | - | 86 | 127 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 2049.6 | $ 5142.5 | 0.1 | 0.6 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 429 | - | - | 5 | 27 | 8 | 576 | - | - |
| HCM Lane V/C Ratio | 0.028 | - | - | 5.778 | 0.947 | 10.417 | 0.133 | - | - |
| HCM Control Delay (s) | 13.6 | - | - | $ 3540 | $ 364.9 | $ 5142.5 | 12.2 | - | - |
| HCM Lane LOS | B | - | - | F | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 5.1 | 3 | 12 | 0.5 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 195 | 7 | 266 | 11 | 977 | 108 | 150 | 1190 | 4 |
| Future Volume (vph) | 0 | 0 | 0 | 195 | 7 | 266 | 11 | 977 | 108 | 150 | 1190 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 0% | | | 4% | | | -1% | | | 1% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 100 | 175 | | 100 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 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 | | 0.985 | | | | |
| Flt Protected | | | | | 0.954 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1742 | 1552 | 1778 | 1844 | 0 | 1761 | 3357 | 0 |
| Flt Permitted | | | | | 0.954 | | 0.146 | | | 0.055 | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1742 | 1552 | 273 | 1844 | 0 | 102 | 3357 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 134 | | 10 | | | 1 | |
| Link Speed (mph) | | 30 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 1012 | | | 1004 | | | 534 | | | 597 | |
| Travel Time (s) | | 23.0 | | | 19.6 | | | 10.4 | | | 11.6 | |
| 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% | 2% | 2% | 7% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 217 | 8 | 296 | 12 | 1086 | 120 | 167 | 1322 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 225 | 296 | 12 | 1206 | 0 | 167 | 1326 | 0 |
| Turn Type | | | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | 6 | | |
| Detector Phase | | | | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | | | | 14.0 | 14.0 | 14.0 | 14.0 | 17.0 | | 14.0 | 17.0 | |
| Total Split (s) | | | | 19.0 | 19.0 | 14.0 | 14.0 | 87.0 | | 14.0 | 87.0 | |
| Total Split (%) | | | | 15.8% | 15.8% | 11.7% | 11.7% | 72.5% | | 11.7% | 72.5% | |
| Yellow Time (s) | | | | 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 | |
| Lost Time Adjust (s) | | | | | -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 | |
| Lead/Lag | | | | | | Lag | Lead | Lead | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | | | | None | None | None | None | C-Max | | None | C-Max | |
| Act Effct Green (s) | | | | | 14.0 | 28.0 | 82.0 | 82.0 | | 90.4 | 90.4 | |
| Actuated g/C Ratio | | | | | 0.12 | 0.23 | 0.68 | 0.68 | | 0.75 | 0.75 | |
| v/c Ratio | | | | | 1.11 | 0.64 | 0.04 | 0.95 | | 0.83 | 0.52 | |
| Control Delay | | | | | 143.8 | 29.2 | 6.4 | 34.9 | | 44.2 | 5.7 | |
| Queue Delay | | | | | 0.0 | 0.2 | 0.0 | 29.8 | | 0.0 | 0.6 | |
| Total Delay | | | | | 143.8 | 29.3 | 6.4 | 64.7 | | 44.2 | 6.3 | |
| LOS | | | | | F | C | A | E | | D | A | |
| Approach Delay | | | | | 78.8 | | | 64.1 | | | 10.6 | |
| Approach LOS | | | | | E | | | E | | | B | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | | | | | ~199 | 113 | 3 | 767 | | 64 | 0 | |
| Queue Length 95th (ft) | | | | | #358 | 213 | 9 | #1186 | | m78 | m268 | |
| Internal Link Dist (ft) | | 932 | | | 924 | | | 454 | | | 517 | |
| Turn Bay Length (ft) | | | | | | 100 | 175 | | | 100 | | |
| Base Capacity (vph) | | | | | 203 | 464 | 299 | 1263 | | 201 | 2529 | |
| Starvation Cap Reductn | | | | | 0 | 0 | 0 | 0 | | 0 | 745 | |
| Spillback Cap Reductn | | | | | 0 | 9 | 0 | 133 | | 0 | 0 | |
| Storage Cap Reductn | | | | | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | | | | 1.11 | 0.65 | 0.04 | 1.07 | | 0.83 | 0.74 | |

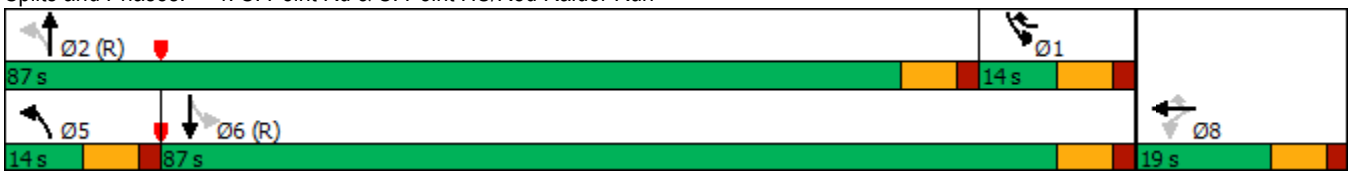
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 100 (83%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 100 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.11 | | | |
| Intersection Signal Delay: 41.7 | | Intersection LOS: D | |
| Intersection Capacity Utilization 90.0% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

