APRIL 2021

River to Sea Transportation
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Daytona Beach, FL 32114

FEASIBILITY STUDY FOR IMPROVEMENTS

at SR 15A/Beresford Avenue/ S Spring Garden Avenue

VHB
250 E. Robinson St.
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April 2021

Final Report

Feasibility Study for Improvements at SR 15A/Beresford Avenue/S Spring Garden Avenue

Prepared for:

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Date: 04/16/2021

Feasibility Study for Improvements
at
SR 15A/Beresford Avenue/S Spring Garden Avenue

Task Work Order TOF-VHB-04

Prepared for:

Prepared by:

Vanasse Hangen Brustlin, Inc.
Orlando, FL

April 2021

1 EXECUTIVE SUMMARY

1.1 Introduction

This report presents the results of a feasibility analysis completed for the intersections of SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue located in the City of DeLand, Volusia County, Florida. This report was prompted by an application by Volusia County to address the traffic operational, pedestrian/bicycle mobility, and safety issues at the study intersections.

The intersections of SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue are currently located 80 feet apart and as a result operate inefficiently, impacting the quality of life and safety of nearby residents. In addition to the existing issues, there was also a concern about the future traffic volume growth because of the newly proposed residential subdivision (Beresford Woods) which will be constructed near S Spring Garden Avenue and Gayle Drive. This proposed development with a build-out date of 2024 is anticipated to generate additional traffic on S Spring Garden Avenue which will further impact the traffic operations and safety of the two study intersections.

1.2 Proposed Improvements

Given the traffic operational and safety issues because of the proximity of the study intersections and the need to accommodate future traffic growth in the study area efficiently and safely, this study developed innovative improvement alternatives that will improve traffic flow, reduce delays, and improve safety for all users. For this study, short-term (2025) and long-term (2040) traffic conditions are evaluated for two build alternatives.

For Build Alternative 1, westbound, and northbound left turn movements are restricted (allowing only right-in right-out movements) at the intersection of Beresford Avenue and S Spring Garden Avenue. With these restrictions in place and turn lane improvements at SR 15A and Beresford Avenue, and signal and turn lane improvements at SR 15A and Gayle Drive, commuters are encouraged to use Gayle Drive and SR 15A route instead of S Spring Garden Avenue and Beresford Avenue route.

For Build Alternative 2, a roundabout option is considered which will combine the intersections of SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue into a five-legged roundabout. Unlike Build Alternative 1, the roundabout option does not assume traffic diversion and is considered a suitable option because of the skewed nature of SR 15A and Beresford Avenue intersection. A flat traffic growth along SR 15A over the last 15 years and minimal traffic growth shown in the year 2040 travel demand model supports the 2X2 roundabout option. The main advantage of a roundabout design is that it can effectively remove the offset between the existing study intersections along Beresford Avenue while improving safety (for all users), reducing intersection delay, idling time, and fuel wastage.

Traffic operational benefits (total delay reduction compared to No-Build or Do-Nothing alternative) and costs for these two build alternatives were used to determine the benefit-cost (B/C) ratios. The following **Table ES-1** shows the summary of the B/C analysis including improvements considered under each build alternative. Build Alternative 1 provides the better B/C ratio. Figures ES-1 and ES-2 illustrate the improvements as part of Build Alternative 1. Figure ES-3 shows the improvements for Build Alternative 2.

Table ES-1: B/C Analysis Summary

Build Alternative	Improvements	Total User Benefit (2025-2044)	Total Construction Cost	B/C Ratio
Alternative 1	Assumes traffic diversion to other roadways within the study area **SR 15A & Beresford Avenue** ▪ Add an exclusive eastbound left turn lane ▪ Add an exclusive westbound left turn lane **SR 15A & Gayle Drive** ▪ Add an exclusive eastbound left turn lane ▪ Add an exclusive southbound right turn lane ▪ Install a signal	$16,449,336	$1,380,840	**11.9**
Alternative 2	**SR 15A & Beresford Avenue/S Spring Garden Avenue** ▪ Covert the existing signal into a five-legged roundabout (with S Spring Garden Avenue as the fifth leg)	$17,620,142	$2,993,669	**5.9**

Notes:
1) The service life of the improvements was kept at 20 years
2) Traffic operational annual user benefit derived using total delay savings are calculated for 20 years with 300 days in a year and with 3 hours each of AM and PM peak periods in a day
3) Construction cost does not include right-of-way

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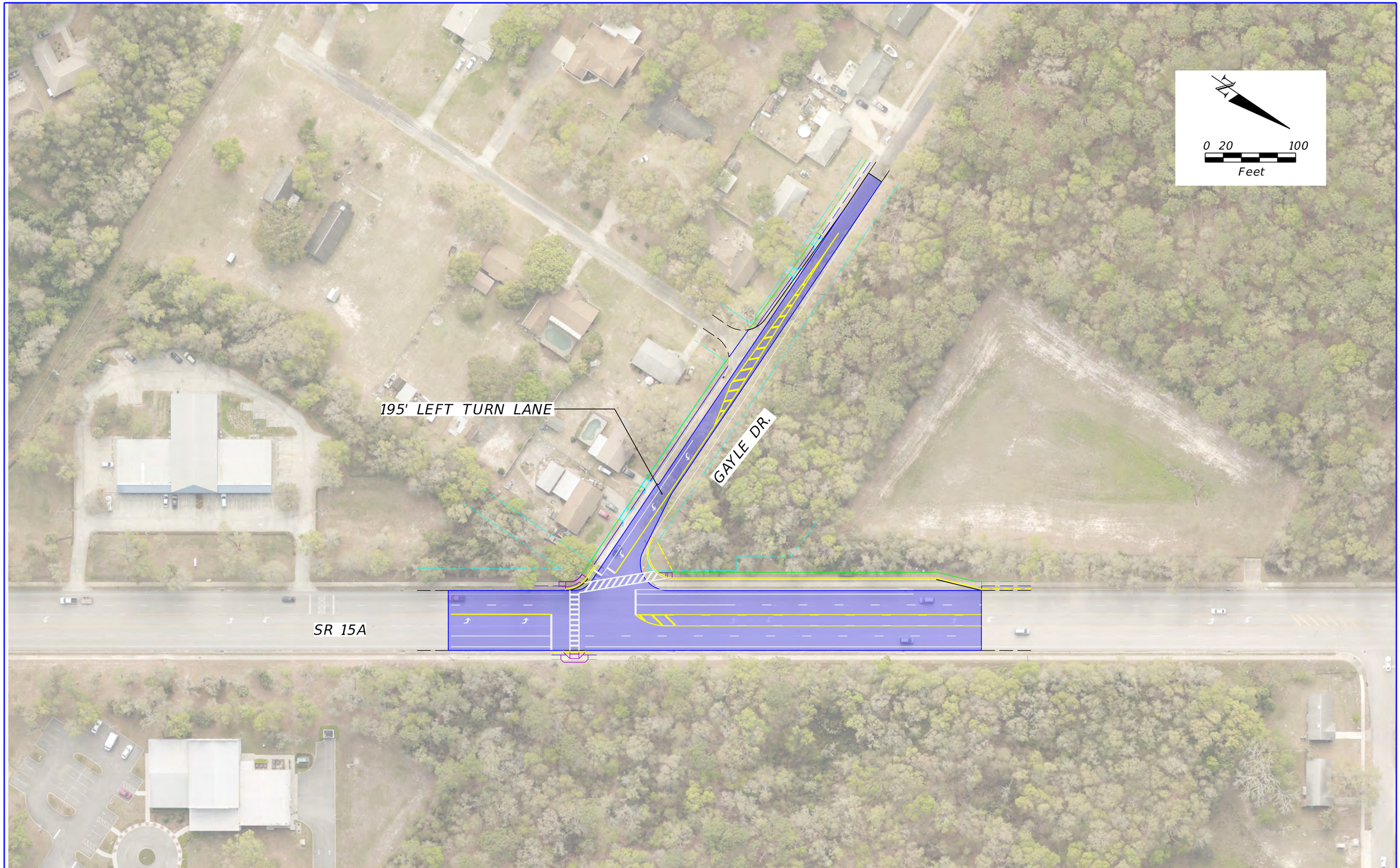
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 15A	VOLUSIA	

CONCEPTUAL IMPROVEMENT DIAGRAM
SR 15A AT BERESFORD AVE.

Figure
ES-1



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SR 15A	VOLUSIA	

CONCEPTUAL IMPROVEMENT DIAGRAM
SR 15A AT GAYLE DR.

Figure
ES-2

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 15A	VOLUSIA	

CONCEPTUAL IMPROVEMENT DIAGRAM

SR 15 A / BERESFORD AVE / S SPRING GARDEN AVE.

Figure

ES-3

1.3 Study Conclusions

Based upon the operational and B/C analysis, and stakeholder input, this study recommends that Build Alternative 1 be considered for the study area. Build Alternative 1 can be implemented in the short term and stages because of lower cost, minimal or no right-of-way acquisition, and potential support (in the form of funds or right-of-way) from Beresford Woods developer for turn lane improvements at the intersection of SR 15A and Gayle Drive. However, Build Alternative 1 will not eliminate the traffic operational issues because of the proximity of the intersections at SR 15A and Beresford Avenue and Beresford Avenue, and S Spring Garden Avenue. It will relatively help with improving traffic operations and safety at the two study intersections by encouraging commuters to choose alternative routes.

The roundabout option (Build Alternative 2) will have a higher cost compared to Build Alternative 1. It is not anticipated to impact the businesses located east of SR 15A or the Day Spring Community Church located west of SR 15A (southwest corner of Beresford Avenue and S Spring Garden Avenue), but will most likely need to acquire the vacant parcel located in the southwest corner of SR 15A and Beresford Avenue. However, the roundabout will be an effective option because of the existing and anticipated future volumes within the study area and help eliminate the issue of offset intersections (SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue), 2) and improve safety because of the skewed nature of SR 15A and Beresford Avenue intersection.

The implementation of Build Alternative 1 does not preclude the consideration of a roundabout at SR 15A and Beresford Avenue/S Spring Garden Avenue. Based on the availability of funds, a roundabout can be constructed as well after the implementation of Build Alternative 1, which will provide a holistic solution for the study area.

The following additional considerations are to be noted for the implementation of the improvements under Build Alternative 1.

- To improve the traffic operations and safety in the short term at the main study intersections (SR 15A at Beresford Avenue and Beresford Avenue and S Spring Garden Avenue), restrict the westbound and northbound left turn lanes at the intersection of Beresford Avenue and S Spring Garden Avenue before the improvements are constructed at the intersections of SR 15A at Beresford Avenue and SR 15A at Gayle Drive. With these restrictions, commuters can choose Louise Lane and Jeanette Drive or Gayle Drive and SR 15A.
- As the traffic demand grows from the background growth as well as the nearby development (Beresford Woods), the proposed improvements can be constructed to encourage more commuters to use Gayle Drive and this will improve operations and safety of SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue intersections.
- Based on coordination with the City of DeLand and Volusia County, this study recognizes that the traffic growth near the study area (and the City in general) may outpace the traffic growth rate used in this study and the recommended improvements may be needed sooner than 2025 (especially the turn lane improvements at SR 15A at Beresford Avenue and SR 15A at Gayle Drive).
- A signal is anticipated to be warranted at the intersection of SR 15A and Gayle Drive by 2025. If a signal is warranted based on actual conditions, an Intersection Control Evaluation (ICE) must be completed to determine if a different and more efficient traffic control can be proposed at this location.

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1 INTRODUCTION

VHB, Inc. was retained by River to Sea Transportation Planning Organization (R2CTPO) to perform a feasibility analysis study for improvements at the intersections of SR 15A at Beresford Avenue and S Spring Garden Avenue at Beresford Avenue, located in DeLand, Volusia County, Florida. To perform feasibility analysis for both short-term and long-term improvements, the study limits are extended to include five additional intersections as shown in **Figure 1**. This study was initiated by an application by Volusia County to identify improvements that will help improve traffic operations and safety at the study intersections.

The current report is revised based on comments received from Volusia County on the draft report submitted in February 2021. The responses to the County's comments are provided in **Appendix A-1**.

The intersections of SR 15A at Beresford Avenue and S Spring Garden Avenue at Beresford Avenue are currently located 80 feet apart and as a result operate inefficiently, impacting the quality of life and safety of nearby residents. In the feasibility application, the County cited a newly proposed residential subdivision's (Beresford Woods) Traffic Impact Analysis (TIA) that documented issues concerning the eastbound movement on SR 15A at Beresford Avenue showing a back-of-queue of 14.5 vehicles (375 feet) in the morning peak hour under the buildout conditions.

Since the intersection spacing is 80 feet, the existing queues extend beyond the S Spring Garden Avenue intersection. A "Do Not Block" sign is currently in place to prevent intersection blocking for traffic coming to and from S Spring Garden Avenue. However, traffic queues in most directions, causing safety concerns.

The objective of this study is to improve traffic flow, reduce delays, and improve safety for all users with innovative intersection improvements. Since the improvement alternatives include turn lane improvements as well as a roundabout option, short-term (2025) and long-term (2040) traffic conditions are evaluated as part of this study.

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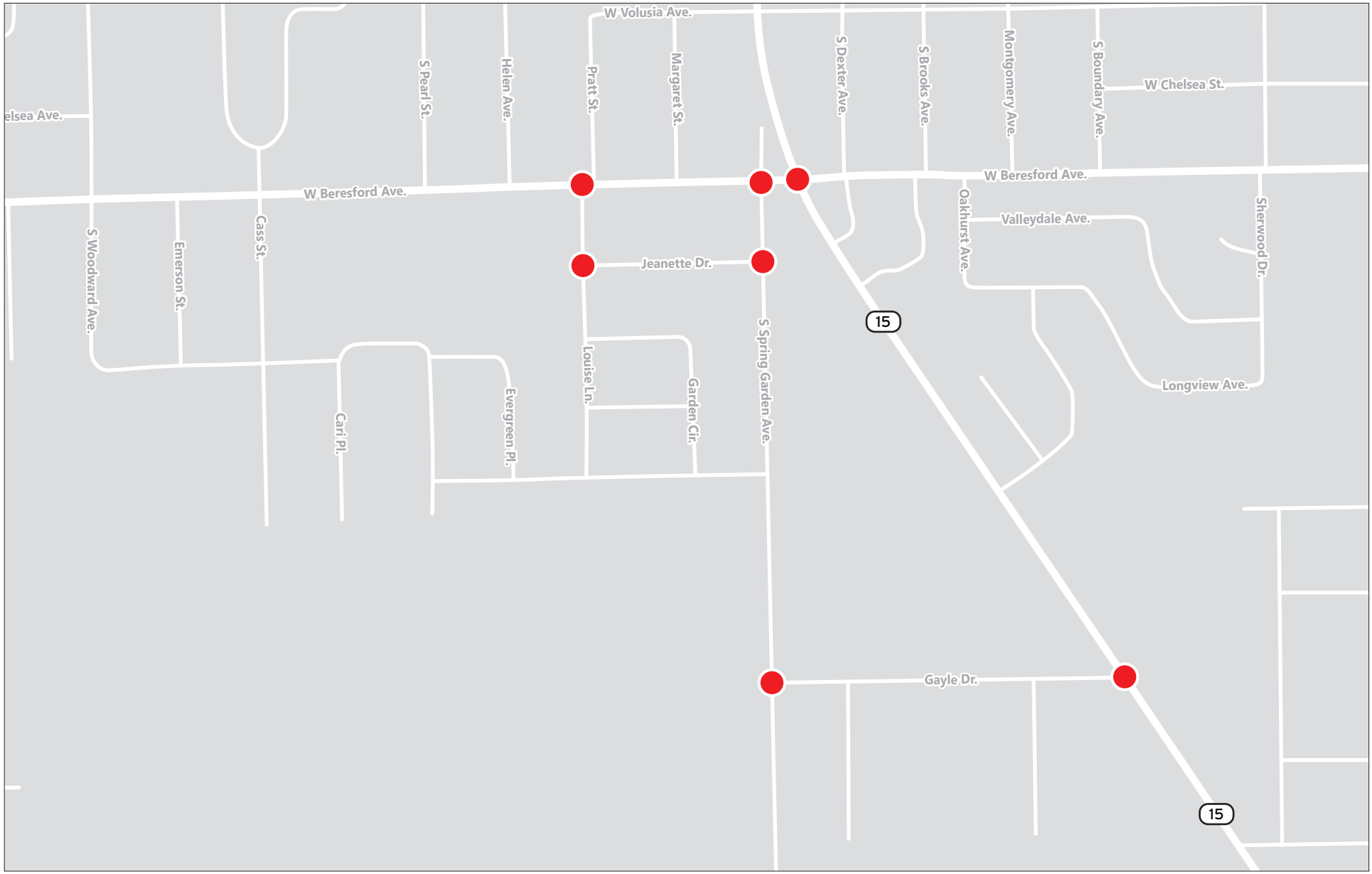


N.T.S.

Study Intersections

Figure 1

Project Location Map
Feasibility Study for Improvements at
SR 15A/Beresford Avenue/S Spring Garden Avenue

The analysis methods used in completing this study are consistent with the Manual on Uniform Traffic Control Devices (MUTCD), the Manual on Uniform Traffic Studies (MUTS), the Traffic Engineering Manual (TEM), and engineering judgment.

The remainder of this report documents existing conditions, vehicle and pedestrian counts, qualitative assessment, crash analysis, future conditions, Benefit-Cost (B/C) analysis, and recommendations.

2 EXISTING CONDITIONS

2.1 Field Inventory

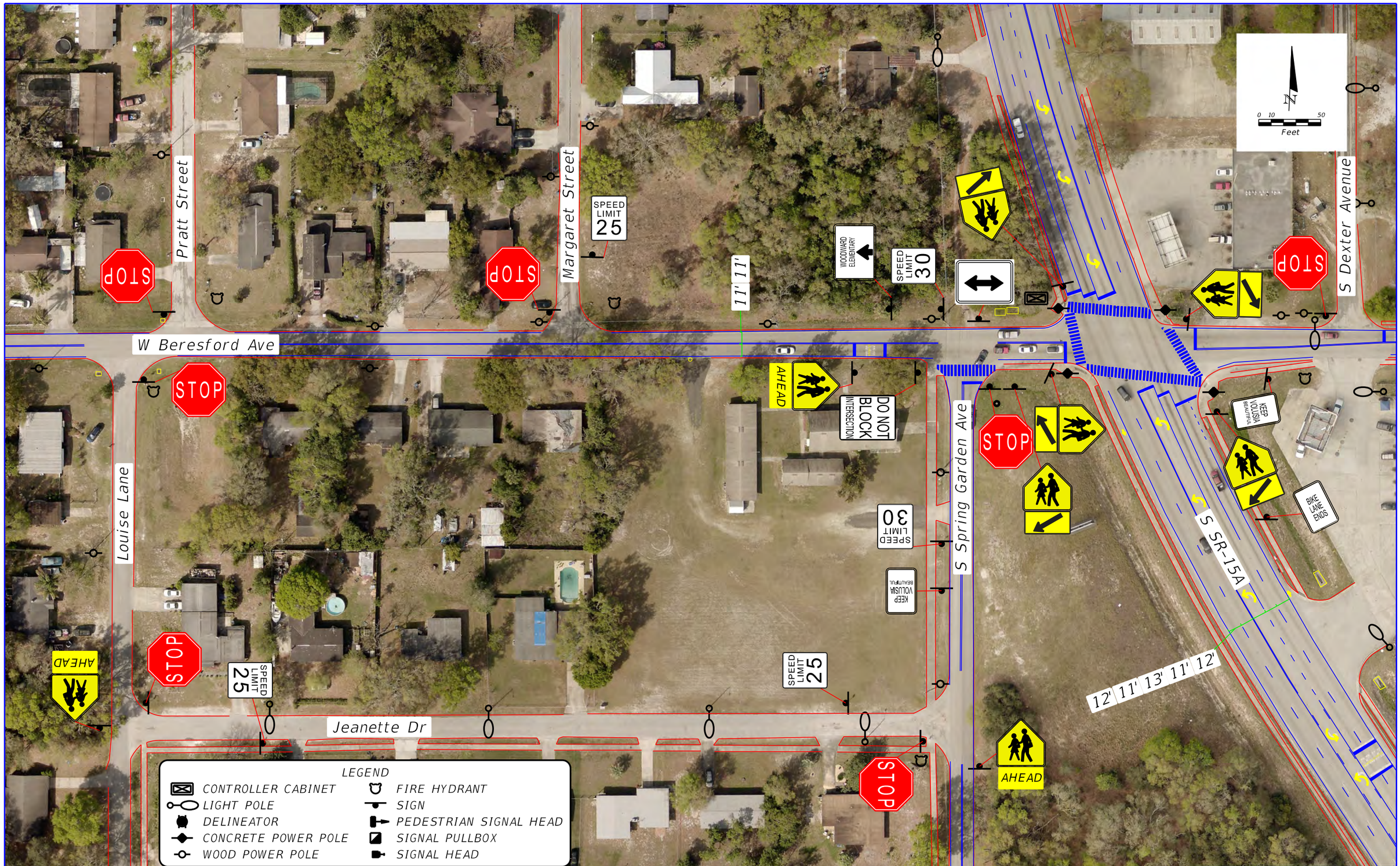
As mentioned in Section 1, the study limits are extended, and the following seven intersections are included in this study:

- Beresford Avenue and Louise Lane
- Beresford Avenue and S Spring Garden Avenue
- Beresford Avenue and SR 15A
- Louise Lane and Jeanette Drive
- S Spring Garden Avenue and Jeanette Drive
- S Spring Garden Avenue and Gayle Drive
- SR 15A and Gayle Drive

The characteristics of the study intersections (Beresford Avenue and SR 15A, Beresford Avenue and S Spring Garden Avenue, and SR 15A and Gayle Drive) are presented in **Table 1. Figures 2** and **3** depict the existing conditions including the general roadway geometry, pavement markings, land use, and intersection traffic control of all the study intersections. The conditions stated in this report reflect conditions as observed on the date of the qualitative assessment.

Table 1: Field Inventory

Features	SR 15A/Beresford Avenue	Beresford Avenue/S Spring Garden Avenue	SR 15A/Gayle Drive
Main Street	SR 15A (north-south) Four-lane divided roadway with two-way left-turn lane	Beresford Avenue (east-west) Two-lane undivided roadway	SR 15A (north-south) Four-lane divided roadway with two-way left-turn lane
Minor Street	Beresford Avenue (east-west); two-lane undivided	S Spring Garden Avenue (north-south); two-lane undivided	Gayle Drive (east-west); two-lane undivided
Intersection Type	4-legged intersection	3-legged intersection	3-legged intersection
Number of Intersection Approach Lanes	Northbound – 1 left turn lane, 1 through lane & 1 shared through/right turn lane Southbound – 1 left turn lane, 1 through lane & 1 shared through/right turn lane Eastbound – 1 shared left/through/right turn lane Westbound – 1 shared left/through/right turn lane	Eastbound – 1 shared through/right turn lane Westbound – 1 shared left/through lane Northbound – 1 shared left/right turn lane	Northbound – 1 left turn lane, 2 through lanes Southbound – 1 through lane & 1 shared through/right turn lane Eastbound – 1 shared left/right turn lane
Traffic Control	Signal	Stop control on the northbound approach	Stop control on the eastbound approach
Speed Limit	SR 15A - 45 MPH Beresford Avenue - 30 MPH	Beresford Avenue - 30 MPH S Spring Garden Avenue - 30 MPH	SR 15A - 45 MPH Gayle Drive - 30 MPH
Bicycle Lanes	Bicycle lanes are provided on both sides of SR 15A on the southern leg Bicycle lanes or shoulder lanes are not provided on Beresford Avenue	Bicycle lanes or shoulder lanes are not provided on Beresford Avenue Bicycle lanes or shoulder lanes are not provided on S Spring Garden Avenue	Bicycle lanes are provided on both sides of SR 15A on the southern leg Bicycle lanes or shoulder lanes are not provided on Gayle Drive
Sidewalks	Sidewalks are available on both sides of SR 15A. Beresford Ave has sparse sidewalk coverage, total lack of sidewalks on EB approach, sidewalks available on the southern side of WB approach	Beresford Ave has sparse sidewalk coverage, total lack of sidewalks on EB approach, sidewalks available on the southern side of WB approach Sidewalks are available on the western side of S Spring Garden Avenue	Sidewalks are available on both sides of SR 15A. Sidewalks are available on the southern side of Gayle Drive
Surrounding Development	Northwest: Vacant Northeast: Rite Track Gas station & Convenience Store Southwest: Vacant Southeast: CITGO Gas station & Convenience Store Woodward Avenue Elementary School is located west of SR 15A & Beresford Avenue	Northwest: Vacant Northeast: Vacant Southwest: Day Spring Community Church Southeast: Vacant	Northwest: Vacant Northeast: Vacant Southwest: Residential Southeast: Vacant
Nearest Signalized intersections	SR 15A & Euclid Avenue - 0.5 miles to the North US 17/92 & Taylor Road - 1.76 miles to the South US 17/92 & Beresford Avenue - 1.22 miles to the East No signalized intersections to the West	SR 15A & Beresford Avenue - 80 feet to the East	SR 15A & Beresford Avenue - 0.43 miles to north US 17/92 & Taylor Road - 1.33 miles to the south
Roadway Lighting	Lighting poles only available on the SE quadrant. These cover the CITGO parking lot and the south side of Beresford Avenue only on the WB approach. There are also mounted lighting fixtures on the CITGO and Rite Track buildings.	No lighting is provided along Beresford Avenue at this intersection. There is a single lighting fixture covering the church lot on the western side (SW quadrant) of S Spring Garden Avenue.	No lighting is provided along SR 15A at this intersection. There are sparse lighting fixtures mounted on the wooden power poles on the southern side of Gayle Drive.



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	VOLUSIA	

Condition Diagram - Study Area Part 1

FIGURE NO. 2

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	VOLUSIA	

Condition Diagram - Study Area Part 2

FIGURE NO. 3

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2.2 Traffic Volume Data

Six-hour turning movement counts were collected between 7:00 and 9:00 AM and 2:00 and 6:00 PM at all the seven study intersections during November 18, 2020. From this data, the AM and PM peak traffic hours for most of the study intersections were found to occur from 7:15 AM to 8:15 AM and 4:15 PM to 5:15 PM. The six-hour turning movement counts and pedestrian/bicycle counts are provided in **Appendix A-1**. The distribution of turning movements at the study intersections is summarized in **Table 2**. Because of the ongoing COVID-19 Pandemic, the field-collected count data were compared with the available 2019 counts from the Florida Traffic Online [FTO]) and turning movement counts collected in August 2019 as part of the recently completed Beresford Woods TIA, dated July 2020 (**Appendix B-1**). **Figure 4** shows the adjusted turning volumes at the study intersections.

Table 2: 6 Hour Turning Movement Percentages (All Vehicles)

Study Intersection	Movement	Northbound	Southbound	Eastbound	Westbound
SR 15A & Beresford Avenue	Left-turn/U-turn	7.62%	4.67%	44.23%	25.83%
	Through	89.24%	86.98%	27.23%	39.24%
	Right-turn	3.14%	8.35%	28.54%	34.93%
Beresford Avenue & S Spring Garden Avenue	Left-turn/U-turn	18.82%	-	-	30.01%
	Through	-	-	91.72%	69.99%
	Right-turn	81.18%	-	8.28%	-
SR 15A & Gayle Drive	Left-turn/U-turn	1.60%	0.04%	18.45%	-
	Through	98.40%	99.52%	-	-
	Right-turn	-	0.45%	81.55%	-
S Spring Garden Avenue & Gayle Drive	Left-turn/U-turn	-	13.14%	-	32.00%
	Through	96.55%	86.86%	-	-
	Right-turn	3.45%	-	-	68.00%
S Spring Garden Avenue & Jeanette Drive	Left-turn/U-turn	2.80%	-	41.67%	-
	Through	97.20%	97.86%	-	-
	Right-turn	-	2.14%	58.33%	-
Jeanette Drive & Louise Lane	Left-turn/U-turn	-	14.29%	-	20.00%
	Through	98.18%	85.71%	-	-
	Right-turn	1.82%	-	-	80.00%
Louise Lane & Beresford Avenue	Left-turn/U-turn	30.00%	-	-	4.73%
	Through	-	-	98.73%	95.27%
	Right-turn	70.00%	-	1.27%	-

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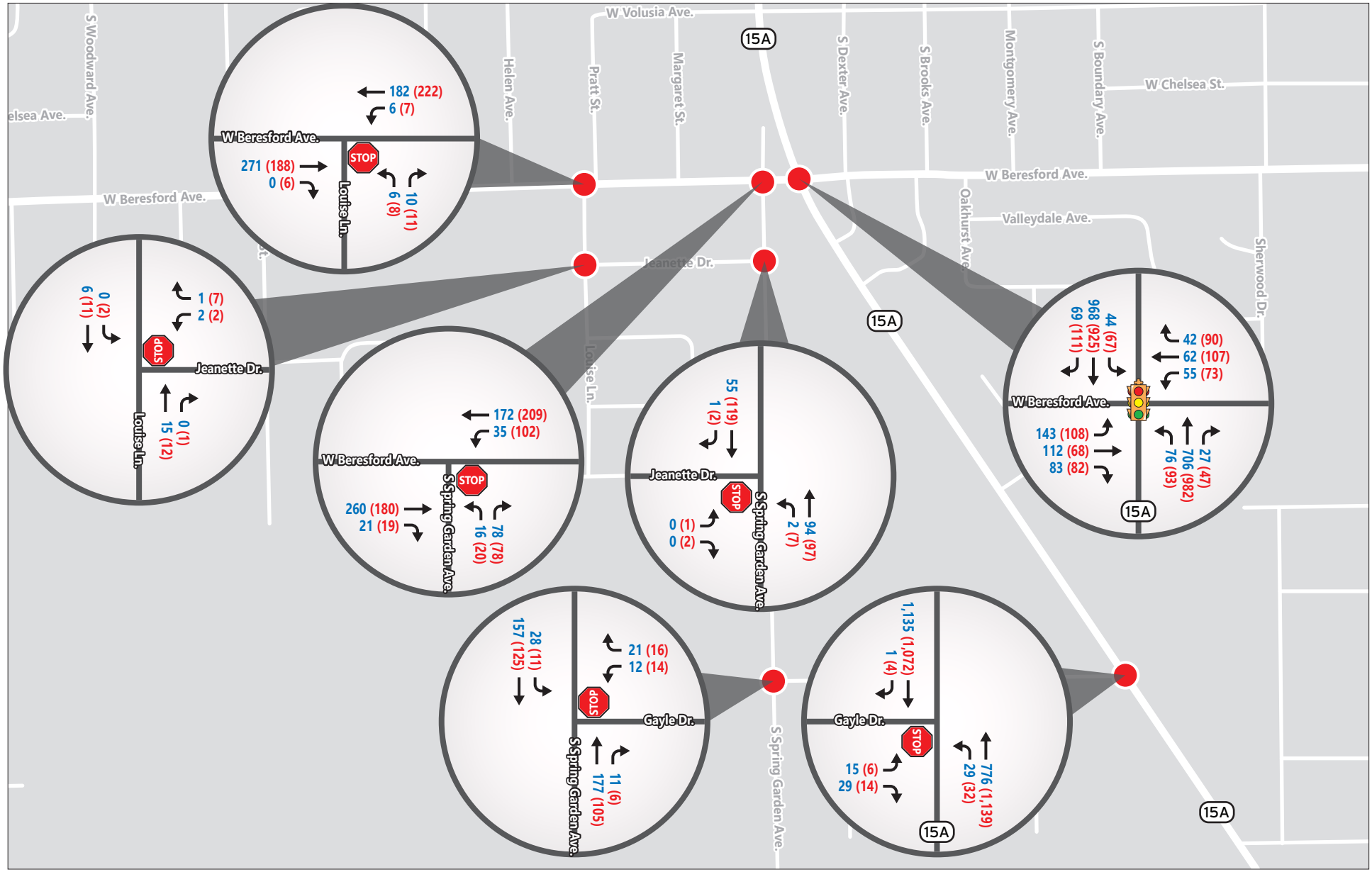

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Study Intersection

Traffic Movement

AM (PM) Peak Hour Traffic Volumes

Figure 4

Existing Turning Movement Volumes
Feasibility Study for Improvements at
SR 15A/Beresford Avenue/S Spring Garden Avenue

2.3 Origin-Destination (OD) Data

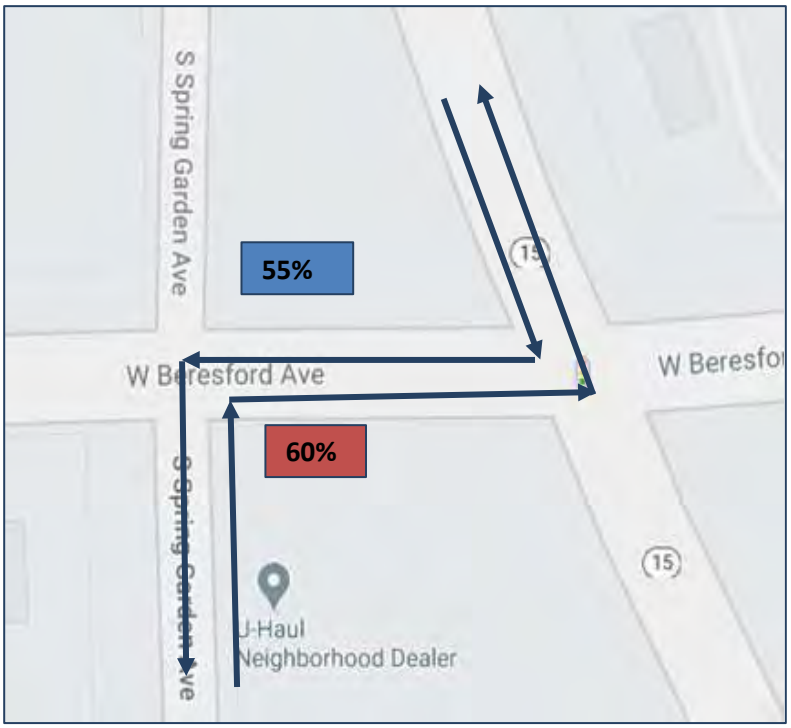
An OD study was conducted at the study intersections in November 2020 to understand the percentage of vehicles completing the following two travel patterns. This information is used in the evaluation of future alternatives.

- Turning northbound right at Beresford Avenue and S Spring Garden Avenue intersection and immediately turning eastbound left at SR 15A and Beresford Avenue intersection.
- Turning southbound right at SR 15A and Beresford Avenue intersection and immediately turning westbound left at Beresford Avenue and S Spring Garden Avenue intersection.

Figure 5 depicts the existing OD patterns between the study intersections. Based on the OD study for the AM and PM peak hours, it was determined that

- Approximately 60% (highest percentage between AM and PM peak hours) of northbound right turning traffic at Beresford Avenue and S Spring Garden Avenue intersection turned eastbound left onto SR 15A.
- Approximately 55% (highest percentage between AM and PM peak hours) of southbound right turning traffic at SR 15A and Beresford Avenue intersection turned westbound left onto S Spring Garden Avenue intersection.

Figure 8: Field-Collected OD Patterns & Results



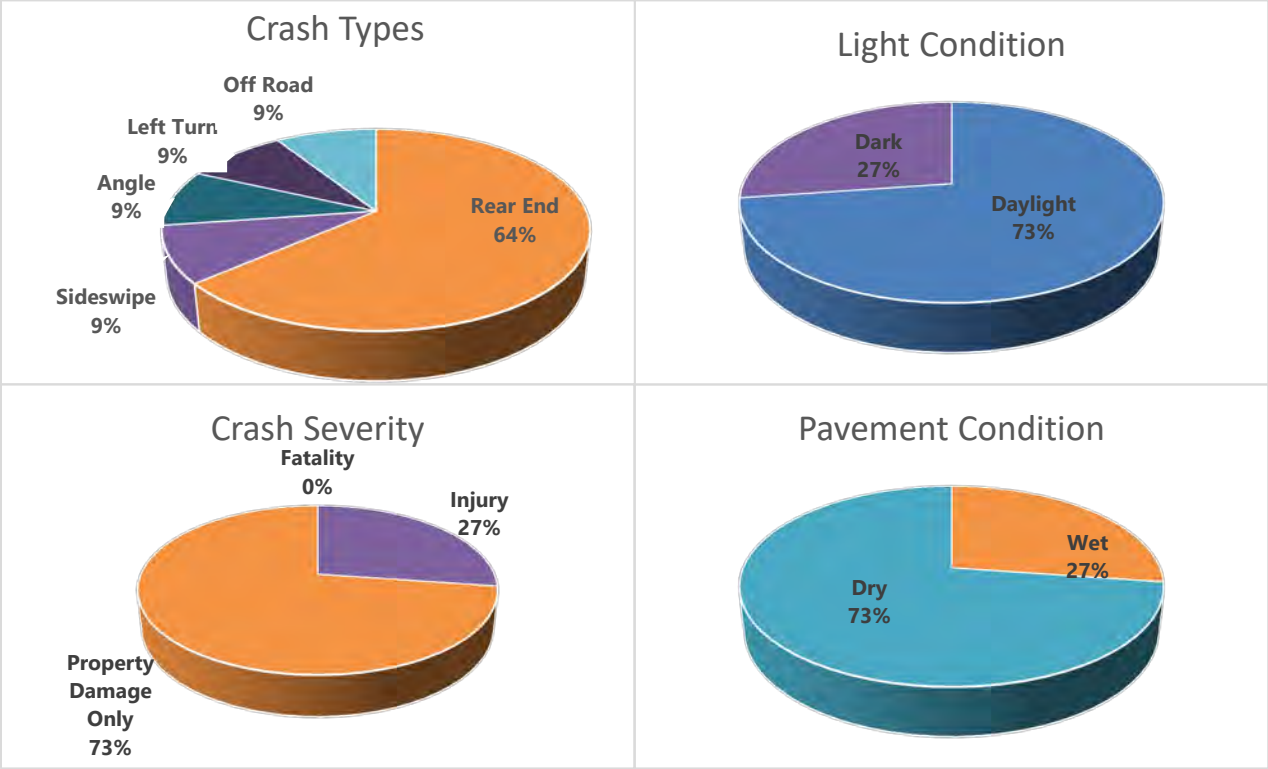
2.4 Crash Data

The latest available three years of crash data (from January 1, 2017, to December 31, 2019) at the study intersections were obtained from Signal Four Analytics. Raw crash data is included in **Appendix B**. A total of 11 crashes were reported at the following three (3) intersections:

- SR 15A and Beresford Avenue – eight crashes
- SR 15A and Gayle Drive – two crashes
- Beresford Avenue and Dexter Avenue – one crash

Figure 6 shows the summaries for crash types and severities, and light and road conditions for the study area.

Figure 9: Study Area Crash Summary for Period between 01/01/2017 and 12/31/2019



2.4.1 SR 15A and Beresford Avenue - Crash Summary

As shown in **Table 3,** eight crashes were reported within the influence area of SR 15A and Beresford Avenue intersection. The crashes consisted of six rear ends, one sideswipe, and one left turn. The crashes resulted in two injuries (from eight crashes), and total property damage amounted to approximately $48,050. There were no fatalities.

Six of the crashes occurred in daylight conditions and the remaining two crashes occurred in dark or dusk conditions. Pavement condition was dry for six crashes and wet for two crashes.

2.4.2 SR 15A and Gayle Drive - Crash Summary

As shown in **Table 4,** there were two crashes reported within the influence area of SR 15A and Gayle Drive intersection. The crashes consisted of one rear end and one off-road. The crashes resulted in two injuries (from two crashes), and total property damage amounted to approximately $15,500. There were no fatalities. One crash occurred in daylight conditions and the other crash occurred in dark or dusk conditions. Pavement condition was dry for one crash and wet for the other crash.

2.4.3 Beresford Avenue and Dexter Avenue - Crash Summary

As shown in **Table 4,** the angle crash that occurred at the intersection of Beresford Avenue and Dexter Avenue consisted of zero injuries, and total property damage amounted to approximately $5,000. There were no fatalities. This crash occurred in daylight conditions and dry pavement conditions.

Table 3: Crash Summary for Period between 01/01/2017 and 12/31/2019 – SR 15A & Beresford Avenue

Crash Type	2017	2018	2019	Total	Proportion
Rear End	1	1	4	**6**	75%
Sideswipe	0	1	0	**1**	13%
Left Turn	0	0	1	**1**	13%
Total	**1**	**2**	**5**	**8**	100%
Crash Severity	**2017**	**2018**	**2019**	**Total**	**Proportion**
Fatality	0	0	0	**0**	0%
Injury	0	0	2	**2**	25%
Property Damage Only	1	2	3	**6**	75%
Total	**1**	**2**	**5**	**8**	100%
Pavement Condition	**2017**	**2018**	**2019**	**Total**	**Proportion**
Wet	0	1	1	**2**	25%
Dry	1	1	4	**6**	75%
Slippery	0	0	0	**0**	0%
Total	**1**	**2**	**5**	**8**	100%
Light Condition	**2017**	**2018**	**2019**	**Total**	**Proportion**
Daylight	1	1	4	**6**	75%
Dusk	0	0	0	**0**	0%
Dawn	0	0	0	**0**	0%
Dark	0	1	1	**2**	25%
Total	**1**	**2**	**5**	**8**	100%

Table 4: Crash Summary for Period between 01/01/2017 and 12/31/2019 – Other Intersections

Crash Type	2017	2018	2019	Total	Proportion
Rear End	0	0	1	**1**	33%
Angle	0	1	0	**1**	33%
Off Road	0	0	1	**1**	33%
Total	**0**	**1**	**2**	**3**	100%
Crash Severity	**2017**	**2018**	**2019**	**Total**	**Proportion**
Fatality	0	0	0	**0**	0%
Injury	0	0	1	**1**	33%
Property Damage Only	0	1	1	**2**	67%
Total	**0**	**1**	**2**	**3**	100%
Pavement Condition	**2017**	**2018**	**2019**	**Total**	**Proportion**
Wet	0	0	1	**1**	33%
Dry	0	1	1	**2**	67%
Slippery	0	0	0	**0**	0%
Total	**0**	**1**	**2**	**3**	100%
Light Condition	**2017**	**2018**	**2019**	**Total**	**Proportion**
Daylight	0	1	1	**2**	67%
Dusk	0	0	0	**0**	0%
Dawn	0	0	0	**0**	0%
Dark	0	0	1	**1**	33%
Total	**0**	**1**	**2**	**3**	100%

3 QUALITATIVE ASSESSMENT

A qualitative assessment (QA) was conducted within the study area in the field to evaluate the existing operating conditions occurring on a typical weekday and to identify areas where improvements would be potentially beneficial to the overall safety and efficiency of the location. The field observations are summarized in **Table 5** for the two study intersections of SR 15A at Beresford Avenue and Beresford Avenue and S Spring Garden Avenue. The other study intersections are low volume roadways and generally did not experience significant traffic operational issues. A registered professional engineer performed the QA during the AM and PM peak hour periods.

Table 5: Qualitative Assessment: SR 15A/Beresford Avenue/S Spring Garden Avenue

Feature	**Observation**
Observation Timings	7:00 to 9:00 AM and 4:00 to 6:00 PM (also during the school closing time for Woodward Avenue Elementary school, 2:00 to 3:00 PM)
Traffic	1. The main study intersection (SR 15A and Beresford Avenue) is skewed because of the orientation of SR 15A. The intersections of SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue are only 80 feet apart. The proximity of these two intersections is observed to cause traffic operational issues in the AM and PM peak hours. In the AM peak hour, most of the northbound approach traffic on S Spring Garden Avenue turns right onto Beresford Avenue. Because the eastbound approach traffic on Beresford Avenue at SR 15A (both AM and PM) blocks the intersection of Beresford Avenue and S Spring Garden Avenue, the northbound right turning traffic (on Beresford Avenue at S Spring Garden Avenue) was observed to have issues turning onto Beresford Avenue, especially in the AM peak hour. The westbound left turning traffic from Beresford Avenue onto S Spring Garden Avenue was observed to have the same issues because of the queue on the eastbound approach on Beresford Avenue at SR 15A, especially in the PM peak hour. Even though the northbound left turning traffic on S Spring Garden Avenue at Beresford Avenue is low in volume, the queueing on the eastbound approach (at SR 15A and Beresford Avenue) obstructs the view of the approaching westbound traffic on Beresford Avenue. 2. The flow of traffic on SR 15A was heavier in the southbound direction during AM peak hour and was heavier in the northbound direction during PM peak hour. The flow of traffic on Beresford Avenue was heavier in the eastbound direction during AM peak hour and was similar in the eastbound and westbound directions during PM peak hour. The flow of traffic on S Spring Garden Avenue was heavier in the northbound direction during AM peak hour and was heavier in the southbound direction during PM peak hour. 3. Except for the eastbound approach, traffic queues cleared up in one cycle on all the approaches at SR 15A and Beresford Avenue. There was one instance where the queue did not clear up in one cycle on the eastbound approach SR 15A and Beresford Avenue. 4. The eastbound approach on Beresford Ave at SR 15A experienced queues of up to 12 vehicles in the AM peak hour. Queues up to 15 vehicles on some cycles in the midday peak with longer queues up to 20 vehicles in the PM peak in the northbound and southbound directions on SR 15A at Beresford Avenue. The westbound approach on Beresford Avenue at SR 15A queues up to 10 vehicles on a few occasions but generally has less queueing than the eastbound approach. 5. Both the eastbound and westbound approaches operate under permissive mode only at SR 15A and Beresford Avenue. The northbound and southbound left turn movements operate under protected-permissive mode at SR 15A and Beresford Avenue. The cycle failures on the eastbound approach (at SR 15A and Beresford Avenue) are partly because of the permissive-only mode for this approach. 6. The southbound and westbound approaches at SR 15A and Beresford Avenue were observed to experience sun glares during the PM peak hour. 7. Around four school buses were observed during the school release time. 8. The driveway access points, for the Rite Track (Gas Station and Food Store) located in the northeast corner of SR 15A and Beresford Avenue, are observed to be very close to the intersection. However, operational issues were not observed because of this proximity.
Pedestrian/Bicycle	1. Very few pedestrians were observed to cross SR 15A or Beresford Avenue during peak hours. Flexible delineators are provided between the travel lane and sidewalk on the eastbound approach on Beresford Avenue between S Spring Garden Avenue and SR 15A because the sidewalk is flush with the pavement. 2. Sidewalks are present on both sides of SR 15A. Sidewalks are present on the south side of Beresford Avenue (east of the SR 15A). A small portion of the sidewalk is present on the south side of Beresford Avenue between SR 15A and S Spring Garden Avenue. A sidewalk is present on S Spring Garden Avenue (only the west side of the roadway) until Helen Drive and shifts to the east side of the roadway south of Helen Drive. 3. Crosswalks are present on all legs of the SR 15A/Beresford Avenue intersection. The crosswalk is present on the south leg of Beresford Avenue and S Spring Garden Avenue intersection. 4. Exclusive bicycle lanes are present on both sides of the roadway on SR 15A south of Beresford Avenue. Beresford Avenue and S Spring Garden Ave do not have bicycle lanes.
Pavement & Signage	1. Pavement markings and signage at SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue intersections are in fair condition. 2. A "Right Turn on Red (RTOR)" sign is provided for all the movements at SR 15A and Beresford Avenue and is only activated during a conflicting pedestrian crossing. 3. The signal heads do not have backplates that would help improve their visibility. 4. A "Do Not Block Intersection" sign is placed on Beresford Avenue (eastbound approach), just west of S Spring Garden Avenue and Beresford Avenue intersection.
Roadway Lighting	1. Concrete power poles are present in all the quadrants of the intersection of SR 15A and Beresford Avenue, but not light poles. 2. The light poles are located near the Beresford Avenue/Dexter Avenue intersection.
Americans with Disabilities Act (ADA) concerns	1. The curb ramps with detectable pads are provided at the SR 15A/Beresford Avenue intersection. 2. The detectable pad is damaged in the northeast corner of the SR 15A/Beresford Avenue intersection. The detectable pads in the remaining corners are in fair condition.

4 FEASIBILITY ANALYSIS

4.1 Background

This study was initiated by a feasibility application by Volusia County to address the existing traffic operational, and pedestrian/bicycle mobility and safety issues at the closely spaced intersections of SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue. In addition to the existing issues, there was also a concern about the future traffic volume growth (background plus the nearby development (Beresford Woods) and the potential traffic issues that this traffic growth might bring to these two study intersections.

The main objective of this feasibility study is to provide improvement alternatives for the study intersections that will improve the operations and safety of all road users both in the near- and long-term traffic conditions. Please note that this study provides costs for improvements at each intersection so that any improvement can be implemented based on funding availability and other restrictions including ROW.

4.2 Stakeholder Coordination

The consultant (VHB) met with the stakeholders including the City of DeLand, Volusia County, FDOT, and R2CTPO to discuss the current issues and the project scope. VHB also met with Volusia County separately during the project scope development to understand the issues and develop future project alternatives. A separate meeting was held on January 29, 2021, to present preliminary study results and obtain feedback from the stakeholders.

4.3 Methodology

The methodology for determining the feasibility of implementing the proposed improvements includes performing a comparison of before (No-Build) and after (Build) operating conditions for the study area utilizing traffic operation analysis software (Synchro and SIDRA) and preparing a B/C analysis for the proposed improvements.

4.4 Analysis Years

Based on the study objective and input from the stakeholders and since the improvement alternatives include turn lane improvements as well as a roundabout option, existing (2020), short-term (2025) and long-term (2040) traffic conditions are evaluated as part of this study.

4.5 Future Traffic Volumes Development

The development of traffic projections for the study corridor required the examination of historical growth, proposed development levels within the corridor vicinity, and a basic understanding of local traffic circulation patterns and travel characteristics of the corridor. As such, the following sources were used to derive reasonable future traffic forecasts for the study area roadways.

- **Travel Demand Model:** The Central Florida Regional Planning Model (CFRPM) version 6.1 was used in the traffic forecasting process.
- **Population Projections:** The population estimates obtained from the most current Bureau of Economic and Business Research (BEBR), Florida Population Studies, Volume 53 Bulletin 186, dated January 2020 was used.
- **Historical Traffic Trends Analysis:** Historical traffic trends analysis based on least squares regression analysis was conducted for the study roadways using traffic data from the 2019 FTO and the 2019 Volusia County Traffic Count Programs.
- **Approved Developments:** The project (vested) trips from the approved Beresford Woods Development with a build-out date of 2024 were added to the background traffic growth determined by the above three sources.

4.5.1 Travel Demand Model

The adopted regional planning model for FDOT District Five, CFRPM version 6.1, is the appropriate travel-forecasting tool for generating future daily traffic volume projections during a typical weekday within the study area. This travel demand model has the base year 2010 and horizon year 2040. For this study, model-based volume growth rates (simple annual rates) are derived between 2019 FTO AADT and 2040 model AADT for the study roadways. A Model Output Conversion Factor (MOCF) of 0.95 was used to convert model volumes (Peak Season weekday Average Daily Traffic) to model AADT.

Before determining these rates, the year 2040 cost-feasible model roadway network was reviewed to ascertain that the model network reflects the proposed improvements shown in the latest adopted (2045) R2CTPO Long Range Transportation Plan (LRTP) near the study area. The future year travel demand model considered all the programmed and planned improvements in the vicinity of the study area that are consistent with regional transportation plans including the following:

- FDOT Five Year Work Program
- FDOT Strategic Intermodal System (SIS) plans
- Committed improvements from local and private sources
- Adopted LRTPs and Comprehensive Plans

This review revealed that capacity improvements are not planned for any of the study roadways including SR 15A, Beresford Avenue, S Spring Garden Avenue, Gayle Drive, Louise Lane, and Jeanette Drive through the year 2045. The horizon year 2040 model plots are included in **Appendix C**. **Table 6** summarizes the growth rates derived using the 2019 base year and the horizon year 2040 model volumes.

Table 6: Model-based Growth Rate Summary

Study Segment	2019 AADT	Year 2040 Model based AADT	Annual Growth Rate
SR 15 A			
North of Beresford Ave	27,000	28,200	0.21%
South of Beresford Ave	26,000	26,500	0.09%
Beresford Ave			
West of SR 15A	1,700	2,300	1.68%

4.5.2 BEBR Growth Rates

The University of Florida's latest BEBR projections were obtained for Volusia County. The BEBR projections show an estimate for 2019 and projections for 2040. The low, medium and high projections for 2040 are summarized in **Table 7**. The growth rates between 2019 and 2040 range from approximately 0.03% percent to 1.56% percent for Volusia County. BEBR population study data is included in **Appendix C**.

Table 7: BEBR Population-based Growth Rates

County	2019 Population Estimate	Future Year 2040		
		Projection Type	Population Projection	Annual Growth Rate
Volusia	538,763	Low	542,700	0.03%
		Medium	629,700	0.80%
		High	715,800	1.56%

4.5.3 Historical Traffic Trends

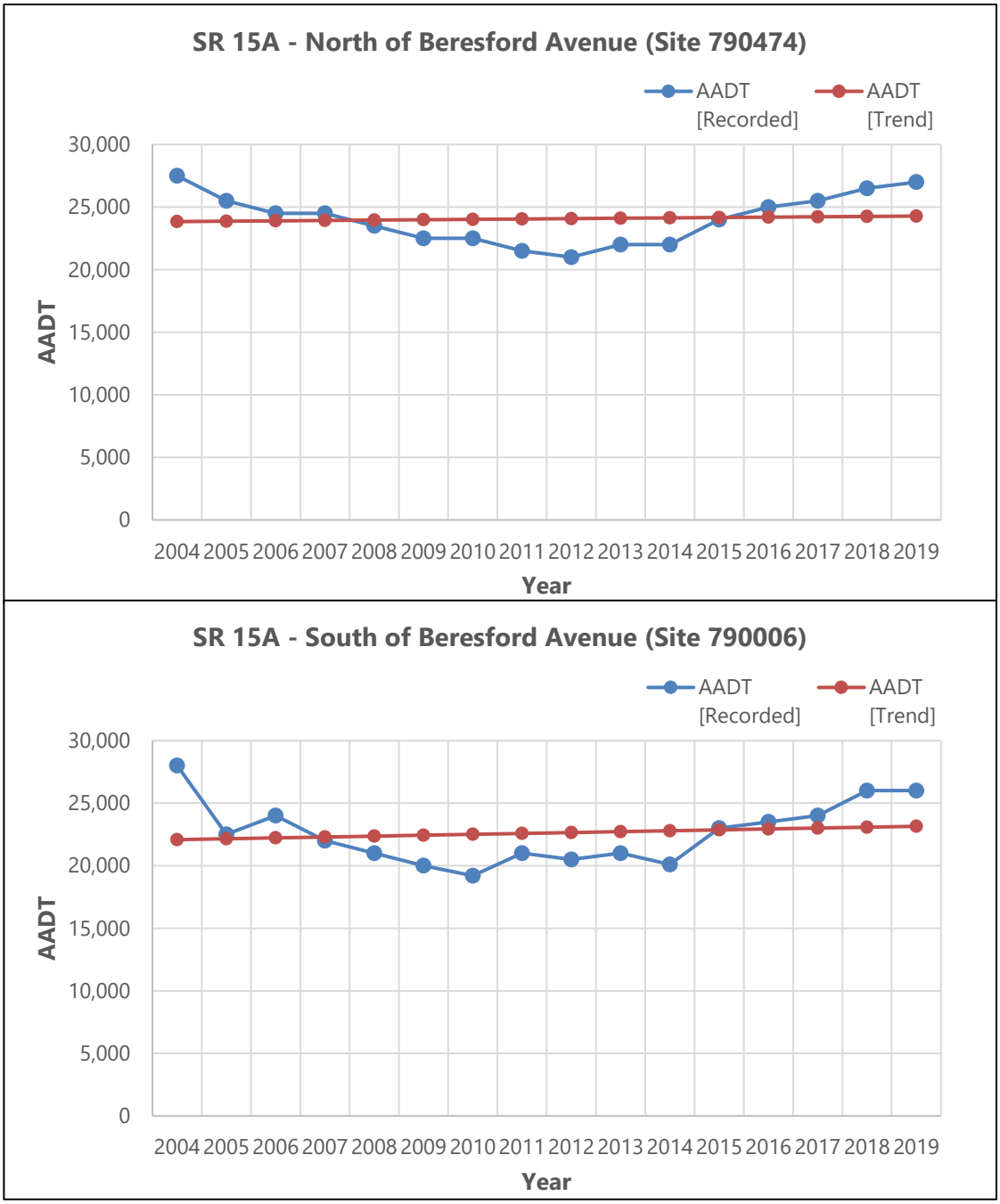
Based on the historical count information obtained from the 2019 FTO counts, linear regression trends analyses were performed for SR 15A. **Figure 7** shows counted AADT and trends based AADT volumes for the period between 2004 and 2019. The trends-based growth rate is calculated at 0.1% and 0.3% for SR 15A north and south of Beresford Ave, respectively. This shows that traffic growth on SR 15A is flat over the last 15 years. This analysis was not conducted for Beresford Avenue because counted data from the FTO is only available for three years. The trends analysis sheets are provided in **Appendix C**.

4.5.4 Recommended Traffic Growth Rate & Future Volumes

Based on a comparison of annual growth rates from the three primary sources (CFRPM models, BEBR population estimates, and historical trends analysis), an annual growth rate of 1.5% was used to derive the year 2025 and the year 2040 background turning movement volumes (from the year 2020 volumes). As mentioned before, project trips from the approved Beresford Woods Development with a build-out date of 2024 were added to these (background) turning movement volumes to derive the future year turning movement volumes.

Figures 8 and 9 illustrate the year 2025 and 2040 turning movement volumes for the No-Build alternative at the study intersections.

Figure 10: Historical AADT Volumes for SR 15A



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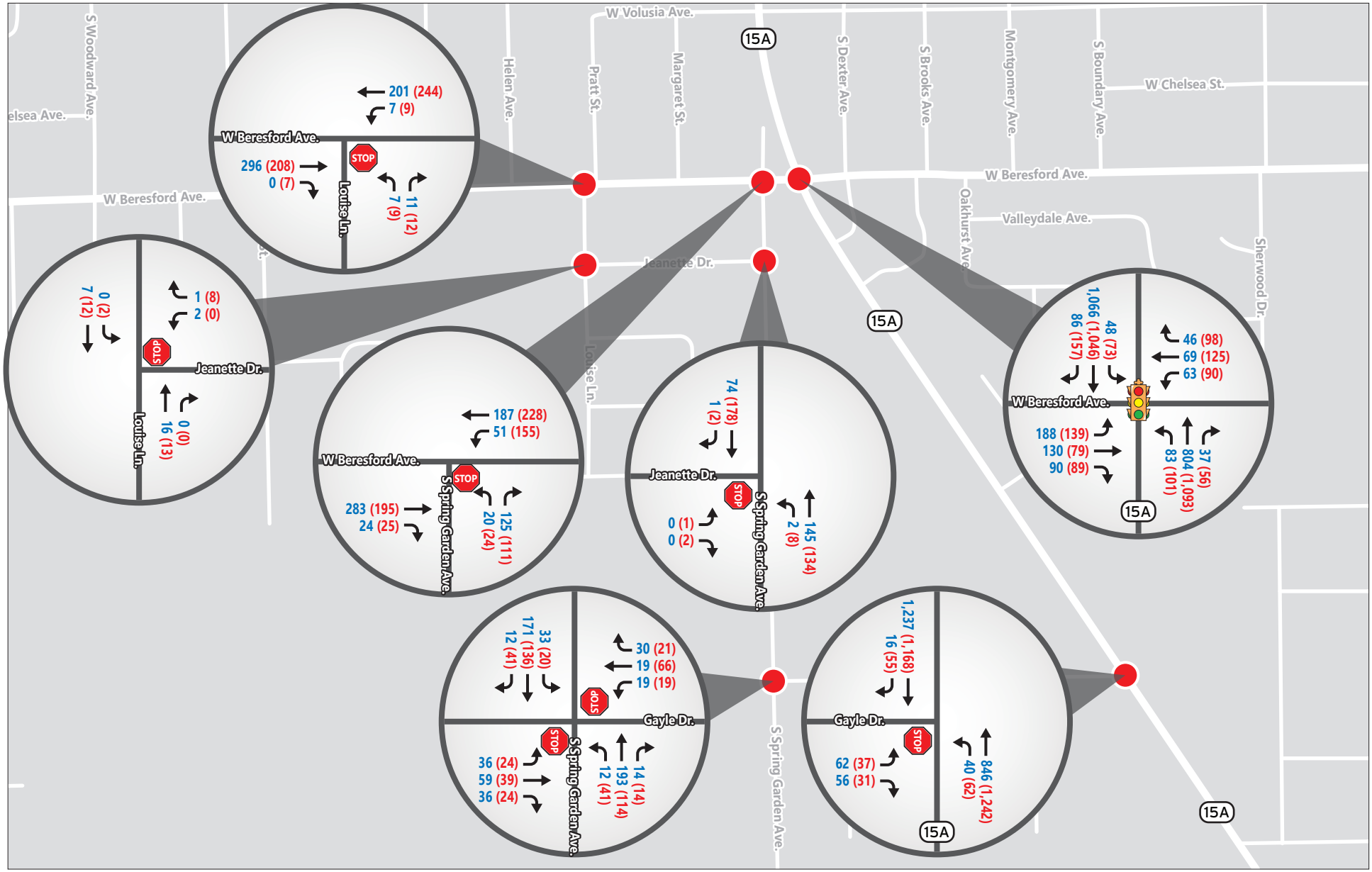

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Study Intersection

Traffic Movement

AM (PM) Peak Hour Traffic Volumes

Figure 8

2025 No Build
Turning Movement Volumes
Feasibility Study for Improvements at
SR 15A/Beresford Avenue/S Spring Garden Avenue

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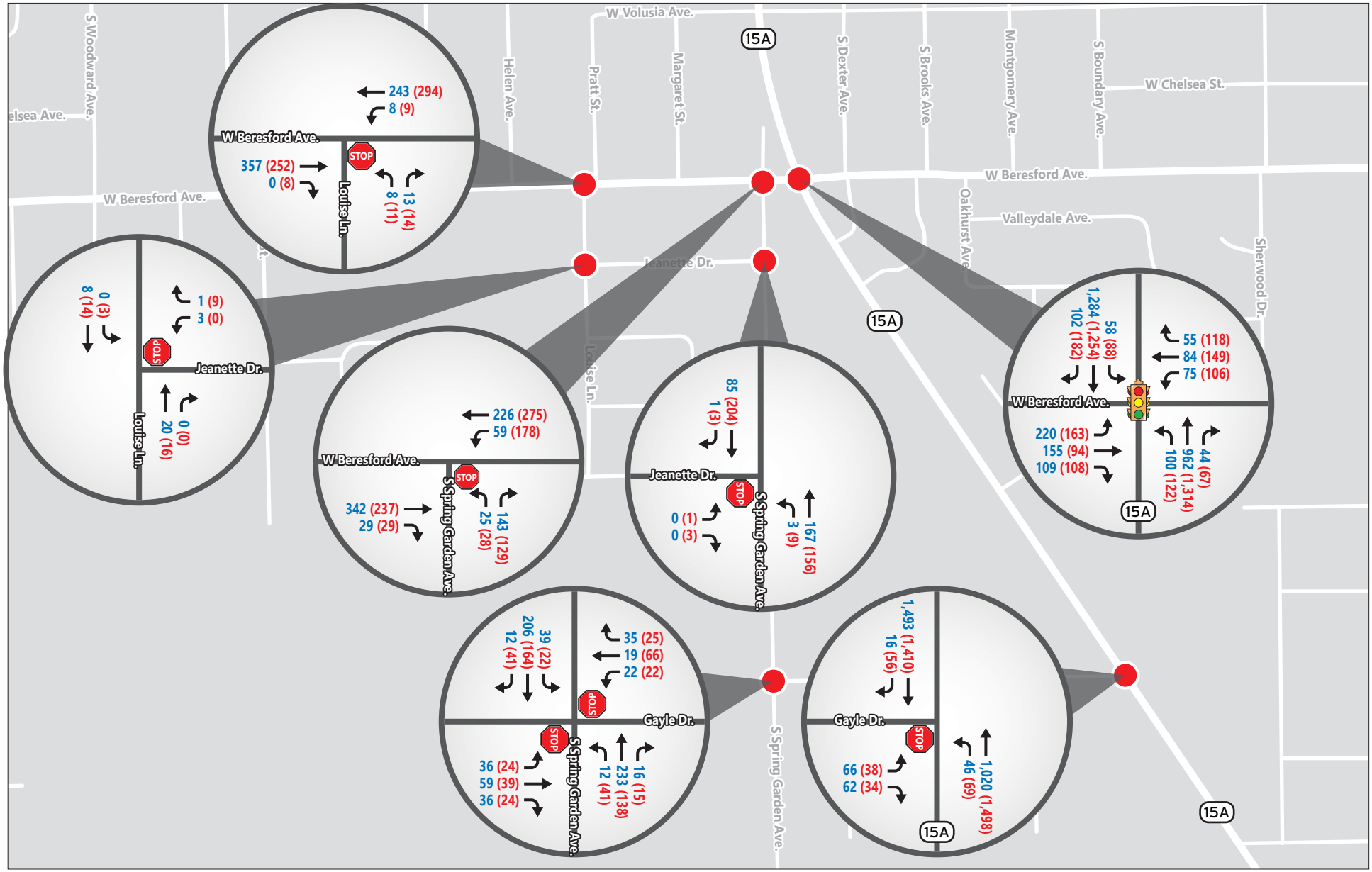

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Study Intersection

Traffic Movement

AM (PM) Peak Hour Traffic Volumes

Figure 9

2040 No Build
Turning Movement Volumes
Feasibility Study for Improvements at
SR 15A/Beresford Avenue/S Spring Garden Avenue

4.6 Proposed Alternatives

A No-Build alternative and two Build alternatives were considered as part of this Study. Since there are no committed improvements within the study area, the No-Build alternative maintains the existing roadway and intersection configuration. The Build alternatives will have an improved intersection configuration at few study intersections within the study area. The process of identifying the proposed improvements under the Build alternative is described below.

4.6.1 Intersection Control Evaluation (ICE)

As part of the initial screening for reasonable Build alternatives, a preliminary Stage 1 ICE was conducted at the intersection of SR 15A and Beresford Avenue. As part of the ICE process, FDOT modified Capacity Analysis at Junctions (CAP-X) and Safety Performance for ICE (SPICE) tools were used to identify the first set of potential alternatives at the intersection of SR 15A and Beresford Avenue that can accommodate 2040 volumes.

It should be noted that the current and anticipated traffic operational issues are not the main problems at the intersection of SR 15A and Beresford Avenue, but the proximity of this intersection to Beresford Avenue and S Spring Garden Avenue intersection is. As expected, the CAP-X analysis results demonstrated that all the (considered) alternatives have a volume over capacity (V/C) ratios of much lower than 1. Conventional intersection type with the addition of exclusive left turn lanes on the side street resulted in a similar V/C ratio as the alternative designs including Quadrant Roadway, Displaced Left Turn (DLT), Median U-Turn (MUT), and Signalized Restricted Crossing U-turn (RCUT) types which may be costly and require additional ROW (compared to the conventional intersection type).

To achieve the study goal, a 2X2 roundabout alternative is considered a viable option. CAP-X analysis also showed a lower than one V/C ratio for a 2X2 roundabout. The main advantage of a roundabout design is that it can effectively remove the offset between the existing study intersections along Beresford Avenue while improving safety (for all users), reducing intersection delay, idling time, and fuel wastage. Based on the crash reduction factor (CRF) published in the cmfclearinghouse website (http://www.cmfclearinghouse.org), conversion of a signalized intersection to a modern roundabout can yield a crash reduction of 21 percent (over the signal option).

For the SPICE analysis, conventional intersections (with existing and modified intersection configurations), DLT, MUT, Signalized RCUT, and roundabout options were evaluated. However, the projected 2040 AADT volume of 35,000 for SR 15A (derived using 1.5% simple annual growth rate and 2019 AADT) is outside the Safety Performance Function (SPF) range of a 2X2 roundabout. The SPICE analysis ranked a traffic signal with side street improvements, number 2 and a 2X2 roundabout, number 4. The ICE results including the ICE form for Stage 1 are provided in **Appendix D.**

4.6.2 Build Alternatives

Based on the purpose and need of the study, existing and anticipated operational and safety issues, stakeholder input, ICE results, operational analysis, historical crash analysis, and engineering judgment, the following proposed Build alternatives are identified for the study area.

The intersections of SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue are only 80 feet apart, and this proximity is anticipated to worsen the traffic operational and safety issues in the future within the study area. As such, the main goal of this study is two-fold: 1) to reroute traffic using alternative routes or 2) provide an intersection configuration that would allow S Spring Garden Avenue to become the fifth leg of the intersection at SR 15A and Beresford Avenue. For the second option, a roundabout is considered the most suitable solution given the skewed nature of SR 15A and Beresford Avenue intersection. Besides, the flat growth rate along SR 15A over the last 15 years and minimal traffic growth shown in the travel demand model also supports a 2X2 roundabout at SR 15A and Beresford Avenue.

4.6.2.1 Build Alternative 1

As part of the proposed Build Alternative 1, the westbound and northbound left turn movements at the intersection of Beresford Avenue and S Spring Garden Avenue will be eliminated allowing only right-in right-out movements at this intersection. Based on the agreement between Beresford Woods Development and Volusia County, this development is proposed to be served via a full access driveway on S Spring Garden Avenue serving the western portion of the development. This site access will line up with Gayle Drive (becoming the fourth leg of the current intersection at S Spring Garden Avenue and Gayle Drive).

Also, there is also a condition in the approved rezoning that an exclusive eastbound left turn lane will be constructed at SR 15A and Gayle Drive if the LOS of this intersection drops below LOS D.

Because of these proposed restrictions, drivers can choose of the following two alternative routes:

- Northbound left turning movement at Beresford Avenue and S Spring Garden Avenue can be completed via 1) northbound left turn at S Spring Garden Avenue and Jeanette Drive, 2) westbound right turn at Louise Lane and Jeanette Drive, and 3) northbound left turn at Beresford Avenue and Louise Lane. Since this volume is not significant, the low volume roadways, Jeanette Drive and Louise Lane are anticipated to handle this additional demand.
- Since northbound right turning movement at Beresford Avenue and S Spring Garden Avenue will not be restricted, a more conducive alternative route using Gayle Drive will be made available for commuters. Using the improved alternative route via Gayle Drive is important because the low volume roadways, Jeanette Drive and Louise Lane, may not be preferred by commuters because of the roadway and traffic control restrictions. The idea is to provide a signal and an exclusive eastbound left turn lane at the intersection of SR 15A and Gayle Drive to encourage a significant portion of the commuters to use Gayle Drive and SR 15A instead of S Spring Garden Avenue and Beresford Avenue to complete the current northbound right turning movement at Beresford Avenue and S Spring Garden Avenue.
- Westbound left turning movement at Beresford Avenue and S Spring Garden Avenue can be completed via 2 options:
    - 1) Westbound through at Beresford Avenue and S Spring Garden Avenue, 2) westbound left turn at Beresford Avenue and Louise Lane, 3) southbound left turn at Jeanette Drive and Louise Lane, and 4) eastbound right turn at S Spring Garden Avenue and Jeanette Drive. However, this alternative route may not be preferred by commuters because of the reasons explained in bullet #2.

- Since westbound left turning movement at Beresford Avenue and S Spring Garden Avenue is a combination of the southbound right, westbound through, and northbound left turning movements at SR 15A and Beresford Avenue, it is anticipated that a majority of the commuters will choose to use SR 15A and then Gayle Drive to complete this movement given the roadway and traffic control restrictions along Jeanette Drive and Louise Lane.

Volume Derivation for Build Alternative 1

Based on the proposed Build Alternative 1, future traffic volumes for the years 2025 and 2040 conditions are derived by rerouting traffic based on the following assumptions. These assumptions reflect a conservative approach to deriving the Build Alternative 1 volumes.

- 100% of the traffic that is supposed to do a northbound right turn at Beresford Avenue and S Spring Garden Avenue and then an eastbound left at SR 15A and Beresford Avenue will now use Gayle Drive and SR 15A to complete this movement.
- 70% of the traffic that is supposed to do a northbound right turn at Beresford Avenue and S Spring Garden Avenue and then an eastbound through at SR 15A and Beresford Avenue will now use Gayle Drive and SR 15A to complete this movement.
- The traffic that is supposed to do a northbound right turn at Beresford Avenue and S Spring Garden Avenue and then an eastbound right at SR 15A and Beresford Avenue will not divert to Gayle Drive.
- The same percentages are assumed for the complementary movements, southbound right turn (100%), westbound through (70%), and northbound left turn (0%) at SR 15A and Beresford Avenue, will now use Gayle Drive and SR 15A to complete this movement.

The year 2025 and year 2040 volumes for Build Alternative 1 are shown in **Figures 10** and **11**, respectively.

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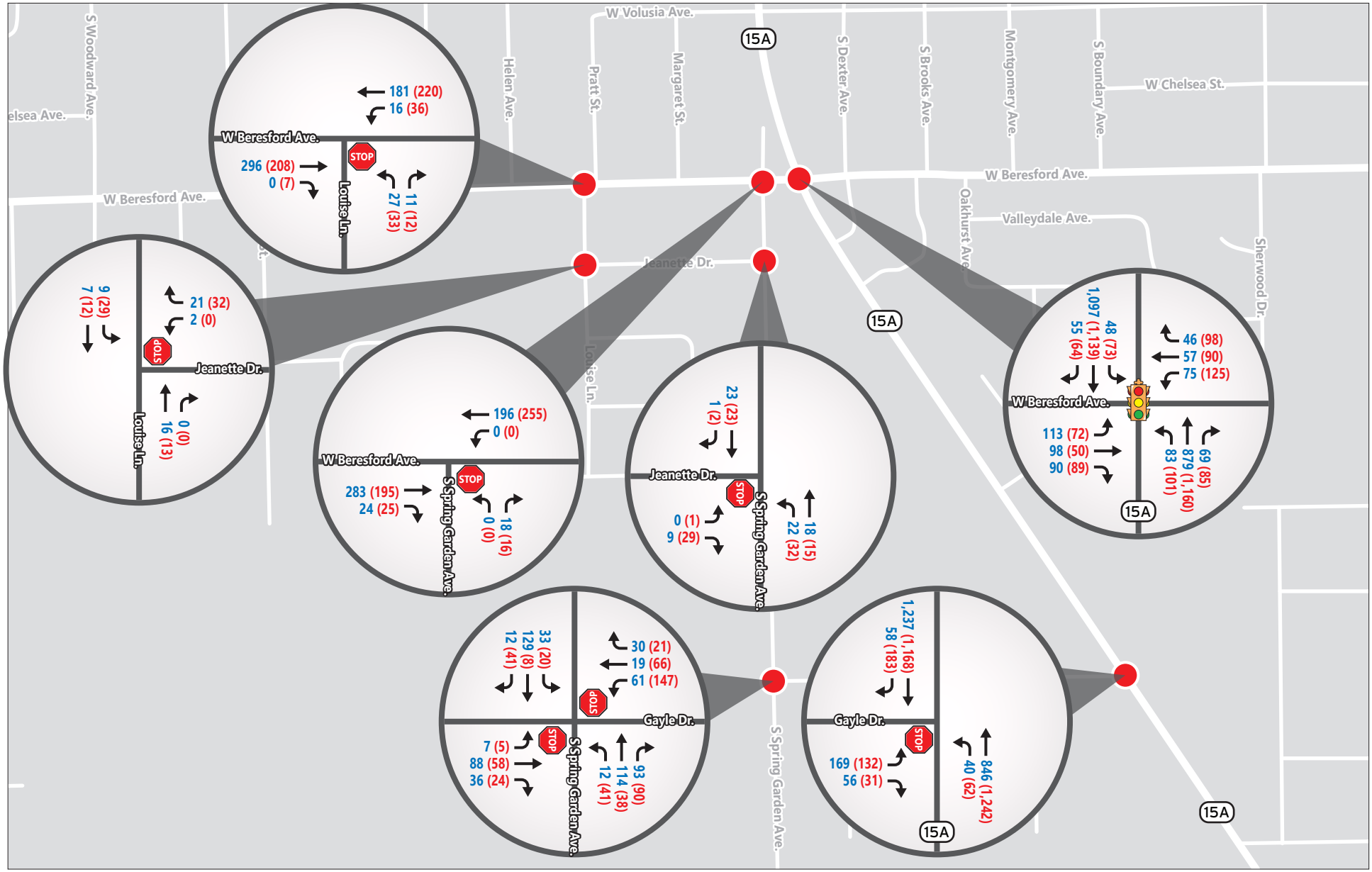

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Study Intersection

Traffic Movement

AM (PM) Peak Hour Traffic Volumes

Figure 10

2025 Build Alternative 1
Turning Movement Volumes
Feasibility Study for Improvements at
SR 15A/Beresford Avenue/S Spring Garden Avenue

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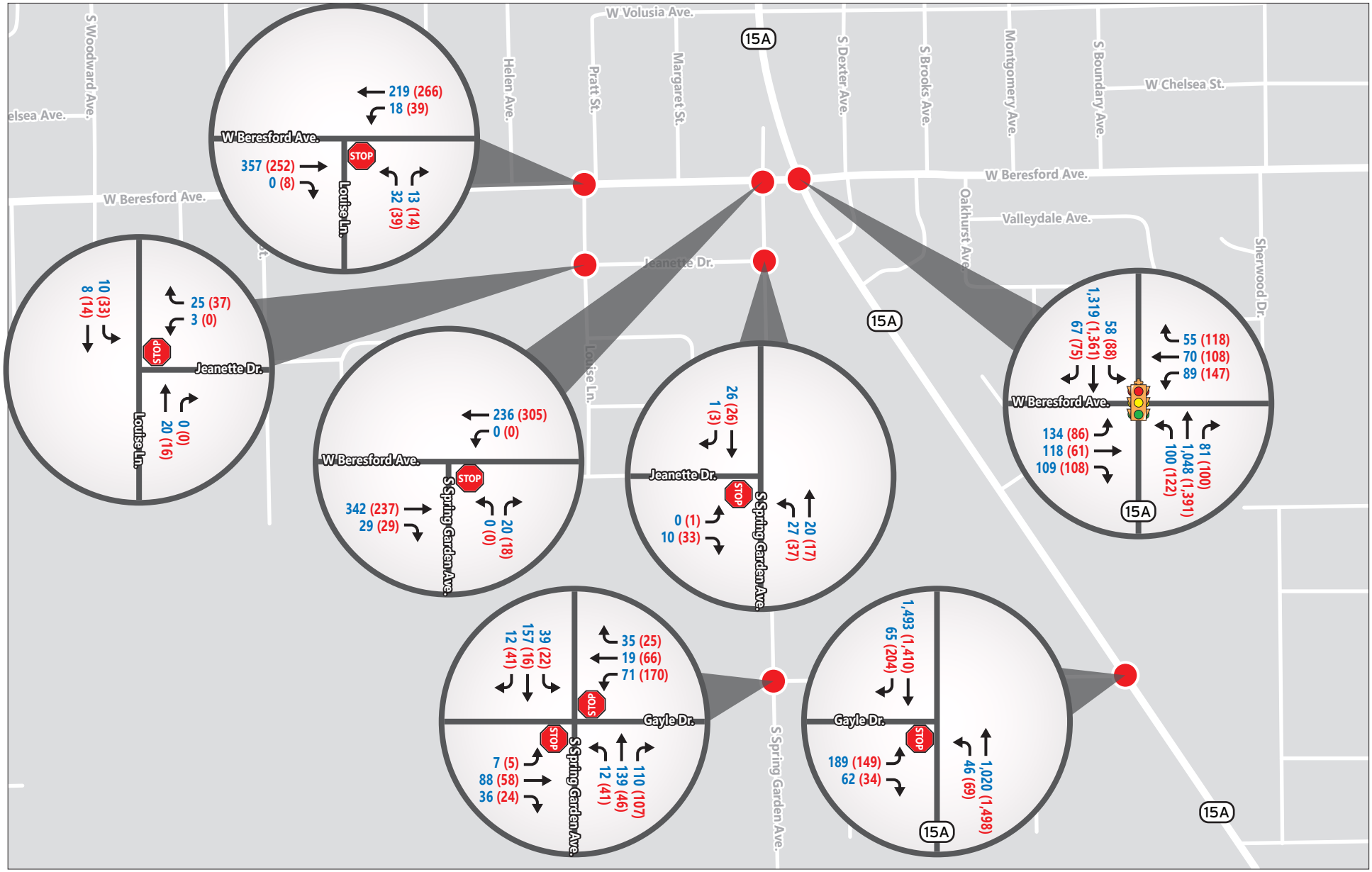

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Study Intersection

Traffic Movement

AM (PM) Peak Hour Traffic Volumes

Figure 11

2040 Build Alternative 1
Turning Movement Volumes
Feasibility Study for Improvements at
SR 15A/Beresford Avenue/S Spring Garden Avenue

Signal Warrant Analysis for SR 15A and Gayle Drive under Build Alternative 1

A preliminary signal warrant analysis was conducted at the intersection of SR 15A and Gayle Drive to check if the diverted traffic warrants a signal at this location. Since the information required for all other warrants cannot be predicted, only warrants 1A and 1B of the Manual on Uniform Traffic Control Devices (MUTCD) were used. To determine the eight highest future volumes for signal warrant analysis, hourly distribution of entering and exiting vehicle trips for single-family units published by ITE Trip Generation Manual (10th Edition) for Beresford Woods in combination with rerouted volumes based on the conditions assumed for the Build Alternative 1 were used. Since the posted speed is greater than 40 MPH, the 70% criteria for signal warrants 1A and 1B were used. A signal is warranted for 2025 traffic conditions. However, since this warrant analysis is based on the conditions assumed for Build Alternative 1, the determination of when this location will be signalized must be based on actual traffic counts and other pertinent data required for signal warrant analysis. Also, a separate ICE process must be completed when a signal is warranted at this location. The relevant documentation for the signal warrant analysis is provided in **Appendix E**.

Proposed Improvements under Build Alternative 1

Based on the projected volumes and future (2040) operational analysis for Build Alternative 1, the following improvements are proposed. The operational analysis is described in the next section.

- Allow right-in right-out only at Beresford Avenue and S Spring Garden Avenue
- Provide exclusive eastbound and westbound left turn lanes at SR 15A and Beresford Avenue
- Provide exclusive eastbound left turn and southbound right turn lanes at SR 15A and Gayle Drive
- Provide a signal at SR 15A and Gayle Drive by the year 2025.
    - This improvement is based on the conditions assumed under Build Alternative 1. Implementation of a signal at this location must be based on actual traffic counts and other pertinent data required for signal warrant analysis.

The proposed improvements are illustrated in **Figures 12 and 13**.

Access Class Considerations for SR 15A with a Signal at SR 15A and Gayle Drive

Based on the adopted (by FDOT) Access Class 4 for SR 15A, a signal at SR 15A and Gayle Drive will deviate from the recommended spacing criteria by around 10%. The recommended spacing between signals for an Access Class 4 is 2,640 feet based on the published guidelines in the 2019 FDOT's Access Management Guidebook. Please refer to **Table 8** for the latest FDOT spacing standards. To the north, the distance along SR 15 A between Beresford Avenue which is currently a signal (milepost 1.760), and Gayle Drive (milepost 1.312) is 2,365 feet. To the south, the distance along SR 15A between Gayle Drive (milepost 1.312) and the proposed signal at S Clara Avenue (milepost 0.257) is 5,570 feet, which exceeds the required 2,640 spacing. Please note that the proposed signal at SR 15A and S Clara Avenue will be constructed as part of the ongoing safety improvement project along SR 15A from S Woodland Boulevard to Adelle Avenue (Signing & Marking Plans for FPID: 441414-1 provided in **Appendix F**) which is estimated to be completed in the field by late 2021.

For the Intersection Safety Study that was completed in July 2017 (which formed the basis for the ongoing safety improvement project along SR 15A from S Woodland Boulevard to Adelle Avenue (FPID: 441414-1)), an Access Class 5 was assumed for SR 15A because of the proposed restrictive median type within the study limits. If FDOT were to convert the existing two-way left-turn lane to a restrictive median and supports Access Class 5 for SR 15A between Beresford Avenue and Gayle Drive, then a signal at SR 15A and Gayle Drive will not deviate from the spacing standards.

Table 8: Median Opening Spacing Standards

Roadway Access Class	FDOT Context Classification	Median Type	Connection Spacing (feet)		Minimum Signal Spacing	
			<=45 mph Posted	>45 mph Posted	<=45 mph Posted	>45 mph Posted
4	C2T Rural Town, C4 Urban General, C5 Urban Center, C6 Urban Core	Non-Restrictive	440	660	2,640	2,640
5		Restrictive	245	440	1,320	2,640

Source: 2019 Access Management Handbook

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

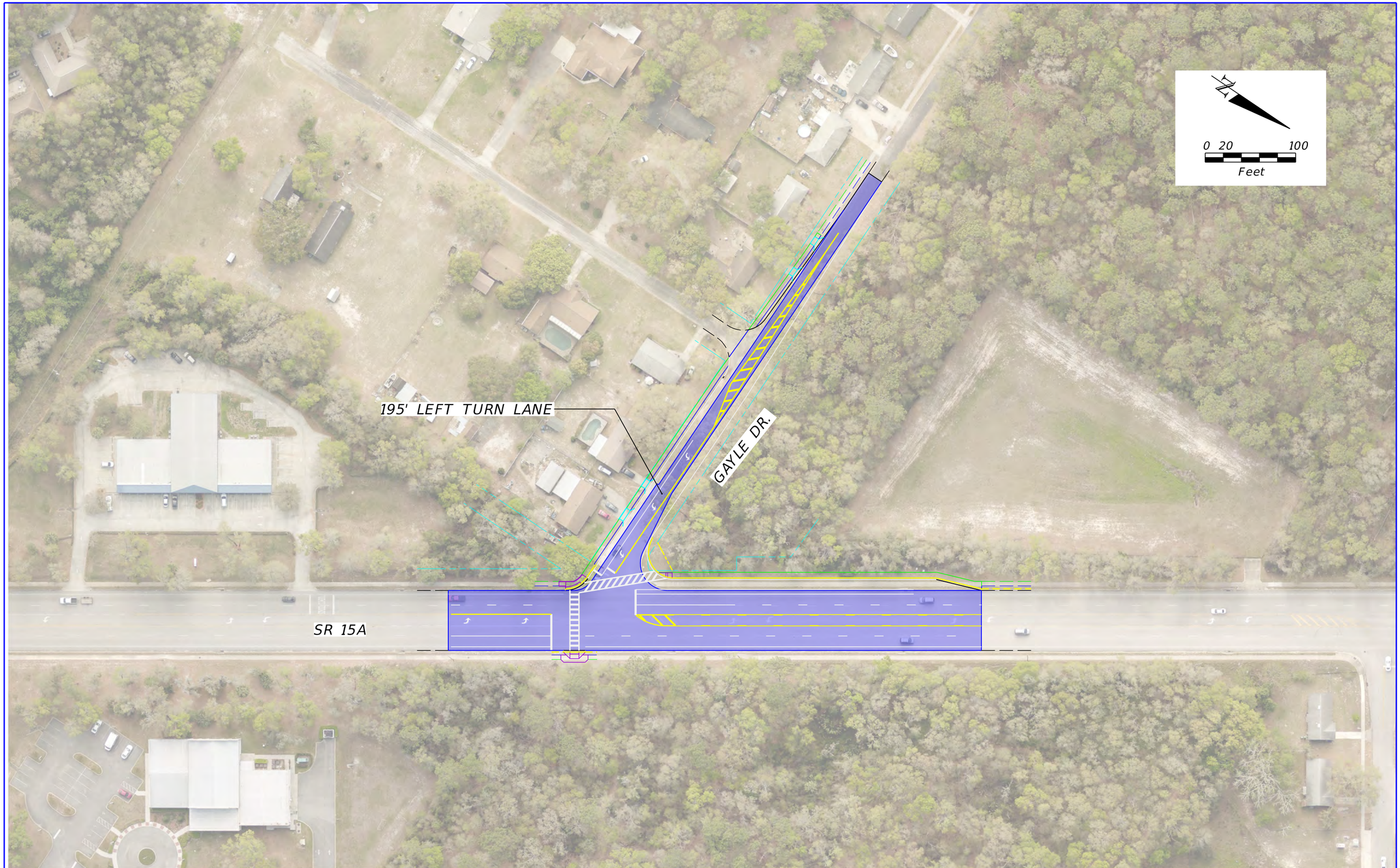
Vanasse Hangen Brustlin, Inc.
Transportation, Land Development, Environmental Services
225 E. Robinson St., Suite 300
Landmark Center Two
Orlando, FL 32801 (407)839-4006
Certificate of Authorization # 3932

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 15A	VOLUSIA	

CONCEPTUAL IMPROVEMENT DIAGRAM
SR 15A AT BERESFORD AVE.

Figure 12



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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 15A	VOLUSIA	

CONCEPTUAL IMPROVEMENT DIAGRAM
SR 15A AT GAYLE DR.

Figure
13

4.6.2.2 Build Alternative 2

As mentioned before, a roundabout option is evaluated (Build Alternative 2) that would allow S Spring Garden Avenue to become the fifth leg of the intersection at SR 15A and Beresford Avenue. Unlike Build Alternative 1, a roundabout option at SR 15A and Beresford Avenue does not assume traffic diversion and is considered a suitable option because of the skewed nature of SR 15A and Beresford Avenue intersection. A flat traffic growth along SR 15A over the last 15 years and minimal traffic growth shown in the year 2040 travel demand model also supports a 2X2 roundabout at SR 15A and Beresford Avenue. The main advantage of a roundabout design is that it can effectively remove the offset between the existing study intersections along Beresford Avenue while improving safety (for all users), reducing intersection delay, idling time, and fuel wastage.

The proposed roundabout option is illustrated in **Figure 14**. As shown in this figure, exclusive eastbound and westbound right turn lanes at the roundabout for SR 15A and Beresford Avenue intersection are proposed as well.

REVISIONS			
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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 15A	VOLUSIA	

CONCEPTUAL IMPROVEMENT DIAGRAM

SR 15 A / BERESFORD AVE / S SPRING GARDEN AVE.

Figure 14

4.7 Operational Analysis

The operational analysis was performed for the 2020 existing conditions, No Build, and 2 Build alternatives for the year 2025 and 2040 conditions. Synchro 10 software was used to evaluate the study intersections for the existing conditions and future conditions under Build Alternative 1. SIDRA software was used to evaluate the future conditions under Build Alternative 2 (roundabout option).

4.7.1 Existing Year (2020) Analysis

The existing signal timing information was obtained from Volusia County. The turning movement volumes shown in **Figure 4** were used for the operational Analysis. **Table 9** summarizes the operation conditions - intersection delay and levels of service (LOS) – for study intersections for AM and PM peak hours. The synchro results are provided in **Appendix G. Table 9** shows the worst-case delay (seconds per vehicle) for the minor/major street movements in case of stop-controlled intersections and overall intersection delay (seconds per vehicle) in case of a signalized intersection. As shown in **Table 9**, the study intersections operate at LOS C or better during the AM and PM peak hour conditions.

Table 9: Existing Year (2020) Intersection Analysis Results

Study Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Beresford Avenue & Louise Lane	Stop	12.4/8.0	B/A	10.7/7.7	B/A
Beresford Avenue & S Spring Garden Avenue	Stop	11.7/8.1	B/A	11.4/7.9	B/A
Beresford Avenue & SR 15A	Signal	29.6	C	26.5	C
Louise Lane & Jeanette Drive	Stop	8.6/0.0	A/A	8.5/7.2	A/A
S Spring Garden Avenue & Jeanette Drive	Stop	0.0/7.3	A/A	9.3/7.5	A/A
S Spring Garden Avenue & Gayle Drive	Stop	11.1/7.8	B/A	9.6/7.5	A/A
SR 15A & Gayle Drive	Stop	20.3/11.8	C/B	16.7/10.8	C/B

Notes:
1) Overall intersection delay and LOS (Synchro based) results are reported for signalized intersections.
2) For stop-controlled intersections, worst Minor/worst Major movement delay & LOS (HCM 6th Edition based) results are reported.
3) sec/vehicle – delay in seconds per vehicle

4.7.2 Year 2025 Analysis

Tables 10 and 11 show the LOS results for the year 2025 No Build alternative and Build Alternative 1. Since the Build Alternative 1 diverts traffic using the study roadways, LOS results for all the study intersections are provided. For Build Alternative 2, SIDRA LOS results for the roundabout option are provided.

Table 10: Year 2025 Intersection Analysis Results – No Build Alternative

Study Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Beresford Avenue & Louise Lane	Stop	13.2/8.1	B/A	11.1/7.7	B/A
Beresford Avenue & S Spring Garden Avenue	Stop	13/8.2	B/A	12.7/8.1	B/A
Beresford Avenue & SR 15A	Signal	41.2	D	32.3	C
Louise Lane & Jeanette Drive	Stop	8.6/0.0	A/A	8.4/7.2	A/A
S Spring Garden Avenue & Jeanette Drive	Stop	0.0/7.4	A/A	9.7/7.6	A/A
S Spring Garden Avenue & Gayle Drive#	Stop	15.4/7.9	C/A	13.9/7.5	B/A
SR 15A & Gayle Drive	Stop	49.8/12.9	F/B	29.1/12.1	D/B

Notes: 1) Overall intersection delay and LOS (Synchro based) results are reported for signalized intersections. 2) For stop controlled intersections, worst Minor/worst Major movement delay & LOS (HCM 6th Edition based) results are reported. 3) sec/vehicle – delay in seconds per vehicle. 4) #S Spring Garden Avenue & Gayle Drive will be four-legged intersection by 2025 based on the approved TIA for Beresford Woods Development.

Table 11: Year 2025 Intersection Analysis Results – Build Alternative 1

Study Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Beresford Avenue & Louise Lane	Stop	16.1/8.1	C/A	13.1/7.8	B/A
Beresford Avenue & S Spring Garden Avenue	Stop	10.4/0.0	B	9.5	A
SR 15A & Beresford Avenue	Signal	27.1	C	24.9	C
Louise Lane & Jeanette Drive	Stop	8.6/7.3	A/A	8.5/7.3	A/A
S Spring Garden Avenue & Jeanette Drive	Stop	8.5/7.3	A/A	8.5/7.3	A/A
S Spring Garden Avenue & Gayle Drive#	Stop	19.6/7.9	C/A	15.4/7.5	C/A
SR 15A & Gayle Drive*	Signal	9.8	A	7.4	A

*Notes: 1) Overall intersection delay and LOS (Synchro based) results are reported for signalized intersections. 2) For stop controlled intersections, worst Minor/worst Major movement delay & LOS (HCM 6th Edition based) results are reported. 3) sec/vehicle – delay in seconds per vehicle. 4) *A signal is assumed at SR 15A & Gayle Drive intersection starting from 2025 under this alternative. 5) #S Spring Garden Avenue & Gayle Drive will be four-legged intersection by 2025 based on the approved TIA for Beresford Woods Development.*

As shown in **Table 10**, except for the eastbound approach at SR 15A and Gayle Drive, all the study intersections operate at LOS D or better during the AM and PM peak hour conditions under No Build alternative. Under Build Alternative 1 (**Table 11**), all the study intersections operate at LOS C or better during the year 2025 AM and PM peak hour conditions.

Table 12 provides the SIDRA roundabout (overall intersection) results for SR 15A and Beresford Avenue/S Spring Garden Avenue. As shown in **Table 12**, the roundabout is estimated to operate at LOS B for the year 2025 AM and PM peak hours. Detailed Synchro and SIDRA outputs are provided in **Appendix H**.

Table 12: Year 2025 Intersection Analysis Results – Build Alternative 2

Study Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
SR 15A & Beresford Avenue/S Spring Garden Avenue	12.2	B	15.7	B

4.7.3 Year 2040 Analysis

Tables 13 and 14 show the LOS results for the year 2040 No Build alternative and Build Alternative 1. Like the year 2025 analysis, LOS results for all the study intersections are provided for the Build Alternative 1and SIDRA LOS results for the roundabout option are provided for Build Alternative 2. As shown in **Table 13**, the eastbound approach at SR 15A and Gayle Drive and the overall intersection at SR 15A and Beresford Ave exceed the LOS Target "D" (based on FDOT target LOS for State roadways) during the AM and PM peak hour conditions under the No Build alternative. All the other study intersections operate at LOS C or better during the AM and PM peak hour conditions under the No Build alternative. Under Build Alternative 1 (**Table 14**), all the study intersections operate at LOS D or better during the year 2040 AM and PM peak hour conditions.

Table 13: Year 2040 Intersection Analysis Results – No Build Alternative

Study Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Beresford Avenue & Louise Lane	Stop	14.9/8.4	B/A	14.2/8	B/A
Beresford Avenue & S Spring Garden Avenue	Stop	15.5/8.5	C/A	17.3/9.6	C/A
Beresford Avenue & SR 15A	Signal	60.3	E	62.2	E
Louise Lane & Jeanette Drive	Stop	8.7/0.0	A/A	8.4/7.3	A/A
S Spring Garden Avenue & Jeanette Drive	Stop	0.0/7.4	A/A	10.0/7.7	A/A
S Spring Garden Avenue & Gayle Drive#	Stop	23.1/8.1	C/A	17.8/7.7	C/A
SR 15A & Gayle Drive	Stop	130.3/15.7	F/C	64.6/16	F/C

Notes: 1) Overall intersection delay and LOS (Synchro based) results are reported for signalized intersections. 2) For stop controlled intersections, worst Minor/worst Major movement delay & LOS (HCM 6th Edition based) results are reported. 3) sec/vehicle – delay in seconds per vehicle. 4) #S Spring Garden Avenue & Gayle Drive will be four-legged intersection by 2025 based on the approved TIA for Beresford Woods Development.