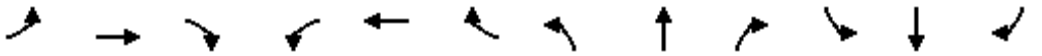
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 4: S. Point Rd & S. Point HS/Red Raider Run





| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 119 | 162 | 100 | 582 | 101 | 49 | 76 | 632 | 512 | 93 | 704 | 65 |
| Future Volume (vph) | 119 | 162 | 100 | 582 | 101 | 49 | 76 | 632 | 512 | 93 | 704 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | 1% | | | 1% | | | 1% | | | 1% | |
| Storage Length (ft) | 200 | | 0 | 225 | | 0 | 280 | | 225 | 25 | | 100 |
| Storage Lanes | 1 | | 0 | 2 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 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 | 1.00 | 1.00 |
| Frt | | 0.943 | | | 0.951 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1761 | 1748 | 0 | 3522 | 1763 | 0 | 1761 | 1853 | 1575 | 1761 | 1853 | 1575 |
| Flt Permitted | 0.652 | | | 0.950 | | | 0.082 | | | 0.083 | | |
| Satd. Flow (perm) | 1208 | 1748 | 0 | 3522 | 1763 | 0 | 152 | 1853 | 1575 | 154 | 1853 | 1575 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 22 | | | 19 | | | | 271 | | | 164 |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 1336 | | | 1784 | | | 597 | | | 1080 | |
| Travel Time (s) | | 26.0 | | | 34.8 | | | 11.6 | | | 21.0 | |
| 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 |
| Adj. Flow (vph) | 132 | 180 | 111 | 647 | 112 | 54 | 84 | 702 | 569 | 103 | 782 | 72 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 132 | 291 | 0 | 647 | 166 | 0 | 84 | 702 | 569 | 103 | 782 | 72 |
| Turn Type | pm+pt | NA | | Prot | NA | | pm+pt | NA | pm+ov | pm+pt | NA | pm+ov |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | 4 | | | | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 17.0 | 14.0 | 14.0 | 17.0 | 14.0 |
| Total Split (s) | 16.0 | 24.0 | | 27.0 | 35.0 | | 14.0 | 55.0 | 27.0 | 14.0 | 55.0 | 16.0 |
| Total Split (%) | 13.3% | 20.0% | | 22.5% | 29.2% | | 11.7% | 45.8% | 22.5% | 11.7% | 45.8% | 13.3% |
| Yellow Time (s) | 5.0 | 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 | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | | -2.0 | -2.0 | | -2.0 | -2.0 | 0.0 | -2.0 | -2.0 | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 7.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lag | Lead | Lead | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | | None | None | | None | C-Max | None | None | C-Max | None |
| Act Effct Green (s) | 29.7 | 19.0 | | 22.0 | 30.3 | | 59.0 | 50.0 | 68.0 | 60.0 | 52.8 | 64.5 |
| Actuated g/C Ratio | 0.25 | 0.16 | | 0.18 | 0.25 | | 0.49 | 0.42 | 0.57 | 0.50 | 0.44 | 0.54 |
| v/c Ratio | 0.38 | 0.99 | | 1.00 | 0.36 | | 0.43 | 0.91 | 0.56 | 0.52 | 0.96 | 0.08 |
| Control Delay | 29.4 | 96.1 | | 85.3 | 35.3 | | 31.1 | 35.0 | 5.0 | 44.8 | 57.2 | 0.2 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 18.9 | 0.1 | 0.0 | 0.0 | 0.0 |
| Total Delay | 29.4 | 96.1 | | 85.3 | 35.3 | | 31.1 | 53.9 | 5.0 | 44.8 | 57.2 | 0.2 |
| LOS | C | F | | F | D | | C | D | A | D | E | A |
| Approach Delay | | 75.3 | | | 75.1 | | | 31.9 | | | 51.6 | |
| Approach LOS | | E | | | E | | | C | | | D | |
| Queue Length 50th (ft) | 67 | 212 | | ~254 | 94 | | 24 | 459 | 80 | 38 | ~615 | 0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 95th (ft) | 114 | #396 | | #375 | 159 | | m29 | m546 | m84 | 82 | #878 | 0 |
| Internal Link Dist (ft) | | 1256 | | | 1704 | | | 517 | | | 1000 | |
| Turn Bay Length (ft) | 200 | | | 225 | | | 280 | | 225 | 25 | | 100 |
| Base Capacity (vph) | 352 | 295 | | 645 | 459 | | 195 | 772 | 1009 | 197 | 815 | 926 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 86 | 24 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.38 | 0.99 | | 1.00 | 0.36 | | 0.43 | 1.02 | 0.58 | 0.52 | 0.96 | 0.08 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 120 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 1.00 | |
| Intersection Signal Delay: 52.3 | Intersection LOS: D |
| Intersection Capacity Utilization 90.8% | ICU Level of Service E |
| Analysis Period (min) 15 | |