Table 14: Year 2040 Intersection Analysis Results – Build Alternative 1

Study Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Beresford Avenue & Louise Lane	Stop	19.7/8.4	C/A	14.9/7.9	B/A
Beresford Avenue & S Spring Garden Avenue	Stop	11.0/0.0	B/	9.9/0.0	A/
SR 15A & Beresford Avenue	Signal	35.8	D	33.1	C
Louise Lane & Jeanette Drive	Stop	8.6/7.3	A/A	8.5/7.3	A/A
S Spring Garden Avenue & Jeanette Drive	Stop	8.5/7.3	A/A	8.6/7.3	A/A
S Spring Garden Avenue & Gayle Drive#	Stop	27.3/8.1	D/A	17.4/7.6	C/A
SR 15A & Gayle Drive*	Signal	10.7	B	8.1	A

*Notes: 1) Overall intersection delay and LOS (Synchro based) results are reported for signalized intersections. 2) For stop controlled intersections, worst Minor/worst Major movement delay & LOS (HCM 6th Edition based) results are reported. 3) sec/vehicle – delay in seconds per vehicle. 4) *A signal is assumed at SR 15A & Gayle Drive intersection starting from 2025 under this alternative. 5) #S Spring Garden Avenue & Gayle Drive will be four-legged intersection by 2025 based on the approved TIA for Beresford Woods Development.*

Table 15 provides the SIDRA roundabout (overall intersection) results for SR 15A and Beresford Avenue/S Spring Garden Avenue. As shown in **Table 15**, the roundabout is estimated to operate at LOS C or better for the year 2040 AM and PM peak hours. However, the eastbound approach in the AM peak hour and westbound approach in the PM peak hour are estimated to fail with LOS F, which can be improved with pocket lanes for the sidestreet left turns. Detailed Synchro and SIDRA outputs are provided in **Appendix I**.

Table 15: Year 2040 Intersection Analysis Results – Build Alternative 2

Study Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
SR 15A & Beresford Avenue/S Spring Garden Avenue	22.9	C	33.8	C

4.8 B/C Analysis

A B/C analysis was performed for the study Build alternatives based on traffic operational benefits. To determine the benefits for 20 years (improvements will last for 20 years based on FDOT guidance) between 2025 and 2044 (included), initially, benefits are calculated for the year 2025 and 2040 conditions. Then the benefits for the interim and beyond 2040 (till 2044) years are interpolated (extrapolated) using the 2025 and 2040 benefits. Finally, benefits from 2025 to 2044 are added to determine the total benefits.

4.8.1 Traffic Operational Benefits

To estimate the operational benefits of the proposed intersection improvements, Synchro and SIDRA reported networkwide total delay (vehicle-hours) values were used. For Build Alternative 1, the network-wide delays for the entire study were used because the route diversion will impact all the study intersections. In the case of Build Alternative 2, the No-Build alternative total delay values (combined) for the intersections of SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue are compared to the roundabout total delay values.

The benefits are defined in terms of annualized cost savings associated with a reduction in the total delay values. The benefits are calculated for six hours (3 AM and 3 PM hours) in a day and 300 days in a year accounting for reduced benefits anticipated due to lower traffic volumes during the off-peak hours and weekends. The value of delay time per hour ($18.12) was obtained from "The Mobility Data for Orlando" published by Texas A&M University.

4.8.2 Improvement Construction Costs

The estimated costs of the proposed improvements separated by each Build alternative were determined for this study. The estimated costs are based on FDOT Long Range Estimating (LRE) System. Please note that ROW costs are not considered in the B/C analysis.

The estimated cost for the modifications under Alternative 1 is $1,380,840, which includes the proposed improvements at SR 15A and Gayle Drive (exclusive eastbound left and southbound right turn lanes and a signal) and SR 15A and Beresford Avenue (exclusive eastbound and westbound left turn lanes).

The estimated cost for the modifications under Alternative 2 is $2,993,669, which includes the proposed five-legged roundabout option at SR 15A and Beresford Avenue.

Table 16 summarizes the B/C analysis for the study alternatives. The analysis yields B/C ratios of 11.9 and 5.9 for the study Build alternatives 1 and 2, respectively. The calculated B/C ratio for each Build alternative indicates that the anticipated benefits outweigh the estimated costs for the proposed modification, with benefits derived through reduced costs associated with lower delay, stops fuel consumption, and crashes. The operational annual user benefits calculations and improvement costs are provided in **Appendix J.** As illustrated in **Table 16**, Alternative 1 provides the better B/C ratio.

Table 16: B/C Analysis Summary

Study Alternative	Improvements	2040 Worst Overall Intersection Delay (seconds per vehicle /LOS)	2040 Total Delay Reduction Vs No-Build (AM/PM)	Total User Benefit (2025-2044)	Total Construction Cost	B/C Ratio
Alternative 1	▪ Assumes traffic diversion to other roadways within the study area **SR 15A & Beresford Avenue** ▪ Add an exclusive eastbound left turn lane ▪ Add an exclusive westbound left turn lane **SR 15A & Gayle Drive** ▪ Add an exclusive eastbound left turn lane ▪ Add an exclusive southbound right turn lane ▪ Install a signal	35.8/D	51/24 vehicle-hours	$16,449,336	$1,380,840	**11.9**
Alternative 2	**SR 15A & Beresford Avenue/S Spring Garden Avenue** ▪ Covert the existing signal into a five-legged roundabout (with S Spring Garden Avenue as the fifth leg)	33.8/C	34/30 vehicle-hours	$17,620,142	$2,993,669	**5.9**

Notes:
1) The service life of the improvements was kept at 20 years
2) Traffic operational annual user benefit derived using total delay savings are calculated for 20 years with 300 days in a year and with 3 hours each of AM and PM peak periods in a day
3) Construction cost does not include right-of-way cost

5 STUDY CONCLUSIONS

Based upon the crash analysis, qualitative assessment, field observations, stakeholder input, intersection analysis, B/C analysis, and engineering judgment, the improvements identified in Build Alternative 1 (as shown in **Figures 12** & **13**, and **Table 16** of the Report) can be considered to improve the safety and operation of the study intersections. The proposed improvements under Build Alternative 1 have a lower cost compared to Build Alternative 2 and a higher B/C ratio. Build Alternative 1 can be implemented in the short term and stages because of lower cost, minimal or no right-of-way acquisition, and potential support (in the form of funds or right-of-way) from Beresford Woods developer for turn lane improvements at the intersection of SR 15A and Gayle Drive. However, Build Alternative 1 will not eliminate the traffic operational issues because of the proximity of the intersections at SR 15A and Beresford Avenue and Beresford Avenue, and S Spring Garden Avenue. It will relatively help with improving traffic operations and safety at the two study intersections by encouraging commuters to choose alternative routes.

The roundabout option (Build Alternative 2) is not anticipated to impact the businesses located east of SR 15A or the Day Spring Community Church located west of SR 15A (southwest corner of Beresford Avenue and S Spring Garden Avenue), but will most likely impact the vacant parcel located in the southwest corner of SR 15A and Beresford Avenue. However, the roundabout will be an effective option because of the existing and anticipated future volumes within the study area and will help eliminate the issue of offset intersections (SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue) and improve safety because of the skewed nature of SR 15A and Beresford Avenue intersection.

It should be noted that the implementation of Build Alternative 1 does not preclude the consideration of a roundabout at SR 15A and Beresford Avenue/S Spring Garden Avenue. Based on the availability of funds, a roundabout can be constructed as well after the implementation of Build Alternative 1, which will provide a holistic solution for the study area.

The following additional considerations are to be noted for the implementation of the improvements under Build Alternative 1:

- To improve the traffic operations and safety in the short-term at the main study intersections (SR 15A at Beresford Avenue and Beresford Avenue and S Spring Garden Avenue) before the improvements are constructed at the intersections of SR 15A at Beresford Avenue and SR 15A at Gayle Drive, restrict the westbound and northbound left turn lanes at the intersection of Beresford Avenue and S Spring Garden Avenue. With these restrictions, commuters can choose Louise Lane and Jeanette Drive or Gayle Drive and SR 15A.
- As the traffic demand grows from the background growth as well as the nearby development (Beresford Woods), the proposed improvements can be constructed to encourage more commuters to use Gayle Drive and this will improve operations and safety of SR 15A at Beresford Avenue and Beresford Avenue at S Spring Garden Avenue intersections.
- Based on coordination with the City of DeLand and Volusia County, this study recognizes that the traffic growth near the study area (and the City in general) may outpace the traffic growth rate used in this study and the recommended improvements may be needed sooner than 2025 (especially the turn lane improvements at SR 15A at Beresford Avenue and SR 15A at Gayle Drive).
- A signal is anticipated to be warranted at the intersection of SR 15A and Gayle Drive by 2025. If a signal is warranted based on actual conditions, an ICE must be completed to determine if a different and more efficient traffic control can be proposed at this location.

6 APPENDICES

APPENDIX A-1:

Responses to Comments from Volusia County on the Draft Report submitted in February 2021

1. Page ii: First paragraph: The study states that along SR 15A the growth rate has been flat over the last 15 years and that minimal growth is shown in year 2040. The study's projections conflict with development activity. Residents in the area know that the area southwest of the Beresford Ave/SR 15A intersection has quite a bit of undeveloped land surrounded by residential. The west Deland area is a hot market for those who want to live a quieter, more rural lifestyle while being close to city amenities and a vibrant downtown. City of Deland Planning Office as well as area land use attorneys will concur that the Deland housing market cannot keep up with demand. Assuming a minimal growth rate through 2040 is unrealistic.

Response: A meeting was held on March 25, 2021, to discuss Volusia County's comment on the growth rate assumptions used in this study. In this meeting, VHB presented the growth rate sources used in this study along with the model-based growth rates derived based on the recently released CFRPM version 7. All the growth rate sources including CFRPM version 7 indicated that the 1.5% per year background growth rate plus the project trips used in this study is adequate. However, this study recognizes that the traffic growth near the study area (and the City in general) may outpace the traffic growth rate used in this study and the recommended improvements may be needed sooner than 2025 (especially the turn lane improvements at SR 15A at Beresford Avenue and SR 15A at Gayle Drive).

Also, this study evaluated SR 15A at Beresford Ave and SR 15A at Gayle Drive for the year 2040 traffic conditions under Build Alternative 1 using a higher background growth rate of 2.5% per year. The following table shows the results of this additional analysis. As shown in this table, the study intersections of SR 15A at Beresford Ave and SR 15A at Gayle Drive are expected to operate within LOS "D" for the year 2040.

This demonstrates that the study intersections with the recommended improvements under Build Alternative 1 have adequate capacity to sustain a higher growth rate than what was used in the study. The Synchro results for the high growth rate scenario are provided within this appendix.

Table A-1: Year 2040 Intersection Analysis Results for Build Alternative 1 with High Growth Rate (Background Rate of 2.5% per year plus Beresford Woods Project Trips)

Study Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
SR 15A & Beresford Avenue	Signal	43.7	D	46.4	D
SR 15A & Gayle Drive*	Signal	11.5	B	16.4	B

2. A public workshop going over the study and alternatives is highly suggested. The area has abundance of interested and concerned residents.

Response: Please note that this type of project coordination (like a public workshop) is outside the scope of this study.

3. Table 6: Rates are lower than should be expected.

Response: Please see the response for Comment #1.

SR 15A & BERESFORD AVE FEASIBILITY STUDY

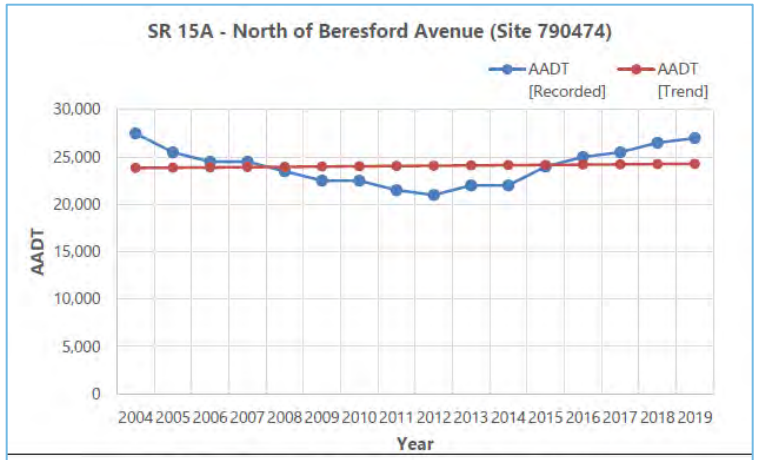
FUTURE CONDITIONS (Meeting with Volusia County and City of DeLand - March 25, 2021)

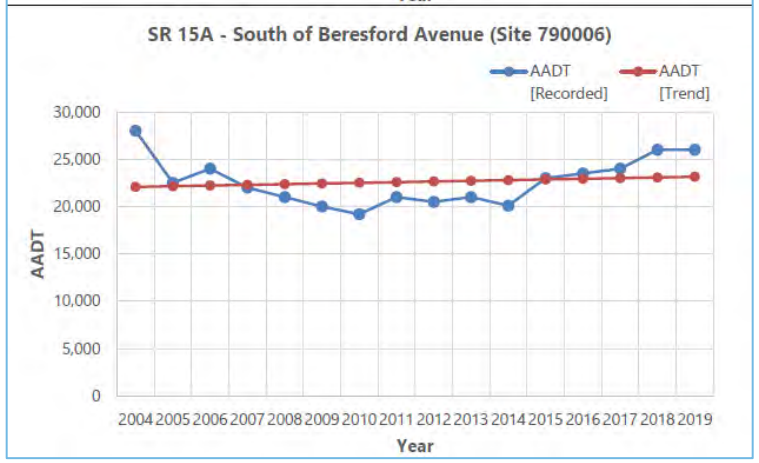
- Future Conditions
  - Short-term (Year 2025)
  - Long-term (Year 2040)
- R2CTPO 2045 LRTP
  - No programmed/planned capacity improvements near the study intersection
- Growth Rate Sources
  - Historical Trends Analysis
    - Less than 0.5% growth
  - CFRPM Version 6.1 2040 Volumes
    - Less than 0.5% on SR 15A
    - Around 1.5% on Beresford Ave
  - BEBR Population Projections
    - Medium: 0.8%
    - High: 1.5%
- Recommended Background Growth:
  - 1.5% per year plus
  - Project trips from Beresford Woods

CFRPM Version 7 Model-based Growth Rates

Roadway	Limits	Annual Growth Rate
SR 15A	N of Beresford Ave	0.8%
SR 15A	S of Beresford Ave	0.7%
Beresford Ave	W of SR 15A	0.4%
Average	**0.6%**	

Historical AADT Volumes





SR 15A & BERESFORD AVE FEASIBILITY STUDY

PLANNED DEVELOPMENT – BERESFORD WOODS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	138	127	102	82	64	116	1206	90	67	1527	76
Future Volume (vph)	155	138	127	102	82	64	116	1206	90	67	1527	76
Satd. Flow (prot)	1805	1711	0	1805	1682	0	1888	3432	0	1925	3450	0
Flt Permitted	0.480			0.195			0.045			0.073		
Satd. Flow (perm)	912	1711	0	370	1682	0	89	3432	0	148	3450	0
Satd. Flow (RTOR)		25			21			7			4	
Lane Group Flow (vph)	172	294	0	113	162	0	129	1440	0	74	1781	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Total Split (s)	13.0	44.0		13.0	44.0		16.0	97.0		16.0	97.0	
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0		7.0	7.0	
Act Effct Green (s)	37.7	31.4		36.5	30.8		96.8	96.8		96.2	96.2	
Actuated g/C Ratio	0.22	0.18		0.21	0.18		0.57	0.57		0.57	0.57	
v/c Ratio	0.72	0.88		0.84	0.50		0.90	0.74		0.44	0.91	
Control Delay	73.7	86.6		96.7	58.6		100.4	23.6		26.1	41.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	73.7	86.6		96.7	58.6		100.4	23.6		26.1	41.8	
LOS	E	F		F	E		F	C		C	D	
Approach Delay		81.9			74.2			29.9			41.2	
Approach LOS		F			E			C			D	
Queue Length 50th (ft)	158	296		100	142		92	438		37	917	
Queue Length 95th (ft)	223	401		#189	213		m#227	541		69	#1184	
Internal Link Dist (ft)		57			107			2251			838	
Turn Bay Length (ft)							210			185		
Base Capacity (vph)	240	401		135	392		146	1956		178	1953	
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	0.72	0.73		0.84	0.41		0.88	0.74		0.42	0.91	

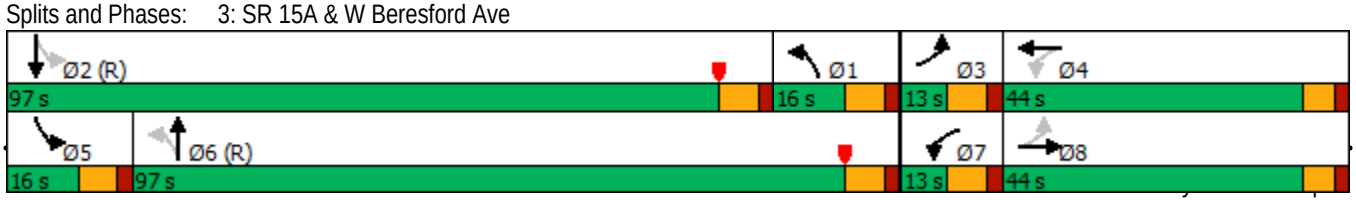
Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 115 (68%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 43.7 — Intersection LOS: D
Intersection Capacity Utilization 94.2% — ICU Level of Service F
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: 3: SR 15A & W Beresford Ave



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	206	68	52	1183	1731	72
Future Volume (vph)	206	68	52	1183	1731	72
Satd. Flow (prot)	1805	1615	1805	3505	3505	1615
Flt Permitted	0.950		0.052			
Satd. Flow (perm)	1805	1615	99	3505	3505	1615
Satd. Flow (RTOR)		75				63
Lane Group Flow (vph)	229	76	58	1314	1923	80
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Total Split (s)	39.0	39.0	13.0	131.0	118.0	118.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Act Effct Green (s)	26.1	26.1	129.9	129.9	119.0	119.0
Actuated g/C Ratio	0.15	0.15	0.76	0.76	0.70	0.70
v/c Ratio	0.83	0.24	0.41	0.49	0.78	0.07
Control Delay	93.0	13.3	15.5	8.7	3.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.0	13.3	15.5	8.7	3.9	0.1
LOS	F	B	B	A	A	A
Approach Delay	73.1			9.0	3.8	
Approach LOS	E			A	A	
Queue Length 50th (ft)	250	1	15	267	148	0
Queue Length 95th (ft)	343	50	35	352	140	m0
Internal Link Dist (ft)	1291			1030	2251	
Turn Bay Length (ft)	200		185			300
Base Capacity (vph)	339	364	140	2677	2452	1149
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.21	0.41	0.49	0.78	0.07

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 168 (99%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 11.5 — Intersection LOS: B
Intersection Capacity Utilization 70.9% — ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: SR 15A & Gayle Dr

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	71	125	167	125	137	142	1608	114	102	1569	85
Future Volume (vph)	99	71	125	167	125	137	142	1608	114	102	1569	85
Satd. Flow (prot)	1787	1687	0	1805	1735	0	1888	3508	0	1925	3482	0
Flt Permitted	0.542			0.211			0.044			0.047		
Satd. Flow (perm)	1020	1687	0	397	1735	0	87	3508	0	95	3482	0
Satd. Flow (RTOR)		52			32			7			5	
Lane Group Flow (vph)	100	198	0	169	264	0	143	1739	0	103	1671	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Total Split (s)	13.0	44.0		13.0	44.0		16.0	90.0		13.0	87.0	
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0		7.0	7.0	
Act Effct Green (s)	24.3	25.3		26.1	27.1		103.5	89.9		95.8	86.1	
Actuated g/C Ratio	0.15	0.16		0.16	0.17		0.65	0.56		0.60	0.54	
v/c Ratio	0.54	0.64		1.25	0.82		0.69	0.88		0.62	0.89	
Control Delay	72.7	54.1		209.1	76.5		43.9	29.4		45.1	40.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	72.7	54.1		209.1	76.5		43.9	29.4		45.1	40.7	
LOS	E	D		F	E		D	C		D	D	
Approach Delay		60.4			128.2			30.5			40.9	
Approach LOS		E			F			C			D	

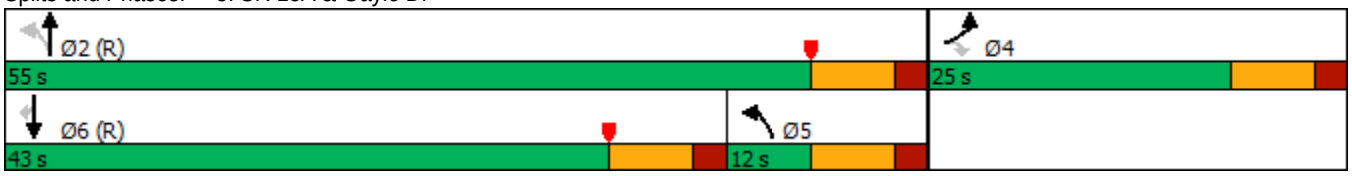
Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 63 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 46.4	Intersection LOS: D
Intersection Capacity Utilization 97.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: SR 15A & W Beresford Ave

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	164	37	76	1737	1635	223
Future Volume (vph)	164	37	76	1737	1635	223
Satd. Flow (prot)	1805	1495	1805	3539	3505	1615
Flt Permitted	0.950		0.081			
Satd. Flow (perm)	1805	1495	154	3539	3505	1615
Satd. Flow (RTOR)		37				225
Lane Group Flow (vph)	166	37	77	1755	1652	225
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Total Split (s)	25.0	25.0	12.0	55.0	43.0	43.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Act Effct Green (s)	12.6	12.6	53.4	53.4	43.8	43.8
Actuated g/C Ratio	0.16	0.16	0.67	0.67	0.55	0.55
v/c Ratio	0.59	0.14	0.38	0.74	0.86	0.23
Control Delay	39.1	10.6	21.4	12.0	20.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	10.6	21.4	12.0	20.4	3.8
LOS	D	B	C	B	C	A
Approach Delay	33.9			12.4	18.4	
Approach LOS	C			B	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: SR 15A & Gayle Dr



APPENDIX A-2:

Traffic Data - Turning Movement Counts

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	SR 15A	**&**	Beresford Ave
Date	November 18, 2020		**Autos**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	15	145	3	3	207	15	25	7	8	9	6	5
7:15 AM - 7:30 AM	20	152	2	6	203	15	32	14	13	11	15	8
7:30 AM - 7:45 AM	10	202	8	11	232	14	43	25	16	8	15	7
7:45 AM - 8:00 AM	13	181	4	10	237	10	43	30	15	16	12	10
8:00 AM - 8:15 AM	13	175	3	12	173	11	19	10	9	7	7	3
8:15 AM - 8:30 AM	10	147	5	7	186	11	17	13	10	12	10	7
8:30 AM - 8:45 AM	13	131	5	7	183	14	13	15	12	10	4	8
8:45 AM - 9:00 AM	5	138	4	15	209	9	16	10	13	11	8	6
TOTAL	99	1,271	34	71	1,630	99	208	124	96	84	77	54
Peak Hour												
7:00 AM - 8:00 AM	**58**	**680**	**17**	**30**	**879**	**54**	**143**	**76**	**52**	**44**	**48**	**30**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	14	126	7	15	164	21	16	10	7	6	23	10
2:15 PM - 2:30 PM	14	144	6	13	180	17	13	14	9	8	18	7
2:30 PM - 2:45 PM	18	155	7	10	162	15	38	15	14	9	22	14
2:45 PM - 3:00 PM	9	174	8	12	163	19	25	15	14	8	12	7
3:00 PM - 3:15 PM	19	185	6	14	185	17	17	10	13	17	10	17
3:15 PM - 3:30 PM	11	181	4	9	185	20	22	13	7	7	21	17
3:30 PM - 3:45 PM	24	194	3	11	205	18	26	13	6	10	10	12
3:45 PM - 4:00 PM	16	179	5	13	217	22	16	15	12	8	11	13
4:00 PM - 4:15 PM	22	207	6	11	208	22	17	12	16	11	23	10
4:15 PM - 4:30 PM	18	249	5	12	204	19	23	12	20	11	24	13
4:30 PM - 4:45 PM	30	247	3	11	193	22	29	15	16	14	18	14
4:45 PM - 5:00 PM	14	230	10	13	201	21	27	22	16	11	25	17
5:00 PM - 5:15 PM	21	218	4	10	218	20	26	17	13	17	32	17
5:15 PM - 5:30 PM	18	221	8	15	201	22	20	11	7	15	20	12
5:30 PM - 5:45 PM	19	211	7	9	207	27	26	21	11	9	27	14
5:45 PM - 6:00 PM	16	206	6	11	175	15	17	10	7	17	18	12
TOTAL	283	3,127	95	189	3,068	317	358	225	188	178	314	206
Peak Hour												
4:15 PM - 5:15 PM	**83**	**944**	**22**	**46**	**816**	**82**	**105**	**66**	**65**	**53**	**99**	**61**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	SR 15A	**&**	Beresford Ave
Date	November 18, 2020		**Trucks**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	1	8	0	0	8	0	0	0	1	0	0	1
7:15 AM - 7:30 AM	0	6	0	0	9	0	0	2	0	0	0	2
7:30 AM - 7:45 AM	0	2	1	0	9	0	0	0	0	0	1	0
7:45 AM - 8:00 AM	0	10	0	0	13	0	0	1	0	0	0	0
8:00 AM - 8:15 AM	1	4	0	0	2	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	11	1	0	13	1	0	0	0	0	0	1
8:30 AM - 8:45 AM	0	7	0	0	9	0	2	0	0	1	1	0
8:45 AM - 9:00 AM	0	8	0	1	12	0	0	1	0	0	0	0
TOTAL	2	56	2	1	75	1	2	4	1	1	2	4
Peak Hour												
7:00 AM - 8:00 AM	**1**	**26**	**1**	**0**	**39**	**0**	**0**	**3**	**1**	**0**	**1**	**3**
	2%	4%	6%	0%	4%	0%	0%	4%	2%	0%	2%	10%

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	7	0	0	8	2	1	0	0	0	2	0
2:15 PM - 2:30 PM	0	12	0	0	7	2	0	1	0	1	1	0
2:30 PM - 2:45 PM	0	4	0	0	9	0	2	0	1	0	0	0
2:45 PM - 3:00 PM	0	9	0	0	11	0	1	0	0	0	0	0
3:00 PM - 3:15 PM	1	9	0	0	3	0	1	0	0	0	1	1
3:15 PM - 3:30 PM	1	5	0	0	13	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	5	0	0	8	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	4	3	0	7	0	0	0	0	0	1	0
4:00 PM - 4:15 PM	0	5	0	1	5	0	0	0	1	0	0	1
4:15 PM - 4:30 PM	2	7	0	0	11	0	0	0	1	0	1	0
4:30 PM - 4:45 PM	0	8	0	0	7	0	1	0	1	0	0	0
4:45 PM - 5:00 PM	0	3	0	0	6	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	4	0	0	2	0	0	0	0	0	1	0
5:15 PM - 5:30 PM	0	1	0	0	3	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	5	0	0	8	0	1	0	0	0	1	0
5:45 PM - 6:00 PM	0	2	0	0	4	0	0	0	0	0	0	0
TOTAL	4	90	3	1	112	4	7	1	4	1	8	2
Peak Hour												
4:15 PM - 5:15 PM	**2**	**22**	**0**	**0**	**26**	**0**	**1**	**0**	**2**	**0**	**2**	**0**
	2%	2%	0%	0%	3%	0%	1%	0%	3%	0%	2%	0%

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	SR 15A	**&**	Beresford Ave
Date	November 18, 2020		**U-Turns & RTOR**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	2	0	0	4
7:15 AM - 7:30 AM	0	0	0	0	0	5	0	0	3	0	0	2
7:30 AM - 7:45 AM	0	0	3	0	0	0	0	0	5	0	0	2
7:45 AM - 8:00 AM	0	0	1	0	0	3	0	0	1	0	0	1
8:00 AM - 8:15 AM	0	0	0	0	0	1	0	0	5	0	0	4
8:15 AM - 8:30 AM	0	0	3	0	0	0	0	0	3	0	0	1
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	4	0	0	6
8:45 AM - 9:00 AM	0	0	1	0	0	0	0	0	10	0	0	4
TOTAL	0	0	8	0	0	9	0	0	33	0	0	24
Peak Hour												
8:00 AM - 9:00 AM	**0**	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**22**	**0**	**0**	**15**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	4	0	0	1	0	0	9
2:15 PM - 2:30 PM	0	0	1	0	0	2	0	0	4	0	0	2
2:30 PM - 2:45 PM	0	0	1	0	0	0	0	0	3	0	0	1
2:45 PM - 3:00 PM	0	0	1	0	0	0	0	0	4	0	0	7
3:00 PM - 3:15 PM	0	0	2	0	0	1	0	0	2	0	0	1
3:15 PM - 3:30 PM	0	0	1	0	0	1	0	0	3	0	0	2
3:30 PM - 3:45 PM	0	0	1	0	0	3	0	0	3	0	0	1
3:45 PM - 4:00 PM	0	0	3	0	0	1	0	0	2	0	0	2
4:00 PM - 4:15 PM	0	0	0	0	0	3	0	0	3	0	0	3
4:15 PM - 4:30 PM	0	0	1	0	0	1	0	0	1	0	0	6
4:30 PM - 4:45 PM	0	0	0	0	0	2	0	0	6	0	0	5
4:45 PM - 5:00 PM	0	0	2	0	0	3	0	0	3	0	0	4
5:00 PM - 5:15 PM	0	0	0	0	0	5	0	0	3	0	0	6
5:15 PM - 5:30 PM	0	0	2	0	0	5	0	0	3	0	0	11
5:30 PM - 5:45 PM	0	0	1	0	0	3	0	0	5	0	0	3
5:45 PM - 6:00 PM	0	0	2	0	0	5	0	0	3	0	0	4
TOTAL	0	0	18	0	0	39	0	0	49	0	0	67
Peak Hour												
5:00 PM - 6:00 PM	**0**	**0**	**5**	**0**	**0**	**18**	**0**	**0**	**14**	**0**	**0**	**24**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	SR 15A	**&**	Beresford Ave
Date	November 18, 2020		**All Vehicles**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	16	153	3	3	215	15	25	7	11	9	6	10
7:15 AM - 7:30 AM	20	158	2	6	212	20	32	16	16	11	15	12
7:30 AM - 7:45 AM	10	204	12	11	241	14	43	25	21	8	16	9
7:45 AM - 8:00 AM	13	191	5	10	250	13	43	31	16	16	12	11
8:00 AM - 8:15 AM	14	179	3	12	175	12	19	10	14	7	7	7
8:15 AM - 8:30 AM	10	158	9	7	199	12	17	13	13	12	10	9
8:30 AM - 8:45 AM	13	138	5	7	192	14	15	15	16	11	5	14
8:45 AM - 9:00 AM	5	146	5	16	221	9	16	11	23	11	8	10
TOTAL	101	1,327	44	72	1,705	109	210	128	130	85	79	82
Peak Hour												
7:00 AM - 8:00 AM	**59**	**706**	**22**	**30**	**918**	**62**	**143**	**79**	**64**	**44**	**49**	**42**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	14	133	7	15	172	27	17	10	8	6	25	19
2:15 PM - 2:30 PM	14	156	7	13	187	21	13	15	13	9	19	9
2:30 PM - 2:45 PM	18	159	8	10	171	15	40	15	18	9	22	15
2:45 PM - 3:00 PM	9	183	9	12	174	19	26	15	18	8	12	14
3:00 PM - 3:15 PM	20	194	8	14	188	18	18	10	15	17	11	19
3:15 PM - 3:30 PM	12	186	5	9	198	21	22	13	10	7	21	19
3:30 PM - 3:45 PM	24	199	4	11	213	21	26	13	9	10	10	13
3:45 PM - 4:00 PM	16	183	11	13	224	23	16	15	14	8	12	15
4:00 PM - 4:15 PM	22	212	6	12	213	25	17	12	20	11	23	14
4:15 PM - 4:30 PM	20	256	6	12	215	20	23	12	22	11	25	19
4:30 PM - 4:45 PM	30	255	3	11	200	24	30	15	23	14	18	19
4:45 PM - 5:00 PM	14	233	12	13	207	24	27	22	19	11	25	21
5:00 PM - 5:15 PM	21	222	4	10	220	25	26	17	16	17	33	23
5:15 PM - 5:30 PM	18	222	10	15	204	27	20	11	10	15	20	23
5:30 PM - 5:45 PM	19	216	8	9	215	30	27	21	16	9	28	17
5:45 PM - 6:00 PM	16	208	8	11	179	20	17	10	10	17	18	16
TOTAL	287	3,217	116	190	3,180	360	365	226	241	179	322	275
Peak Hour												
4:15 PM - 5:15 PM	**85**	**966**	**25**	**46**	**842**	**93**	**106**	**66**	**80**	**53**	**101**	**82**

Pedestrian & Bicycle Summary

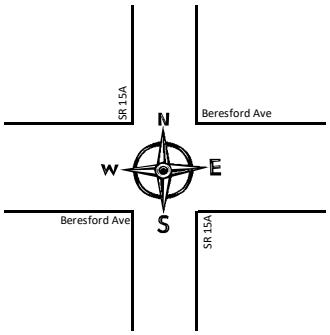
Project #: 63308.05 **NB/SB:** SR 15A

Date: 11/18/2020 **EB/WB:** Beresford Ave

Hour

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	2			0	0	0	0	2
	Ped	0	0			0	0	0	0	0
Westbound ◀	Bike	0	0			0	0	0	0	0
	Ped	0	0			0	0	0	2	2

	Hour	Southbound Ped ▼	Southbound Bike	Northbound Ped ▲	Northbound Bike
1	7:00	2	0	0	0
2	8:00	0	0	2	0
3					
4					
5	14:00	0	0	0	0
6	15:00	0	0	0	0
7	16:00	0	0	0	0
8	17:00	0	0	0	0
		2	0	2	0



	Southbound Ped ▼	Southbound Bike	Northbound Ped ▲	Northbound Bike	Hour
1	0	0	0	0	7:00
2	0	0	0	0	8:00
3					
4					
5	0	0	0	0	14:00
6	2	0	0	0	15:00
7	0	0	2	0	16:00
8	0	0	0	0	17:00
	2	0	2	0	

		7:00	8:00			14:00	15:00	16:00	17:00	
Eastbound ▶	Bike	0	2			0	0	0	0	2
	Ped	0	0			0	6	6	2	14
Westbound ◀	Bike	0	0			0	0	2	0	2
	Ped	0	0			0	4	4	0	8
		1	2	3	4	5	6	7	8	

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection SR15 **&** Gayle Dr

Date November 18, 2020 **Autos**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	132	0	0	222	2	0	0	2	0	0	0
7:15 AM - 7:30 AM	3	156	0	0	205	0	1	0	7	0	0	0
7:30 AM - 7:45 AM	6	213	0	0	242	0	1	0	12	0	0	0
7:45 AM - 8:00 AM	6	192	0	0	264	0	1	0	7	0	0	0
8:00 AM - 8:15 AM	2	170	0	0	209	0	0	0	3	0	0	0
8:15 AM - 8:30 AM	2	150	0	0	199	0	1	0	4	0	0	0
8:30 AM - 8:45 AM	0	131	0	0	225	0	0	0	5	0	0	0
8:45 AM - 9:00 AM	1	147	0	0	217	3	1	0	5	0	0	0
TOTAL	20	1,291	0	0	1,783	5	5	0	45	0	0	0
Peak Hour												
7:15 AM - 8:15 AM	**17**	**731**	**0**	**0**	**920**	**0**	**3**	**0**	**29**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	153	0	0	190	1	0	0	4	0	0	0
2:15 PM - 2:30 PM	5	145	0	0	168	2	0	0	2	0	0	0
2:30 PM - 2:45 PM	4	177	0	0	207	0	3	0	2	0	0	0
2:45 PM - 3:00 PM	3	195	0	0	186	1	0	0	1	0	0	0
3:00 PM - 3:15 PM	0	204	0	0	201	1	2	0	1	0	0	0
3:15 PM - 3:30 PM	4	187	0	0	198	3	2	0	2	0	0	0
3:30 PM - 3:45 PM	1	205	0	0	229	0	0	0	2	0	0	0
3:45 PM - 4:00 PM	1	191	0	0	221	2	1	0	1	0	0	0
4:00 PM - 4:15 PM	0	214	0	0	262	2	1	0	4	0	0	0
4:15 PM - 4:30 PM	13	266	0	0	253	1	1	0	3	0	0	0
4:30 PM - 4:45 PM	10	287	0	0	239	1	2	0	5	0	0	0
4:45 PM - 5:00 PM	4	256	0	0	271	1	1	0	1	0	0	0
5:00 PM - 5:15 PM	5	269	0	0	275	0	0	0	3	0	0	0
5:15 PM - 5:30 PM	4	217	0	0	220	0	1	0	3	0	0	0
5:30 PM - 5:45 PM	0	237	0	0	246	0	0	0	1	0	0	0
5:45 PM - 6:00 PM	3	235	0	0	210	4	0	0	0	0	0	0
TOTAL	57	3,438	0	0	3,576	19	14	0	35	0	0	0
Peak Hour												
4:15 PM - 5:15 PM	**32**	**1,078**	**0**	**0**	**1,038**	**3**	**4**	**0**	**12**	**0**	**0**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection SR15 **&** Gayle Dr

Date November 18, 2020 **Trucks**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	8	0	0	5	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	6	0	0	8	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	2	0	0	7	1	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	8	0	0	8	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	3	0	0	9	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	11	0	0	7	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	7	0	0	13	0	0	0	1	0	0	0
8:45 AM - 9:00 AM	0	8	0	0	12	0	0	0	0	0	0	0
TOTAL	0	53	0	0	69	1	0	0	1	0	0	0
Peak Hour												
7:15 AM - 8:15 AM	**0**	**19**	**0**	**0**	**32**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
	0%	3%	0%	0%	3%	100%	0%	0%	0%	0%	0%	0%

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	1	4	0	0	13	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	11	0	0	8	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	6	0	0	13	0	0	0	1	0	0	0
2:45 PM - 3:00 PM	0	5	0	0	10	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	11	0	0	3	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	2	0	0	14	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	6	0	0	7	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	6	0	0	7	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	4	0	0	8	0	0	0	1	0	0	0
4:15 PM - 4:30 PM	0	5	0	0	8	0	0	0	1	0	0	0
4:30 PM - 4:45 PM	0	8	0	0	9	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	4	0	0	6	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	2	0	0	7	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	2	0	0	3	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	4	0	0	7	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	3	0	0	8	0	0	0	0	0	0	0
TOTAL	1	83	0	0	131	0	0	0	3	0	0	0
Peak Hour												
4:15 PM - 5:15 PM	**0**	**19**	**0**	**0**	**30**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
	0%	2%	0%	0%	3%	0%	0%	0%	8%	0%	0%	0%

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	SR15	**&**	Gayle Dr
Date	November 18, 2020		**U-Turns & RTOR**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	1	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0
TOTAL	1	0	0	1	0	0	0	0	0	0	0	0
Peak Hour												
8:00 AM - 9:00 AM	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	1	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	1	0	0	0	0	0	0	0	0
Peak Hour												
2:30 PM - 3:30 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection SR15 **&** Gayle Dr

Date November 18, 2020 **All Vehicles**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	140	0	0	227	2	0	0	2	0	0	0
7:15 AM - 7:30 AM	3	162	0	0	213	0	1	0	7	0	0	0
7:30 AM - 7:45 AM	6	215	0	0	249	1	1	0	12	0	0	0
7:45 AM - 8:00 AM	6	200	0	0	272	0	1	0	7	0	0	0
8:00 AM - 8:15 AM	2	173	0	0	218	0	0	0	3	0	0	0
8:15 AM - 8:30 AM	2	161	0	0	206	0	1	0	4	0	0	0
8:30 AM - 8:45 AM	1	138	0	0	238	0	0	0	6	0	0	0
8:45 AM - 9:00 AM	1	155	0	1	229	3	1	0	5	0	0	0
TOTAL	21	1,344	0	1	1,852	6	5	0	46	0	0	0
Peak Hour												
7:15 AM - 8:15 AM	**17**	**750**	**0**	**0**	**952**	**1**	**3**	**0**	**29**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	1	157	0	0	203	1	0	0	4	0	0	0
2:15 PM - 2:30 PM	5	156	0	0	176	2	0	0	2	0	0	0
2:30 PM - 2:45 PM	4	183	0	0	220	0	3	0	3	0	0	0
2:45 PM - 3:00 PM	3	200	0	0	196	1	0	0	1	0	0	0
3:00 PM - 3:15 PM	0	215	0	0	204	1	2	0	1	0	0	0
3:15 PM - 3:30 PM	4	189	0	1	212	3	2	0	2	0	0	0
3:30 PM - 3:45 PM	1	211	0	0	236	0	0	0	2	0	0	0
3:45 PM - 4:00 PM	1	197	0	0	228	2	1	0	1	0	0	0
4:00 PM - 4:15 PM	0	218	0	0	270	2	1	0	5	0	0	0
4:15 PM - 4:30 PM	13	271	0	0	261	1	1	0	4	0	0	0
4:30 PM - 4:45 PM	10	295	0	0	248	1	2	0	5	0	0	0
4:45 PM - 5:00 PM	4	260	0	0	277	1	1	0	1	0	0	0
5:00 PM - 5:15 PM	5	271	0	0	282	0	0	0	3	0	0	0
5:15 PM - 5:30 PM	4	219	0	0	223	0	1	0	3	0	0	0
5:30 PM - 5:45 PM	0	241	0	0	253	0	0	0	1	0	0	0
5:45 PM - 6:00 PM	3	238	0	0	218	4	0	0	0	0	0	0
TOTAL	58	3,521	0	1	3,707	19	14	0	38	0	0	0
Peak Hour												
4:15 PM - 5:15 PM	**32**	**1,097**	**0**	**0**	**1,068**	**3**	**4**	**0**	**13**	**0**	**0**	**0**

Pedestrian & Bicycle Summary

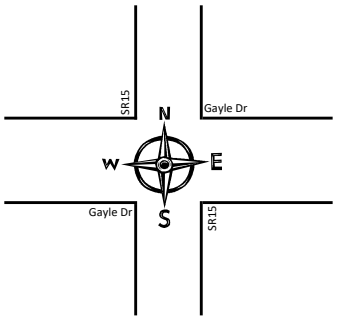
Project #: 63308.05 **NB/SB:** SR15

Date: 11/18/2020 **EB/WB:** Gayle Dr

Hour

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	0			0	0	0	0	0
	Ped	0	1			0	0	0	0	1
Westbound ◀	Bike	0	0			0	0	0	0	0
	Ped	0	0			0	0	0	0	0

		Southbound		Northbound			Southbound		Northbound		
	Hour	Ped ▼	Bike	Ped ▲	Bike		Ped ▼	Bike	Ped ▲	Bike	Hour
1	7:00	0	0	0	0		0	0	0	0	7:00
2	8:00	2	1	1	0		0	0	0	0	8:00
3											
4											
5	14:00	0	0	0	0		0	0	0	0	14:00
6	15:00	0	0	0	0		0	0	0	0	15:00
7	16:00	0	0	2	0		0	0	0	0	16:00
8	17:00	0	0	0	0		0	0	0	0	17:00
		2	1	3	0		0	0	0	0	



Eastbound ▶	Bike	0	0		0	0	0	0	0
	Ped	0	0		0	0	0	0	0
Westbound ◀	Bike	0	0		0	0	0	0	0
	Ped	0	0		0	0	0	0	0
		7:00	8:00		14:00	15:00	16:00	17:00	
		1	2	3 4	5	6	7	8	

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Spring Garden Ave	**&**	Beresford Ave
Date	November 18, 2020		**Autos**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	1	0	11	0	0	0	0	20	3	10	25	0
7:15 AM - 7:30 AM	1	0	22	0	0	0	0	40	2	6	40	0
7:30 AM - 7:45 AM	4	0	12	0	0	0	0	63	3	8	41	0
7:45 AM - 8:00 AM	2	0	24	0	0	0	0	75	6	4	32	0
8:00 AM - 8:15 AM	2	0	20	0	0	0	0	28	1	8	28	0
8:15 AM - 8:30 AM	1	0	11	0	0	0	0	35	0	13	22	0
8:30 AM - 8:45 AM	0	0	10	0	0	0	0	32	6	9	19	0
8:45 AM - 9:00 AM	2	0	11	0	0	0	0	39	3	7	15	0
TOTAL	13	0	121	0	0	0	0	332	24	65	222	0
Peak Hour												
7:15 AM - 8:15 AM	**9**	**0**	**78**	**0**	**0**	**0**	**0**	**206**	**12**	**26**	**141**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	3	0	17	0	0	0	0	17	1	22	42	0
2:15 PM - 2:30 PM	10	0	9	0	0	0	0	29	2	9	41	0
2:30 PM - 2:45 PM	3	0	16	0	0	0	0	49	8	10	46	0
2:45 PM - 3:00 PM	3	0	12	0	0	0	0	56	4	23	23	0
3:00 PM - 3:15 PM	3	0	15	0	0	0	0	24	5	13	27	0
3:15 PM - 3:30 PM	6	0	12	0	0	0	0	32	0	18	28	0
3:30 PM - 3:45 PM	1	0	22	0	0	0	0	29	0	20	40	0
3:45 PM - 4:00 PM	2	0	8	0	0	0	0	36	2	21	27	0
4:00 PM - 4:15 PM	3	0	10	0	0	0	0	34	8	28	40	0
4:15 PM - 4:30 PM	8	0	13	0	0	0	0	43	2	19	45	0
4:30 PM - 4:45 PM	1	0	22	0	0	0	0	43	6	19	57	0
4:45 PM - 5:00 PM	3	0	20	0	0	0	0	45	6	19	39	0
5:00 PM - 5:15 PM	5	0	22	0	0	0	0	45	4	23	59	0
5:15 PM - 5:30 PM	7	0	12	0	0	0	0	25	6	20	43	0
5:30 PM - 5:45 PM	3	0	18	0	0	0	0	39	1	29	45	0
5:45 PM - 6:00 PM	10	0	16	0	0	0	0	26	2	19	45	0
TOTAL	71	0	244	0	0	0	0	572	57	312	647	0
Peak Hour												
4:15 PM - 5:15 PM	**17**	**0**	**77**	**0**	**0**	**0**	**0**	**176**	**18**	**80**	**200**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection S Spring Garden Ave **&** Beresford Ave

Date November 18, 2020 **Trucks**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	2	0	0	1	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	1	1	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	1	0	0	1	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	2	0	0	0	0	0	1	1	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	1	0
TOTAL	0	0	2	0	0	0	0	4	1	2	6	0
Peak Hour												
7:15 AM - 8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**4**	**0**
	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%	3%	0%

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	1	0	1	3	0
2:15 PM - 2:30 PM	0	0	1	0	0	0	0	0	0	1	1	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	4	0	0	1	0
2:45 PM - 3:00 PM	0	0	1	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	1	0	0	0	0	0	0	0	3	0
3:15 PM - 3:30 PM	1	0	0	0	0	0	0	2	0	0	1	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	1	0	1	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	2	0	0	2	0
4:30 PM - 4:45 PM	0	0	1	0	0	0	0	1	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	1	0	2	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2	0	4	0	0	0	0	12	1	3	16	0
Peak Hour												
4:15 PM - 5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**4**	**0**
	0%	0%	1%	0%	0%	0%	0%	2%	5%	0%	2%	0%

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Spring Garden Ave	**&**	Beresford Ave
Date	November 18, 2020		**U-Turns & RTOR**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
7:00 AM - 8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
2:00 PM - 3:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Spring Garden Ave	**&**	Beresford Ave
Date	November 18, 2020		**All Vehicles**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	1	0	11	0	0	0	0	21	3	10	26	0
7:15 AM - 7:30 AM	1	0	22	0	0	0	0	42	2	6	41	0
7:30 AM - 7:45 AM	4	0	12	0	0	0	0	63	3	8	42	0
7:45 AM - 8:00 AM	2	0	24	0	0	0	0	75	6	5	33	0
8:00 AM - 8:15 AM	2	0	20	0	0	0	0	29	1	8	29	0
8:15 AM - 8:30 AM	1	0	11	0	0	0	0	35	0	13	22	0
8:30 AM - 8:45 AM	0	0	12	0	0	0	0	32	7	10	19	0
8:45 AM - 9:00 AM	2	0	11	0	0	0	0	39	3	7	16	0
TOTAL	13	0	123	0	0	0	0	336	25	67	228	0
Peak Hour												
7:15 AM - 8:15 AM	**9**	**0**	**78**	**0**	**0**	**0**	**0**	**209**	**12**	**27**	**145**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	3	0	17	0	0	0	0	18	1	23	45	0
2:15 PM - 2:30 PM	10	0	10	0	0	0	0	29	2	10	42	0
2:30 PM - 2:45 PM	3	0	16	0	0	0	0	53	8	10	47	0
2:45 PM - 3:00 PM	3	0	13	0	0	0	0	56	4	23	23	0
3:00 PM - 3:15 PM	3	0	16	0	0	0	0	24	5	13	30	0
3:15 PM - 3:30 PM	7	0	12	0	0	0	0	34	0	18	29	0
3:30 PM - 3:45 PM	1	0	22	0	0	0	0	30	0	21	40	0
3:45 PM - 4:00 PM	2	0	8	0	0	0	0	36	2	21	29	0
4:00 PM - 4:15 PM	3	0	10	0	0	0	0	34	8	28	41	0
4:15 PM - 4:30 PM	8	0	13	0	0	0	0	45	2	19	47	0
4:30 PM - 4:45 PM	1	0	23	0	0	0	0	44	6	19	57	0
4:45 PM - 5:00 PM	3	0	20	0	0	0	0	46	6	19	39	0
5:00 PM - 5:15 PM	5	0	22	0	0	0	0	45	5	23	61	0
5:15 PM - 5:30 PM	7	0	12	0	0	0	0	25	6	20	43	0
5:30 PM - 5:45 PM	4	0	18	0	0	0	0	39	1	29	45	0
5:45 PM - 6:00 PM	10	0	16	0	0	0	0	26	2	19	45	0
TOTAL	73	0	248	0	0	0	0	584	58	315	663	0
Peak Hour												
4:15 PM - 5:15 PM	**17**	**0**	**78**	**0**	**0**	**0**	**0**	**180**	**19**	**80**	**204**	**0**

Pedestrian & Bicycle Summary

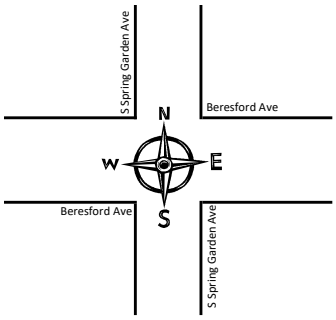
Project #: 63308.05
Date: 11/18/2020

NB/SB: S Spring Garden Ave
EB/WB: Beresford Ave

Hour

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	0			0	0	0	0	**0**
	Ped	0	0			0	0	0	0	**0**
Westbound ◀	Bike	0	0			0	0	0	0	**0**
	Ped	0	0			0	0	0	0	**0**

	Hour	Southbound Ped ▼	Southbound Bike	Northbound Ped ▲	Northbound Bike
1	7:00	0	0	0	0
2	8:00	0	0	0	0
3					
4					
5	14:00	0	0	0	0
6	15:00	0	0	0	0
7	16:00	0	0	0	0
8	17:00	0	0	0	0
		0	**0**	**0**	**0**



	Southbound Ped ▼	Southbound Bike	Northbound Ped ▲	Northbound Bike	Hour
1	0	0	0	0	7:00
2	0	0	0	1	8:00
3					
4					
5	0	0	0	0	14:00
6	0	0	0	1	15:00
7	0	0	0	0	16:00
8	0	0	0	0	17:00
	0	**0**	**0**	**2**	

		7:00	8:00			14:00	15:00	16:00	17:00	
Eastbound ▶	Bike	0	1			0	0	1	0	**2**
	Ped	0	3			0	3	2	0	**8**
Westbound ◀	Bike	0	0			0	0	1	0	**1**
	Ped	0	0			0	3	4	0	**7**
		1	2	3	4	5	6	7	8	

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Spring Garden Ave	**&**	Gayle Dr
Date	November 18, 2020		**Autos**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	19	0	1	16	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	26	2	4	15	0	0	0	0	0	0	4
7:30 AM - 7:45 AM	0	36	0	13	25	0	0	0	0	0	0	11
7:45 AM - 8:00 AM	0	29	0	9	29	0	0	0	0	0	0	6
8:00 AM - 8:15 AM	0	18	1	1	9	0	0	0	0	1	0	2
8:15 AM - 8:30 AM	0	13	0	3	16	0	0	0	0	0	0	2
8:30 AM - 8:45 AM	0	9	0	3	12	0	0	0	0	1	0	0
8:45 AM - 9:00 AM	0	13	3	1	11	0	0	0	0	1	0	1
TOTAL	0	163	6	35	133	0	0	0	0	3	0	26
Peak Hour												
7:00 AM - 8:00 AM	**0**	**110**	**2**	**27**	**85**	**0**	**0**	**0**	**0**	**0**	**0**	**21**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	28	2	1	25	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	24	0	1	9	0	0	0	0	2	0	3
2:30 PM - 2:45 PM	0	24	1	3	32	0	0	0	0	2	0	3
2:45 PM - 3:00 PM	0	16	0	2	41	0	0	0	0	1	0	5
3:00 PM - 3:15 PM	0	18	3	3	20	0	0	0	0	0	0	1
3:15 PM - 3:30 PM	0	19	0	0	24	0	0	0	0	2	0	4
3:30 PM - 3:45 PM	0	18	0	3	17	0	0	0	0	0	0	4
3:45 PM - 4:00 PM	0	11	0	5	20	0	0	0	0	0	0	1
4:00 PM - 4:15 PM	0	21	0	4	32	0	0	0	0	2	0	0
4:15 PM - 4:30 PM	0	23	4	2	25	0	0	0	0	7	0	6
4:30 PM - 4:45 PM	0	24	0	4	22	0	0	0	0	4	0	5
4:45 PM - 5:00 PM	0	27	1	2	25	0	0	0	0	2	0	2
5:00 PM - 5:15 PM	0	30	0	3	24	0	0	0	0	1	0	3
5:15 PM - 5:30 PM	0	21	0	4	26	0	0	0	0	2	0	2
5:30 PM - 5:45 PM	0	26	0	1	28	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	28	1	2	19	0	0	0	0	1	0	3
TOTAL	0	358	12	40	389	0	0	0	0	26	0	42
Peak Hour												
4:15 PM - 5:15 PM	**0**	**104**	**5**	**11**	**96**	**0**	**0**	**0**	**0**	**14**	**0**	**16**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection S Spring Garden Ave **&** Gayle Dr

Date November 18, 2020 **Trucks**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	1	0	0	0	0	0	1	0	0
7:45 AM - 8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	3	0	1	1	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	4	0	2	2	0	0	0	0	1	0	0
Peak Hour												
7:00 AM - 8:00 AM	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
	0%	0%	0%	4%	1%	0%	0%	0%	0%	100%	0%	0%

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	1	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	1	0	0	1	0	0	0	0	1	0	0
2:30 PM - 2:45 PM	0	0	0	1	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	2	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	2	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	1	1	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	1	1	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	7	1	3	5	0	0	0	0	1	0	0
Peak Hour												
4:15 PM - 5:15 PM	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0%	1%	17%	0%	1%	0%	0%	0%	0%	0%	0%	0%

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Spring Garden Ave	**&**	Gayle Dr
Date	November 18, 2020		**U-Turns & RTOR**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
7:00 AM - 8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	1	0	0
Peak Hour												
4:15 PM - 5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Spring Garden Ave	**&**	Gayle Dr
Date	November 18, 2020		**All Vehicles**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	19	0	1	16	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	26	2	4	15	0	0	0	0	0	0	4
7:30 AM - 7:45 AM	0	36	0	14	25	0	0	0	0	1	0	11
7:45 AM - 8:00 AM	0	29	0	9	30	0	0	0	0	0	0	6
8:00 AM - 8:15 AM	0	19	1	1	9	0	0	0	0	1	0	2
8:15 AM - 8:30 AM	0	13	0	3	16	0	0	0	0	0	0	2
8:30 AM - 8:45 AM	0	12	0	4	13	0	0	0	0	1	0	0
8:45 AM - 9:00 AM	0	13	3	1	11	0	0	0	0	1	0	1
TOTAL	0	167	6	37	135	0	0	0	0	4	0	26
Peak Hour												
7:00 AM - 8:00 AM	**0**	**110**	**2**	**28**	**86**	**0**	**0**	**0**	**0**	**1**	**0**	**21**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	28	2	1	26	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	25	0	1	10	0	0	0	0	3	0	3
2:30 PM - 2:45 PM	0	24	1	4	32	0	0	0	0	2	0	3
2:45 PM - 3:00 PM	0	18	0	2	41	0	0	0	0	1	0	5
3:00 PM - 3:15 PM	0	20	3	3	20	0	0	0	0	0	0	1
3:15 PM - 3:30 PM	0	19	0	0	24	0	0	0	0	2	0	4
3:30 PM - 3:45 PM	0	18	0	4	18	0	0	0	0	0	0	4
3:45 PM - 4:00 PM	0	11	0	5	20	0	0	0	0	0	0	1
4:00 PM - 4:15 PM	0	21	0	5	33	0	0	0	0	2	0	0
4:15 PM - 4:30 PM	0	23	5	2	25	0	0	0	0	7	0	6
4:30 PM - 4:45 PM	0	25	0	4	22	0	0	0	0	4	0	5
4:45 PM - 5:00 PM	0	27	1	2	25	0	0	0	0	2	0	2
5:00 PM - 5:15 PM	0	30	0	3	25	0	0	0	0	2	0	3
5:15 PM - 5:30 PM	0	21	0	4	26	0	0	0	0	2	0	2
5:30 PM - 5:45 PM	0	27	0	1	28	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	28	1	2	19	0	0	0	0	1	0	3
TOTAL	0	365	13	43	394	0	0	0	0	28	0	42
Peak Hour												
4:15 PM - 5:15 PM	**0**	**105**	**6**	**11**	**97**	**0**	**0**	**0**	**0**	**15**	**0**	**16**

Pedestrian & Bicycle Summary

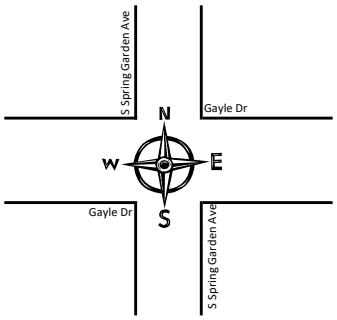
Project #: 63308.05
Date: 11/18/2020

NB/SB: S Spring Garden Ave
EB/WB: Gayle Dr

Hour

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	0			0	0	0	0	**0**
	Ped	0	0			0	0	0	0	**0**
Westbound ◀	Bike	0	0			0	0	0	0	**0**
	Ped	0	0			0	0	0	0	**0**

	Hour	Southbound Ped ▼	Southbound Bike	Northbound Ped ▲	Northbound Bike
1	7:00	0	0	0	0
2	8:00	0	0	0	0
3					
4					
5	14:00	0	0	0	0
6	15:00	0	0	0	0
7	16:00	0	0	0	0
8	17:00	0	0	0	0
		0	**0**	**0**	**0**



	Southbound Ped ▼	Southbound Bike	Northbound Ped ▲	Northbound Bike	Hour
1	3	0	2	5	7:00
2	3	0	0	0	8:00
3					
4					
5	0	5	2	0	14:00
6	1	0	2	0	15:00
7	0	0	7	0	16:00
8	0	0	0	0	17:00
	7	**5**	**13**	**5**	

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	0			0	0	0	0	**0**
	Ped	0	0			0	0	0	0	**0**
Westbound ◀	Bike	0	0			0	0	0	0	**0**
	Ped	0	0			0	0	0	0	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection S Spring Garden Ave **&** Jeanette Dr

Date November 18, 2020 **Autos**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	13	0	0	11	0	0	0	1	0	0	0
7:15 AM - 7:30 AM	0	21	0	0	10	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	18	0	0	9	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	24	0	0	11	1	0	0	0	0	0	0
8:00 AM - 8:15 AM	1	20	0	0	8	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	14	0	0	13	1	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	11	0	0	13	1	0	0	0	0	0	0
8:45 AM - 9:00 AM	1	12	0	0	11	0	0	0	0	0	0	0
TOTAL	2	133	0	0	86	3	0	0	1	0	0	0
Peak Hour												
7:15 AM - 8:15 AM	**1**	**83**	**0**	**0**	**38**	**1**	**0**	**0**	**0**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	20	0	0	26	0	0	0	1	0	0	0
2:15 PM - 2:30 PM	0	19	0	0	9	1	0	0	1	0	0	0
2:30 PM - 2:45 PM	0	17	0	0	19	0	1	0	0	0	0	0
2:45 PM - 3:00 PM	0	14	0	0	27	0	1	0	1	0	0	0
3:00 PM - 3:15 PM	0	18	0	0	17	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	1	18	0	0	18	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	23	0	0	19	2	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	11	0	0	22	1	0	0	0	0	0	0
4:00 PM - 4:15 PM	1	12	0	0	32	0	1	0	0	0	0	0
4:15 PM - 4:30 PM	1	19	0	0	23	1	1	0	1	0	0	0
4:30 PM - 4:45 PM	0	24	0	0	23	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	2	24	0	0	24	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	3	26	0	0	25	2	0	0	1	0	0	0
5:15 PM - 5:30 PM	2	19	0	0	28	0	0	0	1	0	0	0
5:30 PM - 5:45 PM	0	20	0	0	30	0	1	0	0	0	0	0
5:45 PM - 6:00 PM	1	23	0	0	20	0	0	0	0	0	0	0
TOTAL	11	307	0	0	362	7	5	0	6	0	0	0
Peak Hour												
4:45 PM - 5:45 PM	**7**	**89**	**0**	**0**	**107**	**2**	**1**	**0**	**2**	**0**	**0**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Spring Garden Ave	**&**	Jeanette Dr
Date	November 18, 2020		**Trucks**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	2	0	0	2	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	2	0	0	3	0	0	0	0	0	0	0
Peak Hour												
7:15 AM - 8:15 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	1	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	1	0	0	1	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	1	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	1	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	1	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	1	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	2	0	0	0	0	0	0	0	0	0	0
TOTAL	0	9	0	0	6	0	0	0	0	0	0	0
Peak Hour												
4:45 PM - 5:45 PM	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Spring Garden Ave	**&**	Jeanette Dr
Date	November 18, 2020		**U-Turns & RTOR**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
7:00 AM - 8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
2:00 PM - 3:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection S Spring Garden Ave **&** Jeanette Dr

Date November 18, 2020 **All Vehicles**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	13	0	0	11	0	0	0	1	0	0	0
7:15 AM - 7:30 AM	0	21	0	0	10	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	18	0	0	9	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	24	0	0	11	1	0	0	0	0	0	0
8:00 AM - 8:15 AM	1	20	0	0	9	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	14	0	0	13	1	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	13	0	0	15	1	0	0	0	0	0	0
8:45 AM - 9:00 AM	1	12	0	0	11	0	0	0	0	0	0	0
TOTAL	2	135	0	0	89	3	0	0	1	0	0	0
Peak Hour												
7:15 AM - 8:15 AM	**1**	**83**	**0**	**0**	**39**	**1**	**0**	**0**	**0**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	20	0	0	27	0	0	0	1	0	0	0
2:15 PM - 2:30 PM	0	20	0	0	10	1	0	0	1	0	0	0
2:30 PM - 2:45 PM	0	17	0	0	19	0	1	0	0	0	0	0
2:45 PM - 3:00 PM	0	15	0	0	27	0	1	0	1	0	0	0
3:00 PM - 3:15 PM	0	19	0	0	17	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	1	19	0	0	18	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	23	0	0	20	2	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	11	0	0	22	1	0	0	0	0	0	0
4:00 PM - 4:15 PM	1	12	0	0	33	0	1	0	0	0	0	0
4:15 PM - 4:30 PM	1	19	0	0	23	1	1	0	1	0	0	0
4:30 PM - 4:45 PM	0	25	0	0	23	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	2	25	0	0	25	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	3	26	0	0	26	2	0	0	1	0	0	0
5:15 PM - 5:30 PM	2	19	0	0	28	0	0	0	1	0	0	0
5:30 PM - 5:45 PM	0	21	0	0	30	0	1	0	0	0	0	0
5:45 PM - 6:00 PM	1	25	0	0	20	0	0	0	0	0	0	0
TOTAL	11	316	0	0	368	7	5	0	6	0	0	0
Peak Hour												
4:45 PM - 5:45 PM	**7**	**91**	**0**	**0**	**109**	**2**	**1**	**0**	**2**	**0**	**0**	**0**

Pedestrian & Bicycle Summary

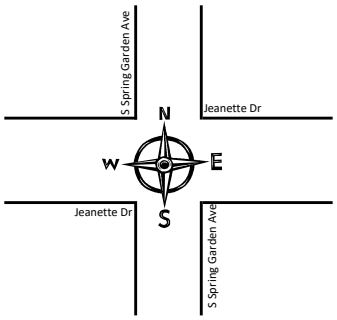
Project #: 63308.05 **NB/SB:** S Spring Garden Ave

Date: 11/18/2020 **EB/WB:** Jeanette Dr

Hour

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	0			0	0	0	0	**0**
	Ped	0	0			0	0	0	1	**1**
Westbound ◀	Bike	0	0			0	0	0	0	**0**
	Ped	0	0			0	0	0	1	**1**

	Hour	Southbound Ped ▼	Southbound Bike	Northbound Ped ▲	Northbound Bike
1	7:00	0	0	0	0
2	8:00	1	0	1	0
3					
4					
5	14:00	0	0	0	0
6	15:00	0	1	1	1
7	16:00	0	0	1	0
8	17:00	4	0	1	0
		5	**1**	**4**	**1**



	Hour	Southbound Ped ▼	Southbound Bike	Northbound Ped ▲	Northbound Bike
1	7:00	0	0	0	0
2	8:00	0	0	0	0
3					
4					
5	14:00	0	0	0	0
6	15:00	0	0	0	0
7	16:00	0	0	0	0
8	17:00	0	0	0	0
		0	**0**	**0**	**0**

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	0			0	0	0	0	**0**
	Ped	0	0			0	0	0	0	**0**
Westbound ◀	Bike	0	0			0	0	0	0	**0**
	Ped	0	0			0	0	0	1	**1**

7:00 8:00 14:00 15:00 16:00 17:00

1 2 3 4 5 6 7 8

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection Louise Ln **&** Jeanette Dr

Date November 18, 2020 **Autos**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	2	0	1	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	1	0	0	2	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	4	0	0	1	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	6	0	0	2	0	0	0	0	1	0	0
8:00 AM - 8:15 AM	0	3	0	0	1	0	0	0	0	1	0	1
8:15 AM - 8:30 AM	0	3	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	2	0	0	0	0	0	0	0	0	0	0
TOTAL	0	22	0	1	6	0	0	0	0	2	0	1
Peak Hour												
7:15 AM - 8:15 AM	**0**	**14**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**2**	**0**	**1**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	2	0	0	3	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	1	0	1	3	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	3	1	1	4	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	2	0	1	1	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	1	0	0	0	0	0	0	0	0	0	1
3:30 PM - 3:45 PM	0	3	0	1	0	0	0	0	0	0	0	1
3:45 PM - 4:00 PM	0	1	0	0	3	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	1	0	0	3	0	0	0	0	1	0	2
4:15 PM - 4:30 PM	0	5	0	0	2	0	0	0	0	0	0	1
4:30 PM - 4:45 PM	0	2	0	0	5	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	3	0	1	2	0	0	0	0	0	0	1
5:00 PM - 5:15 PM	0	2	0	1	2	0	0	0	0	0	0	3
5:15 PM - 5:30 PM	0	3	0	0	4	0	0	0	0	0	0	1
5:30 PM - 5:45 PM	0	1	0	1	3	0	0	0	0	0	0	1
5:45 PM - 6:00 PM	0	1	0	0	6	0	0	0	0	0	0	0
TOTAL	0	31	1	7	41	0	0	0	0	1	0	11
Peak Hour												
4:15 PM - 5:15 PM	**0**	**12**	**0**	**2**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**5**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection Louise Ln **&** Jeanette Dr

Date November 18, 2020 **Trucks**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	1	0	0	1	0	0	0	0	0	0	0
Peak Hour												
7:15 AM - 8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
4:15 PM - 5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection Louise Ln **&** Jeanette Dr

Date November 18, 2020 **U-Turns & RTOR**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
7:00 AM - 8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
2:00 PM - 3:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection Louise Ln **&** Jeanette Dr

Date November 18, 2020 **All Vehicles**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	2	0	1	1	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	1	0	0	2	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	5	0	0	1	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	6	0	0	2	0	0	0	0	1	0	0
8:00 AM - 8:15 AM	0	3	0	0	1	0	0	0	0	1	0	1
8:15 AM - 8:30 AM	0	3	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	2	0	0	0	0	0	0	0	0	0	0
TOTAL	0	23	0	1	7	0	0	0	0	2	0	1
Peak Hour												
7:15 AM - 8:15 AM	**0**	**15**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**2**	**0**	**1**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	2	0	0	3	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	1	0	1	3	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	3	1	1	4	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	2	0	1	1	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	1	0	0	0	0	0	0	0	0	0	1
3:30 PM - 3:45 PM	0	3	0	1	0	0	0	0	0	0	0	1
3:45 PM - 4:00 PM	0	1	0	0	3	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	1	0	0	3	0	0	0	0	1	0	2
4:15 PM - 4:30 PM	0	5	0	0	2	0	0	0	0	0	0	1
4:30 PM - 4:45 PM	0	2	0	0	5	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	3	0	1	2	0	0	0	0	0	0	1
5:00 PM - 5:15 PM	0	2	0	1	2	0	0	0	0	0	0	3
5:15 PM - 5:30 PM	0	3	0	0	4	0	0	0	0	0	0	1
5:30 PM - 5:45 PM	0	1	0	1	3	0	0	0	0	0	0	1
5:45 PM - 6:00 PM	0	1	0	0	6	0	0	0	0	0	0	0
TOTAL	0	31	1	7	41	0	0	0	0	1	0	11
Peak Hour												
4:15 PM - 5:15 PM	**0**	**12**	**0**	**2**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**5**

Pedestrian & Bicycle Summary

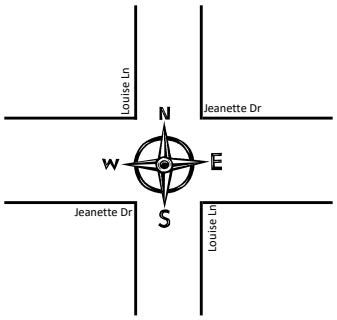
Project #: 63308.05 **NB/SB:** Louise Ln

Date: 11/18/2020 **EB/WB:** Jeanette Dr

Hour

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	0			0	0	0	0	0
	Ped	0	0			0	0	0	0	0
Westbound ◀	Bike	0	0			0	0	0	0	0
	Ped	0	0			0	0	0	0	0

	Hour	Southbound Ped ▼	Southbound Bike	Northbound Ped ▲	Northbound Bike
1	7:00	0	0	0	0
2	8:00	0	0	0	0
3					
4					
5	14:00	0	0	0	0
6	15:00	0	0	0	0
7	16:00	0	0	0	0
8	17:00	0	0	0	0
		0	0	0	0



	Hour	Southbound Ped ▼	Southbound Bike	Northbound Ped ▲	Northbound Bike
1	7:00	0	0	0	0
2	8:00	0	0	0	0
3					
4					
5	14:00	0	0	0	0
6	15:00	0	0	0	0
7	16:00	0	0	0	0
8	17:00	0	0	0	0
		0	0	0	0

		7:00	8:00			14:00	15:00	16:00	17:00	
Eastbound ▶	Bike	0	0			0	0	0	0	0
	Ped	0	0			0	0	0	0	0
Westbound ◀	Bike	0	0			0	0	0	0	0
	Ped	0	0			0	0	0	0	0
		1	2	3	4	5	6	7	8	

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	Louise Ln	**&**	Beresford Ave
Date	November 18, 2020		**Autos**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	3	0	0	0	0	20	1	0	25	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	43	0	2	41	0
7:30 AM - 7:45 AM	2	0	3	0	0	0	0	76	0	1	47	0
7:45 AM - 8:00 AM	1	0	4	0	0	0	0	65	0	2	30	0
8:00 AM - 8:15 AM	1	0	3	0	0	0	0	23	0	1	28	0
8:15 AM - 8:30 AM	1	0	2	0	0	0	0	31	0	1	22	0
8:30 AM - 8:45 AM	0	0	1	0	0	0	0	35	0	0	19	0
8:45 AM - 9:00 AM	1	0	2	0	0	0	0	38	0	2	16	0
TOTAL	6	0	18	0	0	0	0	331	1	9	228	0
Peak Hour												
7:15 AM - 8:15 AM	**4**	**0**	**10**	**0**	**0**	**0**	**0**	**207**	**0**	**6**	**146**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	2	0	0	0	0	20	0	3	43	0
2:15 PM - 2:30 PM	1	0	0	0	0	0	0	30	1	3	50	0
2:30 PM - 2:45 PM	0	0	3	0	0	0	0	62	1	4	39	0
2:45 PM - 3:00 PM	0	0	2	0	0	0	0	52	0	1	25	0
3:00 PM - 3:15 PM	0	0	1	0	0	0	0	21	0	0	29	0
3:15 PM - 3:30 PM	1	0	0	0	0	0	0	30	0	0	38	0
3:30 PM - 3:45 PM	1	0	3	0	0	0	0	26	0	2	37	0
3:45 PM - 4:00 PM	0	0	1	0	0	0	0	37	0	2	25	0
4:00 PM - 4:15 PM	1	0	2	0	0	0	0	37	0	3	40	0
4:15 PM - 4:30 PM	2	0	5	0	0	0	0	37	1	1	49	0
4:30 PM - 4:45 PM	0	0	2	0	0	0	0	48	3	2	54	0
4:45 PM - 5:00 PM	2	0	2	0	0	0	0	49	1	2	43	0
5:00 PM - 5:15 PM	4	0	2	0	0	0	0	45	1	2	62	0
5:15 PM - 5:30 PM	0	0	3	0	0	0	0	25	2	1	39	0
5:30 PM - 5:45 PM	1	0	1	0	0	0	0	38	0	5	45	0
5:45 PM - 6:00 PM	1	0	2	0	0	0	0	23	0	5	41	0
TOTAL	14	0	31	0	0	0	0	580	10	36	659	0
Peak Hour												
4:15 PM - 5:15 PM	**8**	**0**	**11**	**0**	**0**	**0**	**0**	**179**	**6**	**7**	**208**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	Louise Ln	**&**	Beresford Ave
Date	November 18, 2020		**Trucks**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	1	1	0	2	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	3	0	0	1	0
7:30 AM - 7:45 AM	1	0	0	0	0	0	0	0	0	0	1	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	2	0	0	1	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	1	0	0	0	0
TOTAL	1	0	0	0	0	0	0	8	1	0	6	0
Peak Hour												
7:15 AM - 8:15 AM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**3**	**0**
	20%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	1	0	0	3	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	4	0	0	1	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	3	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	2	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	1	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	2	0	0	1	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	3	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	0	2	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	1	0	0	1	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	16	0	0	14	0
Peak Hour												
4:15 PM - 5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**3**	**0**
	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	Louise Ln	**&**	Beresford Ave
Date	November 18, 2020		**U-Turns & RTOR**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
7:00 AM - 8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
2:00 PM - 3:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	Louise Ln	**&**	Beresford Ave
Date	November 18, 2020		**All Vehicles**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	3	0	0	0	0	21	2	0	27	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	46	0	2	42	0
7:30 AM - 7:45 AM	3	0	3	0	0	0	0	76	0	1	48	0
7:45 AM - 8:00 AM	1	0	4	0	0	0	0	66	0	2	30	0
8:00 AM - 8:15 AM	1	0	3	0	0	0	0	23	0	1	29	0
8:15 AM - 8:30 AM	1	0	2	0	0	0	0	31	0	1	22	0
8:30 AM - 8:45 AM	0	0	1	0	0	0	0	37	0	0	20	0
8:45 AM - 9:00 AM	1	0	2	0	0	0	0	39	0	2	16	0
TOTAL	7	0	18	0	0	0	0	339	2	9	234	0
Peak Hour												
7:15 AM - 8:15 AM	**5**	**0**	**10**	**0**	**0**	**0**	**0**	**211**	**0**	**6**	**149**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	2	0	0	0	0	21	0	3	46	0
2:15 PM - 2:30 PM	1	0	0	0	0	0	0	30	1	3	51	0
2:30 PM - 2:45 PM	0	0	3	0	0	0	0	66	1	4	40	0
2:45 PM - 3:00 PM	0	0	2	0	0	0	0	52	0	1	25	0
3:00 PM - 3:15 PM	0	0	1	0	0	0	0	21	0	0	32	0
3:15 PM - 3:30 PM	1	0	0	0	0	0	0	32	0	0	38	0
3:30 PM - 3:45 PM	1	0	3	0	0	0	0	27	0	2	37	0
3:45 PM - 4:00 PM	0	0	1	0	0	0	0	37	0	2	26	0
4:00 PM - 4:15 PM	1	0	2	0	0	0	0	39	0	3	41	0
4:15 PM - 4:30 PM	2	0	5	0	0	0	0	38	1	1	50	0
4:30 PM - 4:45 PM	0	0	2	0	0	0	0	51	3	2	54	0
4:45 PM - 5:00 PM	2	0	2	0	0	0	0	49	1	2	43	0
5:00 PM - 5:15 PM	4	0	2	0	0	0	0	46	1	2	64	0
5:15 PM - 5:30 PM	0	0	3	0	0	0	0	25	2	1	39	0
5:30 PM - 5:45 PM	1	0	1	0	0	0	0	39	0	5	46	0
5:45 PM - 6:00 PM	1	0	2	0	0	0	0	23	0	5	41	0
TOTAL	14	0	31	0	0	0	0	596	10	36	673	0
Peak Hour												
4:15 PM - 5:15 PM	**8**	**0**	**11**	**0**	**0**	**0**	**0**	**184**	**6**	**7**	**211**	**0**

Pedestrian & Bicycle Summary

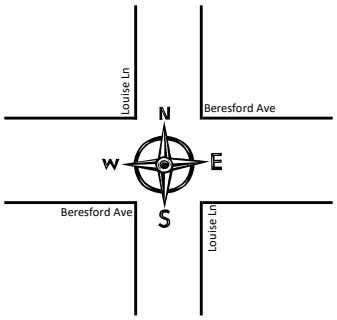
Project #: 63308.05 **NB/SB:** Louise Ln

Date: 11/18/2020 **EB/WB:** Beresford Ave

Hour

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	0			0	0	0	0	0
	Ped	0	0			0	0	0	0	0
Westbound ◀	Bike	0	0			0	0	0	0	0
	Ped	0	0			0	0	0	0	0

		Southbound		Northbound			Southbound		Northbound		
	Hour	Ped ▼	Bike	Ped ▲	Bike		Ped ▼	Bike	Ped ▲	Bike	Hour
1	7:00	0	0	1	0		0	0	1	0	7:00
2	8:00	1	0	0	0		0	0	1	0	8:00
3											
4											
5	14:00	0	0	0	0		0	0	0	0	14:00
6	15:00	0	0	0	0		0	0	0	0	15:00
7	16:00	0	0	0	0		0	1	0	0	16:00
8	17:00	0	0	0	0		0	0	2	0	17:00
		1	0	1	0		0	1	4	0	



		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	0			0	0	0	0	0
	Ped	1	2			0	0	0	0	3
Westbound ◀	Bike	0	0			0	0	0	0	0
	Ped	0	0			0	0	6	0	6

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Dexter Ave	**&**	Beresford Ave
Date	November 18, 2020		**Autos**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	1	0	3	0	0	0	1	14	1	5	27	0
7:15 AM - 7:30 AM	2	0	4	2	0	0	0	19	4	2	32	0
7:30 AM - 7:45 AM	1	0	4	1	0	4	2	31	2	5	35	1
7:45 AM - 8:00 AM	4	1	5	0	0	1	2	52	1	5	41	1
8:00 AM - 8:15 AM	0	0	3	0	0	2	0	30	1	1	20	0
8:15 AM - 8:30 AM	2	0	7	0	1	1	0	32	0	4	24	0
8:30 AM - 8:45 AM	2	0	3	0	0	1	0	28	3	1	34	2
8:45 AM - 9:00 AM	4	0	3	0	1	2	0	31	3	2	25	1
TOTAL	16	1	32	3	2	11	5	237	15	25	238	5
Peak Hour												
7:30 AM - 8:30 AM	**7**	**1**	**19**	**1**	**1**	**8**	**4**	**145**	**4**	**15**	**120**	**2**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	2	0	3	0	0	0	0	30	1	0	45	1
2:15 PM - 2:30 PM	3	1	2	0	0	2	0	31	3	3	43	0
2:30 PM - 2:45 PM	3	0	4	0	0	0	0	42	0	1	43	0
2:45 PM - 3:00 PM	5	0	4	2	0	1	0	37	3	4	37	0
3:00 PM - 3:15 PM	1	0	1	0	0	3	1	33	1	0	42	0
3:15 PM - 3:30 PM	2	2	3	0	0	0	0	39	0	1	43	2
3:30 PM - 3:45 PM	2	0	8	1	0	1	1	24	3	7	38	1
3:45 PM - 4:00 PM	3	1	0	1	0	0	0	34	0	1	29	2
4:00 PM - 4:15 PM	5	0	5	0	0	0	0	40	4	6	51	1
4:15 PM - 4:30 PM	1	0	4	1	0	2	0	24	3	2	48	0
4:30 PM - 4:45 PM	3	0	4	2	0	2	1	31	2	0	48	0
4:45 PM - 5:00 PM	4	0	5	0	0	0	1	42	2	7	52	0
5:00 PM - 5:15 PM	4	1	9	0	0	2	0	42	4	4	69	0
5:15 PM - 5:30 PM	7	0	6	1	0	1	0	37	1	7	62	2
5:30 PM - 5:45 PM	3	0	5	1	0	1	0	48	3	3	56	0
5:45 PM - 6:00 PM	4	0	5	0	0	0	0	24	2	4	55	1
TOTAL	52	5	68	9	0	15	4	558	32	50	761	10
Peak Hour												
4:45 PM - 5:45 PM	**18**	**1**	**25**	**2**	**0**	**4**	**1**	**169**	**10**	**21**	**239**	**2**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County Volusia **City** DeLand

Intersection S Dexter Ave **&** Beresford Ave

Date November 18, 2020 **Trucks**

VHB Project #: 63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0
7:15 AM - 7:30 AM	0	0	1	0	0	0	0	2	0	0	1	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	1	0	0	1	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	1	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:15 AM - 8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	1	0	0	2	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	1	0	0	1	0
TOTAL	1	0	1	0	0	0	0	6	1	0	7	0
Peak Hour												
7:30 AM - 8:30 AM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**1**	**0**
	13%	0%	0%	0%	0%	0%	0%	1%	20%	0%	1%	0%

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	1	0	0	4	1
2:15 PM - 2:30 PM	1	0	0	0	0	0	0	2	0	0	1	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	2	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	1	0	0	3	0
4:00 PM - 4:15 PM	1	0	0	0	0	0	0	1	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2	0	0	0	0	0	0	6	0	0	12	1
Peak Hour												
4:45 PM - 5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Dexter Ave	**&**	Beresford Ave
Date	November 18, 2020		**U-Turns & RTOR**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour												
7:00 AM - 8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	1	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0
5:00 PM - 5:15 PM	1	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2	0	0	0	0	0	0	0	0	1	0	0
Peak Hour												
4:00 PM - 5:00 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Volusia	**City**	DeLand
Intersection	S Dexter Ave	**&**	Beresford Ave
Date	November 18, 2020		**All Vehicles**
		VHB Project #:	63308.05

AM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7:00 AM - 7:15 AM	1	0	3	0	0	0	1	14	1	5	29	0
7:15 AM - 7:30 AM	2	0	5	2	0	0	0	21	4	2	33	0
7:30 AM - 7:45 AM	1	0	4	1	0	4	2	32	2	5	36	1
7:45 AM - 8:00 AM	4	1	5	0	0	1	2	52	2	5	41	1
8:00 AM - 8:15 AM	0	0	3	0	0	2	0	31	1	1	20	0
8:15 AM - 8:30 AM	3	0	7	0	1	1	0	32	0	4	24	0
8:30 AM - 8:45 AM	2	0	3	0	0	1	0	29	3	1	36	2
8:45 AM - 9:00 AM	4	0	3	0	1	2	0	32	3	2	26	1
TOTAL	17	1	33	3	2	11	5	243	16	25	245	5
Peak Hour												
7:30 AM - 8:30 AM	**8**	**1**	**19**	**1**	**1**	**8**	**4**	**147**	**5**	**15**	**121**	**2**

PM Peak Hour

Time Period	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2:00 PM - 2:15 PM	2	0	3	0	0	0	0	31	1	0	49	2
2:15 PM - 2:30 PM	4	1	2	0	0	2	0	33	3	3	44	0
2:30 PM - 2:45 PM	3	0	4	0	0	0	0	42	0	1	43	0
2:45 PM - 3:00 PM	5	0	4	2	0	1	0	37	3	4	37	0
3:00 PM - 3:15 PM	1	0	1	0	0	3	1	33	1	0	44	0
3:15 PM - 3:30 PM	2	2	3	0	0	0	0	39	0	1	43	2
3:30 PM - 3:45 PM	2	0	8	1	0	1	1	24	3	7	38	1
3:45 PM - 4:00 PM	3	1	0	1	0	0	0	35	0	1	32	2
4:00 PM - 4:15 PM	7	0	5	0	0	0	0	41	4	6	51	1
4:15 PM - 4:30 PM	1	0	4	1	0	2	0	25	3	2	49	0
4:30 PM - 4:45 PM	3	0	4	2	0	2	1	31	2	0	48	0
4:45 PM - 5:00 PM	4	0	5	0	0	0	1	42	2	8	52	0
5:00 PM - 5:15 PM	5	1	9	0	0	2	0	42	4	4	70	0
5:15 PM - 5:30 PM	7	0	6	1	0	1	0	37	1	7	62	2
5:30 PM - 5:45 PM	3	0	5	1	0	1	0	48	3	3	56	0
5:45 PM - 6:00 PM	4	0	5	0	0	0	0	24	2	4	55	1
TOTAL	56	5	68	9	0	15	4	564	32	51	773	11
Peak Hour												
4:45 PM - 5:45 PM	**19**	**1**	**25**	**2**	**0**	**4**	**1**	**169**	**10**	**22**	**240**	**2**

Pedestrian & Bicycle Summary

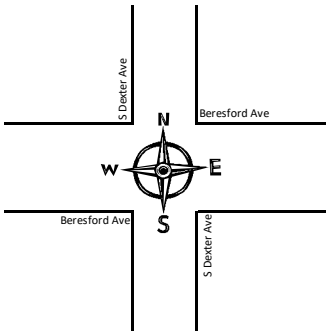
Project #: 63308.05 **NB/SB:** S Dexter Ave

Date: 11/18/2020 **EB/WB:** Beresford Ave

Hour

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	2			0	0	1	0	3
	Ped	1	1			0	0	0	0	2
Westbound ◀	Bike	0	1			0	0	0	0	1
	Ped	0	1			1	0	0	2	4

		Southbound		Northbound	
	Hour	Ped ▼	Bike	Ped ▲	Bike
1	7:00	3	0	1	0
2	8:00	1	0	2	0
3					
4					
5	14:00	0	0	1	0
6	15:00	0	0	1	0
7	16:00	0	0	0	0
8	17:00	1	1	1	1
		5	1	6	1



		Southbound		Northbound		
		Ped ▼	Bike	Ped ▲	Bike	Hour
1	7:00	0	0	0	0	7:00
2	8:00	0	0	0	0	8:00
3						
4						
5	14:00	1	0	2	0	14:00
6	15:00	2	0	0	0	15:00
7	16:00	0	0	2	0	16:00
8	17:00	1	0	0	0	17:00
		4	0	4	0	

		7:00	8:00			14:00	15:00	16:00	17:00	
		1	2	3	4	5	6	7	8	
Eastbound ▶	Bike	0	1			0	0	0	0	1
	Ped	2	1			1	9	6	5	24
Westbound ◀	Bike	0	0			0	0	3	0	3
	Ped	1	0			0	6	6	1	14

7:00	8:00			14:00	15:00	16:00	17:00
1	2	3	4	5	6	7	8

APPENDIX A-3:

TMC from Beresford Woods TIA

TRAFFIC IMPACT ANALYSIS

BERESFORD WOODS
CITY OF DELAND, FLORIDA

Prepared for:

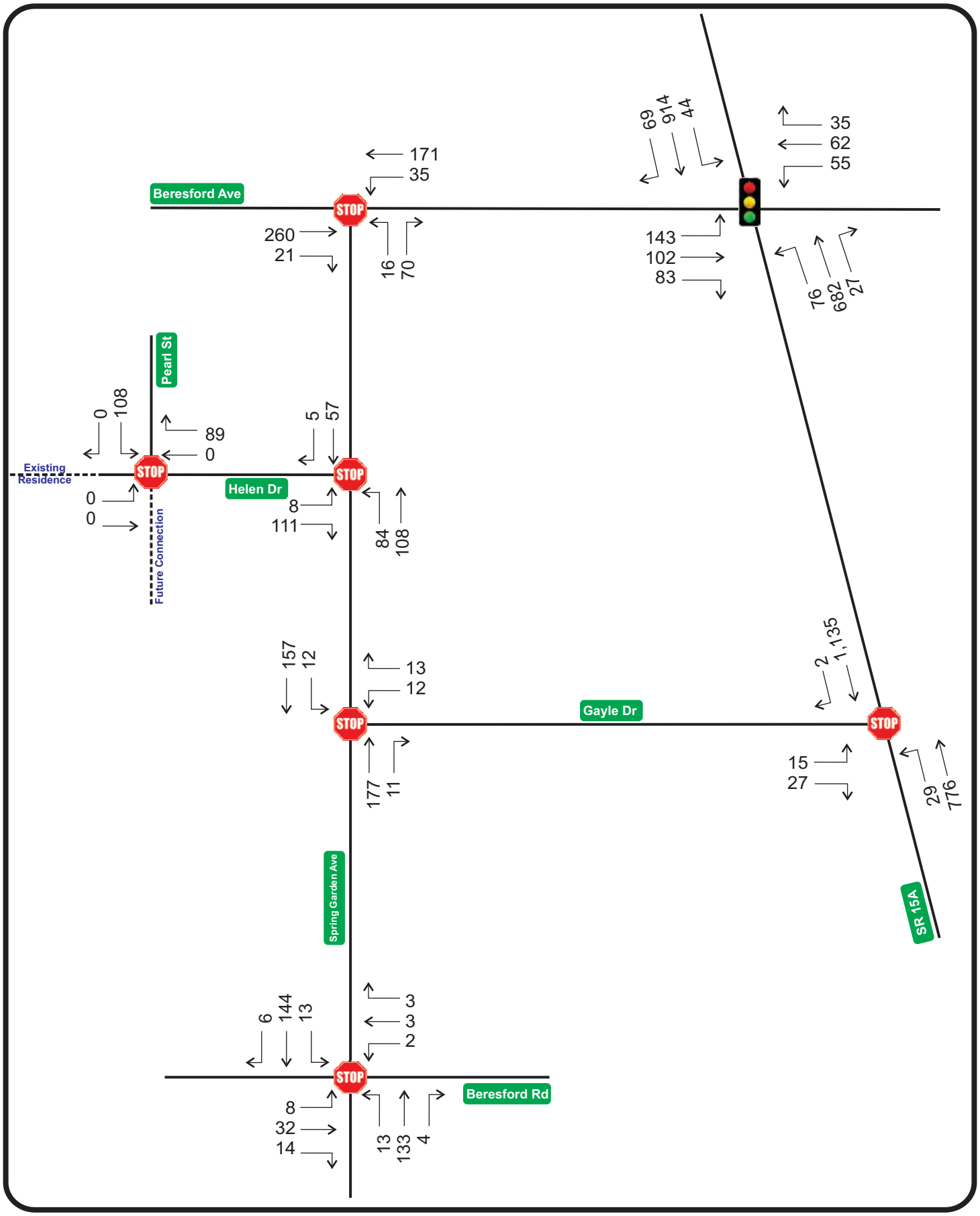
ZDA Land Investments, LLC
100 S. Virginia Avenue, Unit 201
Winter Park, FL 32789

Prepared by:

Traffic Planning and Design, Inc.
535 Versailles Drive
Maitland, Florida 32751
407-628-9955

Revised
July 2020

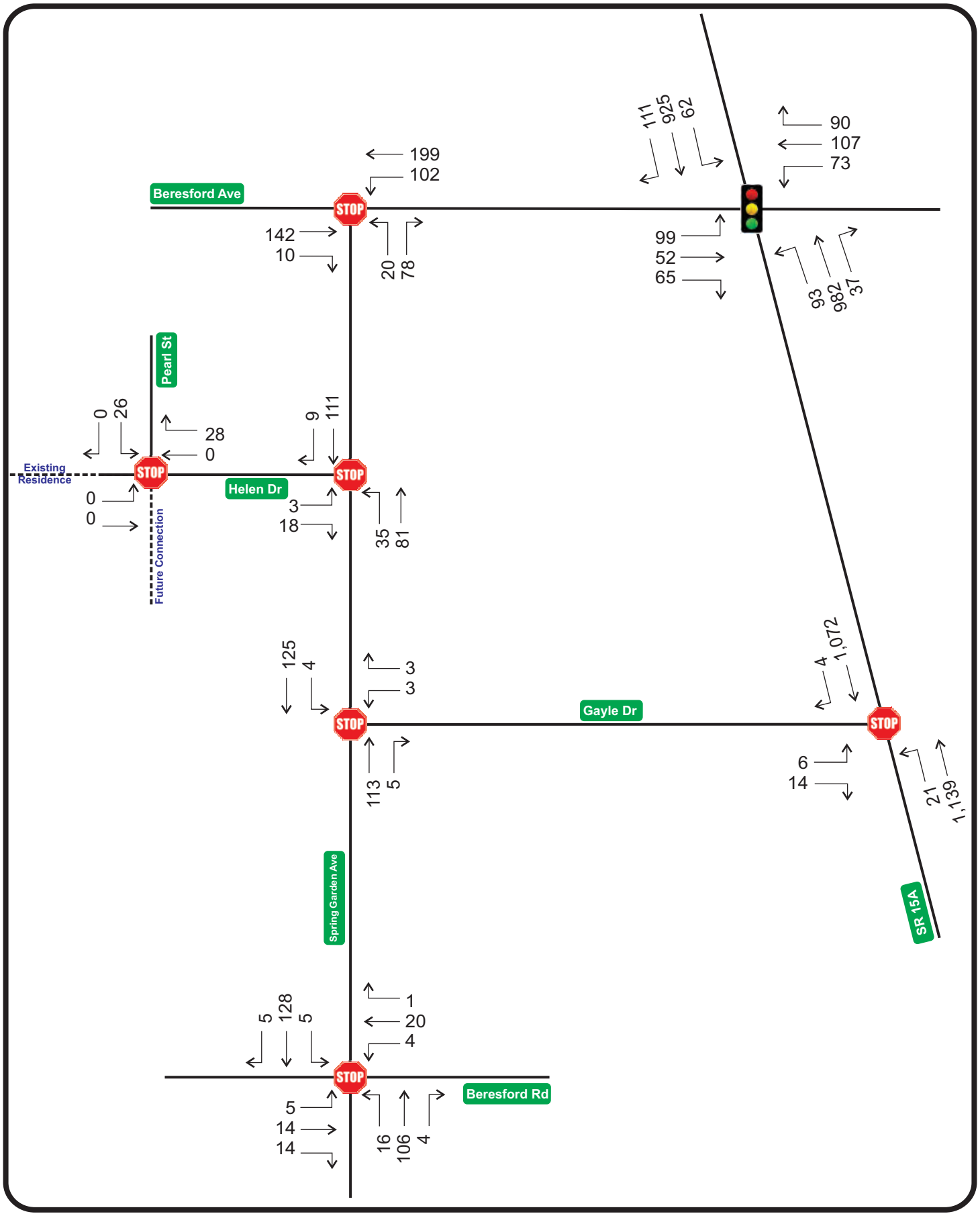
TPD № 5237



Beresford Woods
Project № 5237
Figure 3a

Existing A.M. Peak Hour Intersection Volumes

N
NTS



Beresford Woods
Project № 5237
Figure 3b

Existing P.M. Peak Hour Intersection Volumes

N
NTS

APPENDIX B:

Crash Data

Crash Summaries at the Intersection of SR 15A and W Beresford Ave

Crash Num.	Crash Type	Vehicle Orientations	Detail
85467057 (C1)	Rear End	SB/SB/SB (rightmost lane)	Rear-end collision with stationary vehicle at red light, causing a chain reaction resulting in another rear-end. The driver that failed to slow down fled the scene but was later detained and cited for careless driving and DUI. Conditions were dry in daylight.
87743387 (C2)	Rear End	SB/SB (unspecified lane)	Rear-end collision with stationary vehicle at red light. Conditions were wet in daylight.
87235979 (C3)	Sideswipe	SB/SB (leftmost lane)	Vehicle approaching red light lost control and spun out. The rear of the approaching vehicle struck the front-right of a stationary vehicle waiting at the light. Conditions were wet in daylight.
87147234 (C4)	Rear End	NB/NB (middle through lane)	Two vehicles were approaching a red-light in the same lane. The second vehicle failed to slow down and rear-ended the first vehicle. Conditions were dry and reported as dark-lighted.
88091744 (C5)	Rear End	SB/SB/SB (rightmost lane)	Rear-end collision with stationary vehicle at red light, causing a chain reaction resulting in another rear-end. The driver of the stationary car (first collision) was transported to the hospital with incapacitating injuries. Conditions were dry in daylight.
88195977 (C6)	Left Turn	NB/WB (leftmost lane)	The at-fault driver heading NB was using the two-way left-turn lane to pass stopped traffic at the red-light. Another vehicle was exiting a driveway WB, taking a left onto SB SR 15A where they collided with the NB vehicle in the two-way left-turn lane. The driver of the WB reported non-incapacitating injuries. Conditions were dry in daylight.
88171677 (C7)	Rear End	SB/SB (rightmost lane)	Two vehicles were travelling SB approaching the intersection in the right-most lane. The following vehicle failed to slow down to the leading right-turning vehicle and struck them in the rear. The at-fault vehicle fled the scene. Conditions were dry and dark-unlighted.
88195968 (C8)	Rear End	SB/SB (unspecified lane)	Rear-end collision with stationary vehicle at red light. Conditions were wet in daylight.