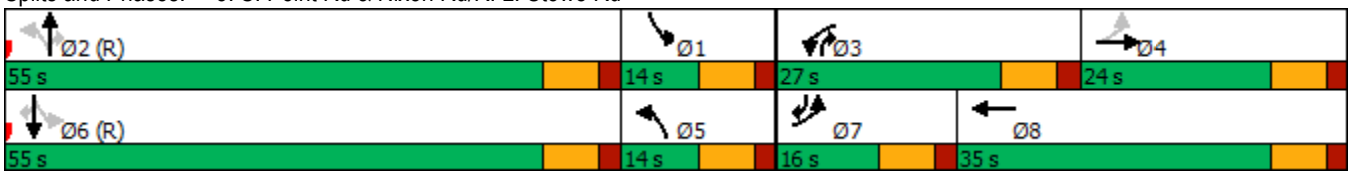
* User Entered Value

~ 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.

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

Splits and Phases: 5: S. Point Rd & Nixon Rd/R. L. Stowe Rd



## Intersection: 1: S. Point Rd & Armstrong Rd

| Movement | EB | NB | SB | SB |
|---|---|---|---|---|
| Directions Served | LR | LT | T | R |
| Maximum Queue (ft) | 317 | 1645 | 229 | 175 |
| Average Queue (ft) | 190 | 1192 | 115 | 102 |
| 95th Queue (ft) | 278 | 1865 | 208 | 184 |
| Link Distance (ft) | 2516 | 1804 | 2161 | |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | 150 |
| Storage Blk Time (%) | | | 2 | 0 |
| Queuing Penalty (veh) | | | 18 | 1 |

## Intersection: 2: S. Point Rd & Belmont MS/Belwood Drive

| Movement | EB | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LTR | LTR | L | T | TR | L | T | R |
| Maximum Queue (ft) | 47 | 43 | 97 | 31 | 348 | 378 | 124 | 287 | 224 |
| Average Queue (ft) | 9 | 10 | 35 | 2 | 121 | 62 | 33 | 148 | 7 |
| 95th Queue (ft) | 30 | 31 | 67 | 12 | 217 | 185 | 82 | 319 | 74 |
| Link Distance (ft) | | 954 | 958 | | 1152 | 1152 | | 1278 | |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | 175 | | | 200 | | | 100 | | 200 |
| Storage Blk Time (%) | | | | | 1 | | | 8 | |
| Queuing Penalty (veh) | | | | | 0 | | | 6 | |

## Intersection: 3: S. Point Rd & McKee Farm Road/Stowe Road

| Movement | EB | EB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LTR | L | T | R | L | T |
| Maximum Queue (ft) | 163 | 523 | 1106 | 116 | 892 | 558 | 70 | 486 |
| Average Queue (ft) | 131 | 137 | 503 | 14 | 382 | 46 | 30 | 25 |
| 95th Queue (ft) | 185 | 467 | 1116 | 52 | 846 | 272 | 67 | 185 |
| Link Distance (ft) | | 1110 | 1091 | | 1278 | 1278 | | 472 |
| Upstream Blk Time (%) | | | 13 | | | | | 0 |
| Queuing Penalty (veh) | | | 0 | | | | | 1 |
| Storage Bay Dist (ft) | 150 | | | 100 | | | 125 | |
| Storage Blk Time (%) | 53 | | | | 26 | | | |
| Queuing Penalty (veh) | 12 | | | | 3 | | | |

## Intersection: 4: S. Point Rd & S. Point HS/Red Raider Run

| Movement | WB | WB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | L | TR | L | T | TR |
| Maximum Queue (ft) | 1009 | 125 | 200 | 488 | 124 | 420 | 317 |
| Average Queue (ft) | 813 | 124 | 29 | 446 | 83 | 159 | 85 |
| 95th Queue (ft) | 1141 | 128 | 125 | 567 | 147 | 364 | 249 |
| Link Distance (ft) | 970 | | | 472 | | 516 | 516 |
| Upstream Blk Time (%) | 28 | | | 11 | | | |
| Queuing Penalty (veh) | 0 | | | 125 | | | |
| Storage Bay Dist (ft) | | 100 | 175 | | 100 | | |
| Storage Blk Time (%) | 41 | 67 | | 36 | 9 | 8 | |
| Queuing Penalty (veh) | 110 | 136 | | 4 | 55 | 13 | |

## Intersection: 5: S. Point Rd & Nixon Rd/R. L. Stowe Rd

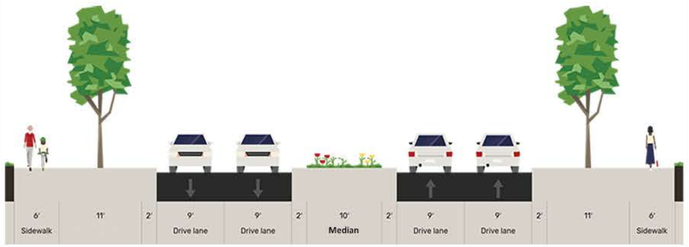
| Movement | EB | EB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | L | TR | L | T | R | L | T | R |
| Maximum Queue (ft) | 225 | 551 | 237 | 250 | 1056 | 304 | 532 | 250 | 49 | 1103 | 125 |
| Average Queue (ft) | 147 | 278 | 234 | 247 | 646 | 80 | 347 | 186 | 41 | 1057 | 53 |
| 95th Queue (ft) | 271 | 497 | 240 | 254 | 971 | 234 | 574 | 319 | 59 | 1133 | 150 |
| Link Distance (ft) | | 1290 | | | 1737 | | 516 | | | 1040 | |
| Upstream Blk Time (%) | | | | | | | 1 | | | 76 | |
| Queuing Penalty (veh) | | | | | | | 13 | | | 0 | |
| Storage Bay Dist (ft) | 200 | | 225 | 225 | | 280 | | 225 | 25 | | 100 |
| Storage Blk Time (%) | 0 | 33 | 36 | 49 | 1 | | 15 | 0 | 30 | 55 | 0 |
| Queuing Penalty (veh) | 0 | 39 | 54 | 74 | 3 | | 87 | 1 | 233 | 87 | 0 |

## Network Summary

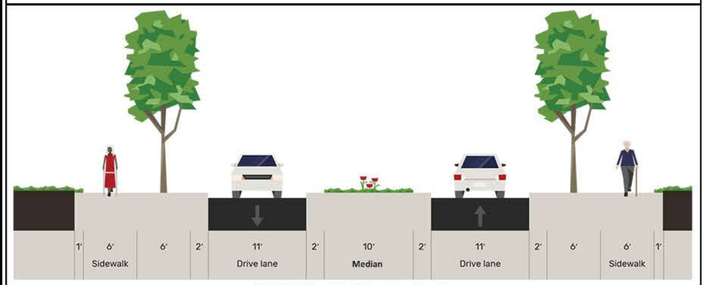
Network wide Queuing Penalty: 1075

# Appendix C: Site Plan

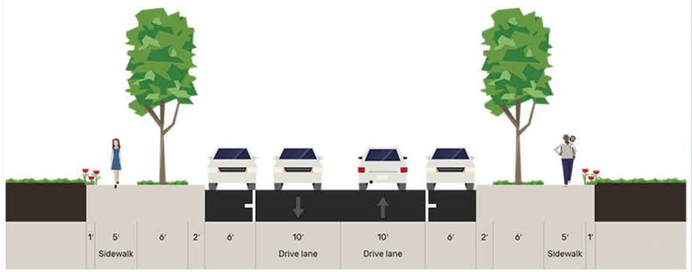
C



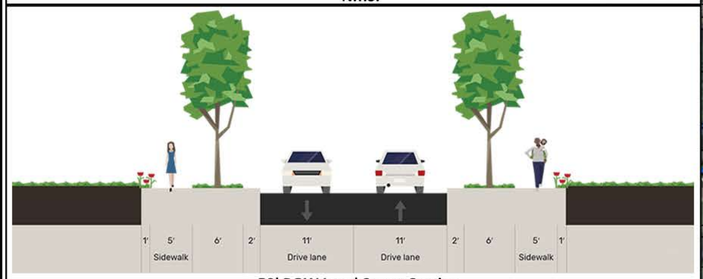

100' ROW Main Boulevard Street Section
N.T.S.



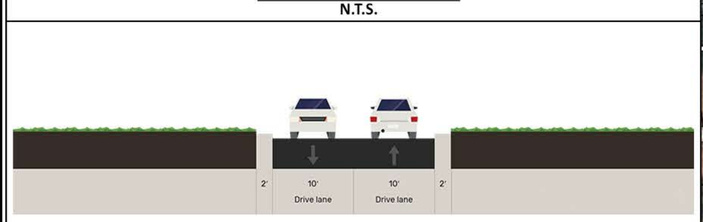

66' ROW with Median Section
N.T.S.




60' ROW Local Street Section
N.T.S.

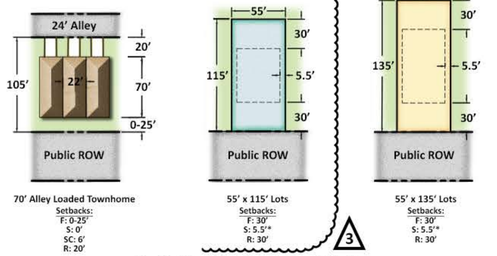



50' ROW Local Street Section
N.T.S.

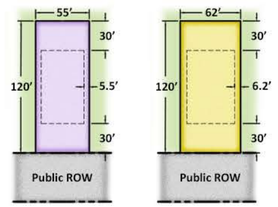



24' ROW Rear Alley Street Section
N.T.S.