W Beresford Ave at S Dexter Ave

Only one (1) crash was reported at the intersection with S Dexter Ave.

- **Crash #88698038 (C9):** A NB travelling vehicle was exiting the Kangaroo parking lot towards S Dexter Ave and failed to yield to the stop sign and oncoming EB vehicle resulting in an angle collision. Extensive damage was reported for both vehicles, however neither of the drivers reported injuries. Conditions were dry in daylight.

SR 15A at Gayle Dr

Only two (2) crashes were reported at the intersection of SR 15A with Gayle Dr.

- **Crash #88170486 (C10):** The first crash involved a NB vehicle veering off-road to the right and then colliding with a tree. The driver fled the vehicle and no further details are given. The conditions were dry and dark-unlighted.
- **Crash #88268146 (C11):** For the second crash, a queue had formed on the northbound approach at the stop-light for the intersection of SR 15A and W Beresford Ave in the left northbound through lane, extending upstream past the intersection with Gayle Dr. A vehicle travelling NB failed to stop for the queue, striking the rear of the last queued vehicle causing a chain reaction striking one more vehicle. Non-incapacitating injuries were reported for the drivers of the rear-ended vehicle. The conditions were wet in daylight.

Crash Data Summary

No.	Crash ID	Date	Day	Time	Crash Type	Crash Severity	Fatalities	Injuries	Property Damage	Day/Night	Wet/Dry
1	85467057	3/29/2017	Wednesday	6:20 PM	Rear End	Property Damage Only	0	0	$2,800	Daylight	Dry
2	87743387	8/28/2019	Wednesday	5:30 PM	Rear End	Property Damage Only	0	0	$20,000	Daylight	Wet
3	87235979	6/27/2018	Wednesday	2:35 PM	Sideswipe	Property Damage Only	0	0	$2,000	Daylight	Wet
4	87147234	4/30/2018	Monday	11:59 PM	Off Road	Property Damage Only	0	0	$2,000	Dark - Lighted	Dry
5	88091744	5/17/2019	Friday	8:05 AM	Rear End	Property Damage Only	0	4	$15,000	Daylight	Dry
6	88195977	10/25/2019	Friday	6:00 PM	Left Turn	Injury	0	1	$3,000	Daylight	Dry
7	88171677	10/21/2019	Monday	8:40 PM	Rear End	Property Damage Only	0	0	$2,000	Dark - Not Lighted	Dry
8	88195968	10/14/2019	Monday	5:30 PM	Rear End	Property Damage Only	0	0	$1,250	Daylight	Dry
9	88698038	10/12/2018	Friday	4:00 PM	Rear End	Injury	0	0	$5,000	Daylight	Dry
10	88170486	10/25/2019	Friday	10:44 PM	Rear End	Injury	0	0	$5,000	Dark - Not Lighted	Wet
11	88268146	12/12/2019	Thursday	4:55 PM	Angle	Property Damage Only	0	2	$10,500	Daylight	Dry

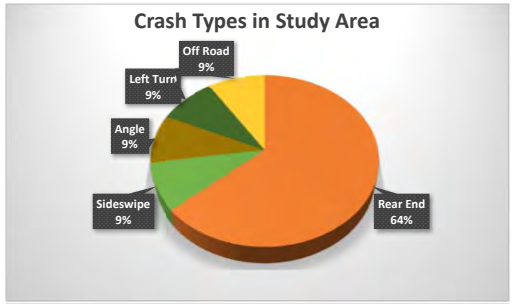
Crash Data Summary - All Crashes

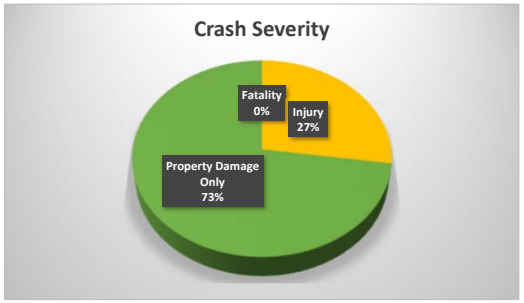
Crash Type	2015	2016	2017	2018	2019	Total	Proportion
Rear End	0	0	1	1	5	**7**	64%
Head On	0	0	0	0	0	**0**	0%
Sideswipe	0	0	0	1	0	**1**	9%
RollOver	0	0	0	0	0	**0**	0%
Angle	0	0	0	0	1	**1**	9%
Left Turn	0	0	0	0	1	**1**	9%
Right Turn	0	0	0	0	0	**0**	0%
Off Road	0	0	0	1	0	**1**	9%
Pedestrian & Biclycle	0	0	0	0	0	**0**	0%
Animal	0	0	0	0	0	**0**	0%
Other	0	0	0	0	0	**0**	0%
Total	**0**	**0**	**1**	**3**	**7**	**11**	100%

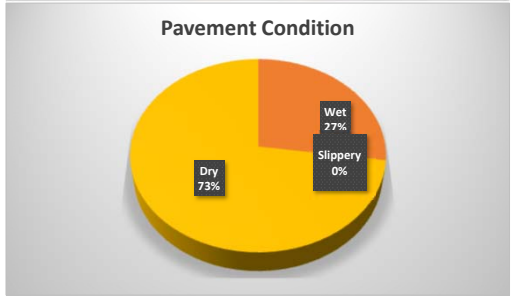
Crash Severity	2015	2016	2017	2018	2019	Total	Proportion
Fatality	0	0	0	0	0	**0**	0%
Injury	0	0	0	1	2	**3**	27%
Property Damage Only	0	0	1	2	5	**8**	73%
Total	**0**	**0**	**1**	**3**	**7**	**11**	100%

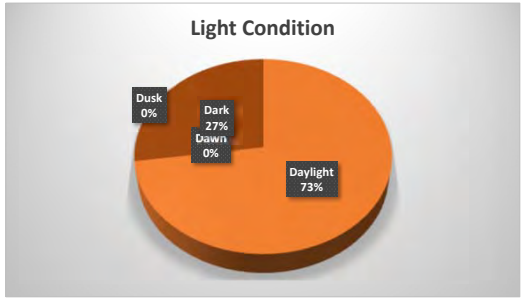
Pavement Condition	2015	2016	2017	2018	2019	Total	Proportion
Wet	0	0	0	1	2	**3**	27%
Dry	0	0	1	2	5	**8**	73%
Slippery	0	0	0	0	0	**0**	0%
Total	**0**	**0**	**1**	**3**	**7**	**11**	100%

Light Condition	2015	2016	2017	2018	2019	Total	Proportion
Daylight	0	0	1	2	5	**8**	73%
Dusk	0	0	0	0	0	**0**	0%
Dawn	0	0	0	0	0	**0**	0%
Dark	0	0	0	1	2	**3**	27%
Total	**0**	**0**	**1**	**3**	**7**	**11**	100%
Under the Influence	**2015**	**2016**	**2017**	**2018**	**2019**	**Total**	**Proportion**
Alcohol	0	0	1	0	0	**1**	9%
Drugs	0	0	1	0	0	**1**	9%
Total	**0**	**0**	**2**	**0**	**0**	**2**	18%





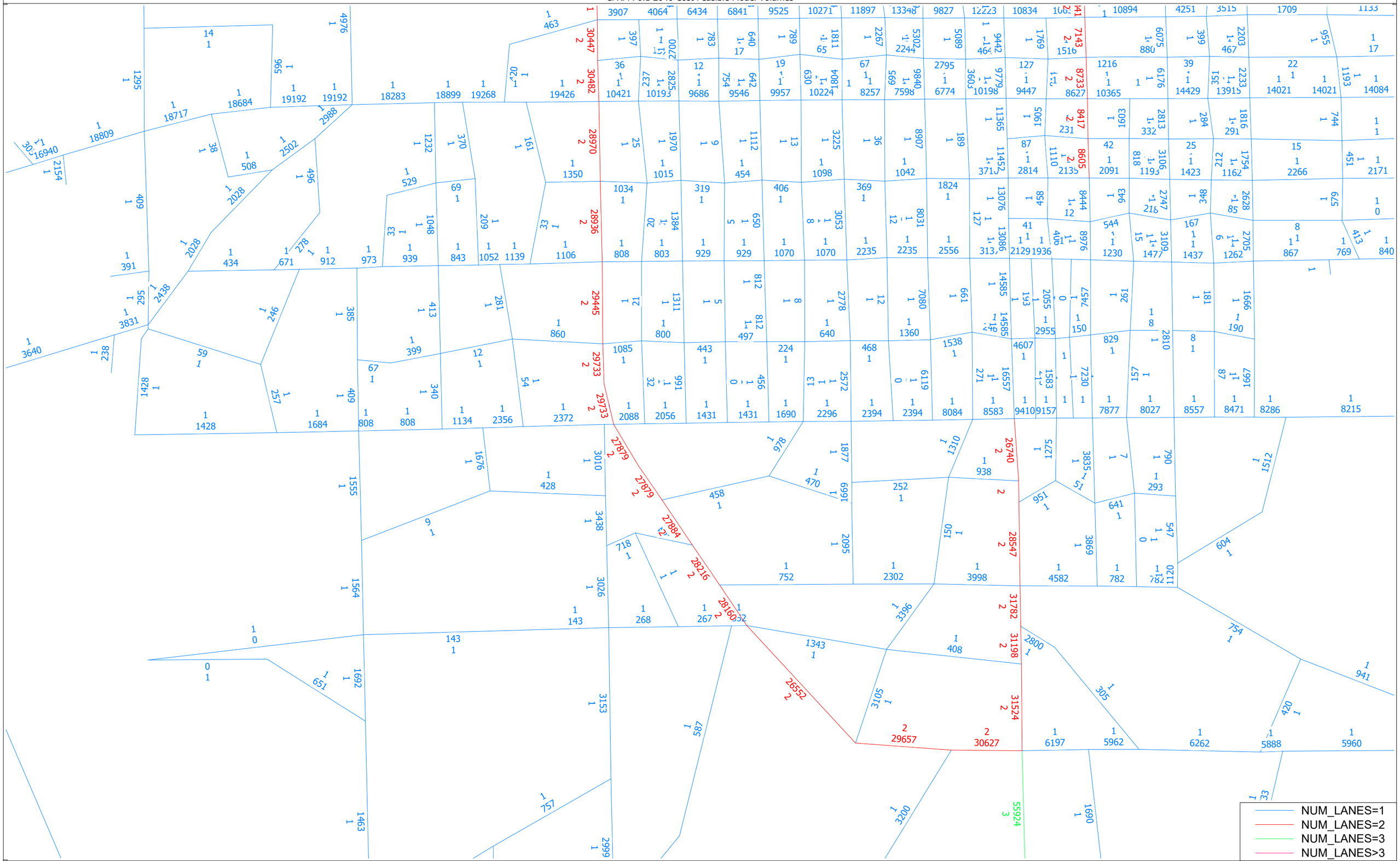




APPENDIX C:

2040 Model Output
BEBR Population Estimates
&
TRENDS Outputs

CFRPM 6.1 2040 Cost Feasible Model Volumes



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College of Liberal Arts and Sciences
Bureau of Economic and Business Research

BEBR

Florida Population Studies

Volume 53, Bulletin 186, January 2020

Projections of Florida Population by County, 2020–2045, with Estimates for 2019

Stefan Rayer, Population Program Director
Ying Wang, Research Demographer

The Bureau of Economic and Business Research (BEBR) has been making population projections for Florida and its counties since the 1970s. This report presents our most recent set of projections and describes the methodology used to construct those projections. To account for uncertainty regarding future population growth, we publish three series of projections. We believe the medium series is the most likely to provide accurate forecasts in most circumstances, but the low and high series provide an indication of the uncertainty surrounding the medium series. It should be noted that these projections refer solely to permanent residents of Florida; they do not include tourists or seasonal residents.

State projections

The starting point for the state-level projections was the April 1, 2010 census population count by age, sex, race, and Hispanic origin, as adjusted by the National Center for Health Statistics (NCHS) in the Vintage 2017 bridged race population estimates. Projections were made in one-year intervals using a cohort-component methodology in which births, deaths, and migration are projected separately for each age-sex cohort in Florida for non-Hispanic whites, non-Hispanic nonwhites, and Hispanics. We applied three different sets of assumptions to provide low, medium, and high series of projections. Although the low and high series do not provide absolute bounds on future population change, they provide a reasonable range in which Florida's future population is likely to fall.

Survival rates were applied by single year of age, sex, race, and Hispanic origin to project future deaths in the population. These rates were based on Florida Life Tables for 2007–2013, using mortality data published by the Office of Vital Statistics in the Florida Department of Health. The survival rates were adjusted upward each year until 2044 to account for projected increases in life expectancy. These adjustments were based on projected increases in survival rates released by the U.S. Census Bureau. We used the same mortality assumptions for all three series of projections because there is less uncertainty regarding future changes in mortality rates than is true for migration and fertility rates.

Domestic migration rates by age and sex were based on Public Use Microdata Sample (PUMS) files from the 2005–2009 and 2013–2017 American Community Survey (ACS) 5-year estimates. We chose an average of those two sets of migration estimates because the recession of 2007–2009 had a substantial impact on migration patterns in Florida, affecting in- and out-migration in both time periods; in addition, projections based on more than one time period

Projections of Florida Population by County, 2020–2045, with Estimates for 2019 (continued)

County and State	Estimates April 1, 2019	Projections, April 1 2020	2025	2030	2035	2040	2045
SANTA ROSA	179,054						
Low		171,600	179,700	184,800	188,000	189,300	189,500
Medium		182,800	199,600	213,400	225,100	235,100	244,200
High		193,600	217,400	240,100	262,100	282,500	303,400
SARASOTA	426,275						
Low		415,600	433,000	444,200	452,400	459,000	463,900
Medium		433,300	464,900	489,600	510,500	529,400	546,500
High		450,200	494,300	534,600	570,400	605,400	639,200
SEMINOLE	471,735						
Low		459,300	475,700	485,800	493,100	496,900	498,500
Medium		478,800	510,700	535,600	556,900	574,700	590,400
High		497,600	543,100	584,700	621,800	655,400	686,900
SUMTER	128,633						
Low		122,800	134,700	144,600	151,000	155,700	158,800
Medium		132,300	152,300	170,800	185,700	199,100	211,500
High		141,300	167,400	194,500	219,800	245,000	270,800
SUWANNEE	45,423						
Low		44,000	45,100	45,900	46,400	46,500	46,500
Medium		45,900	48,300	50,400	52,100	53,500	54,700
High		47,700	51,700	55,600	59,300	62,500	65,700
TAYLOR	22,458						
Low		21,500	21,300	21,000	20,700	20,300	19,900
Medium		22,600	23,200	23,600	24,000	24,300	24,700
High		23,800	25,100	26,500	27,800	29,200	30,600
UNION	15,505						
Low		14,700	14,300	13,900	13,400	12,900	12,400
Medium		15,500	15,600	15,600	15,700	15,700	15,700
High		16,300	16,900	17,500	18,100	18,600	19,100
VOLUSIA	538,763						
Low		523,000	534,500	540,000	541,900	542,700	542,400
Medium		545,200	573,800	595,800	613,600	629,700	644,700
High		566,600	610,200	650,000	683,300	715,800	747,400
WAKULLA	32,976						
Low		31,600	32,400	33,000	33,100	33,000	32,700
Medium		33,300	35,400	37,200	38,500	39,600	40,600
High		34,900	38,200	41,400	44,300	46,800	49,300
WALTON	70,071						
Low		67,600	73,400	77,700	80,800	83,000	84,800
Medium		72,100	81,500	89,600	96,200	102,200	107,700
High		76,300	88,800	101,000	112,600	123,900	135,700
WASHINGTON	25,387						
Low		23,900	23,800	23,600	23,200	22,800	22,300
Medium		25,200	25,900	26,500	27,000	27,300	27,700
High		26,500	28,100	29,700	31,300	32,700	34,200
FLORIDA	21,208,589						
Low		20,926,300	22,105,500	22,970,200	23,580,900	24,020,900	24,340,400
Medium		21,556,000	23,130,900	24,426,200	25,498,000	26,428,700	27,266,900
High		22,173,900	24,133,900	25,847,700	27,370,100	28,783,400	30,135,700

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Bureau of Economic and Business Research
College of Liberal Arts and Sciences
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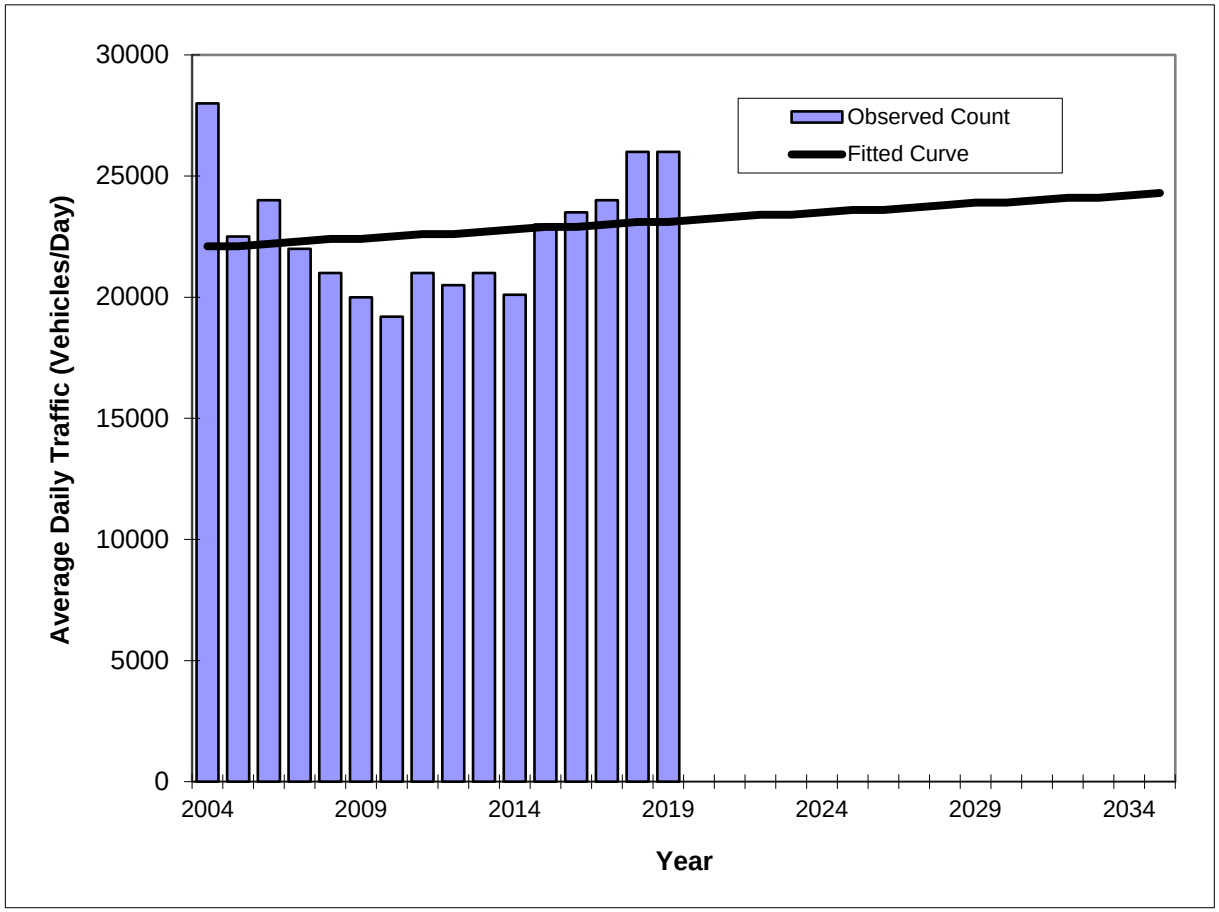
www.bebr.ufl.edu

Traffic Trends - V03.a

SR 15A, S of W Beresford Ave --

FIN#	1234
Location	1

County:	Volusia (79)
Station #:	0006
Highway:	SR 15A, S of W Beresford Ave



Year	Traffic (ADT/AADT) Count*	Trend**
2004	28000	22100
2005	22500	22100
2006	24000	22200
2007	22000	22300
2008	21000	22400
2009	20000	22400
2010	19200	22500
2011	21000	22600
2012	20500	22600
2013	21000	22700
2014	20100	22800
2015	23000	22900
2016	23500	22900
2017	24000	23000
2018	26000	23100
2019	26000	23100
2021 Opening Year Trend		
2021	N/A	23300
2025 Mid-Year Trend		
2025	N/A	23600
2030 Design Year Trend		
2030	N/A	23900
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	71
Trend R-squared:	1.83%
Trend Annual Historic Growth Rate:	0.30%
Trend Growth Rate (2019 to Design Year):	0.31%
Printed:	17-Feb-21

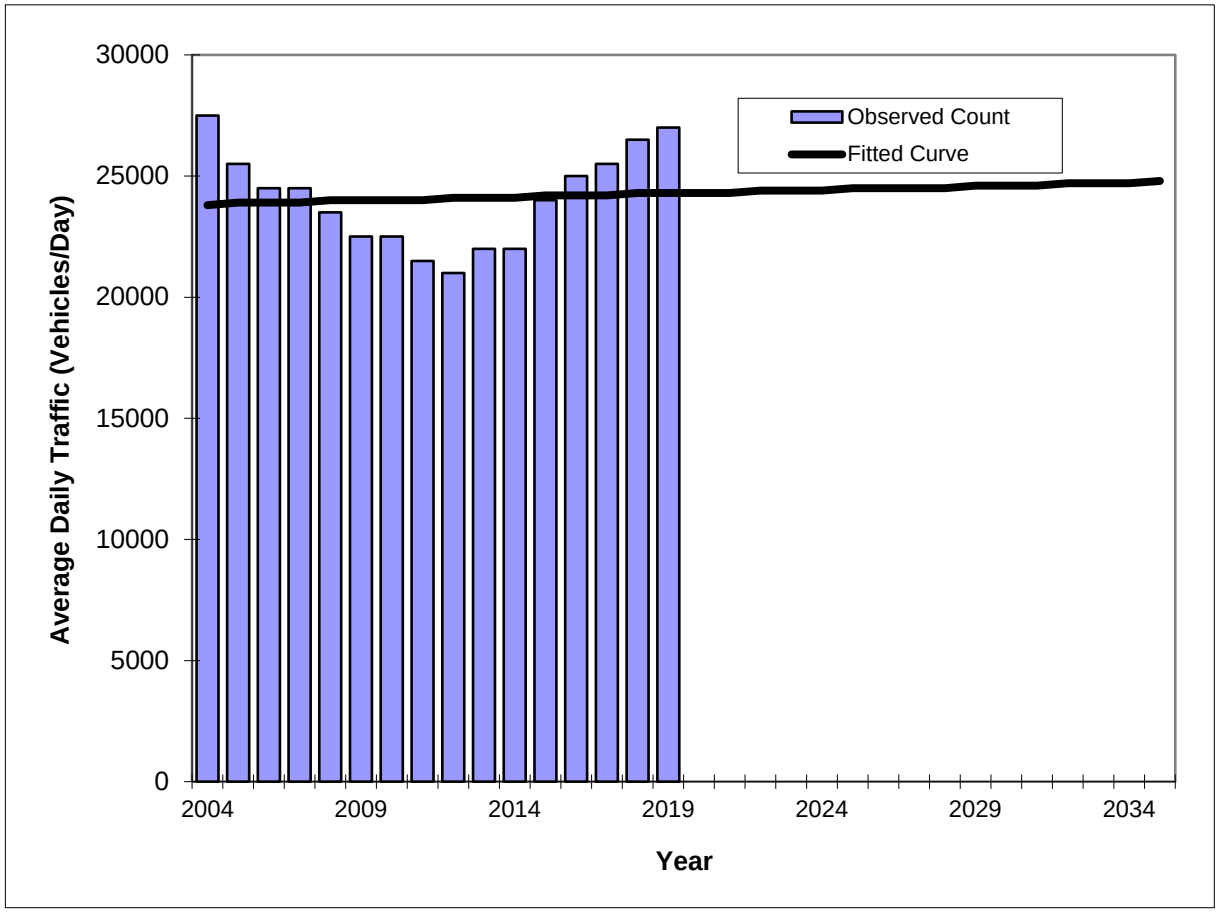
Straight Line Growth Option

Traffic Trends - V03.a

SR 15A, N of W Beresford Ave --

FIN#	1234
Location	1

County:	Volusia (79)
Station #:	0474
Highway:	SR 15A, N of W Beresford Ave



Year	Traffic (ADT/AADT) Count*	Trend**
2004	27500	23800
2005	25500	23900
2006	24500	23900
2007	24500	23900
2008	23500	24000
2009	22500	24000
2010	22500	24000
2011	21500	24000
2012	21000	24100
2013	22000	24100
2014	22000	24100
2015	24000	24200
2016	25000	24200
2017	25500	24200
2018	26500	24300
2019	27000	24300
2021 Opening Year Trend		
2021	N/A	24300
2025 Mid-Year Trend		
2025	N/A	24500
2030 Design Year Trend		
2030	N/A	24600
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	29
Trend R-squared:	0.48%
Trend Annual Historic Growth Rate:	0.14%
Trend Growth Rate (2019 to Design Year):	0.11%
Printed:	17-Feb-21

Straight Line Growth Option

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 79 - VOLUSIA

SITE: 0006 - ON SR-15A, 1.557 MI. N OF US-17/92 (UVL)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	26000 F	N 12500	S 13500	9.00	59.00	3.30
2018	26000 C	N 12500	S 13500	9.00	60.00	4.10
2017	24000 C	N 11500	S 12500	9.00	60.90	3.80
2016	23500 C	N 11000	S 12500	9.00	61.40	5.80
2015	23000 C	N 11000	S 12000	9.00	60.20	6.90
2014	20100 C	N 9600	S 10500	9.00	59.20	6.60
2013	21000 C	N 10000	S 11000	9.00	61.00	6.20
2012	20500 C	N 10000	S 10500	9.00	61.90	6.00
2011	21000 C	N 10000	S 11000	9.00	62.20	6.70
2010	19200 C	N 9400	S 9800	10.39	62.46	8.00
2009	20000 C	N 9500	S 10500	10.54	62.19	7.50
2008	21000 C	N 10000	S 11000	10.88	64.83	6.70
2007	22000 C	N 10500	S 11500	11.05	64.64	8.10
2006	24000 C	N 11500	S 12500	10.68	60.08	8.40
2005	22500 C	N 11000	S 11500	10.70	57.20	7.60
2004	28000 C	N 16000	S 12000	10.40	58.90	8.50

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 79 - VOLUSIA

SITE: 0474 - ON SR-15A, 0.08 MI. S OF SR-44 (UCLP)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	27000 C	N 13000	S 14000	9.00	59.00	9.70
2018	26500 F	N 13000	S 13500	9.00	60.00	7.00
2017	25500 C	N 12500	S 13000	9.00	60.90	7.00
2016	25000 C	N 11500	S 13500	9.00	61.40	6.70
2015	24000 C	N 11500	S 12500	9.00	60.20	7.50
2014	22000 C	N 10500	S 11500	9.00	59.20	6.70
2013	22000 C	N 10500	S 11500	9.00	61.00	5.80
2012	21000 C	N 10000	S 11000	9.00	61.90	5.90
2011	21500 C	N 10500	S 11000	9.00	62.20	5.90
2010	22500 C	N 11000	S 11500	10.39	62.46	6.30
2009	22500 C	N 11000	S 11500	10.54	62.19	6.50
2008	23500 C	N 11500	S 12000	10.88	64.83	4.50
2007	24500 C	N 12000	S 12500	11.05	64.64	7.60
2006	24500 C	N 12000	S 12500	10.68	60.08	8.40
2005	25500 C	N 12500	S 13000	10.70	57.20	7.60
2004	27500 C	N 11000	S 16500	10.40	58.90	8.50

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

APPENDIX D:

Stage 1 ICE Forms

Florida Department of Transportation
Intersection Control Evaluation (ICE) Form
Stage 1: Screening

To fulfill the requirements of Stage 1 (Screening) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	SR 15A & Beresford Ave		FDOT Project #	NA	
Submitted By	VHB	Agency/Company	R2CTPO	Date	2/2/2021
Email		FDOT District	District 5	County	Volusia
Project Locality (*City/Town/Village*)	Deland		Project Type	Safety Improvement Project	
Project Funding Source	Non-federal	FDOT Context Classification	C3R - Suburban Residential		
Project Purpose (*What is the catalyst for this project and why is it being undertaken?*)	Improve operations and safety at the intersection of SR 15A and Beresford Ave.The proximity of the study intersection to Beresford Ave and S Spring Graden Ave (80 feet apart) along with anticipated traffic growth from the surrounding developments will deteriorate the current safety and operational issues. In addition, there is also a need to provide pedestrian and bicycle facilities (especially along the minor street).				
Project Setting Description (*Describe the area surrounding the intersection*)	SR 15A is classified as an urban principal arterial, 4-lane facility. The immediate land uses surrounding the intersection are mostly commercial and residential.				
Multimodal Context (*Describe the pedestrian, bicycle, and transit activity in the area and the potential for activity based on surrounding land uses and development patterns*)	Bicycle lanes are provided on both sides of SR 15A on the south leg. Bicycle lanes or shoulder lanes are not provided on Beresford Avenue. Sidewalks are available on both sides of SR 15A. Beresford Ave has sparse sidewalk coverage, total lack of sidewalks on EB approach, sidewalks available on southern side of WB approach.				

Major Street Information								
Route #:		Route Name(s)	SR 15A				Milepost	
Existing Control Type	Signal		Existing AADT	26,000			Design Year AADT	35,000
Design Vehicle	Interstate Semitrailer (WB-62)		Control Vehicle	Interstate Semitrailer (WB-62)				
Primary Functional Classification		Urban Principal Arterial					Design Speed (mph)	45
Secondary Functional Classification (if app.)							Target Speed (mph) [if app.]	

Approach #1	Direction	Northbound	Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along	Both sides of the approach	Left-Turn	1				
	Crosswalk on Approach?	Yes	Left-Through	0				
	On-Street Bike Facilities?	No	Through	1	Left	100	Left	122
	Multi-Use Path?	No	Left-Through-Right	0	Through	962	Through	1,314
	Scheduled Bus Service?	No	Through-Right	1	Right	44	Right	67
	Bus Stop on Approach?	No	Right-Turn	0	Daily Truck %		4.0%	
Approach #2	Direction	Southbound	Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:	Both sides of the approach	Left-Turn	1				
	Crosswalk on Approach?	Yes	Left-Through	0				
	On-Street Bike Facilities?	Yes	Through	1	Left	58	Left	88
	Multi-Use Path?	No	Left-Through-Right	0	Through	1,284	Through	1,254
	Scheduled Bus Service?	No	Through-Right	1	Right	102	Right	182
	Bus Stop on Approach?	No	Right-Turn	0	Daily Truck %		4.0%	

Minor Street Information							
Route #:		Route Name(s)	Beresford Ave			Milepost (if app.)	
Existing Control Type	Signal		Existing AADT	1,700		Design Year AADT	2,300
Design Vehicle	School Bus (S-BUS-36)		Control Vehicle	School Bus (S-BUS-36)			
Primary Functional Classification		Urban Local				Design Speed (mph)	30
Secondary Functional Classification (if app.)						Target Speed (mph) [if app.]	

Approach #1	Direction	Eastbound	Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:	Neither side of the approach	Left-Turn					
	Crosswalk on Approach?	Yes	Left-Through					
	On-Street Bike Facilities?	No	Through		Left	220	Left	163
	Multi-Use Path?	No	Left-Through-Right	1	Through	155	Through	94
	Scheduled Bus Service?	No	Through-Right		Right	109	Right	108
	Bus Stop on Approach?	No	Right-Turn		Daily Truck %		2.0%	
Approach #2	Direction	Westbound	Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:	One side of the approach	Left-Turn					
	Crosswalk on Approach?	Yes	Left-Through					
	On-Street Bike Facilities?	No	Through		Left	75	Left	106
	Multi-Use Path?	No	Left-Through-Right	1	Through	84	Through	149
	Scheduled Bus Service?	No	Through-Right		Right	55	Right	118
	Bus Stop on Approach?	No	Right-Turn		Daily Truck %		2.0%	
Approach #3	Direction		Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:		Left-Turn					
	Crosswalk on Approach?		Left-Through					
	On-Street Bike Facilities?		Through		Left		Left	
	Multi-Use Path?		Left-Through-Right		Through		Through	
	Scheduled Bus Service?		Through-Right		Right		Right	
	Bus Stop on Approach?		Right-Turn		Daily Truck %			

Crash History (Existing Intersections Only)
Append the most recent five-years of crash data for the intersection from the CAR System. If the crash data evidences any issues relating to safety performance, discuss briefly here:
No distinguishable crash patterns.

Control Strategy Evaluation						
Provide a brief justification as to why each of the following control strategies should be advanced or not. Justification should consider potential environmental impacts.						
Control Strategy	CAP-X Outputs			SPICE Ranking	Strategy to Be Advanced?	Justification
	V/C Ratio		Multimodal Score			
Two-Way Stop-Controlled					No	Currently a signalized intersection
All-Way Stop-Controlled					No	Currently a signalized intersection
Signalized Control	0.65	0.75	4.8	5/2	Yes	Traffic signal (as the future no-build condition) and an improved signalized condition are evaluated. Spice Ranking for the Improved Signal Option is 2
Roundabout	0.74	0.88	5.6	4	Yes	A roundabout will effectively mitigate the offset intersections issue
Median U-Turn					No	The issue of offset intersections, additional ROW needs, higher construction costs, and heavy trucks (SR 15A) do not support this alternative.
RCUT (Signalized)	0.58	0.66	6.3	6	No	The issue of offset intersections, additional ROW needs, higher construction costs, and heavy trucks (SR 15A) do not support this alternative
RCUT (Unsignalized)					No	Currently a signalized intersection
Jughandle					No	The issue of offset intersections, additional ROW needs, higher construction costs, and heavy trucks (SR 15A) do not support this alternative
Displaced Left-Turn	0.63	0.68	4.8	3	No	Low left turning volumes do not justify the costs of Full/Partial DLT. The issue of offset intersections, additional ROW also do not support this alternative
Continuous Green Tee					No	The study intersection is a 4-leg intersection and a Green T is not applicable
Quadrant Roadway	0.58	0.60	4.4		No	Left turns rerouting don't provide a significant operational improvement given QRI costs. However, traffic rereouting is assumed for the Build condition
Partial MUT	0.64	0.71	6.3	1	No	The issue of offset intersections, additional ROW needs, higher construction costs, and heavy trucks (SR 15A) do not support this alternative
Other						

Resolution					
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer					
Project Determination					
Comments					
DOTE Name		Signature		Date	
DDE Name		Signature		Date	

Capacity Analysis for Planning of Junctions

Project Name:	SR 15A/Beresford Ave
Project Number:	0
Location:	City of DeLand - Volusia County
Date:	2040 AM
Number of Intersection Legs:	4
Major Street Direction	North-South

Traffic Volume Demand

	Volume (Veh/hr)				Percent (%)	
	U-Turn	**Left**	**Thru**	**Right**	Heavy Vehicles	Volume Growth
Eastbound	0	220	155	109	2.00%	0.00%
Westbound	0	75	84	55	2.00%	0.00%
Southbound	0	58	1284	102	4.00%	0.00%
Northbound	0	100	962	44	4.00%	0.00%
Adjustment Factor	0.80	0.95		0.85		
Suggested	**0.80**	**0.95**		**0.85**		

Truck to PCE Factor		**Suggested = 2.00**	2.00
FDOT Context Zone	**C3R-Suburban Residential**		
Critical Lane Volume Threshold	2-phase signal	**Suggested = 1800**	**1800**
	3-phase signal	**Suggested = 1750**	**1750**
	4-phase signal	**Suggested = 1700**	**1700**

Capacity Analysis for Planning of Junctions

TYPE OF INTERSECTION	Overall v/c Ratio	V/C Ranking	Multimodal Score	Pedestrian Accommodations	Bicycle Accommodations	Transit Accommodations
Quadrant Roadway S-W	0.58	1	4.4	Fair	Fair	Fair
Quadrant Roadway N-E	0.58	1	4.4	Fair	Fair	Fair
Quadrant Roadway N-W	0.58	1	4.4	Fair	Fair	Fair
Signalized Restricted Crossing U-Turn N-S	0.58	1	6.3	Good	Good	Fair
Quadrant Roadway S-E	0.60	5	4.4	Fair	Fair	Fair
Partial Displaced Left Turn N-S	0.63	6	4.8	Fair	Fair	Good
Partial Median U-Turn N-S	0.64	7	6.3	Good	Good	Fair
Traffic Signal	0.65	8	4.8	Fair	Fair	Good
2 X 2	0.74	9	5.6	Fair	Good	Good
2NS X 1EW	1.28	10	5.6	Fair	Good	Good

Capacity Analysis for Planning of Junctions

Project Name:	SR 15A/Beresford Ave
Project Number:	0
Location:	City of DeLand - Volusia County
Date:	2040 PM
Number of Intersection Legs:	4
Major Street Direction	North-South

Traffic Volume Demand

	Volume (Veh/hr)				Percent (%)	
	U-Turn	**Left**	**Thru**	**Right**	Heavy Vehicles	Volume Growth
Eastbound	0	163	155	109	2.00%	0.00%
Westbound	0	106	149	118	2.00%	0.00%
Southbound	0	88	1254	182	4.00%	0.00%
Northbound	0	122	1314	67	4.00%	0.00%
Adjustment Factor	0.80	0.95		0.85		
Suggested	**0.80**	**0.95**		**0.85**		

Truck to PCE Factor		**Suggested = 2.00**	2.00
FDOT Context Zone	**C3R-Suburban Residential**		
Critical Lane Volume Threshold	2-phase signal	**Suggested = 1800**	**1800**
	3-phase signal	**Suggested = 1750**	**1750**
	4-phase signal	**Suggested = 1700**	**1700**

Capacity Analysis for Planning of Junctions

TYPE OF INTERSECTION	Overall v/c Ratio	V/C Ranking	Multimodal Score	Pedestrian Accommodations	Bicycle Accommodations	Transit Accommodations
Quadrant Roadway S-W	0.55	1	4.4	Fair	Fair	Fair
Quadrant Roadway N-W	0.56	2	4.4	Fair	Fair	Fair
Quadrant Roadway S-E	0.57	3	4.4	Fair	Fair	Fair
Quadrant Roadway N-E	0.60	4	4.4	Fair	Fair	Fair
Signalized Restricted Crossing U-Turn N-S	0.66	5	6.3	Good	Good	Fair
Partial Displaced Left Turn N-S	0.68	6	4.8	Fair	Fair	Good
Partial Median U-Turn N-S	0.71	7	6.3	Good	Good	Fair
Traffic Signal	0.75	8	4.8	Fair	Fair	Good
2 X 2	0.88	9	5.6	Fair	Good	Good
2NS X 1EW	1.16	10	5.6	Fair	Good	Good

Federal Highway Administration (FHWA)
Safety Performance for Intersection Control Evaluation Tool

Results

Summary of crash prediction results for each alternative

Project Information

Project Name:	SR 15A & Beresford Ave Feasibility Study	**Intersection Type**	At-Grade Intersections
Intersection:	SR 15A & Beresford Ave	**Opening Year**	2025
Agency:	R2CTPO	**Design Year**	2040
Project Reference:		**Facility Type**	On Urban and Suburban Arterial
City:	Deland	**Number of Legs**	4-leg
State:	FL	**1-Way/2-Way**	2-way Intersecting 2-way
Date:	2/2/2021	**# of Major Street Lanes (both directions)**	5 or fewer
Analyst:	VHB	**Major Street Approach Speed**	Less than 55 mph

Crash Prediction Summary

Control Strategy	Crash Type	Opening Year	Design Year	Total Project Life Cycle	Rank	AADT Within Prediction Range?	Source of Prediction
Traffic Signal	Total	5.20	6.17	90.95	5	Yes	Calibrated SPF
	Fatal & Injury	2.62	3.14	46.08			
Traffic Signal (Alt)	Total	4.17	4.94	72.83	2	Yes	Calibrated SPF
	Fatal & Injury	2.11	2.52	37.00			
2-lane Roundabout	Total	13.13	15.41	228.21	4	No	Uncalibrated SPF
	Fatal & Injury	2.49	2.97	43.73			
Displaced Left Turn (DLT)	Total	4.58	5.43	80.03	3	N/A	CMF
	Fatal & Injury	2.31	2.76	40.55			
Median U-Turn (MUT)	Total	4.42	5.25	77.30	1	N/A	CMF
	Fatal & Injury	1.84	2.20	32.26			
Signalized RCUT	Total	20.41	25.35	365.58	6	Yes	Uncalibrated SPF
	Fatal & Injury	4.74	6.02	85.99			

APPENDIX E:

Signal Warrant Analysis

TRAFFIC SIGNAL WARRANT SUMMARY

City: **NA** Engineer: **VHB**
County: **Volusia** Date: **February 17, 2021**

Major Street: **SR 15A** Lanes: **2** Critical Approach Speed: **45**
Minor Street: **Gayle Dr** Lanes: **1**
Opening Year 2025

Volume Level Criteria

1. Is the critical speed of major street traffic > 70 km/h (40 mph) ? ☒ Yes ☐ No
2. Is the intersection in a built-up area of isolated community of <10,000 population? ☐ Yes ☐ No

If Question 1 or 2 above is answered "Yes", then use "70%" volume level ☒ 70% ☐ 100%

WARRANT 1 - EIGHT-HOUR VEHICULAR VOLUME

Applicable: ☒ Yes ☐ No
Satisfied: ☒ Yes ☐ No

Warrant 1 is satisfied if Condition A or Condition B is "100%" satisfied.
Warrant is also satisfied if both Condition A and Condition B are "80%" satisfied for major streets 40 mph or less, or "56%" satisfied for major streets greater than 40 mph.

Condition A - Minimum Vehicular Volume*

100% (70%) Satisfied: ☒ Yes ☐ No
56% or 80% Satisfied: ☐ Yes ☐ No

(volumes in veh/hr)	Minimum Requirements (80% Shown in Brackets)				Eight Highest Hours							
Approach Lanes	1		2 or more		7-8 AM	8-9 AM	11-12 PM	12-1 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM
Volume Level	100%	70%	100%	70%								
Both Approaches on Major Street	500 (400) [280]	350	600 (480) [336]	420	1,849	1,666	1,666	1,644	1,644	1,859	2,323	2,137
Highest Approach on Minor Street	150 (120) [84]	105	200 (160) [112]	140	192	127	96	114	119	100	139	130

Record 8 highest hours and the corresponding volumes in boxes provided. Condition is 100% satisfied if the minimum volumes are met for eight hours . Condition is 80% satisfied if (parenthetical) volumes are met for eight hours. Condition is 56% satisfied if [bracketed] volumes are met for eight hours.

Condition B - Interruption of Continuous Traffic

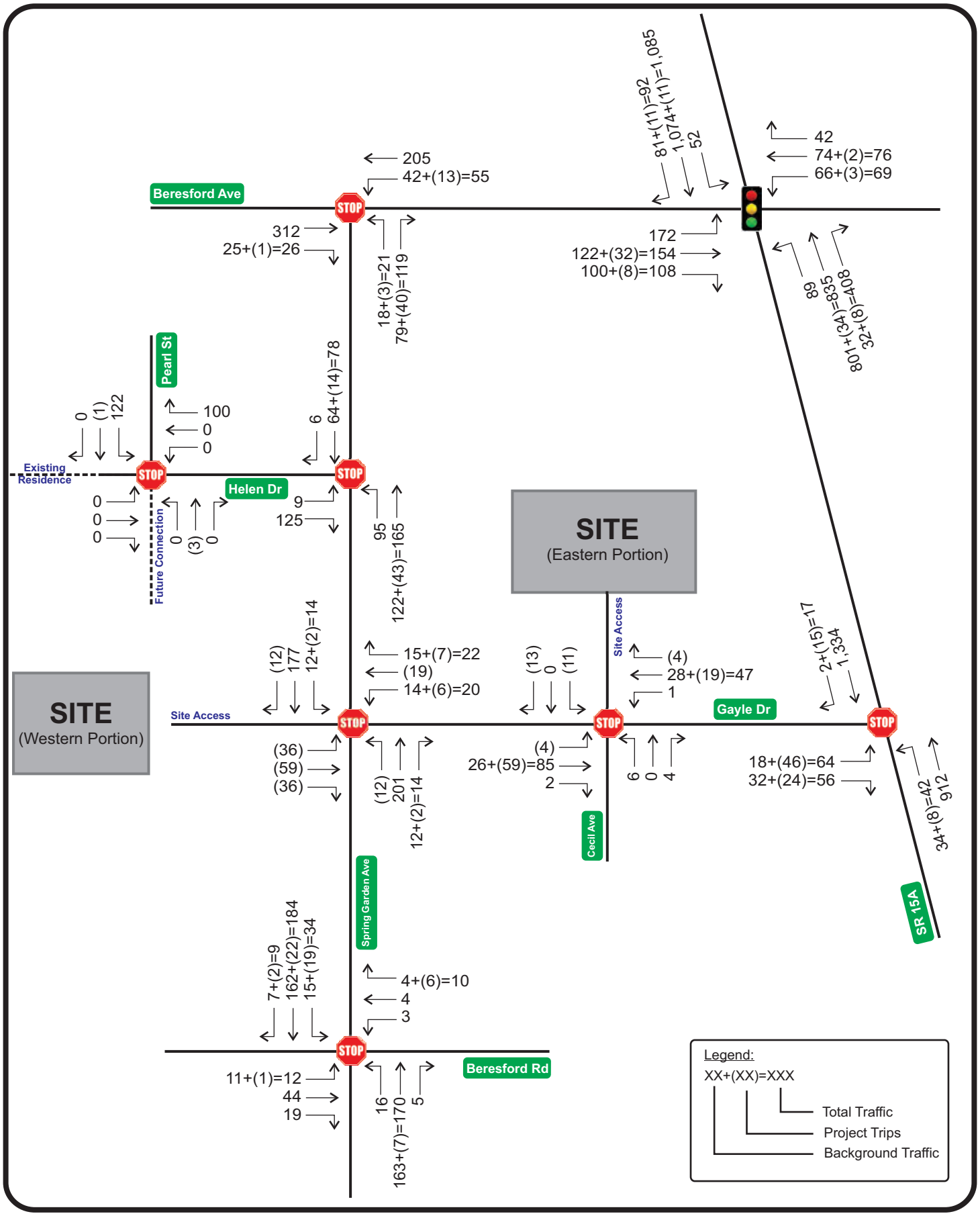
Condition B is intended for application where the traffic volume is so heavy that traffic on the minor street suffers excessive delay.