## Typical Lot Details: Traditional
Not to Scale

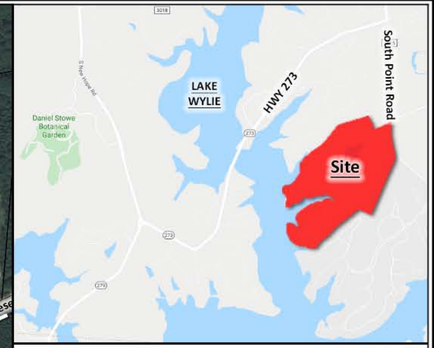



## Typical Lot Details: Active Adult
Not to Scale




* Note: Side Setbacks are 20% of Lot Width




## Vicinity Map
Not To Scale

## Site Data:

| | |
|---|---|
| Tax Parcels: | 193557, 193558, 193559, & 201459 |
| Total Acreage: | +/- 221.36 Acres (per GIS) |
| Location: | |
| Existing: | Gaston County, NC |
| Proposed: | Belmont, NC |
| Zoning: | |
| Existing: | R-1 (Scenic View Overlay & Highway Corridor Overlay)(Gaston County, NC) |
| Proposed: | SR (CD) (Belmont, NC) |
| Watershed: | Duharts Creek-South Fork Catawba River |
| **Total Potential Units:** | **+/- 385 Units** |
| Traditional: | +/- 270 Lots (70%) |
| 55' x 135' Lots | +/- 78 Lots (29%) |
| 55' x 115' Lots | +/- 77 Lots (29%) |
| 22' x 70' Townhomes | +/- 115 Units (42%) |
| Active Adult: | +/- 115 Lots (30%) |
| 55'x120' Lots | +/- 58 Lots (50%) |
| 62'x120' Lots | +/- 57 Lots (50%) |
| Potential Density: | +/- 1.74 DU/AC |
| Open Space: | |
| Required: | +/- 20.35 Acres * |
| Proposed: | +/- 20.35 Acres Min. |
| Tree Save: | |
| Required: | +/- 52.4 Acres (25% Exist. Canopy) |
| Proposed: | +/- 52.4 Acres (25%) Min. |

* Note: Open Space Requirement is calculated by multiplying the number of bedrooms per unit x (number of units x 520 SF): **3.5 (385 x 520) = 700,700 SF**

**General Notes**
1. Base information provided by Gaston County GIS Data and should be verified for accuracy.
2. All site plan, zoning, and wetland information utilized in the preparation of this plan is considered to be preliminary in nature and subject to change and final verification.
3. Draft - Do not rely on this document.

**Floodplain Information**
Floodplain information obtained from FEMA FIRM Panels 3710359200J & 3710359100L effective dates of studies 09/28/2007 & 09/02/2015.

**Stream/Wetland Information**
Stream/Wetland information is based on preliminary information provided to ESP by "Figure 1: Approximate Delineation of Surface Waters and Wetlands" provided by Wetlands & Waters, Inc. dated 02/01/2021 and Gaston County GIS data. For purposes of preparation of this Sketch Plan, any potential wetland areas and stream features depicted on the plan are considered to be preliminary in nature and approximate in location. The Sketch Plan will need to be revised once all agencies approved on-site wetland/stream and appropriate jurisdictional boundaries are surveyed and verified with acceptable levels of accuracy- unit loss may occur.

**Access Points/Driveways/Streets**
1. Proposed project site entrance locations are considered preliminary in nature and need to be verified for adequate sight distance.
2. All roadway and street systems are considered to be preliminary and will need to be verified for sufficiency to satisfy or exceed minimum requirements established in the Gaston County and applicable standards identified by NCDOT. Street connections are conceptual and may be subject to change based on agency input and review.

**Open Space /Tree Save**
Open Space and Tree Save areas are conceptual and preliminary. The exact location of these areas may change as the client finalizes decisions regarding final layout, product allocation, and as other spatially dependent project components such as stormwater areas, wetland areas, utility features, and buffers, (as applicable) for this project are better defined.

**Potential Stormwater Quality Areas**
Location of proposed stormwater areas are conceptual and preliminary and still need to be determined. The exact size and location of these areas will change as the client finalizes decisions regarding final layout, product allocation, and as other proposed changes to the project are better defined. Layout and unit count subject to change based on final design of stormwater areas.

**Public Information**
ESP Associates is not responsible for plan deficiencies created by incorrect, incomplete, missing or outdated information derived from public sources such as GIS, Planning and Zoning departments.

ESP Associates, Inc.
P.O. Box 7030
Charlotte, NC 28241
803.802.2440
www.espassociates.com

NORTH

# Lakeview Farms Site

## Sketch Plan

SKPR2020.12

ESP Job #HW58 Revised June 27, 2022

GRAPHIC SCALE
300 0 150 300 600
1 INCH = 300 FT.

TRI Pointe HOMES
3436 Toringdon Way, Suite 210
Charlotte, NC 28277

# Appendix D: Improvement Cost Estimates

D

GANNETT FLEMING
Excellence Delivered As Promised

North Carolina Department of Transportation
Preliminary Estimate

Project: TriPointe Homes
Route: South Point Road
AT: Armstrong Road
Typical Section: Signal & Right Turn Lane

**Func**

County: **Gaston**

| CONSTR. COST |
|---|
| **$88,674** |

Prepared By: Gannett Fleming  Date 9/22/2022

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|---|---|---|---|---|---|---|---|
| | | | Clearing and Grubbing | 0.05 | Acre | $ 40,000.00 | $ 2,000.00 |
| | | | Borrow | 20 | CY | $ 200.00 | $ 4,000.00 |
| | | | Unclassified Excavation | 20 | CY | $ 20.00 | $ 400.00 |
| | | | Fine Grading | 100 | SY | $ 4.00 | $ 400.00 |
| | | | New Pavement | 100 | SY | $ 75.00 | $ 7,500.00 |
| | | | Erosion Control | 0.1 | Acres | $ 15,000.00 | $ 750.00 |
| | | | Traffic Control | 1.00 | LS | $ 1,000.00 | $ 1,000.00 |
| | | | Pavment Markings | 0.05 | Miles | $ 20,000.00 | $ 1,000.00 |
| | | | Signal | 1 | Ea | $ 50,000.00 | $ 50,000.00 |
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| | | | Misc. & Mob (15% Strs&Util) | | | | $ - |
| | | | Misc. & Mob (15% Roadway) | | | | $ 10,950.00 |

**Lgth 2150 Feet**

| | |
|---|---|
| **Contract Cost** ..... ..... ..... | $ 78,000.00 |
| **E. & C. 15%** ..... ..... ..... | $ 10,673.63 |
| **Construction Cost** ..... ..... ..... | **$ 88,673.63** |
| **Design Engineering** ..... ..... ..... | $ 11,700.00 |
| **Utility Relocation** | |
| **Right of Way** ..... ..... ..... | $ - |
| **Total Cost** ..... ..... ..... | $ 100,373.63 |
| **Say** ..... ..... | $ 105,000.00 |

Project: TriPointe Homes
Route: South Point Road
At: Armstrong Road
Typical Section: Roundabout

**Func**

County: **Gaston**

| **CONSTR. COST** |
|---|
| **$548,000** |

Prepared By: Gannett Fleming

Date 9/22/2022

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|---|---|---|---|---|---|---|---|
| | | | Clearing and Grubbing | 0.50 | Acre | $ 40,000.00 | $ 20,000.00 |
| | | | Borrow | 50.00 | CY | $ 200.00 | $ 10,000.00 |
| | | | Unclassified Excavation | 300.00 | CY | $ 20.00 | $ 6,000.00 |
| | | | | | | | |
| | | | Islands | 100.00 | SY | $ 150.00 | $ 15,000.00 |
| | | | Mountable Center Island | 315.00 | SY | $ 150.00 | $ 47,250.00 |
| | | | Fine Grading | 600.00 | SY | $ 4.00 | $ 2,400.00 |
| | | | New Pavement Roundabout | 400.00 | SY | $ 75.00 | $ 30,000.00 |
| | | | New Pavement Additional Lanes | 2400.00 | SY | $ 50.00 | $ 120,000.00 |
| | | | Erosion Control | 0.50 | Acre | $ 45,000.00 | $ 22,500.00 |
| | | | Traffic Control | 1.00 | LS | $ 25,000.00 | $ 25,000.00 |
| | | | Thermo and Markers | 0.60 | Miles | $ 50,000.00 | $ 30,000.00 |
| | | | Misc. & Mob (15% Strs&Util) | | | | $ - |
| | | | Misc. & Mob (45% Roadway) | | | | $ 147,850.00 |

**Lgth 1200 Feet**

| | | |
|---|---|---|
| **Contract Cost** | $ | 476,000.00 |
| **E. & C. 15%** | $ | 72,000.00 |
| **Construction Cost** | **$** | **548,000.00** |
| **Design Engineering** | $ | 71,400.00 |
| **Utility Relocation** | $ | 100,000.00 |
| **Right of Way** | $ | - |
| **Total Cost** | $ | 719,400.00 |
| **Say** | $ | 725,000.00 |

North Carolina Department of Transportation
Preliminary Estimate

Project: TriPointe Homes | **Func** | County: **Gaston**
Route: South Point Road
At: Belmont MS / Belwood Road
Typical Section: Add one lane northbound to Stowe Rd
Add one left turn lane eastbound to MS Approach