Applicable: ☒ Yes ☐ No
Excessive Delay: ☐ Yes ☐ No
100% (70%) Satisfied: ☒ Yes ☐ No
56% or 80% Satisfied: ☐ Yes ☐ No

(volumes in veh/hr)	Minimum Requirements (80% Shown in Brackets)				Eight Highest Hours							
Approach Lanes	1		2 or more		7-8 AM	8-9 AM	11-12 PM	12-1 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM
Volume Level	100%	70%	100%	70%								
Both Approaches on Major Street	750 (600) [420]	525	900 (720) [504]	630	1,849	1,666	1,666	1,644	1,644	1,859	2,323	2,137
Highest Approach on Minor Street	75 (60) [42]	53	100 (80) [56]	70	192	127	96	114	119	100	139	130

Record 8 highest hours and the corresponding volumes in boxes provided. Condition is 100% satisfied if the minimum volumes are met for eight hours . Condition is 80% satisfied if (parenthetical) volumes are met for eight hours. Condition is 56% satisfied if [bracketed] volumes are met for eight hours.

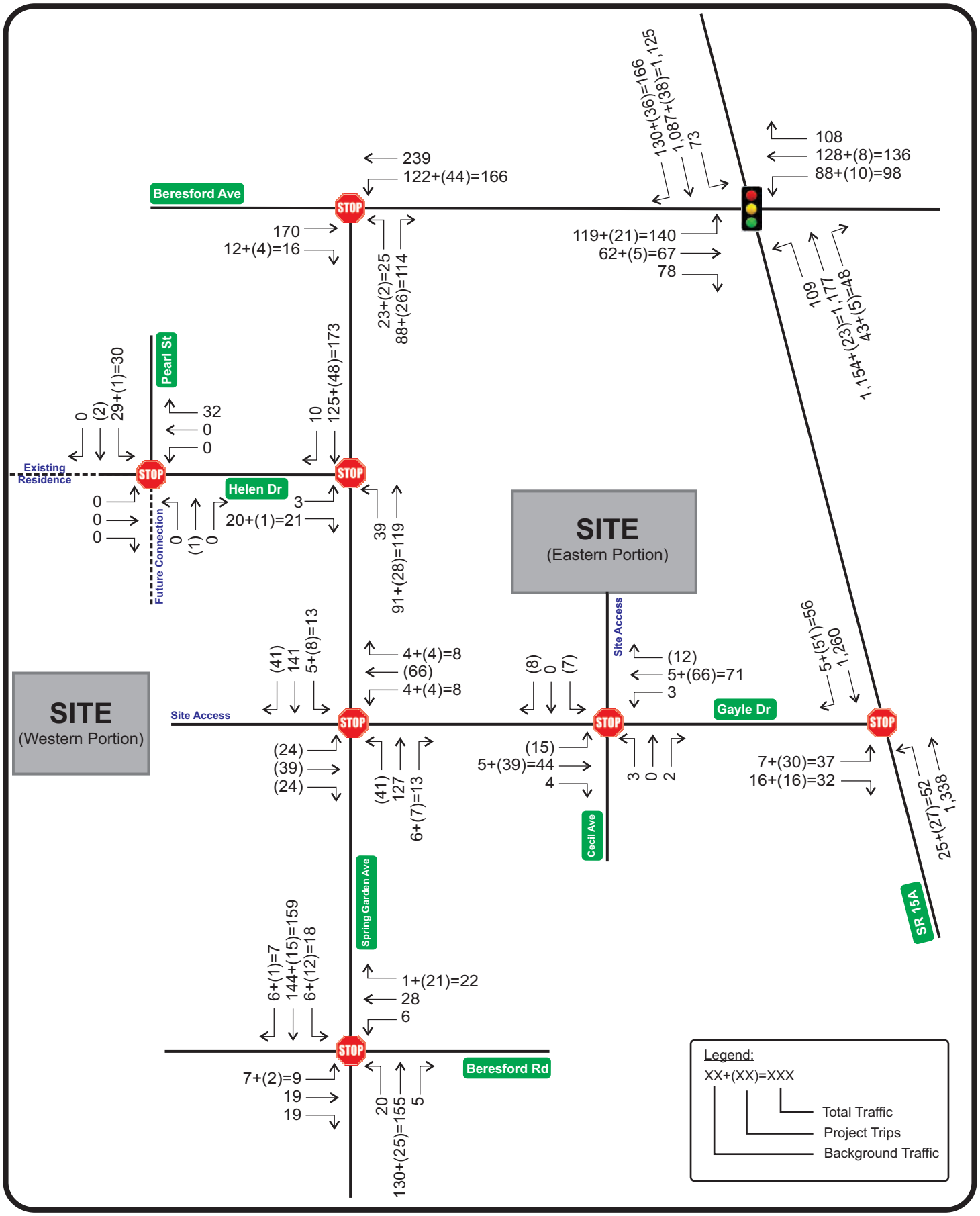
Source: Revised from NCHRP Report 457



Beresford Woods
Project № 5237
Figure 5a

Projected A.M. Peak Hour Intersection Volumes

N
NTS



Beresford Woods
Project № 5237
Figure 5b

Projected P.M. Peak Hour Intersection Volumes

N
NTS

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use

Source: ITE *Trip Generation Manual* , 10th Edition

Land Use Code	210	
Land Use	Single-Family Detached Housing	
Setting	General Urban/Suburban	
Time Period	Weekday	
Trip Type	Vehicle	
# Data Sites	6	
	% of 24-Hour Traffic	
Time	Entering	Exiting
12-1 AM	0.5	0.2
1-2 AM	0.2	0.2
2-3 AM	0.2	0
3-4 AM	0.2	0.2
4-5 AM	0.3	0.8
5-6 AM	0.5	2.0
6-7 AM	1.6	5.9
7-8 AM	3.2	10.2
8-9 AM	3.7	8.6
9-10 AM	3.2	5.4
10-11 AM	4.2	5.4
11-12 PM	5.4	5.1
12-1 PM	5.5	5.6
1-2 PM	6.0	5.9
2-3 PM	7.0	6.2
3-4 PM	8.5	6.0
4-5 PM	10.5	7.5
5-6 PM	10.3	7.4
6-7 PM	8.6	5.9
7-8 PM	6.2	4.3
8-9 PM	6.3	3.1
9-10 PM	4.5	2.4
10-11 PM	2.2	1.1
11-12 AM	1.3	0.7

APPENDIX F:

Signing & Marking Plans (FPID 441414-1)

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 441414-1-52-01

(FEDERAL FUNDS)

VOLUSIA COUNTY (79160)

STATE ROAD NO. 15A

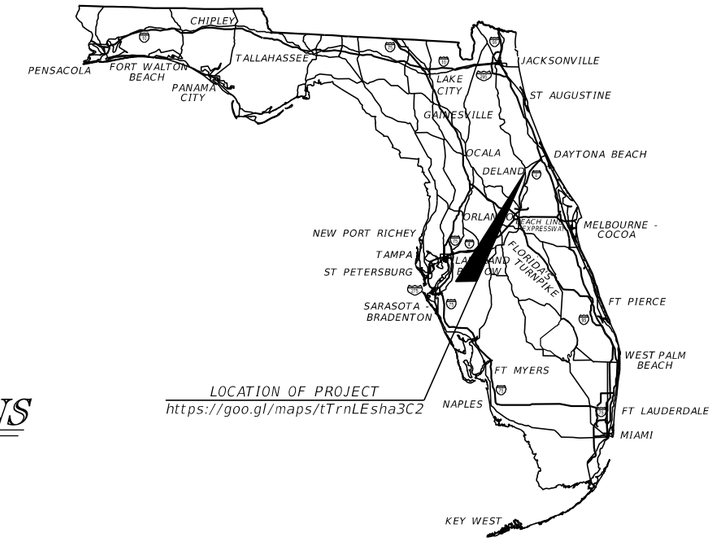
SR 15A (TAYLOR RD)

FROM WEST OF SR 15 (US 17/92) TO WEST OF SOUTH ADELLE AVE.

SIGNING AND PAVEMENT MARKING PLANS

INDEX OF SIGNING AND PAVEMENT MARKING PLANS

SHEET NO.	SHEET DESCRIPTION
S-1	KEY SHEET
S-1A	NOTES TO REVIEWER
S-2	TABULATION OF QUANTITIES
S-3	SPECIAL DETAILS
S-4 - S-9	SIGNING AND PAVEMENT MARKING PLANS
S-10	GUIDE SIGN WORKSHEET



LOCATION OF PROJECT
https://goo.gl/maps/tTrnLEsha3C2

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

ROBERT W. NEIL
LICENSE
No 43370
STATE OF FLORIDA
PROFESSIONAL ENGINEER

PHASE III PLANS SUBMITTAL
OCTOBER 23, 2019

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SIGNING AND PAVEMENT MARKING PLANS ENGINEER OF RECORD:

ROBERT NEIL, P.E. NO.: 43370
SRD, INC.
3812 COCONUT PALM DR., STE. 100
TAMPA, FL 33619
(813) 621-3250
CONTRACT NO.: C-9F59
VENDOR NO.: 65-1080679
CERTIFICATE OF AUTHORIZATION NO.: 00008828

FDOT PROJECT MANAGER:

GENE VARANO

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
XXXXX	21	S-1

NOTES TO REVIEWERS

1. TURN LANES ARE 9-FT WIDE PER SCOPE. THIS HAS BEEN REVIEWED BY GEORGE BORCHIK AND A DESIGN VARIATION HAS BEEN SUBMITTED FOR TURN LANE WIDTH.

2. IN ORDER TO MAINTAIN THE 9-FT TURN LANE WIDTH, THE INSIDE 6" WHITE STRIPE IS TO BE PLACED AS CLOSE TO THE TRAFFIC SEPARATOR AS POSSIBLE. THE TURN LANE TAPER IS 50', BUT SINCE THE 6" WHITE OFFSET IS NOT 1.5-FT AS TYPICAL, IT APPEARS TO BE 60'.

3. AUTOTURN TURNING TEMPLATES HAVE BEEN COMPLETED AT THE U-TURN WIDENING APRONS FOR LARGE PASSENGER VEHICLES.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS S-4 PLAN	S-4 FINAL	S-5 PLAN	S-5 FINAL	S-6 PLAN	S-6 FINAL	S-7 PLAN	S-7 FINAL	S-8 PLAN	S-8 FINAL	S-9 PLAN	S-9 FINAL	PLAN	FINAL	TOTAL THIS SHEET PLAN	TOTAL THIS SHEET FINAL	GRAND TOTAL PLAN	GRAND TOTAL FINAL
0700 1 11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	AS	1				3		6				1				11		11	
0700 1 12	SINGLE POST SIGN, F&I GROUND MOUNT, 12-20 SF	AS	1										1				2		2	
0700 1 50	SINGLE POST SIGN, RELOCATE	AS							1								1		1	
0700 1 60	SINGLE POST SIGN, REMOVE	AS	2		5		1		3								11		11	
0700 3601	SIGN PANEL, REMOVE, UP TO 12 SF	EA							1								1		1	
0700 5 21	INTERNALLY ILLUMINATED SIGN, FURNISH AND INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA			2												2		2	
0700 5 22	INTERNALLY ILLUMINATED SIGN, FURNISH AND INSTALL OVERHEAD MOUNT, 12-18 SF	EA			2												2		2	
0705 10 1	OBJECT MARKER, TYPE 1	EA											1				1		1	
0705 11 3	DELINEATOR, FLEXIBILE, HIGH VISIBILITY MEDIAN	EA	1				2		2				1				6		6	
0710 11190	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, ISLAND NOSE	SF	9.6				9.6		9.6								29		29	
0710 11290	PAINTED PAVEMENT MARKINGS, STANDARD, YELLOW, ISLAND NOSE	SF	4.8		9.6		9.6		9.6				4.8				38		38	
0710 90	PAINTED PAVEMENT MARKINGS, FINAL SURFACE	LS	1														1		1	
*	RETRO-REFLECTIVE PAVEMENT MARKERS (W/R)		38		47		53		47		37		21				243		243	
*	RETRO-REFLECTIVE PAVEMENT MARKERS (MD/Y)		9		16		18		18				8				69		69	
*	RETRO-REFLECTIVE PAVEMENT MARKERS (MD/W)		19				19		20				10				68		68	
*	RETRO-REFLECTIVE PAVEMENT MARKERS (Y/Y)		4		12		4		91				10				121		121	
*	PAINT, STD., WHITE, SOLID, 6"	GM	0.168		0.245		0.251		0.262		0.239		0.083				1.248		1.248	
*	PAINT, STD., WHITE, SOLID, 8"	GM	0.019				0.023		0.027				0.013				0.082		0.082	
*	PAINT, STD., WHITE, SOLID, 12"	LF	90.4		481.7		116.8		287.3								976.2		976	
*	PAINT, STD., WHITE, SOLID, DIAG./CHEVRON, 18"	LF	7.6				11.8		17.2				9.7				46.3		46	
*	PAINT, WHITE, SOLID, STOP LINES/CROSSWALK, 24"	LF	13.7		110.4		19.7		30.1								173.9		174	
*	PAINT, STD., WHITE, SKIP, 6" (10/30)	GM	0.167		0.137		0.213		0.213		0.213		0.091				1.034		1.034	
*	PAINT, STD., WHITE, GUIDE LINE, 6" (2-4 DOTTED GUIDELINE / 6-10 GAP EXTENSION)	GM	0.058		0.073		0.064		0.089		0.040		0.064				0.388		0.388	
*	PAINT, STD., MESSAGE OR SYMBOL (ONLY)	EA					3				1		2				6		6	
*	PAINT, STD., ARROWS	EA																	27	
	LEFT		4		5		3		4		2		1				19		19	
	RIGHT								2								2		2	
	U-TURN						3				1		2				6		6	
*	PAINT, STD., YELLOW, SOLID, 6"	GM	0.165		0.207		0.238		0.360		0.212		0.098				1.280		1.280	
*	PAINT, STD., YELLOW, SOLID, DIAG/CHEVRONS, 18"	LF	10.4		19.2		10.2		130.6				45.7				216.1		216	
*	PAINT, STD., YELLOW, GUIDE LINE, 6" (2/4)	GM	0.007				0.012						0.007				0.026		0.026	
0711 11123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	LF	90.4		481.7		116.8		287.3								976.2		976	
0711 11124	THERMOPLASTIC, STANDARD, WHITE, SOLID, 18" FOR DIAGONALS AND CHEVRONS	LF	7.6				11.8		17.2				9.7				46.3		46	
0711 11125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	LF	13.7		110.4		19.7		30.1								173.9		174	
0711 11141	THERMO., STD., WHITE, GUIDE LINE, 6" (2-4 DOTTED GUIDELINE / 6-10 GAP EXTENSION)	GM	0.058		0.073		0.064		0.089		0.040		0.064				0.388		0.388	
0711 11160	THERMO., STD., MESSAGE OR SYMBOL (ONLY)	EA					3				1		2				6		6	
0711 11170	THERMO., STD., ARROWS	EA																	27	
	LEFT		4		5		3		4		2		1				19		19	
	RIGHT								2								2		2	
	U-TURN						3				1		2				6		6	
0711 11224	THERMOPLASTIC, STANDARD, YELLOW, SOLID, 18" FOR DIAGONAL OR CHEVRONS	LF	10.4		19.2		10.2		130.6				45.7				216.1		216	
0711 11241	THERMO., STD., YELLOW, GUIDE LINE, 6" (2/4)	GM	0.007				0.012						0.007				0.026		0.026	
0711 14125	THERMOPLASTIC, PREFORMED, WHITE, SOLID, 24" FOR CROSSWALK	LF	73.2		393.3		100.0		225.5								792.0		792	
0711 14160	THERMO., PREFORMED, MESSAGE OR SYMBOL (BIKE)	EA	3		3		1		3		1		1				12		12	
0711 14170	THERMO., PREFORMED, ARROWS (BIKE THRU)	EA	3		3		1		3		1		1				12		12	
0711 16101	THERMOPLASTIC, STANDARD, OTHER SURFACES, WHITE, SOLID, 6"	GM	0.168		0.245		0.251		0.262		0.239		0.083				1.248		1.248	
0711 16102	THERMOPLASTIC, STANDARD, OTHER SURFACES, WHITE, SOLID, 8"	GM	0.019				0.023		0.027				0.013				0.082		0.082	
0711 16131	THERMO., STD. - OTHER, WHITE, SKIP, 6" (10/30)	GM	0.167		0.137		0.213		0.213		0.213		0.091				1.034		1.034	
0711 16201	THERMOPLASTIC, STANDARD, OTHER SURFACES, YELLOW, SOLID, 6"	GM	0.165		0.207		0.238		0.360		0.212		0.098				1.280		1.280	
0711 17 1	THERMOPLASTIC, REMOVE EXISTING THERMOPLASTIC PAVEMENT MARKINGS- SURFACE TO REMAIN	SF											51.0				51.0		51	

* THESE QUANTITIES ARE PAID FOR UNDER PAINTED PAVEMENT MARKINGS (FINAL SURFACE), LUMP SUM - ITEM NO. 710-90. THE QUANTITIES SHOWN ARE FOR ONE APPLICATION; SEE SPECIFICATION 710 FOR THE NUMBER OF APPLICATIONS REQUIRED.

REVISIONS DATE	DESCRIPTION	DATE	DESCRIPTION

SRD, Inc.
3812 Coconut Palm Dr., Ste. 100
Tampa, FL 33619
Phone No. (813) 621-3250
Certificate No. 00008828
Robert Neil, P.E.
P.E. No. 43370

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 15A	VOLUSIA	441414-1-52-01

TABULATION OF QUANTITIES

SHEET NO. S-2

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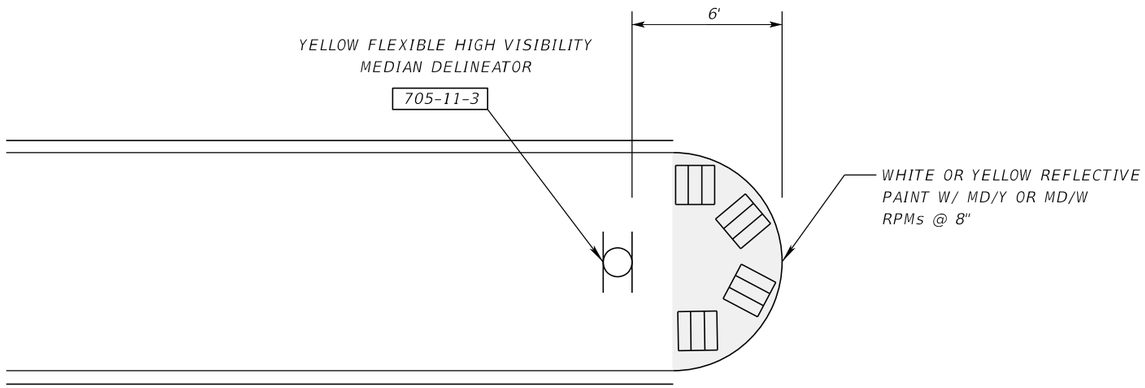
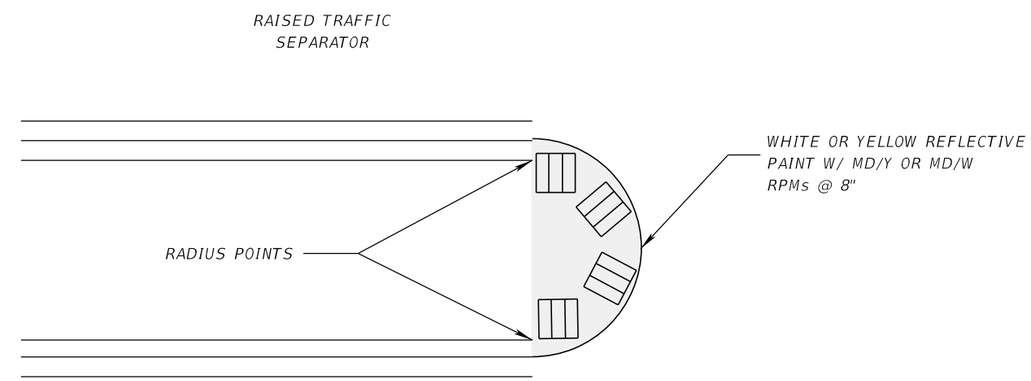


SIGN PLACEMENT FOR SIGNALIZED & UNSIGNALIZED INTERSECTIONS



MEDIAN NOSE PAINT DETAIL

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 15A	VOLUSIA	441414-1-52-01

SPECIAL DETAILS

SHEET NO.
S-3

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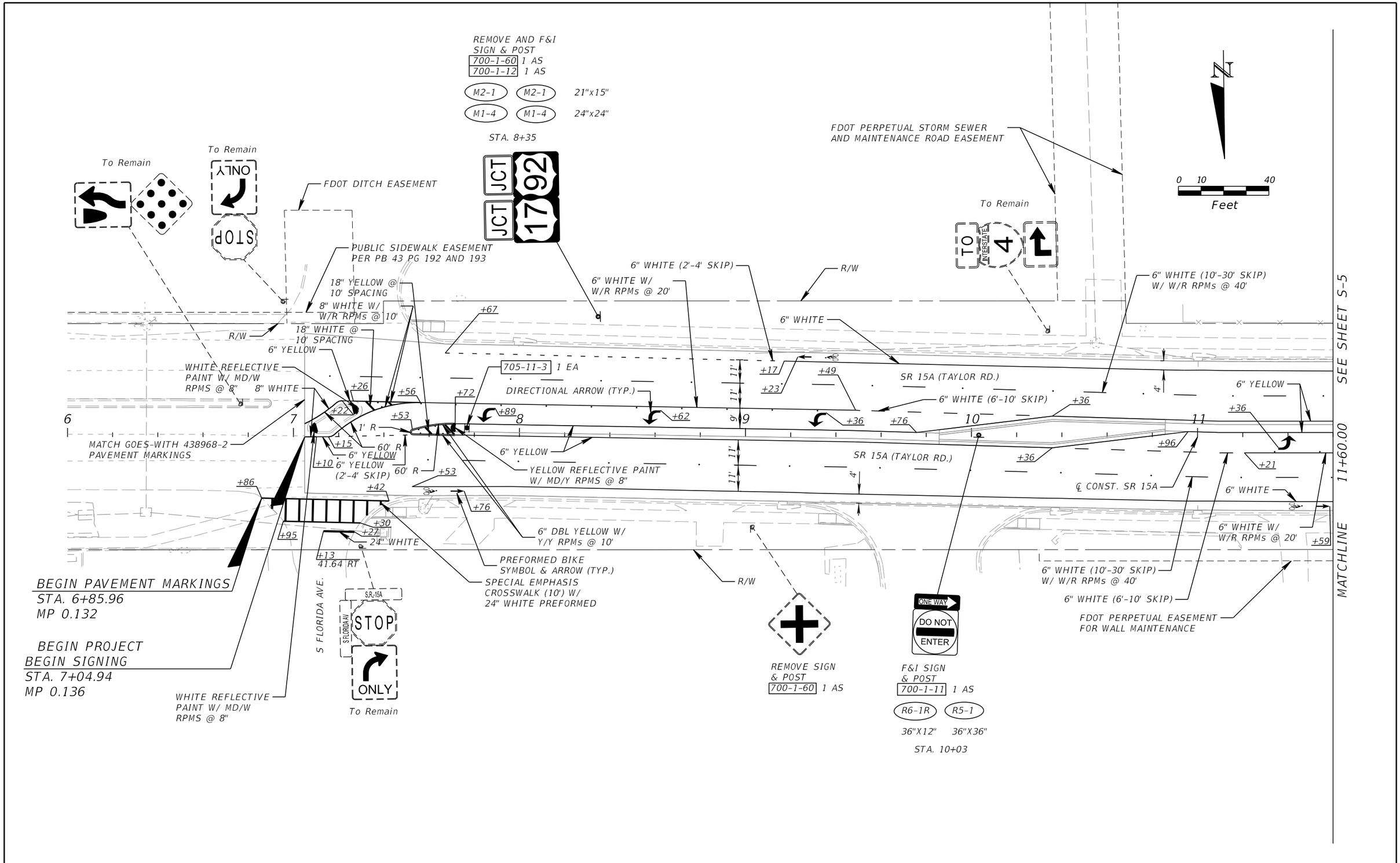

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 15A	VOLUSIA	441414-1-52-01

SIGNING & PAVEMENT MARKING PLANS (1)

SHEET NO.
S-4

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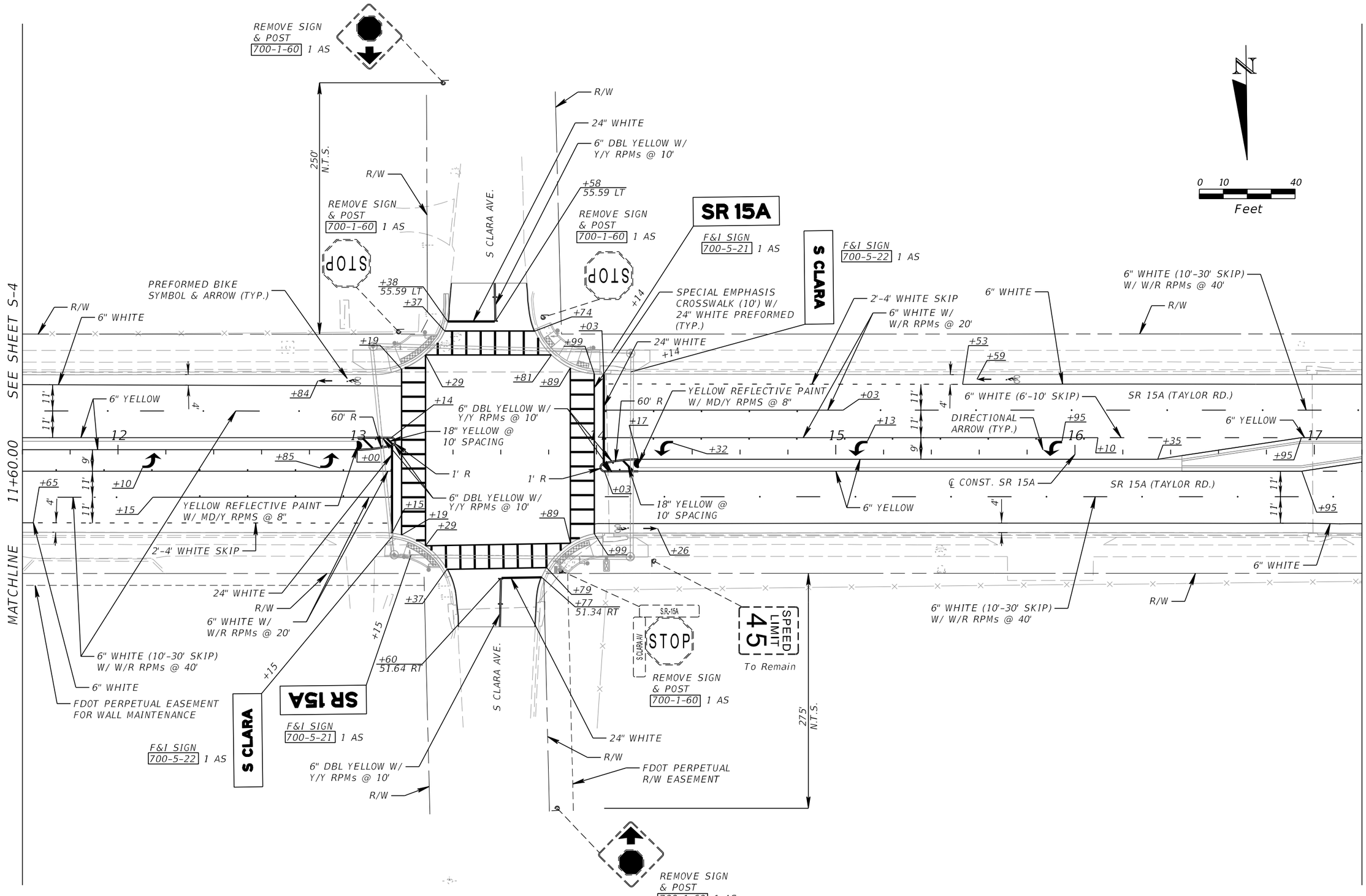

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SIGNING & PAVEMENT MARKING PLANS (2)

SHEET NO. S-5

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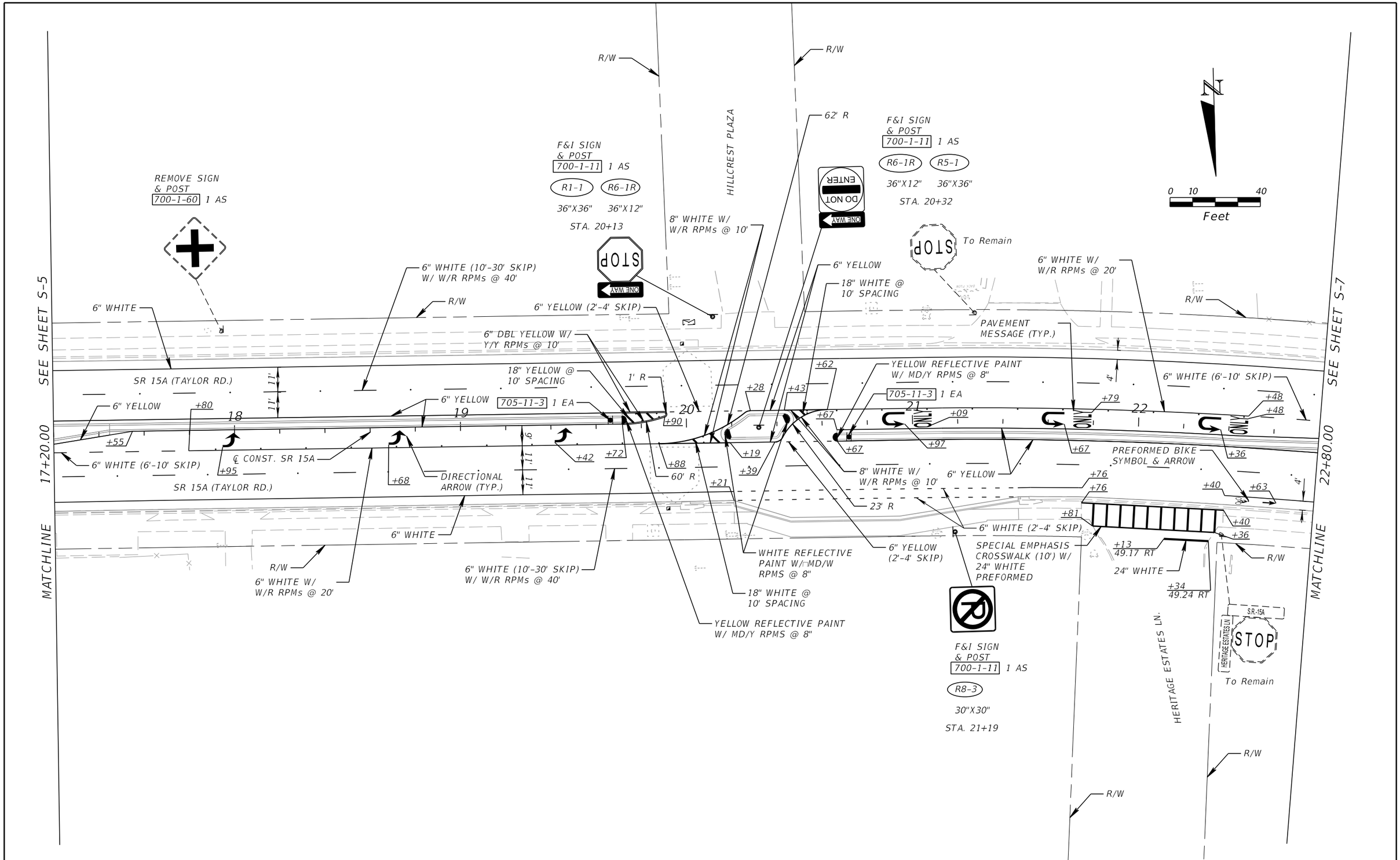

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SIGNING & PAVEMENT MARKING PLANS (3)

SHEET NO.
S-6

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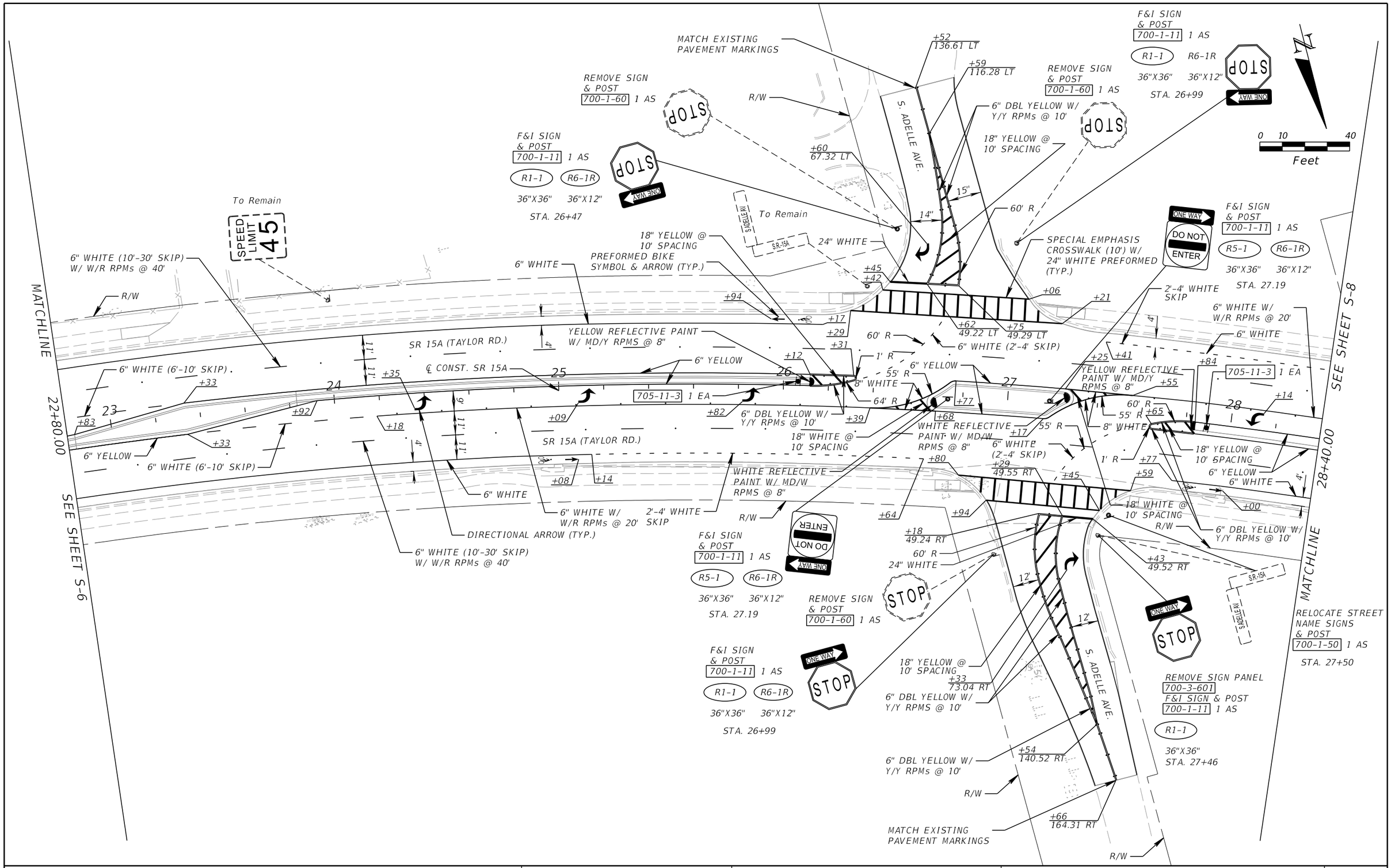

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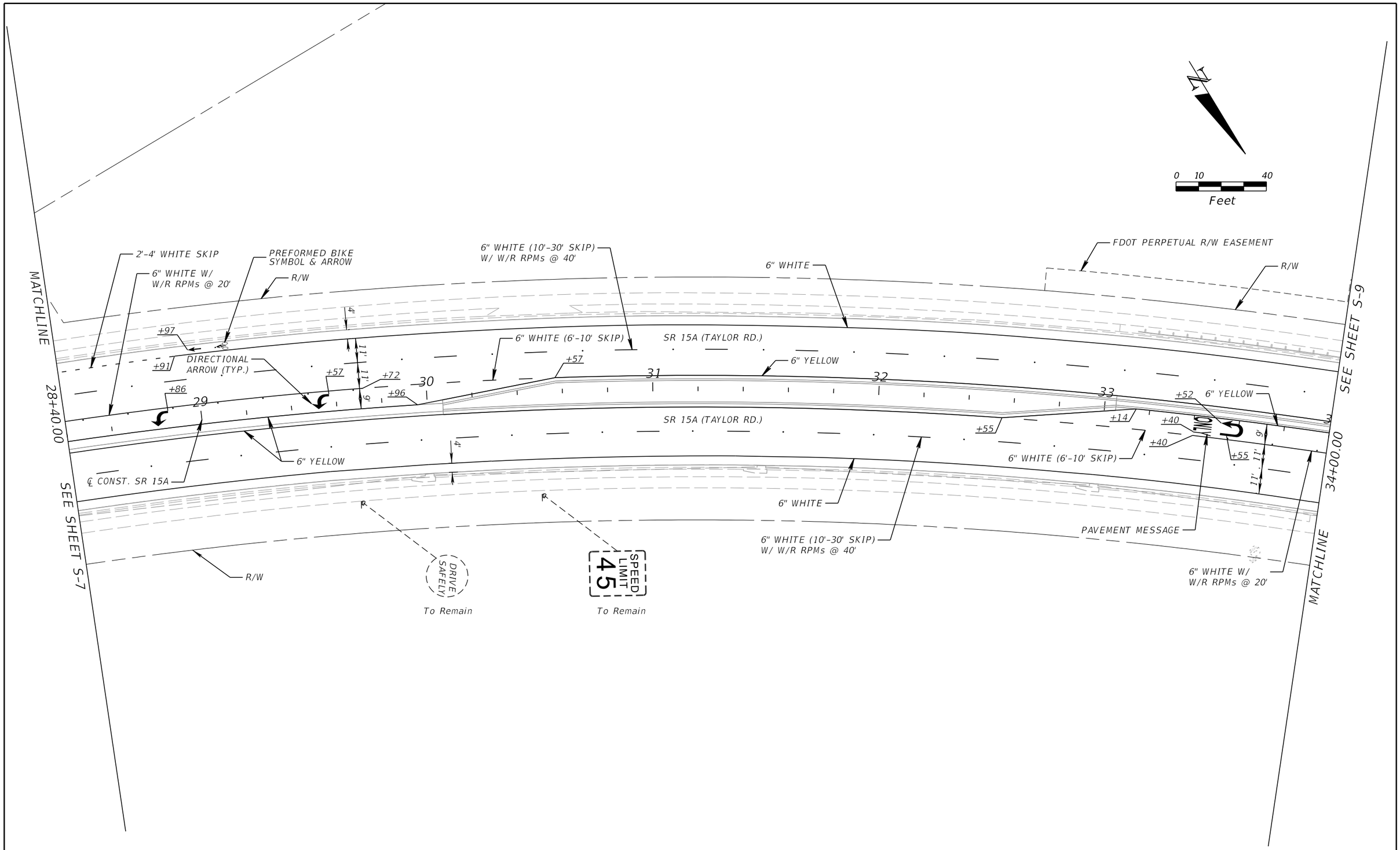
SIGNING & PAVEMENT MARKING PLANS (4)

SHEET NO.
S-7



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SIGNING & PAVEMENT MARKING PLANS (5)

SHEET NO.
S-8

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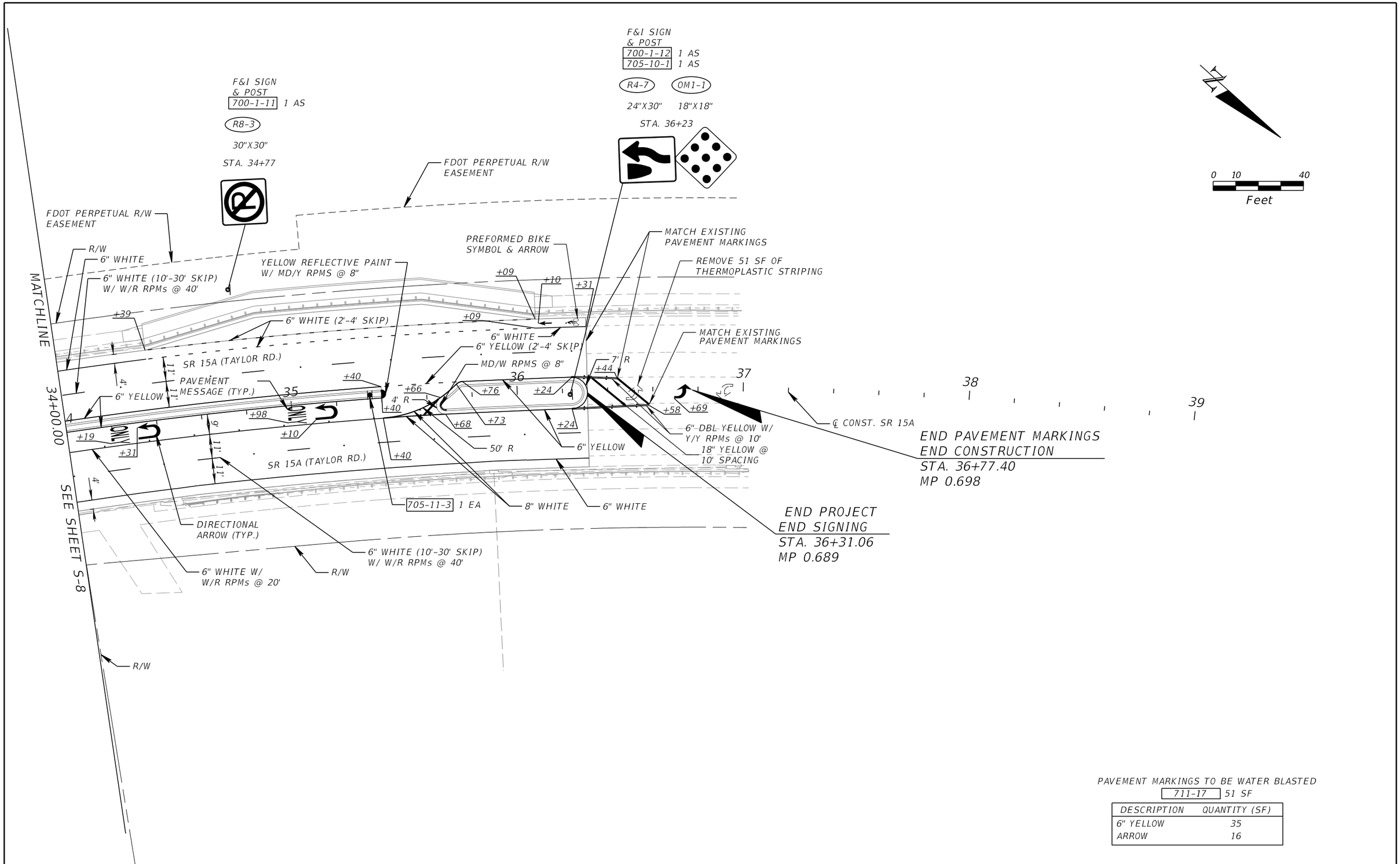

PAVEMENT MARKINGS TO BE WATER BLASTED

711-17 51 SF

DESCRIPTION	QUANTITY (SF)
6" YELLOW	35
ARROW	16

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SR 15A	VOLUSIA	441414-1-52-01

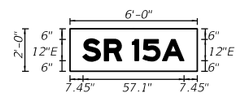
SIGNING & PAVEMENT MARKING PLANS (6)

SHEET NO.
S-9

SIGN NAME	SIGN A	QTY	2	SIGN NUMBER	STATION(S)
PANEL		BORDER			none
WIDTH	6'-0"	WIDTH	0"		
HEIGHT	2'-0"	RADII	0"		
LEGEND	White	COLOR	Green		
COLOR	Green				

SYMBOL(S)	ANGLE	X	Y	WID	HT

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH



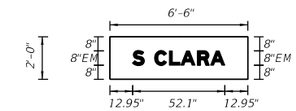
NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY	S	R	1	5	A		L																
SPACE	7.4	19.6	35.3	41.3	52.3		57.1																
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							

SIGN NAME	SIGN B	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			none
WIDTH	6'-6"	WIDTH	0"		
HEIGHT	2'-0"	RADII	0"		
LEGEND	White	COLOR	Green		
COLOR	Green				

SYMBOL(S)	ANGLE	X	Y	WID	HT

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH



NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY	S	C	L	A	R	A		L															
SPACE	13	25.4	33.7	40.1	49.6	57		52.1															
COPY	1	5	0	0		L																	
SPACE	5	8	13.9	20.1		20.2																	
COPY	A	V	E		L																		
SPACE	30.2	36.8	43.3		17.6																		
COPY	1	6	0	0		L																	
SPACE	52.5	55.7	61.7	68		20.5																	
COPY																							
SPACE																							
COPY																							
SPACE																							

SIGN NAME		QTY		SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH		WIDTH			
HEIGHT		RADII			
LEGEND		COLOR			
COLOR					

SYMBOL(S)	ANGLE	X	Y	WID	HT

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH

NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY																							
SPACE																							
COPY																							
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SPACE																							
COPY																							
SPACE																							

SIGN NAME		QTY		SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH		WIDTH			
HEIGHT		RADII			
LEGEND		COLOR			
COLOR					

SYMBOL(S)	ANGLE	X	Y	WID	HT

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH

NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY																							
SPACE																							
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SR 15A	VOLUSIA	441414-1-52-01

GUIDE SIGN WORKSHEET

SHEET NO. S-10

APPENDIX G:

Existing Traffic Operational Analysis Output
And
Signal Timing Sheets

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	271	0	6	182	0	6	0	10	0	0	0
Future Vol, veh/h	0	271	0	6	182	0	6	0	10	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	2	0	0	2	0	25	0	0	0	0	0
Mvmt Flow	0	371	0	8	249	0	8	0	14	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	249	0	0	371	0	0	636	636	371	643	636	249
Stage 1	-	-	-	-	-	-	371	371	-	265	265	-
Stage 2	-	-	-	-	-	-	265	265	-	378	371	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.35	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.725	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1328	-	-	1199	-	-	360	398	679	389	398	795
Stage 1	-	-	-	-	-	-	605	623	-	745	693	-
Stage 2	-	-	-	-	-	-	692	693	-	648	623	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1328	-	-	1199	-	-	358	395	679	379	395	795
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	395	-	379	395	-
Stage 1	-	-	-	-	-	-	605	623	-	745	687	-
Stage 2	-	-	-	-	-	-	686	687	-	635	623	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	12.4	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	508	1328	-	-	1199	-	-	-
HCM Lane V/C Ratio	0.043	-	-	-	0.007	-	-	-
HCM Control Delay (s)	12.4	0	-	-	8	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	260	21	35	172	16	78
Future Vol, veh/h	260	21	35	172	16	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	4	3	0	0
Mvmt Flow	313	25	42	207	19	94

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	338	0	617	326
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	291	-
Critical Hdwy	-	-	4.14	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1210	-	457	720
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	763	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1210	-	439	720
Mov Cap-2 Maneuver	-	-	-	-	439	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	733	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	649	-	-	1210	-
HCM Lane V/C Ratio	0.175	-	-	0.035	-
HCM Control Delay (s)	11.7	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	112	83	55	62	42	76	706	27	44	968	69
Future Volume (vph)	143	112	83	55	62	42	76	706	27	44	968	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	210		0	185		0
Storage Lanes	0		0	0		0	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	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.967			0.964			0.994			0.990	
Flt Protected		0.979			0.983		0.950			0.950		
Satd. Flow (prot)	0	1767	0	0	1741	0	1888	3448	0	1925	3441	0
Flt Permitted		0.773			0.754		0.111			0.280		
Satd. Flow (perm)	0	1395	0	0	1335	0	221	3448	0	567	3441	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			17			4			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		137			187			2331			918	
Travel Time (s)		3.1			4.3			53.0			20.9	
Confl. Peds. (#/hr)							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 (%)	0%	4%	2%	0%	2%	10%	2%	4%	6%	0%	4%	2%
Adj. Flow (vph)	159	124	92	61	69	47	84	784	30	49	1076	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	375	0	0	177	0	84	814	0	49	1153	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	17.0		5.0	17.0	
Minimum Split (s)	44.0	44.0		44.0	44.0		12.0	34.0		12.0	34.0	
Total Split (s)	45.0	45.0		45.0	45.0		25.0	55.0		15.0	45.0	
Total Split (%)	39.1%	39.1%		39.1%	39.1%		21.7%	47.8%		13.0%	39.1%	
Maximum Green (s)	39.0	39.0		39.0	39.0		18.0	48.0		8.0	38.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		7.0	7.0		7.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	28.0	28.0		28.0	28.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		29.2			29.2		47.0	42.2		43.9	38.6	
Actuated g/C Ratio		0.32			0.32		0.51	0.46		0.47	0.42	
v/c Ratio		0.83			0.41		0.33	0.52		0.13	0.80	
Control Delay		45.6			25.9		15.9	22.3		13.1	31.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		45.6			25.9		15.9	22.3		13.1	31.8	
LOS		D			C		B	C		B	C	
Approach Delay		45.6			25.9			21.7			31.1	
Approach LOS		D			C			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 115	
Actuated Cycle Length: 92.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 29.6	Intersection LOS: C
Intersection Capacity Utilization 75.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: SR 15A & W Beresford Ave

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	15	0	0	6
Future Vol, veh/h	2	1	15	0	0	6
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	67	67	67	67	67	67
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	3	1	22	0	0	9

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	31	22	0	0	22	0
Stage 1	22	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	988	1061	-	-	1607	-
Stage 1	1006	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	988	1061	-	-	1607	-
Mov Cap-2 Maneuver	988	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	1019	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1011	1607	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	-	-	8.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	2	94	55	1
Future Vol, veh/h	0	0	2	94	55	1
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	0	0	2	109	64	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	178	65	65	0	-	0
Stage 1	65	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	816	1005	1550	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	815	1005	1550	-	-	-
Mov Cap-2 Maneuver	815	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	917	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1550	-	-	-	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	7.3	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	21	177	11	28	157
Future Vol, veh/h	12	21	177	11	28	157
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	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	3
Mvmt Flow	17	30	249	15	39	221

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	556	257	0	0	264	0
Stage 1	257	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	496	787	-	-	1312	-
Stage 1	791	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	479	787	-	-	1312	-
Mov Cap-2 Maneuver	479	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	638	1312	-
HCM Lane V/C Ratio	-	-	0.073	0.03	-
HCM Control Delay (s)	-	-	11.1	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	29	29	776	1135	1
Future Vol, veh/h	15	29	29	776	1135	1
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	-	185	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	17	32	32	862	1261	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1757	631	1262	0	-	0
Stage 1	1262	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	78	429	558	-	-	-
Stage 1	234	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	74	429	558	-	-	-
Mov Cap-2 Maneuver	172	-	-	-	-	-
Stage 1	221	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.3	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	558	-	284	-	-
HCM Lane V/C Ratio	0.058	-	0.172	-	-
HCM Control Delay (s)	11.8	-	20.3	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	188	6	7	222	0	8	0	11	0	0	0
Future Vol, veh/h	0	188	6	7	222	0	8	0	11	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	209	7	8	247	0	9	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	247	0	0	216	0	0	476	476	213	482	479	247
Stage 1	-	-	-	-	-	-	213	213	-	263	263	-
Stage 2	-	-	-	-	-	-	263	263	-	219	216	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1331	-	-	1366	-	-	503	491	832	498	489	797
Stage 1	-	-	-	-	-	-	794	730	-	747	694	-
Stage 2	-	-	-	-	-	-	747	694	-	788	728	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1331	-	-	1366	-	-	500	488	832	488	486	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	500	488	-	488	486	-
Stage 1	-	-	-	-	-	-	794	730	-	747	689	-
Stage 2	-	-	-	-	-	-	742	689	-	776	728	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	10.7	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	650	1331	-	-	1366	-	-	-
HCM Lane V/C Ratio	0.032	-	-	-	0.006	-	-	-
HCM Control Delay (s)	10.7	0	-	-	7.7	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	180	19	102	209	20	78
Future Vol, veh/h	180	19	102	209	20	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	5	0	2	0	1
Mvmt Flow	200	21	113	232	22	87

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	221	0	669	211
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	458	-
Critical Hdwy	-	-	4.1	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1360	-	426	832
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1360	-	386	832
Mov Cap-2 Maneuver	-	-	-	-	386	-
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	580	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	673	-	-	1360	-
HCM Lane V/C Ratio	0.162	-	-	0.083	-
HCM Control Delay (s)	11.4	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.3	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	68	82	73	107	90	93	982	47	67	925	111
Future Volume (vph)	108	68	82	73	107	90	93	982	47	67	925	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	210		0	185		0
Storage Lanes	0		0	0		0	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	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					1.00					1.00		
Frt		0.957			0.955			0.993			0.984	
Flt Protected		0.980			0.987		0.950			0.950		
Satd. Flow (prot)	0	1758	0	0	1777	0	1888	3518	0	1925	3460	0
Flt Permitted		0.686			0.816		0.155			0.167		
Satd. Flow (perm)	0	1230	0	0	1466	0	308	3518	0	338	3460	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			24			5			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		137			187			2331			918	
Travel Time (s)		3.1			4.3			53.0			20.9	
Confl. Peds. (#/hr)				12						2		
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	0%	3%	0%	2%	0%	2%	2%	0%	0%	3%	0%
Adj. Flow (vph)	109	69	83	74	108	91	94	992	47	68	934	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	261	0	0	273	0	94	1039	0	68	1046	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	17.0		5.0	17.0	
Minimum Split (s)	44.0	44.0		44.0	44.0		12.0	34.0		12.0	34.0	
Total Split (s)	45.0	45.0		45.0	45.0		25.0	55.0		15.0	45.0	
Total Split (%)	39.1%	39.1%		39.1%	39.1%		21.7%	47.8%		13.0%	39.1%	
Maximum Green (s)	39.0	39.0		39.0	39.0		18.0	48.0		8.0	38.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		7.0	7.0		7.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	28.0	28.0		28.0	28.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		23.0			23.0		40.8	34.9		39.6	34.3	
Actuated g/C Ratio		0.28			0.28		0.49	0.42		0.48	0.41	
v/c Ratio		0.73			0.64		0.31	0.70		0.22	0.73	
Control Delay		40.2			33.9		12.7	24.2		12.0	25.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		40.2			33.9		12.7	24.2		12.0	25.6	
LOS		D			C		B	C		B	C	
Approach Delay		40.2			33.9			23.3			24.7	
Approach LOS		D			C			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 115	
Actuated Cycle Length: 82.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 26.5	Intersection LOS: C
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: SR 15A & W Beresford Ave

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	7	12	1	2	11
Future Vol, veh/h	2	7	12	1	2	11
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	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	7	13	1	2	12

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	30	14	0	0	14	0
Stage 1	14	-	-	-	-	-
Stage 2	16	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	989	1072	-	-	1617	-
Stage 1	1014	-	-	-	-	-
Stage 2	1012	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	988	1072	-	-	1617	-
Mov Cap-2 Maneuver	988	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1052	1617	-
HCM Lane V/C Ratio	-	-	0.009	0.001	-
HCM Control Delay (s)	-	-	8.5	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	7	97	119	2
Future Vol, veh/h	1	2	7	97	119	2
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	1	2	8	107	131	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	255	132	133	0	-	0
Stage 1	132	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	738	923	1464	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	907	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	734	923	1464	-	-	-
Mov Cap-2 Maneuver	734	-	-	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	907	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1464	-	850	-	-
HCM Lane V/C Ratio	0.005	-	0.004	-	-
HCM Control Delay (s)	7.5	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	16	105	6	11	125
Future Vol, veh/h	14	16	105	6	11	125
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	15	17	114	7	12	136

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	278	118	0	0	121	0
Stage 1	118	-	-	-	-	-
Stage 2	160	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	716	939	-	-	1479	-
Stage 1	912	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	710	939	-	-	1479	-
Mov Cap-2 Maneuver	710	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	866	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	816	1479	-
HCM Lane V/C Ratio	-	-	0.04	0.008	-
HCM Control Delay (s)	-	-	9.6	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	14	32	1139	1072	4
Future Vol, veh/h	6	14	32	1139	1072	4
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	-	185	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	8	0	2	3	0
Mvmt Flow	6	14	32	1151	1083	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1725	544	1087	0	-	0
Stage 1	1085	-	-	-	-	-
Stage 2	640	-	-	-	-	-
Critical Hdwy	6.8	7.06	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.38	2.2	-	-	-
Pot Cap-1 Maneuver	82	468	649	-	-	-
Stage 1	290	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	78	468	649	-	-	-
Mov Cap-2 Maneuver	194	-	-	-	-	-
Stage 1	276	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	649	-	329	-	-
HCM Lane V/C Ratio	0.05	-	0.061	-	-
HCM Control Delay (s)	10.8	-	16.7	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-

COUNTY OF VOLUSIA TRAFFIC SIGNAL TIMING SHEET

LOCATION: SR 15A & Beresford Avenue
DeLand

ISOLATED: X

DATE: 6/22/2015

SIGNAL #: 105

CO-ORD:

Design By: M. Tobin

System #: -

Controller Timing Chart

PHASE	1	2	3	4	5	6	7	8	
DIRECTION	NBL	SB	-	WB	SBL	NB	-	EB	
TURN TYPE	PERM/PROT	-	-	-	PERM/PROT	-	-	-	
MIN GREEN	5	17		7	5	17		7	
EXTENSION	3	3		3	3	3		3	
CLEARANCE	5.0	5.0		4.0	5.0	5.0		4.0	
ALL RED	2.0	2.0		2.0	2.0	2.0		2.0	
WALK	-	10		10	-	10		10	
FDW	-	17		28	-	17		28	
MAX 1	20	35		25	20	35		25	
MAX 2	25	45		35	15	45		35	
MAX 3	-	-		-	-	-		-	
ADJUST	-	-		-	-	-		-	
RECALL	-	MIN		-	-	MIN		-	
DETECTOR	NON-LOCK	LOCK		NON-LOCK	NON-LOCK	LOCK		NON-LOCK	
FLASH	-	YELLOW		RED	-	YELLOW		RED	
SET	-	-		-	-	-		-	
CLEAR	-	-		-	-	-		-	

BASE DAY		1	2	3	4	5	6	7
MON #1	TIME	00:00-07:00	07:00-08:30	08:30-13:00	13:00-15:00	15:00-00:00		
	PLAN	FREE/ MAX 1	FREE / MAX 2	FREE / MAX 1	FREE / MAX 2	FREE / MAX 1		
TUES#1	TIME	00:00-07:00	07:00-08:30	08:30-13:00	13:00-15:00	15:00-00:00		
	PLAN	FREE/ MAX 1	FREE / MAX 2	FREE / MAX 1	FREE / MAX 2	FREE / MAX 1		
WED #1	TIME	00:00-07:00	07:00-08:30	08:30-13:00	13:00-15:00	15:00-00:00		
	PLAN	FREE/ MAX 1	FREE / MAX 2	FREE / MAX 1	FREE / MAX 2	FREE / MAX 1		
THU #1	TIME	00:00-07:00	07:00-08:30	08:30-13:00	13:00-15:00	15:00-00:00		
	PLAN	FREE/ MAX 1	FREE / MAX 2	FREE / MAX 1	FREE / MAX 2	FREE / MAX 1		
FRI #1	TIME	00:00-07:00	07:00-08:30	08:30-13:00	13:00-15:00	15:00-00:00		
	PLAN	FREE/ MAX 1	FREE / MAX 2	FREE / MAX 1	FREE / MAX 2	FREE / MAX 1		
SAT #2	TIME	00:00-00:00						
	PLAN	FREE						
SUN #3	TIME	00:00-00:00						
	PLAN	FREE						

Crosswalk Length
P2
51 Feet
P4
74 Feet
P6
59 Feet
P8
98 Feet

CONTROLLER TYPE		CONDITION OF OVERHEAD	OK	PROM NUMBER	
1880 EL		OVERHEAD STREET NAMES	YES		SIGNAL OWNER
PHASES:	8Φ	ILLUMINATED STREET NAMES	NO	92R09	
CABINET TYPE	V	PRE-EMPTION	NO	IP ADDRESS	FDOT
CABINET DATE	-	PRE-EMPTION TYPE	N/A	-	LED YES

REMARKS:

No Right Turn on Red Blankout Signs Activated by Pedestrian Buttons

1	2	4
5	6	8

APPENDIX H:

2025 Traffic Operational Analysis Output
(All Alternatives)

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	296	0	7	201	0	7	0	11	0	0	0
Future Vol, veh/h	0	296	0	7	201	0	7	0	11	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	2	0	0	2	0	25	0	0	0	0	0
Mvmt Flow	0	405	0	10	275	0	10	0	15	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	275	0	0	405	0	0	700	700	405	708	700	275
Stage 1	-	-	-	-	-	-	405	405	-	295	295	-
Stage 2	-	-	-	-	-	-	295	295	-	413	405	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.35	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.725	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1300	-	-	1165	-	-	325	366	650	352	366	769
Stage 1	-	-	-	-	-	-	579	602	-	718	673	-
Stage 2	-	-	-	-	-	-	666	673	-	620	602	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1300	-	-	1165	-	-	322	362	650	341	362	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	322	362	-	341	362	-
Stage 1	-	-	-	-	-	-	579	602	-	718	666	-
Stage 2	-	-	-	-	-	-	659	666	-	606	602	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	13.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	466	1300	-	-	1165	-	-	-
HCM Lane V/C Ratio	0.053	-	-	-	0.008	-	-	-
HCM Control Delay (s)	13.2	0	-	-	8.1	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	283	24	51	187	20	125
Future Vol, veh/h	283	24	51	187	20	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	4	3	0	0
Mvmt Flow	341	29	61	225	24	151

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	370	0	703	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	-	-	4.14	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1178	-	407	693
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	720	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1178	-	383	693
Mov Cap-2 Maneuver	-	-	-	-	383	-
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	678	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	623	-	-	1178	-
HCM Lane V/C Ratio	0.28	-	-	0.052	-
HCM Control Delay (s)	13	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.1	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	130	90	63	69	46	83	804	37	48	1066	86
Future Volume (vph)	188	130	90	63	69	46	83	804	37	48	1066	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	210		0	185		0
Storage Lanes	0		0	0		0	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	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.970			0.965			0.993			0.989	
Flt Protected		0.977			0.983		0.950			0.950		
Satd. Flow (prot)	0	1770	0	0	1744	0	1888	3444	0	1925	3438	0
Flt Permitted		0.747			0.739		0.099			0.184		
Satd. Flow (perm)	0	1354	0	0	1311	0	197	3444	0	373	3438	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			16			5			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		137			187			2331			918	
Travel Time (s)		3.1			4.3			53.0			20.9	
Confl. Peds. (#/hr)							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 (%)	0%	4%	2%	0%	2%	10%	2%	4%	6%	0%	4%	2%
Adj. Flow (vph)	209	144	100	70	77	51	92	893	41	53	1184	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	453	0	0	198	0	92	934	0	53	1280	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	17.0		5.0	17.0	
Minimum Split (s)	44.0	44.0		44.0	44.0		12.0	34.0		12.0	34.0	
Total Split (s)	45.0	45.0		45.0	45.0		25.0	55.0		15.0	45.0	
Total Split (%)	39.1%	39.1%		39.1%	39.1%		21.7%	47.8%		13.0%	39.1%	
Maximum Green (s)	39.0	39.0		39.0	39.0		18.0	48.0		8.0	38.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		7.0	7.0		7.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	28.0	28.0		28.0	28.0			17.0			17.0	
Pedestrian Calls (#/hr)	5	5		5	5			5			5	
Act Effct Green (s)		38.2			38.2		47.3	40.6		44.9	39.4	
Actuated g/C Ratio		0.37			0.37		0.46	0.39		0.44	0.38	
v/c Ratio		0.89			0.40		0.41	0.69		0.20	0.97	
Control Delay		51.7			26.2		19.2	29.6		15.1	50.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		51.7			26.2		19.2	29.6		15.1	50.8	
LOS		D			C		B	C		B	D	
Approach Delay		51.7			26.2			28.7			49.4	
Approach LOS		D			C			C			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 102.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 41.2	Intersection LOS: D
Intersection Capacity Utilization 82.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR 15A & W Beresford Ave

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	16	0	0	7
Future Vol, veh/h	2	1	16	0	0	7
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	67	67	67	67	67	67
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	3	1	24	0	0	10

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	34	24	0	0	24	0
Stage 1	24	-	-	-	-	-
Stage 2	10	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	984	1058	-	-	1604	-
Stage 1	1004	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	984	1058	-	-	1604	-
Mov Cap-2 Maneuver	984	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1018	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1007	1604	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	-	-	8.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	2	145	74	1
Future Vol, veh/h	0	0	2	145	74	1
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	0	0	2	169	86	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	260	87	87	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	173	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	733	977	1522	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	862	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	732	977	1522	-	-	-
Mov Cap-2 Maneuver	732	-	-	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	862	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1522	-	-	-	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	7.4	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	59	36	19	19	30	12	193	14	33	171	12
Future Vol, veh/h	36	59	36	19	19	30	12	193	14	33	171	12
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	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	71	92	71	92	71	71	71	71	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	3	2
Mvmt Flow	39	64	39	27	21	42	13	272	20	46	241	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	680	658	248	699	654	282	254	0	0	292	0	0
Stage 1	340	340	-	308	308	-	-	-	-	-	-	-
Stage 2	340	318	-	391	346	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	365	384	791	357	386	762	1311	-	-	1281	-	-
Stage 1	675	639	-	706	660	-	-	-	-	-	-	-
Stage 2	675	654	-	637	635	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	316	364	791	282	366	762	1311	-	-	1281	-	-
Mov Cap-2 Maneuver	316	364	-	282	366	-	-	-	-	-	-	-
Stage 1	667	612	-	698	652	-	-	-	-	-	-	-
Stage 2	610	646	-	519	608	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	15.4	0.3	1.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1311	-	-	407	434	1281	-	-
HCM Lane V/C Ratio	0.01	-	-	0.35	0.207	0.036	-	-
HCM Control Delay (s)	7.8	-	-	18.5	15.4	7.9	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.5	0.8	0.1	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	62	56	40	846	1237	16
Future Vol, veh/h	62	56	40	846	1237	16
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	-	185	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	69	62	44	940	1374	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1941	696	1392	0	-	0
Stage 1	1383	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	~ 58	389	498	-	-	-
Stage 1	202	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 53	389	498	-	-	-
Mov Cap-2 Maneuver	143	-	-	-	-	-
Stage 1	184	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	49.8	0.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	498	-	204	-	-
HCM Lane V/C Ratio	0.089	-	0.643	-	-
HCM Control Delay (s)	12.9	-	49.8	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	3.8	-	-

Notes

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

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	208	7	9	244	0	9	0	12	0	0	0
Future Vol, veh/h	0	208	7	9	244	0	9	0	12	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	231	8	10	271	0	10	0	13	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	271	0	0	239	0	0	526	526	235	533	530	271
Stage 1	-	-	-	-	-	-	235	235	-	291	291	-
Stage 2	-	-	-	-	-	-	291	291	-	242	239	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1304	-	-	1340	-	-	466	460	809	461	457	773
Stage 1	-	-	-	-	-	-	773	714	-	721	675	-
Stage 2	-	-	-	-	-	-	721	675	-	766	711	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1304	-	-	1340	-	-	463	456	809	450	453	773
Mov Cap-2 Maneuver	-	-	-	-	-	-	463	456	-	450	453	-
Stage 1	-	-	-	-	-	-	773	714	-	721	669	-
Stage 2	-	-	-	-	-	-	715	669	-	753	711	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	11.1	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	613	1304	-	-	1340	-	-	-
HCM Lane V/C Ratio	0.038	-	-	-	0.007	-	-	-
HCM Control Delay (s)	11.1	0	-	-	7.7	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	25	155	228	24	111
Future Vol, veh/h	195	25	155	228	24	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	5	0	2	0	1
Mvmt Flow	217	28	172	253	27	123

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	245	0	828	231
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	597	-
Critical Hdwy	-	-	4.1	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1333	-	344	811
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1333	-	292	811
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	471	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.3	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	616	-	-	1333	-
HCM Lane V/C Ratio	0.244	-	-	0.129	-
HCM Control Delay (s)	12.7	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.4	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	79	89	90	125	98	101	1093	56	73	1046	157
Future Volume (vph)	139	79	89	90	125	98	101	1093	56	73	1046	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	210		0	185		0
Storage Lanes	0		0	0		0	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	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					1.00					1.00		
Frt		0.961			0.958			0.993			0.980	
Flt Protected		0.978			0.986		0.950			0.950		
Satd. Flow (prot)	0	1762	0	0	1781	0	1888	3518	0	1925	3448	0
Flt Permitted		0.638			0.783		0.098			0.127		
Satd. Flow (perm)	0	1150	0	0	1412	0	195	3518	0	257	3448	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			22			6			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		137			187			2331			918	
Travel Time (s)		3.1			4.3			53.0			20.9	
Confl. Peds. (#/hr)				12						2		
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	0%	3%	0%	2%	0%	2%	2%	0%	0%	3%	0%
Adj. Flow (vph)	140	80	90	91	126	99	102	1104	57	74	1057	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	310	0	0	316	0	102	1161	0	74	1216	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	17.0		5.0	17.0	
Minimum Split (s)	44.0	44.0		44.0	44.0		12.0	34.0		12.0	34.0	
Total Split (s)	45.0	45.0		45.0	45.0		25.0	55.0		15.0	45.0	
Total Split (%)	39.1%	39.1%		39.1%	39.1%		21.7%	47.8%		13.0%	39.1%	
Maximum Green (s)	39.0	39.0		39.0	39.0		18.0	48.0		8.0	38.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		7.0	7.0		7.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	28.0	28.0		28.0	28.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		29.9			29.9		50.5	43.8		48.4	42.8	
Actuated g/C Ratio		0.30			0.30		0.51	0.45		0.49	0.44	
v/c Ratio		0.85			0.71		0.42	0.74		0.30	0.80	
Control Delay		53.6			38.6		17.2	28.1		15.2	31.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		53.6			38.6		17.2	28.1		15.2	31.5	
LOS		D			D		B	C		B	C	
Approach Delay		53.6			38.6			27.2			30.5	
Approach LOS		D			D			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 115	
Actuated Cycle Length: 98.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 32.3	Intersection LOS: C
Intersection Capacity Utilization 84.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR 15A & W Beresford Ave

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	13	0	2	12
Future Vol, veh/h	0	8	13	0	2	12
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	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	9	14	0	2	13

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	31	14	0	0	14	0
Stage 1	14	-	-	-	-	-
Stage 2	17	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	988	1072	-	-	1617	-
Stage 1	1014	-	-	-	-	-
Stage 2	1011	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	987	1072	-	-	1617	-
Mov Cap-2 Maneuver	987	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1010	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1072	1617	-
HCM Lane V/C Ratio	-	-	0.008	0.001	-
HCM Control Delay (s)	-	-	8.4	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	8	134	178	2
Future Vol, veh/h	1	2	8	134	178	2
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	1	2	9	147	196	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	362	197	198	0	-	0
Stage 1	197	-	-	-	-	-
Stage 2	165	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	641	849	1387	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	637	849	1387	-	-	-
Mov Cap-2 Maneuver	637	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	869	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1387	-	764	-	-
HCM Lane V/C Ratio	0.006	-	0.004	-	-
HCM Control Delay (s)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	39	24	19	66	21	41	114	14	20	136	41
Future Vol, veh/h	24	39	24	19	66	21	41	114	14	20	136	41
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	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	1	0	0	1	2
Mvmt Flow	26	42	26	21	72	23	45	124	15	22	148	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	484	444	171	471	459	132	193	0	0	139	0	0
Stage 1	215	215	-	222	222	-	-	-	-	-	-	-
Stage 2	269	229	-	249	237	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	493	508	873	506	499	923	1380	-	-	1457	-	-
Stage 1	787	725	-	785	720	-	-	-	-	-	-	-
Stage 2	737	715	-	759	709	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	409	482	873	440	474	923	1380	-	-	1457	-	-
Mov Cap-2 Maneuver	409	482	-	440	474	-	-	-	-	-	-	-
Stage 1	759	713	-	758	695	-	-	-	-	-	-	-
Stage 2	622	690	-	681	697	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	13.9	1.9	0.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1380	-	-	521	517	1457	-	-
HCM Lane V/C Ratio	0.032	-	-	0.182	0.223	0.015	-	-
HCM Control Delay (s)	7.7	0	-	13.4	13.9	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.8	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	31	62	1242	1168	55
Future Vol, veh/h	37	31	62	1242	1168	55
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	-	185	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	8	0	2	3	0
Mvmt Flow	37	31	63	1255	1180	56

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1962	618	1236	0	-	0
Stage 1	1208	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Critical Hdwy	6.8	7.06	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.38	2.2	-	-	-
Pot Cap-1 Maneuver	57	418	571	-	-	-
Stage 1	250	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	51	418	571	-	-	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	223	-	-	-	-	-
Stage 2	431	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.1	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	571	-	217	-	-
HCM Lane V/C Ratio	0.11	-	0.317	-	-
HCM Control Delay (s)	12.1	-	29.1	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.4	-	1.3	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	296	0	16	181	0	27	0	11	0	0	0
Future Vol, veh/h	0	296	0	16	181	0	27	0	11	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	2	0	0	2	0	25	0	0	0	0	0
Mvmt Flow	0	405	0	22	248	0	37	0	15	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	248	0	0	405	0	0	697	697	405	705	697	248
Stage 1	-	-	-	-	-	-	405	405	-	292	292	-
Stage 2	-	-	-	-	-	-	292	292	-	413	405	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.35	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.725	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1330	-	-	1165	-	-	327	367	650	354	367	796
Stage 1	-	-	-	-	-	-	579	602	-	720	675	-
Stage 2	-	-	-	-	-	-	669	675	-	620	602	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1330	-	-	1165	-	-	321	359	650	340	359	796
Mov Cap-2 Maneuver	-	-	-	-	-	-	321	359	-	340	359	-
Stage 1	-	-	-	-	-	-	579	602	-	720	660	-
Stage 2	-	-	-	-	-	-	654	660	-	606	602	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	16.1	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	376	1330	-	-	1165	-	-	-
HCM Lane V/C Ratio	0.138	-	-	-	0.019	-	-	-
HCM Control Delay (s)	16.1	0	-	-	8.1	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	283	24	0	196	0	18
Future Vol, veh/h	283	24	0	196	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	4	3	0	0
Mvmt Flow	341	29	0	236	0	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	356
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	-	0	693
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	693
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

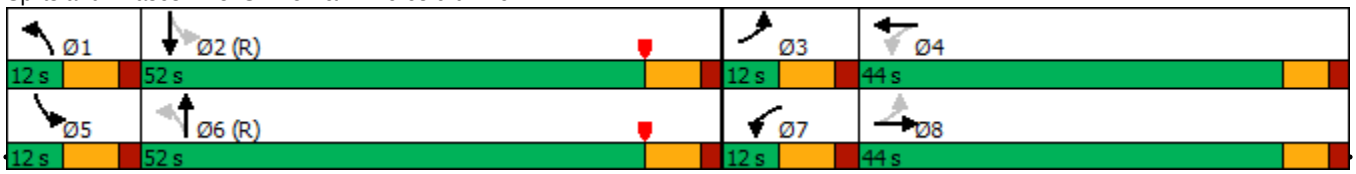
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	693	-	-	-
HCM Lane V/C Ratio	0.031	-	-	-
HCM Control Delay (s)	10.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	98	90	75	57	46	83	879	69	48	1097	55
Future Volume (vph)	113	98	90	75	57	46	83	879	69	48	1097	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	210		0	185		0
Storage Lanes	1		0	1		0	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	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.928			0.933			0.989			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1711	0	1805	1679	0	1888	3428	0	1925	3450	0
Flt Permitted	0.599			0.437			0.111			0.202		
Satd. Flow (perm)	1138	1711	0	830	1679	0	221	3428	0	409	3450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			36			8			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		137			187			2331			918	
Travel Time (s)		3.1			4.3			53.0			20.9	
Confl. Peds. (#/hr)							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 (%)	0%	4%	2%	0%	2%	10%	2%	4%	6%	0%	4%	2%
Adj. Flow (vph)	126	109	100	83	63	51	92	977	77	53	1219	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	209	0	83	114	0	92	1054	0	53	1280	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	17.0		5.0	17.0	
Minimum Split (s)	12.0	44.0		12.0	44.0		12.0	34.0		12.0	34.0	
Total Split (s)	12.0	44.0		12.0	44.0		12.0	52.0		12.0	52.0	
Total Split (%)	10.0%	36.7%		10.0%	36.7%		10.0%	43.3%		10.0%	43.3%	
Maximum Green (s)	5.0	38.0		5.0	38.0		5.0	45.0		5.0	45.0	
Yellow Time (s)	5.0	4.0		5.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		10.0			10.0			10.0			10.0	
Flash Dont Walk (s)		28.0			28.0			17.0			17.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	22.9	19.9		21.2	16.9		73.2	66.2		69.1	62.3	
Actuated g/C Ratio	0.19	0.17		0.18	0.14		0.61	0.55		0.58	0.52	
v/c Ratio	0.51	0.66		0.44	0.43		0.37	0.56		0.17	0.71	
Control Delay	46.1	48.2		43.4	35.0		11.5	21.7		10.7	26.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.1	48.2		43.4	35.0		11.5	21.7		10.7	26.2	
LOS	D	D		D	D		B	C		B	C	
Approach Delay		47.4			38.6			20.9			25.6	
Approach LOS		D			D			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 3 (3%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: SR 15A & W Beresford Ave



Intersection	
Int Delay, s/veh	4.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	21	16	0	9	7
Future Vol, veh/h	2	21	16	0	9	7
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	67	67	67	67	67	67
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	3	31	24	0	13	10

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	60	24	0	0	24	0
Stage 1	24	-	-	-	-	-
Stage 2	36	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	952	1058	-	-	1604	-
Stage 1	1004	-	-	-	-	-
Stage 2	992	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	944	1058	-	-	1604	-
Mov Cap-2 Maneuver	944	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	984	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	4.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1047	1604	-
HCM Lane V/C Ratio	-	-	0.033	0.008	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	22	18	23	1
Future Vol, veh/h	0	9	22	18	23	1
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	0	10	26	21	27	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	101	28	28	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	73	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	902	1053	1599	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	888	1053	1599	-	-	-
Mov Cap-2 Maneuver	888	-	-	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1599	-	1053	-	-
HCM Lane V/C Ratio	0.016	-	0.01	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	88	36	61	19	30	12	114	93	33	129	12
Future Vol, veh/h	7	88	36	61	19	30	12	114	93	33	129	12
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	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	71	92	71	92	71	71	71	71	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	3	2
Mvmt Flow	8	96	39	86	21	42	13	161	131	46	182	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	565	599	189	601	540	227	195	0	0	292	0	0
Stage 1	281	281	-	253	253	-	-	-	-	-	-	-
Stage 2	284	318	-	348	287	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	436	415	853	415	449	817	1378	-	-	1281	-	-
Stage 1	726	678	-	756	698	-	-	-	-	-	-	-
Stage 2	723	654	-	672	674	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	383	394	853	310	426	817	1378	-	-	1281	-	-
Mov Cap-2 Maneuver	383	394	-	310	426	-	-	-	-	-	-	-
Stage 1	718	651	-	748	690	-	-	-	-	-	-	-
Stage 2	658	647	-	525	647	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.2	19.6	0.3	1.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1378	-	-	462	394	1281	-	-
HCM Lane V/C Ratio	0.009	-	-	0.308	0.378	0.036	-	-
HCM Control Delay (s)	7.6	-	-	16.2	19.6	7.9	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	1.7	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	12.0	34.0	34.0	34.0
Total Split (s)	31.0	31.0	12.0	89.0	77.0	77.0
Total Split (%)	25.8%	25.8%	10.0%	74.2%	64.2%	64.2%
Maximum Green (s)	24.0	24.0	5.0	82.0	70.0	70.0
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0
Flash Dont Walk (s)				17.0	17.0	17.0
Pedestrian Calls (#/hr)				0	0	0
Act Effct Green (s)	17.7	17.7	88.3	88.3	77.9	77.9
Actuated g/C Ratio	0.15	0.15	0.74	0.74	0.65	0.65
v/c Ratio	0.71	0.21	0.17	0.36	0.60	0.06
Control Delay	62.6	11.9	6.7	6.6	5.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	11.9	6.7	6.6	5.3	0.1
LOS	E	B	A	A	A	A
Approach Delay	50.0			6.6	5.1	
Approach LOS	D			A	A	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 70 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 9.8	Intersection LOS: A
Intersection Capacity Utilization 55.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: SR 15A & Gayle Dr

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	208	7	36	220	0	33	0	12	0	0	0
Future Vol, veh/h	0	208	7	36	220	0	33	0	12	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	231	8	40	244	0	37	0	13	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	244	0	0	239	0	0	559	559	235	566	563	244
Stage 1	-	-	-	-	-	-	235	235	-	324	324	-
Stage 2	-	-	-	-	-	-	324	324	-	242	239	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1334	-	-	1340	-	-	443	440	809	438	438	800
Stage 1	-	-	-	-	-	-	773	714	-	692	653	-
Stage 2	-	-	-	-	-	-	692	653	-	766	711	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1334	-	-	1340	-	-	431	425	809	419	423	800
Mov Cap-2 Maneuver	-	-	-	-	-	-	431	425	-	419	423	-
Stage 1	-	-	-	-	-	-	773	714	-	692	630	-
Stage 2	-	-	-	-	-	-	668	630	-	753	711	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	13.1	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	492	1334	-	-	1340	-	-	-
HCM Lane V/C Ratio	0.102	-	-	-	0.03	-	-	-
HCM Control Delay (s)	13.1	0	-	-	7.8	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	25	0	255	0	16
Future Vol, veh/h	195	25	0	255	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	5	0	2	0	1
Mvmt Flow	217	28	0	283	0	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	231
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.309
Pot Cap-1 Maneuver	-	-	0	-	0	811
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	811
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

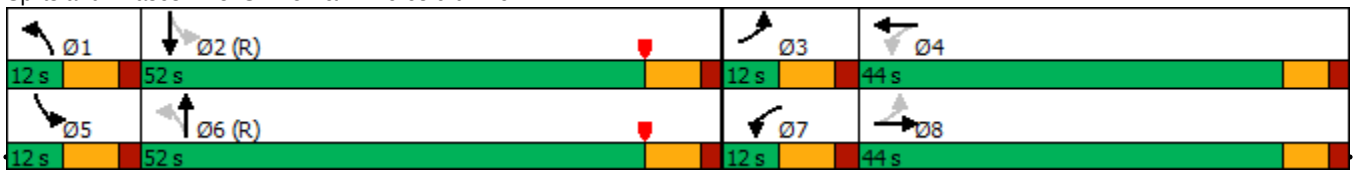
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	811	-	-	-
HCM Lane V/C Ratio	0.022	-	-	-
HCM Control Delay (s)	9.5	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	50	89	125	90	98	101	1160	85	73	1139	64
Future Volume (vph)	72	50	89	125	90	98	101	1160	85	73	1139	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	210		0	185		0
Storage Lanes	1		0	1		0	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	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor				0.99								
Frt		0.904			0.922			0.990			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1685	0	1805	1735	0	1888	3509	0	1925	3482	0
Flt Permitted	0.478			0.496			0.130			0.139		
Satd. Flow (perm)	899	1685	0	934	1735	0	258	3509	0	282	3482	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		77			48			7			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		137			187			2331			918	
Travel Time (s)		3.1			4.3			53.0			20.9	
Confl. Peds. (#/hr)				12						2		
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	0%	3%	0%	2%	0%	2%	2%	0%	0%	3%	0%
Adj. Flow (vph)	73	51	90	126	91	99	102	1172	86	74	1151	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	141	0	126	190	0	102	1258	0	74	1216	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	17.0		5.0	17.0	
Minimum Split (s)	12.0	44.0		12.0	44.0		12.0	34.0		12.0	34.0	
Total Split (s)	12.0	44.0		12.0	44.0		12.0	52.0		12.0	52.0	
Total Split (%)	10.0%	36.7%		10.0%	36.7%		10.0%	43.3%		10.0%	43.3%	
Maximum Green (s)	5.0	38.0		5.0	38.0		5.0	45.0		5.0	45.0	
Yellow Time (s)	5.0	4.0		5.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		10.0			10.0			10.0			10.0	
Flash Dont Walk (s)		28.0			28.0			17.0			17.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	19.8	15.0		22.1	18.3		74.3	66.8		69.9	62.7	
Actuated g/C Ratio	0.16	0.12		0.18	0.15		0.62	0.56		0.58	0.52	
v/c Ratio	0.38	0.51		0.58	0.62		0.37	0.64		0.28	0.67	
Control Delay	42.7	28.4		51.2	44.9		8.9	20.5		11.6	24.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.7	28.4		51.2	44.9		8.9	20.5		11.6	24.3	
LOS	D	C		D	D		A	C		B	C	
Approach Delay		33.3			47.4			19.7			23.6	
Approach LOS		C			D			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 3 (3%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 24.9	Intersection LOS: C
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: SR 15A & W Beresford Ave



Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	32	13	0	29	12
Future Vol, veh/h	0	32	13	0	29	12
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	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	34	14	0	31	13

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	89	14	0	0	14	0
Stage 1	14	-	-	-	-	-
Stage 2	75	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	917	1072	-	-	1617	-
Stage 1	1014	-	-	-	-	-
Stage 2	953	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	900	1072	-	-	1617	-
Mov Cap-2 Maneuver	900	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	5.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1072	1617	-
HCM Lane V/C Ratio	-	-	0.032	0.019	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	29	32	15	23	2
Future Vol, veh/h	1	29	32	15	23	2
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	1	32	35	16	25	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	112	26	27	0	-	0
Stage 1	26	-	-	-	-	-
Stage 2	86	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	890	1056	1600	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	870	1056	1600	-	-	-
Mov Cap-2 Maneuver	870	-	-	-	-	-
Stage 1	980	-	-	-	-	-
Stage 2	942	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1600	-	1049	-	-
HCM Lane V/C Ratio	0.022	-	0.031	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	58	24	147	66	21	41	38	90	20	8	41
Future Vol, veh/h	5	58	24	147	66	21	41	38	90	20	8	41
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	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	1	0	0	1	2
Mvmt Flow	5	63	26	160	72	23	45	41	98	22	9	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	304	305	32	300	278	90	54	0	0	139	0	0
Stage 1	76	76	-	180	180	-	-	-	-	-	-	-
Stage 2	228	229	-	120	98	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	648	608	1042	656	630	973	1551	-	-	1457	-	-
Stage 1	933	832	-	826	750	-	-	-	-	-	-	-
Stage 2	775	715	-	889	814	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	555	579	1042	565	600	973	1551	-	-	1457	-	-
Mov Cap-2 Maneuver	555	579	-	565	600	-	-	-	-	-	-	-
Stage 1	903	819	-	800	726	-	-	-	-	-	-	-
Stage 2	660	692	-	787	801	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	15.4	1.8	2.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1551	-	-	658	597	1457	-	-
HCM Lane V/C Ratio	0.029	-	-	0.144	0.426	0.015	-	-
HCM Control Delay (s)	7.4	-	-	11.4	15.4	7.5	0	-
HCM Lane LOS	A	-	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	2.1	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	12.0	34.0	34.0	34.0
Total Split (s)	30.0	30.0	15.0	90.0	75.0	75.0
Total Split (%)	25.0%	25.0%	12.5%	75.0%	62.5%	62.5%
Maximum Green (s)	23.0	23.0	8.0	83.0	68.0	68.0
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0
Flash Dont Walk (s)				17.0	17.0	17.0
Pedestrian Calls (#/hr)				0	0	0
Act Effct Green (s)	14.1	14.1	91.9	91.9	80.8	80.8
Actuated g/C Ratio	0.12	0.12	0.77	0.77	0.67	0.67
v/c Ratio	0.63	0.15	0.18	0.46	0.50	0.16
Control Delay	62.9	16.4	5.3	6.1	3.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.9	16.4	5.3	6.1	3.6	0.4
LOS	E	B	A	A	A	A
Approach Delay	54.1			6.1	3.1	
Approach LOS	D			A	A	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 70 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: SR 15A & Gayle Dr

INTERSECTION SUMMARY

Site: 101 [SR 15/Beresford Ave- 2025 AM (Site Folder: General)]

2025 AM
Site Category: (None)
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Travel Speed (Average)	31.3	mph	31.3	mph
Travel Distance (Total)	1767.5	veh-mi/h	2121.0	pers-mi/h
Travel Time (Total)	56.4	veh-h/h	67.7	pers-h/h
Desired Speed (Program)	40.0	mph		
Speed Efficiency	0.78			
Travel Time Index	7.59			
Congestion Coefficient	1.28			
Demand Flows (Total)	2782	veh/h	3338	pers/h
Percent Heavy Vehicles (Demand)	3.5	%		
Degree of Saturation	0.666			
Practical Spare Capacity	27.6	%		
Effective Intersection Capacity	4177	veh/h		
Control Delay (Total)	9.40	veh-h/h	11.28	pers-h/h
Control Delay (Average)	12.2	sec	12.2	sec
Control Delay (Worst Lane)	25.2	sec		
Control Delay (Worst Movement)	25.2	sec	25.2	sec
Geometric Delay (Average)	0.0	sec		
Stop-Line Delay (Average)	12.2	sec		
Idling Time (Average)	7.4	sec		
Intersection Level of Service (LOS)	LOS B			
95% Back of Queue - Vehicles (Worst Lane)	4.0	veh		
95% Back of Queue - Distance (Worst Lane)	100.6	ft		
Ave. Queue Storage Ratio (Worst Lane)	0.03			
Total Effective Stops	1729	veh/h	2074	pers/h
Effective Stop Rate	0.62		0.62	
Proportion Queued	0.64		0.64	
Performance Index	107.4		107.4	
Cost (Total)	1185.19	$/h	1185.19	$/h
Fuel Consumption (Total)	76.2	gal/h		
Carbon Dioxide (Total)	683.3	kg/h		
Hydrocarbons (Total)	0.060	kg/h		
Carbon Monoxide (Total)	0.822	kg/h		
NOx (Total)	1.157	kg/h		

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Site Model Variability Index (Iterations 3 to N): 0.0 %
Number of Iterations: 3 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Flow-Capacity Iterations: 100.0% 96.2% 0.0%

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1,335,273	veh/y	1,602,327	pers/y
Delay	4,511	veh-h/y	5,413	pers-h/y
Effective Stops	829,685	veh/y	995,622	pers/y
Travel Distance	848,382	veh-mi/y	1,018,059	pers-mi/y
Travel Time	27,082	veh-h/y	32,498	pers-h/y
Cost	568,893	$/y	568,893	$/y
Fuel Consumption	36,555	gal/y		
Carbon Dioxide	327,964	kg/y		
Hydrocarbons	29	kg/y		

Carbon Monoxide	395	kg/y
NOx	555	kg/y

LANE SUMMARY

Site: 101 [SR 15/Beresford Ave- 2025 AM (Site Folder: General)]

2025 AM
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: SR 15													
Lane 1	467	4.0	951	0.491	100	9.8	LOS A	3.2	83.5	Full	1600	0.0	0.0
Lane 2[d]	467	4.0	951	0.491	100	9.8	LOS A	3.2	83.5	Full	1600	0.0	0.0
Approach	933	4.0		0.491		9.8	LOS A	3.2	83.5				
East: W Beresford Ave													
Lane 1[d]	180	2.0	526	0.342	100	12.1	LOS B	1.4	34.8	Full	1600	0.0	0.0
Approach	180	2.0		0.342		12.1	LOS B	1.4	34.8				
North: SR 15													
Lane 1	606	4.0	1094	0.554	100	10.1	LOS B	3.7	95.1	Full	1600	0.0	0.0
Lane 2[d]	606	4.0	1094	0.554	100	10.1	LOS B	3.7	95.1	Full	1600	0.0	0.0
Approach	1212	4.0		0.554		10.1	LOS B	3.7	95.1				
West: W Beresford Ave													
Lane 1[d]	310	2.0	466	0.666	100	25.2	LOS C	4.0	100.6	Full	1600	0.0	0.0
Approach	310	2.0		0.666		25.2	LOS C	4.0	100.6				
SouthWest: Spring Garden Ave													
Lane 1[d]	146	1.0	384	0.381	100	16.9	LOS B	1.5	37.1	Full	1600	0.0	0.0
Approach	146	1.0		0.381		16.9	LOS B	1.5	37.1				
Intersection	2782	3.5		0.666		12.2	LOS B	4.0	100.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: SR 15

Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	17	67	383	-	467	4.0	951	0.491	100	NA	NA
Lane 2	-	-	429	37	467	4.0	951	0.491	100	NA	NA
Approach	17	67	812	37	933	4.0		0.491			

East: W Beresford Ave

Mov.	L2	L1	T1	R2	Total	%HV	Deg.	Lane	Prob.	Ov.

From E To Exit:	S	SW	W	N			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	64	7	63	46	180	2.0	526	0.342	100	NA	NA
Approach	64	7	63	46	180	2.0		0.342			
North: SR 15											
Mov. From N To Exit:	L2 E	T1 S	R1 SW	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	48	558	-	-	606	4.0	1094	0.554	100	NA	NA
Lane 2	-	519	27	60	606	4.0	1094	0.554	100	NA	NA
Approach	48	1077	27	60	1212	4.0		0.554			
West: W Beresford Ave											
Mov. From W To Exit:	L2 N	T1 E	R2 S	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	114	85	87	24	310	2.0	466	0.666	100	NA	NA
Approach	114	85	87	24	310	2.0		0.666			
SouthWest: Spring Garden Ave											
Mov. From SW To Exit:	L3 W	L1 N	R1 E	R3 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	20	76	46	4	146	1.0	384	0.381	100	NA	NA
Approach	20	76	46	4	146	1.0		0.381			

	Total	%HV	Deg.Satn (v/c)
Intersection	2782	3.5	0.666

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: SR 15 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: W Beresford Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: SR 15 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: W Beresford Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: Spring Garden Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

LANE SUMMARY

Site: 101 [SR 15/Beresford Ave- 2025 PM (Site Folder: General)]

2025 PM
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: SR 15													
Lane 1	631	4.0	1016	0.621	100	12.3	LOS B	6.7	171.7	Full	1600	0.0	0.0
Lane 2[d]	631	4.0	1016	0.621	100	12.3	LOS B	6.7	171.7	Full	1600	0.0	0.0
Approach	1263	4.0		0.621		12.3	LOS B	6.7	171.7				
East: W Beresford Ave													
Lane 1[d]	316	2.0	416	0.760	100	35.1	LOS D	5.0	127.1	Full	1600	0.0	0.0
Approach	316	2.0		0.760		35.1	LOS D	5.0	127.1				
North: SR 15													
Lane 1	644	4.0	991	0.650	100	13.4	LOS B	7.7	197.4	Full	1600	0.0	0.0
Lane 2[d]	644	4.0	991	0.650	100	13.4	LOS B	7.7	197.4	Full	1600	0.0	0.0
Approach	1289	4.0		0.650		13.4	LOS B	7.7	197.4				
West: W Beresford Ave													
Lane 1[d]	222	2.0	413	0.539	100	21.1	LOS C	2.5	63.8	Full	1600	0.0	0.0
Approach	222	2.0		0.539		21.1	LOS C	2.5	63.8				
SouthWest: Spring Garden Ave													
Lane 1[d]	136	1.0	403	0.338	100	15.1	LOS B	1.3	31.9	Full	1600	0.0	0.0
Approach	136	1.0		0.338		15.1	LOS B	1.3	31.9				
Intersection	3226	3.5		0.760		15.7	LOS B	7.7	197.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: SR 15

Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	20	82	529	-	631	4.0	1016	0.621	100	NA	NA
Lane 2	-	-	575	57	631	4.0	1016	0.621	100	NA	NA
Approach	20	82	1104	57	1263	4.0		0.621			

East: W Beresford Ave

Mov.	L2	L1	T1	R2	Total	%HV	Deg.	Lane	Prob.	Ov.