**CONSTR. COST**
**$588,000**

Prepared By: Gannett Fleming Date 9/22/2022

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|---|---|---|---|---|---|---|---|
| | | | Pavment Markings | 0.05 | Miles | $ 20,000.00 | $ 1,000.00 |
| | | | | | | | |
| | | | Clearing and Grubbing | 0.10 | Acre | $ 40,000.00 | $ 4,000.00 |
| | | | Borrow | 10.00 | CY | $ 200.00 | $ 2,000.00 |
| | | | Unclassified Excavation | 75.00 | CY | $ 20.00 | $ 1,500.00 |
| | | | Drainage C&G | 0.01 | Miles | $400,000.00 | $ 4,000.00 |
| | | | 2'-6" C&G | 200.00 | LF | $ 30.00 | $ 6,000.00 |
| | | | 5' Sidewalk | 0.00 | SY | $ 10.00 | $ - |
| | | | Fine Grading | 300.00 | SY | $ 4.00 | $ 1,200.00 |
| | | | New Pavement | 300.00 | SY | $ 75.00 | $ 22,500.00 |
| | | | Erosion Control | 0.01 | Acres | $ 45,000.00 | $ 450.00 |
| | | | Traffic Control | 1.00 | LS | $ 12,000.00 | $ 12,000.00 |
| | | | Thermo and Markers | 0.60 | Miles | $ 50,000.00 | $ 30,000.00 |
| | | | Signal Mods | 1.00 | Ea | $ 20,000.00 | $ 20,000.00 |
| | | | | | | | |
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| | | | NB Lane | | | | $ - |
| | | | Pavment Markings | 0.25 | Miles | $ 20,000.00 | $ 5,000.00 |
| | | | Clearing and Grubbing | 0.50 | Acre | $ 40,000.00 | $ 20,000.00 |
| | | | Borrow | 50.00 | CY | $ 200.00 | $ 10,000.00 |
| | | | Unclassified Excavation | 500.00 | CY | $ 20.00 | $ 10,000.00 |
| | | | Drainage C&G | | Miles | $400,000.00 | $ - |
| | | | 2'-6" C&G | | LF | $ 30.00 | $ - |
| | | | 5' Sidewalk | | SY | $ 10.00 | $ - |
| | | | Fine Grading | 1100.00 | SY | $ 4.00 | $ 4,400.00 |
| | | | New Pavement | 500.00 | TONS | $ 100.00 | $ 50,000.00 |
| | | | Pavement Overlay | 1500.00 | TONS | $ 100.00 | $ 150,000.00 |
| | | | Erosion Control | 1.00 | Acres | $ 45,000.00 | $ 45,000.00 |
| | | | Traffic Control | 1.00 | LS | $ 25,000.00 | $ 25,000.00 |
| | | | Thermo and Markers | 0.40 | Miles | $ 50,000.00 | $ 20,000.00 |
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| | | | Misc. & Mob (15% Strs&Util) | | | | $ - |
| | | | Misc. & Mob (15% Roadway) | | | | $ 66,950.00 |

**Lgth 7150 Feet**

| | |
|---|---|
| **Contract Cost** ..... | $ 511,000.00 |
| **E. & C. 15%** ..... | $ 77,000.00 |
| **Construction Cost** ..... | **$ 588,000.00** |
| **Design Engineering** ..... | $ 76,650.00 |
| **Utility Relocation** | |
| **Right of Way** ..... | $ - |
| **Total Cost** ..... | $ 664,650.00 |
| **Say** ..... | $ 670,000.00 |

Project: TriPointe Homes
Route: South Point Road
At: McKee Farms Road / Stowe Road
Typical Section: Add one SB lane with pavement markings

**Func**

County: **Gaston**

| **CONSTR. COST** |
|---|
| **$283,000** |

Prepared By: Gannett Fleming  Date 12/16/2022

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|---|---|---|---|---|---|---|---|
| | | | Pavment Markings | 0.25 | Miles | $ 20,000.00 | $ 5,000.00 |
| | | | Clearing and Grubbing | 0.50 | Acre | $ 40,000.00 | $ 20,000.00 |
| | | | Borrow | 50.00 | CY | $ 200.00 | $ 10,000.00 |
| | | | Unclassified Excavation | 500.00 | CY | $ 20.00 | $ 10,000.00 |
| | | | Drainage C&G | 0.10 | Miles | $ 400,000.00 | $ 40,000.00 |
| | | | 2'-6" C&G | 500.00 | LF | $ 30.00 | $ 15,000.00 |
| | | | 5' Sidewalk | 270.00 | SY | $ 10.00 | $ 2,700.00 |
| | | | Fine Grading | 670.00 | SY | $ 4.00 | $ 2,680.00 |
| | | | New Pavement | 670.00 | SY | $ 75.00 | $ 50,250.00 |
| | | | Erosion Control | 0.50 | Acres | $ 45,000.00 | $ 22,500.00 |
| | | | Traffic Control | 1.00 | LS | $ 25,000.00 | $ 25,000.00 |
| | | | Thermo and Markers | 0.20 | Miles | $ 50,000.00 | $ 10,000.00 |
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| | | | Misc. & Mob (15% Strs&Util) | | | | $ - |
| | | | Misc. & Mob (15% Roadway) | | | | $ 32,870.00 |

**Lgth 2150 Feet**

| | | |
|---|---|---|
| **Contract Cost** | | $ 246,000.00 |
| **E. & C. 15%** | | $ 37,000.00 |
| **Construction Cost** | | **$ 283,000.00** |
| **Design Engineering** | | $ 36,900.00 |
| **Utility Relocation** | | |
| **Right of Way** | | $ - |
| **Total Cost** | | $ 319,900.00 |
| **Say** | | $ 320,000.00 |

North Carolina Department of Transportation
Preliminary Estimate

Project: TriPointe Homes
Route: South Point Road
From: Red Raider Run To: Nixon Road
Typical Section: Left Turn W/signal

**Func**

County: **Gaston**

| **CONSTR. COST** |
|---|
| **$500,000** |

Prepared By: Gannett Fleming Date 12/16/2022

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|---|---|---|---|---|---|---|---|
| | | | Clearing and Grubbing | 0.25 | Acre | $ 40,000.00 | $ 10,000.00 |
| | | | Borrow | 50.00 | CY | $ 200.00 | $ 10,000.00 |
| | | | Unclassified Excavation | 500.00 | CY | $ 20.00 | $ 10,000.00 |
| | | | Drainage C&G | 0.10 | Miles | $ 400,000.00 | $ 40,000.00 |
| | | | 2'-6" C&G | 1200.00 | LF | $ 30.00 | $ 36,000.00 |
| | | | 5' Sidewalk | 666.67 | SY | $ 10.00 | $ 6,666.67 |
| | | | Fine Grading | 1000.00 | SY | $ 4.00 | $ 4,000.00 |
| | | | New Pavement | 1000.00 | SY | $ 75.00 | $ 75,000.00 |
| | | | Erosion Control | 1.00 | Acres | $ 45,000.00 | $ 45,000.00 |
| | | | Traffic Control | 1.00 | LS | $ 25,000.00 | $ 25,000.00 |
| | | | Thermo and Markers | 0.20 | Miles | $ 50,000.00 | $ 10,000.00 |
| | | | Signal Mods | 1.00 | Ea | $ 20,000.00 | $ 20,000.00 |
| | | | Misc. & Mob (15% Strs&Util) | | | | $ - |
| | | | Misc. & Mob (45% Roadway) | | | | $ 131,333.33 |

**Lgth 1200 Feet**

| | |
|---|---|
| **Contract Cost** | $ 423,000.00 |
| **E. & C. 15%** | $ 77,000.00 |
| **Construction Cost** | **$ 500,000.00** |
| **Design Engineering** | $ 63,450.00 |
| **Utility Relocation** | $ 150,000.00 |
| **Right of Way** | $ - |
| **Total Cost** | $ 713,450.00 |
| **Say** | $ 725,000.00 |

North Carolina Department of Transportation
Preliminary Estimate

Project: TriPointe Homes | **Func** | County: **Gaston**
Route: South Point Road
From: Red Raider Run To: Nixon Road
Typical Section: Add one lane with Curb & Gutter and Sidewalk

**CONSTR. COST**
**$108,000**

Prepared By: Gannett Fleming Date 9/22/2022

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|---|---|---|---|---|---|---|---|
| | | | Clearing and Grubbing | 0.05 | Acre | $ 40,000.00 | $ 2,000.00 |
| | | | Borrow | 10 | CY | $ 200.00 | $ 2,000.00 |
| | | | Unclassified Excavation | 10 | CY | $ 20.00 | $ 200.00 |
| | | | Drainage C&G | 0.01 | Miles | $ 400,000.00 | $ 4,000.00 |
| | | | 2'-6" C&G | 200 | LF | $ 30.00 | $ 6,000.00 |
| | | | Fine Grading | 200 | SY | $ 4.00 | $ 800.00 |
| | | | New Pavement | 267 | SY | $ 75.00 | $ 20,000.00 |
| | | | Erosion Control | 0.05 | Acres | $ 45,000.00 | $ 2,250.00 |
| | | | Traffic Control | 1 | LS | $ 5,000.00 | $ 5,000.00 |
| | | | Thermo and Markers | 0.05 | Miles | $ 50,000.00 | $ 2,500.00 |
| | | | Signal Mods | 1 | Ea | $ 20,000.00 | $ 20,000.00 |
| | | | Misc. & Mob (15% Strs&Util) | | | | $ - |
| | | | Misc. & Mob 25% Roadway) | | | | $ 29,250.00 |

**Lgth 1200 Feet**

| | | |
|---|---|---|
| **Contract Cost** ……. …….. …….. | $ | 94,000.00 |
| **E. & C. 15%** ……. …….. …….. | $ | 14,000.00 |
| **Construction Cost** ……. …….. …….. | **$** | **108,000.00** |
| **Design Engineering** ……. …….. …….. | $ | 14,100.00 |
| **Utility Relocation** | | |
| **Right of Way** ……. …….. …….. | $ | - |
| **Total Cost** ……. …….. …….. | $ | 122,100.00 |
| **Say …… …… …….** | **$** | **125,000.00** |