From E To Exit:	S	SW	W	N			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	91	25	101	99	316	2.0	416	0.760	100	NA	NA
Approach	91	25	101	99	316	2.0		0.760			

North: SR 15

Mov. From N To Exit:	L2 E	T1 S	R1 SW	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	74	571	-	-	644	4.0	991	0.650	100	NA	NA
Lane 2	-	486	111	47	644	4.0	991	0.650	100	NA	NA
Approach	74	1057	111	47	1289	4.0		0.650			

West: W Beresford Ave

Mov. From W To Exit:	L2 N	T1 E	R2 S	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	73	38	86	25	222	2.0	413	0.539	100	NA	NA
Approach	73	38	86	25	222	2.0		0.539			

SouthWest: Spring Garden Ave

Mov. From SW To Exit:	L3 W	L1 N	R1 E	R3 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	24	68	41	3	136	1.0	403	0.338	100	NA	NA
Approach	24	68	41	3	136	1.0		0.338			

	Total	%HV	Deg.Satn (v/c)
Intersection	3226	3.5	0.760

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: SR 15 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: W Beresford Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: SR 15 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: W Beresford Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: Spring Garden Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

INTERSECTION SUMMARY

Site: 101 [SR 15/Beresford Ave- 2025 PM (Site Folder: General)]

2025 PM
Site Category: (None)
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Travel Speed (Average)	29.9	mph	29.9	mph
Travel Distance (Total)	2048.7	veh-mi/h	2458.5	pers-mi/h
Travel Time (Total)	68.5	veh-h/h	82.2	pers-h/h
Desired Speed (Program)	40.0	mph		
Speed Efficiency	0.75			
Travel Time Index	7.19			
Congestion Coefficient	1.34			
Demand Flows (Total)	3226	veh/h	3872	pers/h
Percent Heavy Vehicles (Demand)	3.5	%		
Degree of Saturation	0.760			
Practical Spare Capacity	11.8	%		
Effective Intersection Capacity	4244	veh/h		
Control Delay (Total)	14.05	veh-h/h	16.87	pers-h/h
Control Delay (Average)	15.7	sec	15.7	sec
Control Delay (Worst Lane)	35.1	sec		
Control Delay (Worst Movement)	35.1	sec	35.1	sec
Geometric Delay (Average)	0.0	sec		
Stop-Line Delay (Average)	15.7	sec		
Idling Time (Average)	8.3	sec		
Intersection Level of Service (LOS)	LOS B			
95% Back of Queue - Vehicles (Worst Lane)	7.7	veh		
95% Back of Queue - Distance (Worst Lane)	197.4	ft		
Ave. Queue Storage Ratio (Worst Lane)	0.05			
Total Effective Stops	2737	veh/h	3285	pers/h
Effective Stop Rate	0.85		0.85	
Proportion Queued	0.73		0.73	
Performance Index	154.8		154.8	
Cost (Total)	1432.41	$/h	1432.41	$/h
Fuel Consumption (Total)	91.1	gal/h		
Carbon Dioxide (Total)	817.4	kg/h		
Hydrocarbons (Total)	0.073	kg/h		
Carbon Monoxide (Total)	0.973	kg/h		
NOx (Total)	1.410	kg/h		

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Site Model Variability Index (Iterations 3 to N): 0.0 %
Number of Iterations: 3 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Flow-Capacity Iterations: 100.0% 96.0% 0.0%

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1,548,606	veh/y	1,858,327	pers/y
Delay	6,746	veh-h/y	8,096	pers-h/y
Effective Stops	1,313,999	veh/y	1,576,799	pers/y
Travel Distance	983,397	veh-mi/y	1,180,076	pers-mi/y
Travel Time	32,900	veh-h/y	39,480	pers-h/y
Cost	687,556	$/y	687,556	$/y
Fuel Consumption	43,732	gal/y		
Carbon Dioxide	392,344	kg/y		
Hydrocarbons	35	kg/y		

Carbon Monoxide	467	kg/y
NOx	677	kg/y

APPENDIX I:

2040 Traffic Operational Analysis Output
(All Alternatives)

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	357	0	8	243	0	8	0	13	0	0	0
Future Vol, veh/h	0	357	0	8	243	0	8	0	13	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	2	0	0	2	0	25	0	0	0	0	0
Mvmt Flow	0	489	0	11	333	0	11	0	18	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	333	0	0	489	0	0	844	844	489	853	844	333
Stage 1	-	-	-	-	-	-	489	489	-	355	355	-
Stage 2	-	-	-	-	-	-	355	355	-	498	489	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.35	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.725	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1238	-	-	1085	-	-	259	302	583	281	302	713
Stage 1	-	-	-	-	-	-	520	553	-	666	633	-
Stage 2	-	-	-	-	-	-	617	633	-	558	553	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1238	-	-	1085	-	-	257	298	583	270	298	713
Mov Cap-2 Maneuver	-	-	-	-	-	-	257	298	-	270	298	-
Stage 1	-	-	-	-	-	-	520	553	-	666	625	-
Stage 2	-	-	-	-	-	-	610	625	-	541	553	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	14.9	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	393	1238	-	-	1085	-	-	-
HCM Lane V/C Ratio	0.073	-	-	-	0.01	-	-	-
HCM Control Delay (s)	14.9	0	-	-	8.4	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	342	29	59	226	25	143
Future Vol, veh/h	342	29	59	226	25	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	4	3	0	0
Mvmt Flow	412	35	71	272	30	172

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	447	0	844	430
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	414	-
Critical Hdwy	-	-	4.14	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1103	-	336	629
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1103	-	310	629
Mov Cap-2 Maneuver	-	-	-	-	310	-
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	620	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	545	-	-	1103	-
HCM Lane V/C Ratio	0.371	-	-	0.064	-
HCM Control Delay (s)	15.5	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.7	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	155	109	75	84	55	100	962	44	58	1284	102
Future Volume (vph)	220	155	109	75	84	55	100	962	44	58	1284	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	210		0	185		0
Storage Lanes	0		0	0		0	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	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.970			0.965			0.993			0.989	
Flt Protected		0.978			0.983		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1744	0	1888	3444	0	1925	3438	0
Flt Permitted		0.713			0.703		0.064			0.128		
Satd. Flow (perm)	0	1292	0	0	1247	0	127	3444	0	259	3438	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			15			4			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		137			187			2331			918	
Travel Time (s)		3.1			4.3			53.0			20.9	
Confl. Peds. (#/hr)							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 (%)	0%	4%	2%	0%	2%	10%	2%	4%	6%	0%	4%	2%
Adj. Flow (vph)	244	172	121	83	93	61	111	1069	49	64	1427	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	537	0	0	237	0	111	1118	0	64	1540	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	17.0		5.0	17.0	
Minimum Split (s)	44.0	44.0		44.0	44.0		12.0	34.0		12.0	34.0	
Total Split (s)	60.0	60.0		60.0	60.0		12.0	67.0		13.0	68.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%		8.6%	47.9%		9.3%	48.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		7.0	7.0		7.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)		54.0			54.0		66.6	62.6		67.0	61.0	
Actuated g/C Ratio		0.39			0.39		0.48	0.45		0.48	0.44	
v/c Ratio		1.06			0.48		0.90	0.73		0.33	1.03	
Control Delay		98.3			34.3		84.7	35.6		21.4	68.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		98.3			34.3		84.7	35.6		21.4	68.7	
LOS		F			C		F	D		C	E	
Approach Delay		98.3			34.3			40.1			66.9	
Approach LOS		F			C			D			E	
Queue Length 50th (ft)		~531			152		50	446		28	~783	
Queue Length 95th (ft)		#761			236		#172	533		53	#924	
Internal Link Dist (ft)		57			107			2251			838	
Turn Bay Length (ft)							210			185		
Base Capacity (vph)		505			490		123	1542		195	1501	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.06			0.48		0.90	0.73		0.33	1.03	

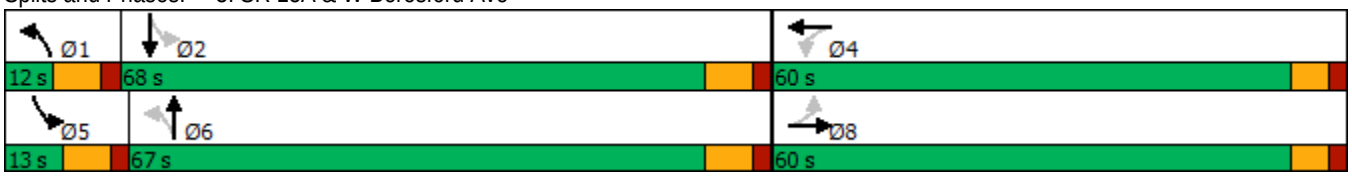
Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 60.3 — Intersection LOS: E
Intersection Capacity Utilization 100.3% — ICU Level of Service G
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: 3: SR 15A & W Beresford Ave



Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	1	20	0	0	8
Future Vol, veh/h	3	1	20	0	0	8
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	67	67	67	67	67	67
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	4	1	30	0	0	12

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	42	30	0	0	30	0
Stage 1	30	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	974	1050	-	-	1596	-
Stage 1	998	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	974	1050	-	-	1596	-
Mov Cap-2 Maneuver	974	-	-	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	1016	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	992	1596	-
HCM Lane V/C Ratio	-	-	0.006	-	-
HCM Control Delay (s)	-	-	8.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	3	167	85	1
Future Vol, veh/h	0	0	3	167	85	1
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	0	0	3	194	99	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	300	100	100	0	-	0
Stage 1	100	-	-	-	-	-
Stage 2	200	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	696	961	1505	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	695	961	1505	-	-	-
Mov Cap-2 Maneuver	695	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	838	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1505	-	-	-	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	7.4	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	59	36	22	19	35	12	233	16	39	206	12
Future Vol, veh/h	36	59	36	22	19	35	12	233	16	39	206	12
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	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	71	92	71	92	71	71	71	71	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	3	2
Mvmt Flow	39	64	39	31	21	49	13	328	23	55	290	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	808	784	297	824	779	340	303	0	0	351	0	0
Stage 1	407	407	-	366	366	-	-	-	-	-	-	-
Stage 2	401	377	-	458	413	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	299	325	742	294	327	707	1258	-	-	1219	-	-
Stage 1	621	597	-	657	623	-	-	-	-	-	-	-
Stage 2	626	616	-	587	594	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	251	304	742	222	305	707	1258	-	-	1219	-	-
Mov Cap-2 Maneuver	251	304	-	222	305	-	-	-	-	-	-	-
Stage 1	613	565	-	648	615	-	-	-	-	-	-	-
Stage 2	555	608	-	466	562	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.1	18.6	0.3	1.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1258	-	-	339	364	1219	-	-
HCM Lane V/C Ratio	0.01	-	-	0.42	0.277	0.045	-	-
HCM Control Delay (s)	7.9	-	-	23.1	18.6	8.1	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2	1.1	0.1	-	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	66	62	46	1020	1493	16
Future Vol, veh/h	66	62	46	1020	1493	16
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	-	185	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	73	69	51	1133	1659	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2337	839	1677	0	-	0
Stage 1	1668	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	~ 32	313	387	-	-	-
Stage 1	141	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 28	313	387	-	-	-
Mov Cap-2 Maneuver	96	-	-	-	-	-
Stage 1	122	-	-	-	-	-
Stage 2	476	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	130.3	0.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	387	-	145	-	-
HCM Lane V/C Ratio	0.132	-	0.981	-	-
HCM Control Delay (s)	15.7	-	130.3	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0.5	-	7.1	-	-

Notes

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

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	252	8	9	294	0	11	0	14	0	0	0
Future Vol, veh/h	0	252	8	9	294	0	11	0	14	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	2	0	0	2	0	25	0	0	0	0	0
Mvmt Flow	0	345	11	12	403	0	15	0	19	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	403	0	0	356	0	0	778	778	351	787	783	403
Stage 1	-	-	-	-	-	-	351	351	-	427	427	-
Stage 2	-	-	-	-	-	-	427	427	-	360	356	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.35	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.725	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1167	-	-	1214	-	-	287	330	697	312	328	652
Stage 1	-	-	-	-	-	-	621	636	-	610	589	-
Stage 2	-	-	-	-	-	-	563	589	-	662	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1167	-	-	1214	-	-	284	326	697	300	324	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	284	326	-	300	324	-
Stage 1	-	-	-	-	-	-	621	636	-	610	581	-
Stage 2	-	-	-	-	-	-	556	581	-	644	633	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	14.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	425	1167	-	-	1214	-	-	-
HCM Lane V/C Ratio	0.081	-	-	-	0.01	-	-	-
HCM Control Delay (s)	14.2	0	-	-	8	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	237	29	178	275	28	129
Future Vol, veh/h	237	29	178	275	28	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	4	3	0	0
Mvmt Flow	286	35	214	331	34	155

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	321	0	1063	304
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	759	-
Critical Hdwy	-	-	6.4	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1004	-	249	740
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	466	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1004	-	184	740
Mov Cap-2 Maneuver	-	-	-	-	184	-
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	344	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.8	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	481	-	-	1004	-
HCM Lane V/C Ratio	0.393	-	-	0.214	-
HCM Control Delay (s)	17.3	-	-	9.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.9	-	-	0.8	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	94	108	106	149	118	122	1314	67	88	1254	182
Future Volume (vph)	163	94	108	106	149	118	122	1314	67	88	1254	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	210		0	185		0
Storage Lanes	0		0	0		0	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	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.960			0.957			0.993			0.981	
Flt Protected		0.978			0.986		0.950			0.950		
Satd. Flow (prot)	0	1755	0	0	1725	0	1888	3444	0	1925	3414	0
Flt Permitted		0.592			0.754		0.061			0.062		
Satd. Flow (perm)	0	1063	0	0	1319	0	121	3444	0	126	3414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			18			5			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		137			187			2331			918	
Travel Time (s)		3.1			4.3			53.0			20.9	
Confl. Peds. (#/hr)							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 (%)	0%	4%	2%	0%	2%	10%	2%	4%	6%	0%	4%	2%
Adj. Flow (vph)	181	104	120	118	166	131	136	1460	74	98	1393	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	405	0	0	415	0	136	1534	0	98	1595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	17.0		5.0	17.0	
Minimum Split (s)	44.0	44.0		44.0	44.0		12.0	34.0		12.0	34.0	
Total Split (s)	55.0	55.0		55.0	55.0		14.0	73.0		12.0	71.0	
Total Split (%)	39.3%	39.3%		39.3%	39.3%		10.0%	52.1%		8.6%	50.7%	
Maximum Green (s)	49.0	49.0		49.0	49.0		7.0	66.0		5.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		7.0	7.0		7.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			10.0			10.0	
Flash Dont Walk (s)	28.0	28.0		28.0	28.0			17.0			17.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		49.0			49.0		73.0	66.0		69.0	64.0	
Actuated g/C Ratio		0.35			0.35		0.52	0.47		0.49	0.46	
v/c Ratio		1.06			0.88		0.90	0.94		0.78	1.02	
Control Delay		103.8			61.4		79.0	47.8		59.1	64.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		103.8			61.4		79.0	47.8		59.1	64.3	
LOS		F			E		E	D		E	E	
Approach Delay		103.8			61.4			50.3			64.0	
Approach LOS		F			E			D			E	

Intersection Summary	
Area Type: Other	
Cycle Length: 140	
Actuated Cycle Length: 140	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 62.2	Intersection LOS: E
Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: SR 15A & W Beresford Ave

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	16	0	3	14
Future Vol, veh/h	0	9	16	0	3	14
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	67	67	67	67	67	67
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	0	13	24	0	4	21

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	53	24	0	0	24	0
Stage 1	24	-	-	-	-	-
Stage 2	29	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	960	1058	-	-	1604	-
Stage 1	1004	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	957	1058	-	-	1604	-
Mov Cap-2 Maneuver	957	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	996	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	1.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1058	1604	-
HCM Lane V/C Ratio	-	-	0.013	0.003	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	156	204	3
Future Vol, veh/h	1	3	9	156	204	3
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	1	3	10	181	237	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	440	239	240	0	-	0
Stage 1	239	-	-	-	-	-
Stage 2	201	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	578	805	1339	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	573	805	1339	-	-	-
Mov Cap-2 Maneuver	573	-	-	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	838	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1339	-	731	-	-
HCM Lane V/C Ratio	0.008	-	0.006	-	-
HCM Control Delay (s)	7.7	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	39	24	22	66	25	41	138	15	22	164	41
Future Vol, veh/h	24	39	24	22	66	25	41	138	15	22	164	41
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	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	71	92	71	92	71	71	71	71	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	3	2
Mvmt Flow	26	42	26	31	72	35	45	194	21	31	231	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	664	621	254	645	633	205	276	0	0	215	0	0
Stage 1	316	316	-	295	295	-	-	-	-	-	-	-
Stage 2	348	305	-	350	338	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	374	403	785	388	397	841	1287	-	-	1367	-	-
Stage 1	695	655	-	718	669	-	-	-	-	-	-	-
Stage 2	668	662	-	671	641	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	290	376	785	326	371	841	1287	-	-	1367	-	-
Mov Cap-2 Maneuver	290	376	-	326	371	-	-	-	-	-	-	-
Stage 1	667	637	-	689	642	-	-	-	-	-	-	-
Stage 2	546	636	-	589	624	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.7	17.8	1.4	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1287	-	-	401	418	1367	-	-
HCM Lane V/C Ratio	0.035	-	-	0.236	0.33	0.023	-	-
HCM Control Delay (s)	7.9	-	-	16.7	17.8	7.7	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	1.4	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	34	69	1498	1410	56
Future Vol, veh/h	38	34	69	1498	1410	56
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	-	185	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	42	38	77	1664	1567	62

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2584	815	1629	0	-	0
Stage 1	1598	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	~ 21	325	404	-	-	-
Stage 1	154	-	-	-	-	-
Stage 2	327	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 17	325	404	-	-	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	125	-	-	-	-	-
Stage 2	327	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	64.6	0.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	404	-	135	-	-
HCM Lane V/C Ratio	0.19	-	0.593	-	-
HCM Control Delay (s)	16	-	64.6	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0.7	-	3	-	-

Notes

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

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	357	0	18	219	0	32	0	13	0	0	0
Future Vol, veh/h	0	357	0	18	219	0	32	0	13	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	2	0	0	2	0	25	0	0	0	0	0
Mvmt Flow	0	489	0	25	300	0	44	0	18	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	300	0	0	489	0	0	839	839	489	848	839	300
Stage 1	-	-	-	-	-	-	489	489	-	350	350	-
Stage 2	-	-	-	-	-	-	350	350	-	498	489	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.35	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.725	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1273	-	-	1085	-	-	261	304	583	284	304	744
Stage 1	-	-	-	-	-	-	520	553	-	671	636	-
Stage 2	-	-	-	-	-	-	621	636	-	558	553	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1273	-	-	1085	-	-	256	295	583	270	295	744
Mov Cap-2 Maneuver	-	-	-	-	-	-	256	295	-	270	295	-
Stage 1	-	-	-	-	-	-	520	553	-	671	618	-
Stage 2	-	-	-	-	-	-	604	618	-	541	553	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	19.7	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	306	1273	-	-	1085	-	-	-
HCM Lane V/C Ratio	0.201	-	-	-	0.023	-	-	-
HCM Control Delay (s)	19.7	0	-	-	8.4	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	342	29	0	236	0	20
Future Vol, veh/h	342	29	0	236	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	4	3	0	0
Mvmt Flow	412	35	0	284	0	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	430
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	-	0	629
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	629
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

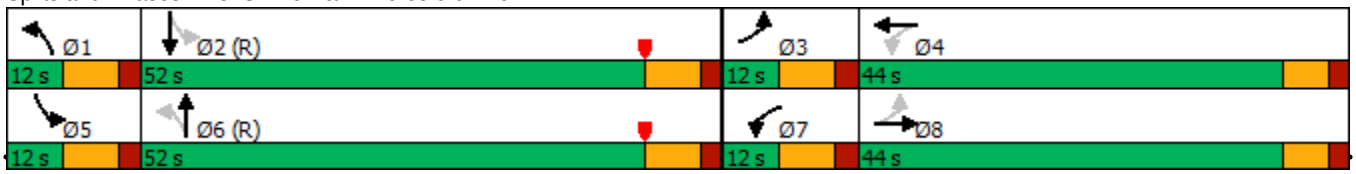
Approach	EB	WB	NB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	629	-	-	-
HCM Lane V/C Ratio	0.038	-	-	-
HCM Control Delay (s)	11	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	17.0		5.0	17.0	
Minimum Split (s)	12.0	44.0		12.0	44.0		12.0	34.0		12.0	34.0	
Total Split (s)	12.0	44.0		12.0	44.0		12.0	52.0		12.0	52.0	
Total Split (%)	10.0%	36.7%		10.0%	36.7%		10.0%	43.3%		10.0%	43.3%	
Maximum Green (s)	5.0	38.0		5.0	38.0		5.0	45.0		5.0	45.0	
Yellow Time (s)	5.0	4.0		5.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		10.0			10.0			10.0			10.0	
Flash Dont Walk (s)		28.0			28.0			17.0			17.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	24.6	20.6		24.6	20.6		70.8	62.8		65.1	57.9	
Actuated g/C Ratio	0.20	0.17		0.20	0.17		0.59	0.52		0.54	0.48	
v/c Ratio	0.58	0.77		0.59	0.44		0.52	0.70		0.26	0.92	
Control Delay	46.5	54.6		48.9	36.3		18.9	26.5		13.8	40.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.5	54.6		48.9	36.3		18.9	26.5		13.8	40.5	
LOS	D	D		D	D		B	C		B	D	
Approach Delay		51.6			41.5			25.9			39.4	
Approach LOS		D			D			C			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 5 (4%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 35.8	Intersection LOS: D
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR 15A & W Beresford Ave



Intersection	
Int Delay, s/veh	4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	25	20	0	10	8
Future Vol, veh/h	3	25	20	0	10	8
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	67	67	67	67	67	67
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	4	37	30	0	15	12

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	72	30	0	0	30	0
Stage 1	30	-	-	-	-	-
Stage 2	42	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	937	1050	-	-	1596	-
Stage 1	998	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	929	1050	-	-	1596	-
Mov Cap-2 Maneuver	929	-	-	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	977	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1036	1596	-
HCM Lane V/C Ratio	-	-	0.04	0.009	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	27	20	26	1
Future Vol, veh/h	0	10	27	20	26	1
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	0	12	31	23	30	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	116	31	31	0	-	0
Stage 1	31	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	885	1049	1595	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	943	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	867	1049	1595	-	-	-
Mov Cap-2 Maneuver	867	-	-	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	943	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1595	-	1049	-	-
HCM Lane V/C Ratio	0.02	-	0.011	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	88	36	71	19	35	12	139	110	39	157	12
Future Vol, veh/h	7	88	36	71	19	35	12	139	110	39	157	12
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	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	71	92	71	92	71	71	71	71	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	3	2
Mvmt Flow	8	96	39	100	21	49	13	196	155	55	221	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	673	715	228	705	644	274	234	0	0	351	0	0
Stage 1	338	338	-	300	300	-	-	-	-	-	-	-
Stage 2	335	377	-	405	344	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	369	356	811	354	391	770	1333	-	-	1219	-	-
Stage 1	676	641	-	713	666	-	-	-	-	-	-	-
Stage 2	679	616	-	626	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	315	334	811	250	366	770	1333	-	-	1219	-	-
Mov Cap-2 Maneuver	315	334	-	250	366	-	-	-	-	-	-	-
Stage 1	668	608	-	704	658	-	-	-	-	-	-	-
Stage 2	608	609	-	476	604	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.1	27.3	0.3	1.5
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	397	327	1219	-	-
HCM Lane V/C Ratio	0.01	-	-	0.359	0.52	0.045	-	-
HCM Control Delay (s)	7.7	-	-	19.1	27.3	8.1	0	-
HCM Lane LOS	A	-	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.6	2.8	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	189	62	46	1020	1493	65
Future Volume (vph)	189	62	46	1020	1493	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0	185			300
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1805	3505	3505	1615
Flt Permitted	0.950		0.072			
Satd. Flow (perm)	1805	1615	137	3505	3505	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		69				72
Link Speed (mph)	30			30	30	
Link Distance (ft)	1371			1110	2331	
Travel Time (s)	31.2			25.2	53.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	3%	3%	0%
Adj. Flow (vph)	210	69	51	1133	1659	72
Shared Lane Traffic (%)						
Lane Group Flow (vph)	210	69	51	1133	1659	72
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	12.0	34.0	34.0	34.0
Total Split (s)	31.0	31.0	12.0	89.0	77.0	77.0
Total Split (%)	25.8%	25.8%	10.0%	74.2%	64.2%	64.2%
Maximum Green (s)	24.0	24.0	5.0	82.0	70.0	70.0
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0
Flash Dont Walk (s)				17.0	17.0	17.0
Pedestrian Calls (#/hr)				0	0	0
Act Effct Green (s)	18.8	18.8	87.2	87.2	76.7	76.7
Actuated g/C Ratio	0.16	0.16	0.73	0.73	0.64	0.64
v/c Ratio	0.74	0.22	0.28	0.44	0.74	0.07
Control Delay	63.9	11.2	9.3	7.7	6.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.9	11.2	9.3	7.7	6.4	0.1
LOS	E	B	A	A	A	A
Approach Delay	50.9			7.8	6.2	
Approach LOS	D			A	A	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 72 (60%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 63.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: SR 15A & Gayle Dr

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	252	8	39	266	0	39	0	14	0	0	0
Future Vol, veh/h	0	252	8	39	266	0	39	0	14	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	280	9	43	296	0	43	0	16	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	296	0	0	289	0	0	667	667	285	675	671	296
Stage 1	-	-	-	-	-	-	285	285	-	382	382	-
Stage 2	-	-	-	-	-	-	382	382	-	293	289	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1277	-	-	1284	-	-	375	382	759	371	380	748
Stage 1	-	-	-	-	-	-	727	679	-	645	616	-
Stage 2	-	-	-	-	-	-	645	616	-	719	677	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1277	-	-	1284	-	-	363	367	759	352	365	748
Mov Cap-2 Maneuver	-	-	-	-	-	-	363	367	-	352	365	-
Stage 1	-	-	-	-	-	-	727	679	-	645	591	-
Stage 2	-	-	-	-	-	-	619	591	-	704	677	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	14.9	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	421	1277	-	-	1284	-	-	-
HCM Lane V/C Ratio	0.14	-	-	-	0.034	-	-	-
HCM Control Delay (s)	14.9	0	-	-	7.9	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	237	29	0	305	0	18
Future Vol, veh/h	237	29	0	305	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	5	0	2	0	1
Mvmt Flow	263	32	0	339	0	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	279
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.309
Pot Cap-1 Maneuver	-	-	0	-	0	762
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	762
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

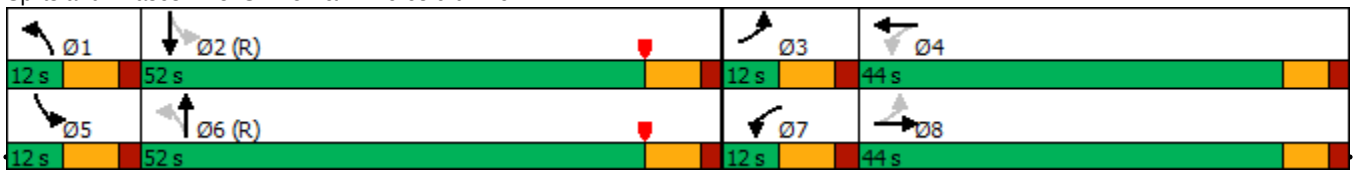
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	762	-	-	-
HCM Lane V/C Ratio	0.026	-	-	-
HCM Control Delay (s)	9.9	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	61	108	147	108	118	122	1391	100	88	1361	75
Future Volume (vph)	86	61	108	147	108	118	122	1391	100	88	1361	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	210		0	185		0
Storage Lanes	1		0	1		0	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	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor				0.99								
Frt		0.904			0.922			0.990			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1685	0	1805	1735	0	1888	3508	0	1925	3482	0
Flt Permitted	0.319			0.482			0.065			0.067		
Satd. Flow (perm)	600	1685	0	908	1735	0	129	3508	0	136	3482	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		77			48			7			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		137			187			2331			918	
Travel Time (s)		3.1			4.3			53.0			20.9	
Confl. Peds. (#/hr)				12						2		
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	0%	3%	0%	2%	0%	2%	2%	0%	0%	3%	0%
Adj. Flow (vph)	87	62	109	148	109	119	123	1405	101	89	1375	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	171	0	148	228	0	123	1506	0	89	1451	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	17.0		5.0	17.0	
Minimum Split (s)	12.0	44.0		12.0	44.0		12.0	34.0		12.0	34.0	
Total Split (s)	12.0	44.0		12.0	44.0		12.0	52.0		12.0	52.0	
Total Split (%)	10.0%	36.7%		10.0%	36.7%		10.0%	43.3%		10.0%	43.3%	
Maximum Green (s)	5.0	38.0		5.0	38.0		5.0	45.0		5.0	45.0	
Yellow Time (s)	5.0	4.0		5.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	6.0		7.0	6.0		7.0	7.0		7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		10.0			10.0			10.0			10.0	
Flash Dont Walk (s)		28.0			28.0			17.0			17.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	22.2	18.2		22.2	18.2		72.3	61.9		67.3	59.4	
Actuated g/C Ratio	0.18	0.15		0.18	0.15		0.60	0.52		0.56	0.50	
v/c Ratio	0.54	0.53		0.72	0.75		0.53	0.83		0.46	0.84	
Control Delay	48.9	30.4		60.1	53.0		19.8	28.4		22.9	33.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.9	30.4		60.1	53.0		19.8	28.4		22.9	33.1	
LOS	D	C		E	D		B	C		C	C	
Approach Delay		36.6			55.8			27.7			32.5	
Approach LOS		D			E			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 3 (3%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 33.1	Intersection LOS: C
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR 15A & W Beresford Ave



Intersection	
Int Delay, s/veh	5.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	37	16	0	33	14
Future Vol, veh/h	0	37	16	0	33	14
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	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	39	17	0	35	15

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	102	17	0	0	17	0
Stage 1	17	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	901	1068	-	-	1613	-
Stage 1	1011	-	-	-	-	-
Stage 2	943	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	881	1068	-	-	1613	-
Mov Cap-2 Maneuver	881	-	-	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	922	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	5.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1068	1613	-
HCM Lane V/C Ratio	-	-	0.037	0.022	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	33	37	17	26	3
Future Vol, veh/h	1	33	37	17	26	3
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	1	36	41	19	29	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	132	31	32	0	-	0
Stage 1	31	-	-	-	-	-
Stage 2	101	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	867	1049	1593	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	844	1049	1593	-	-	-
Mov Cap-2 Maneuver	844	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	928	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1593	-	1042	-	-
HCM Lane V/C Ratio	0.026	-	0.036	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	58	24	170	66	25	41	46	107	22	16	41
Future Vol, veh/h	5	58	24	170	66	25	41	46	107	22	16	41
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	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	1	0	0	1	2
Mvmt Flow	5	63	26	185	72	27	45	50	116	24	17	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	336	344	40	330	308	108	62	0	0	166	0	0
Stage 1	88	88	-	198	198	-	-	-	-	-	-	-
Stage 2	248	256	-	132	110	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	618	579	1031	627	606	951	1541	-	-	1424	-	-
Stage 1	920	822	-	808	737	-	-	-	-	-	-	-
Stage 2	756	696	-	876	804	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	523	550	1031	537	576	951	1541	-	-	1424	-	-
Mov Cap-2 Maneuver	523	550	-	537	576	-	-	-	-	-	-	-
Stage 1	890	807	-	781	713	-	-	-	-	-	-	-
Stage 2	639	673	-	773	790	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	17.4	1.6	2.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1541	-	-	629	571	1424	-	-
HCM Lane V/C Ratio	0.029	-	-	0.15	0.497	0.017	-	-
HCM Control Delay (s)	7.4	-	-	11.7	17.4	7.6	0	-
HCM Lane LOS	A	-	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	2.8	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	12.0	34.0	34.0	34.0
Total Split (s)	27.0	27.0	14.0	93.0	79.0	79.0
Total Split (%)	22.5%	22.5%	11.7%	77.5%	65.8%	65.8%
Maximum Green (s)	20.0	20.0	7.0	86.0	72.0	72.0
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0
Flash Dont Walk (s)				17.0	17.0	17.0
Pedestrian Calls (#/hr)				0	0	0
Act Effct Green (s)	15.1	15.1	90.9	90.9	79.9	79.9
Actuated g/C Ratio	0.13	0.13	0.76	0.76	0.67	0.67
v/c Ratio	0.67	0.16	0.27	0.56	0.61	0.18
Control Delay	63.9	15.7	6.8	7.6	3.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.9	15.7	6.8	7.6	3.8	0.3
LOS	E	B	A	A	A	A
Approach Delay	55.0			7.5	3.3	
Approach LOS	E			A	A	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 70 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 68.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: SR 15A & Gayle Dr

LANE SUMMARY

Site: 101 [SR 15/Beresford Ave- 2040 AM (Site Folder: General)]

2040 AM
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: SR 15													
Lane 1	559	4.0	890	0.628	100	13.8	LOS B	6.2	159.9	Full	1600	0.0	0.0
Lane 2[d]	559	4.0	890	0.628	100	13.8	LOS B	6.2	159.9	Full	1600	0.0	0.0
Approach	1117	4.0		0.628		13.8	LOS B	6.2	159.9				
East: W Beresford Ave													
Lane 1[d]	216	2.0	436	0.496	100	18.6	LOS B	2.3	57.2	Full	1600	0.0	0.0
Approach	216	2.0		0.496		18.6	LOS B	2.3	57.2				
North: SR 15													
Lane 1	729	4.0	1045	0.698	100	14.5	LOS B	10.3	266.1	Full	1600	0.0	0.0
Lane 2[d]	729	4.0	1045	0.698	100	14.5	LOS B	10.3	266.1	Full	1600	0.0	0.0
Approach	1459	4.0		0.698		14.5	LOS B	10.3	266.1				
West: W Beresford Ave													
Lane 1[d]	375	2.0	373	1.004	100	81.6	LOS F	13.7	347.7	Full	1600	0.0	0.0
Approach	375	2.0		1.004		81.6	LOS F	13.7	347.7				
SouthWest: Spring Garden Ave													
Lane 1[d]	170	1.0	295	0.576	100	30.5	LOS C	2.5	61.8	Full	1600	0.0	0.0
Approach	170	1.0		0.576		30.5	LOS C	2.5	61.8				
Intersection	3336	3.5		1.004		22.9	LOS C	13.7	347.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: SR 15

Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	20	81	458	-	559	4.0	890	0.628	100	NA	NA
Lane 2	-	-	514	44	559	4.0	890	0.628	100	NA	NA
Approach	20	81	972	44	1117	4.0		0.628			

East: W Beresford Ave

Mov.	L2	L1	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.

From E To Exit:	S	SW	W	N			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	76	8	77	56	216	2.0	436	0.496	100	NA	NA
Approach	76	8	77	56	216	2.0		0.496			

North: SR 15

Mov. From N To Exit:	L2 E	T1 S	R1 SW	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	59	671	-	-	729	4.0	1045	0.698	100	NA	NA
Lane 2	-	626	31	72	729	4.0	1045	0.698	100	NA	NA
Approach	59	1297	31	72	1459	4.0		0.698			

West: W Beresford Ave

Mov. From W To Exit:	L2 N	T1 E	R2 S	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	135	103	107	29	375	2.0	373	1.004	100	NA	NA
Approach	135	103	107	29	375	2.0		1.004			

SouthWest: Spring Garden Ave

Mov. From SW To Exit:	L3 W	L1 N	R1 E	R3 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	25	87	54	4	170	1.0	295	0.576	100	NA	NA
Approach	25	87	54	4	170	1.0		0.576			

	Total	%HV	Deg.Satn (v/c)
Intersection	3336	3.5	1.004

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: SR 15 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: W Beresford Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: SR 15 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: W Beresford Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: Spring Garden Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

INTERSECTION SUMMARY

Site: 101 [SR 15/Beresford Ave- 2040 AM (Site Folder: General)]

2040 AM
Site Category: (None)
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Travel Speed (Average)	27.3	mph	27.3	mph
Travel Distance (Total)	2119.8	veh-mi/h	2543.7	pers-mi/h
Travel Time (Total)	77.6	veh-h/h	93.1	pers-h/h
Desired Speed (Program)	40.0	mph		
Speed Efficiency	0.68			
Travel Time Index	6.48			
Congestion Coefficient	1.46			
Demand Flows (Total)	3336	veh/h	4004	pers/h
Percent Heavy Vehicles (Demand)	3.5	%		
Degree of Saturation	1.004			
Practical Spare Capacity	-15.4	%		
Effective Intersection Capacity	3322	veh/h		
Control Delay (Total)	21.19	veh-h/h	25.43	pers-h/h
Control Delay (Average)	22.9	sec	22.9	sec
Control Delay (Worst Lane)	81.6	sec		
Control Delay (Worst Movement)	81.6	sec	81.6	sec
Geometric Delay (Average)	0.0	sec		
Stop-Line Delay (Average)	22.9	sec		
Idling Time (Average)	13.3	sec		
Intersection Level of Service (LOS)	LOS C			
95% Back of Queue - Vehicles (Worst Lane)	13.7	veh		
95% Back of Queue - Distance (Worst Lane)	347.7	ft		
Ave. Queue Storage Ratio (Worst Lane)	0.09			
Total Effective Stops	3387	veh/h	4064	pers/h
Effective Stop Rate	1.02		1.02	
Proportion Queued	0.78		0.78	
Performance Index	205.4		205.4	
Cost (Total)	1590.56	$/h	1590.56	$/h
Fuel Consumption (Total)	97.3	gal/h		
Carbon Dioxide (Total)	872.3	kg/h		
Hydrocarbons (Total)	0.079	kg/h		
Carbon Monoxide (Total)	1.027	kg/h		
NOx (Total)	1.473	kg/h		

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Site Model Variability Index (Iterations 3 to N): 0.1 %
Number of Iterations: 3 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Flow-Capacity Iterations: 100.0% 97.1% 0.1%

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1,601,454	veh/y	1,921,746	pers/y
Delay	10,172	veh-h/y	12,207	pers-h/y
Effective Stops	1,625,690	veh/y	1,950,828	pers/y
Travel Distance	1,017,486	veh-mi/y	1,220,983	pers-mi/y
Travel Time	37,240	veh-h/y	44,687	pers-h/y
Cost	763,467	$/y	763,467	$/y
Fuel Consumption	46,685	gal/y		
Carbon Dioxide	418,721	kg/y		
Hydrocarbons	38	kg/y		

Carbon Monoxide	493	kg/y
NOx	707	kg/y

LANE SUMMARY

Site: 101 [SR 15/Beresford Ave- 2040 PM (Site Folder: General)]

2040 PM
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: SR 15													
Lane 1	759	4.0	962	0.789	100	20.1	LOS C	14.7	379.9	Full	1600	0.0	0.0
Lane 2[d]	759	4.0	962	0.789	100	20.1	LOS C	14.7	379.9	Full	1600	0.0	0.0
Approach	1518	4.0		0.789		20.1	LOS C	14.7	379.9				
East: W Beresford Ave													
Lane 1[d]	377	2.0	327	1.152	100	133.2	LOS F	24.2	614.2	Full	1600	0.0	0.0
Approach	377	2.0		1.152		133.2	LOS F	24.2	614.2				
North: SR 15													
Lane 1	770	4.0	955	0.806	100	21.4	LOS C	15.9	409.4	Full	1600	0.0	0.0
Lane 2[d]	770	4.0	955	0.806	100	21.4	LOS C	15.9	409.4	Full	1600	0.0	0.0
Approach	1539	4.0		0.806		21.4	LOS C	15.9	409.4				
West: W Beresford Ave													
Lane 1[d]	269	2.0	331	0.813	100	48.7	LOS D	5.2	131.7	Full	1600	0.0	0.0
Approach	269	2.0		0.813		48.7	LOS D	5.2	131.7				
SouthWest: Spring Garden Ave													
Lane 1[d]	159	1.0	317	0.500	100	24.7	LOS C	2.0	51.1	Full	1600	0.0	0.0
Approach	159	1.0		0.500		24.7	LOS C	2.0	51.1				
Intersection	3862	3.5		1.152		33.8	LOS C	24.2	614.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: SR 15

Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	24	99	636	-	759	4.0	962	0.789	100	NA	NA
Lane 2	-	-	691	68	759	4.0	962	0.789	100	NA	NA
Approach	24	99	1327	68	1518	4.0		0.789			

East: W Beresford Ave

Mov.	L2	L1	T1	R2	Total	%HV	Deg.	Lane	Prob.	Ov.

From E To Exit:	S	SW	W	N			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	107	30	120	119	377	2.0	327	1.152	100	NA	NA
Approach	107	30	120	119	377	2.0		1.152			
North: SR 15											
Mov. From N To Exit:	L2 E	T1 S	R1 SW	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	89	681	-	-	770	4.0	955	0.806	100	NA	NA
Lane 2	-	586	125	59	770	4.0	955	0.806	100	NA	NA
Approach	89	1267	125	59	1539	4.0		0.806			
West: W Beresford Ave											
Mov. From W To Exit:	L2 N	T1 E	R2 S	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	87	46	106	29	269	2.0	331	0.813	100	NA	NA
Approach	87	46	106	29	269	2.0		0.813			
SouthWest: Spring Garden Ave											
Mov. From SW To Exit:	L3 W	L1 N	R1 E	R3 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	28	78	48	4	159	1.0	317	0.500	100	NA	NA
Approach	28	78	48	4	159	1.0		0.500			

	Total	%HV	Deg.Satn (v/c)
Intersection	3862	3.5	1.152

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: SR 15 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: W Beresford Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: SR 15 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: W Beresford Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: Spring Garden Ave Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

INTERSECTION SUMMARY

Site: 101 [SR 15/Beresford Ave- 2040 PM (Site Folder: General)]

2040 PM
Site Category: (None)
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Travel Speed (Average)	24.2	mph	24.2	mph
Travel Distance (Total)	2452.1	veh-mi/h	2942.6	pers-mi/h
Travel Time (Total)	101.5	veh-h/h	121.8	pers-h/h
Desired Speed (Program)	40.0	mph		
Speed Efficiency	0.60			
Travel Time Index	5.60			
Congestion Coefficient	1.66			
Demand Flows (Total)	3862	veh/h	4634	pers/h
Percent Heavy Vehicles (Demand)	3.5	%		
Degree of Saturation	1.152			
Practical Spare Capacity	-26.2	%		
Effective Intersection Capacity	3352	veh/h		
Control Delay (Total)	36.25	veh-h/h	43.50	pers-h/h
Control Delay (Average)	33.8	sec	33.8	sec
Control Delay (Worst Lane)	133.2	sec		
Control Delay (Worst Movement)	133.2	sec	133.2	sec
Geometric Delay (Average)	0.0	sec		
Stop-Line Delay (Average)	33.8	sec		
Idling Time (Average)	19.3	sec		
Intersection Level of Service (LOS)	LOS C			
95% Back of Queue - Vehicles (Worst Lane)	24.2	veh		
95% Back of Queue - Distance (Worst Lane)	614.2	ft		
Ave. Queue Storage Ratio (Worst Lane)	0.15			
Total Effective Stops	5343	veh/h	6411	pers/h
Effective Stop Rate	1.38		1.38	
Proportion Queued	0.90		0.90	
Performance Index	326.8		326.8	
Cost (Total)	2038.76	$/h	2038.76	$/h
Fuel Consumption (Total)	119.3	gal/h		
Carbon Dioxide (Total)	1070.1	kg/h		
Hydrocarbons (Total)	0.099	kg/h		
Carbon Monoxide (Total)	1.236	kg/h		
NOx (Total)	1.822	kg/h		

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Site Model Variability Index (Iterations 3 to N): 1.2 %
Number of Iterations: 4 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Flow-Capacity Iterations: 96.9% 1.6% 0.8%

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1,853,576	veh/y	2,224,291	pers/y
Delay	17,399	veh-h/y	20,879	pers-h/y
Effective Stops	2,564,579	veh/y	3,077,495	pers/y
Travel Distance	1,177,025	veh-mi/y	1,412,430	pers-mi/y
Travel Time	48,701	veh-h/y	58,441	pers-h/y
Cost	978,605	$/y	978,605	$/y
Fuel Consumption	57,275	gal/y		
Carbon Dioxide	513,644	kg/y		
Hydrocarbons	47	kg/y		

Carbon Monoxide	593	kg/y
NOx	875	kg/y

APPENDIX J:

Cost Estimates & Benefit/Cost Analysis

B/C Calculation for Build Alternative 1								
Network MOE	**2025**				**2040**			
	2025 NB AM	**2025 Build1 AM**	**2025 NB PM**	**2025 Build 1 PM**	**2040 NB AM**	**2040 Build1 AM**	**2040 NB PM**	**2040 Build 1 PM**
Total Delay (hour)	34	29	33	30	94	43	69	45
Estimated Daily Savings (hours)	24				225			
Daily User Benefit by MOE	435				4,077			
Daily User Benefit Total	434.88				4077.00			
Annual User Benefit	**130,464**				**1,223,100**			

Interpolation for other years

2025	130,464
2026	203,306
2027	276,149
2028	348,991
2029	421,834
2030	494,676
2031	567,518
2032	640,361
2033	713,203
2034	786,046
2035	858,888
2036	931,730
2037	1,004,573
2038	1,077,415
2039	1,150,258
2040	1,223,100
2041	1,295,942
2042	1,368,785
2043	1,441,627
2044	1,514,470
Total Benefits	**16,449,336**
Total Cost	**1,380,840**
B/C	**$11.9**

B/C Calculation for Build Alternative 2								
Network MOE	**2025**				**2040**			
	2025 NB AM	**2025 Build1 AM**	**2025 NB PM**	**2025 Build 1 PM**	**2040 NB AM**	**2040 Build1 AM**	**2040 NB PM**	**2040 Build 1 PM**
Total Delay (hour)	32	9	29	14	55	21	66	36
Estimated Daily Savings	38				64			
Daily User Benefit by MOE	680				1,152			
Daily User Benefit Total	2041.22				3455.12			
Annual User Benefit	**612,365**				**1,036,536**			

Interpolation for other years

2025	$612,365
2026	$640,643
2027	$668,922
2028	$697,200
2029	$725,478
2030	$753,756
2031	$782,034
2032	$810,312
2033	$838,590
2034	$866,868
2035	$895,146
2036	$923,424
2037	$951,702
2038	$979,980
2039	$1,008,258
2040	$1,036,536
2041	$1,064,815
2042	$1,093,093
2043	$1,121,371
2044	$1,149,649
Total Benefits	**$17,620,142**
Total Cost	**$2,993,669**
B/C	**5.9**

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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 101010-1-52-01 **Letting Date:** 01/2099

Description: VHB Project# 6330805

District: 05 **County:** 79 VOLUSIA **Market Area:** 06 **Units:** English

Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.376 MI

Project Manager:

Version 36 Project Grand Total **$619,082.43**

Description: Beresford Ave./SR 15A Intersection Improvements

Sequence: 1 WUR - Widen/Resurface, Undivided, Rural **Net Length:** 0.103 MI
544 LF

Description: Eastbound Approach

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.24
Alignment Number	1
Distance	0.103
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.24	AC	$56,091.75	$13,462.02

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	126.00	SY	$26.59	$3,350.34
	Earthwork Component Total				$16,812.36

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2

Existing Roadway Pavement Width L/R	11.50 / 15.40
Structural Spread Rate	0
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	5.30 / 2.90
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,099.77	SY	$15.28	$16,804.49
285-709	OPTIONAL BASE,BASE GROUP 09	535.38	SY	$43.71	$23,401.46
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	1,625.48	SY	$4.02	$6,534.43
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	81.76	TN	$100.88	$8,247.95
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	134.10	TN	$146.68	$19,669.79
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	40.88	TN	$146.68	$5,996.28

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	14.00	EA	$8.07	$112.98
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.41	GM	$1,165.75	$477.96
710-11-231	PAINTED PAVT MARK,STD,YELLOW,SKIP,6"	0.21	GM	$573.71	$120.48
	Roadway Component Total				$81,365.82

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	5.00 / 5.00
New Total Outside Shoulder Width L/R	5.00 / 5.00
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Existing Paved Outside Shoulder Width L/R	0.00 / 0.00
New Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	0
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	604.27	SY	$4.57	$2,761.51

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	134.00	LF	$32.40	$4,341.60
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	43.00	SY	$61.69	$2,652.67
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	99.00	SY	$62.59	$6,196.41
527-2	DETECTABLE WARNINGS	97.00	SF	$30.24	$2,933.28

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,250.83	LF	$1.70	$2,126.41
104-11	FLOATING TURBIDITY BARRIER	10.30	LF	$11.97	$123.29
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	10.30	LF	$3.98	$40.99
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$844.61	$844.61
104-18	INLET PROTECTION SYSTEM	1.00	EA	$100.55	$100.55
107-1	LITTER REMOVAL	0.25	AC	$48.27	$12.07
107-2	MOWING	0.25	AC	$65.78	$16.44
	Shoulder Component Total				$22,149.84

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	16.00	LF	$98.22	$1,571.52
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	8.00	LF	$185.53	$1,484.24
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	2.00	EA	$1,370.92	$2,741.84
570-1-1	PERFORMANCE TURF	41.61	SY	$4.57	$190.16
	Drainage Component Total				$5,987.76

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$398.82	$398.82
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	3.00	AS	$1,386.20	$4,158.60

700-1-50	SINGLE POST SIGN, RELOCATE	1.00 AS	$230.67	$230.67
700-1-60	SINGLE POST SIGN, REMOVE	3.00 AS	$37.06	$111.18
700-2-13	MULTI- POST SIGN, F&I GM, 21-30 SF	1.00 AS	$3,817.39	$3,817.39
700-2-60	MULTI- POST SIGN, REMOVE	1.00 AS	$1,036.42	$1,036.42
	Signing Component Total			$9,753.08

Sequence 1 Total $136,068.86

Sequence: 2 WUR - Widen/Resurface, Undivided, Rural **Net Length:** 0.102 MI
540 LF

Description: Westbound Approach

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.26
Alignment Number	1
Distance	0.103
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.26 AC	$56,091.75	$14,583.86

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	551.00 SY	$26.59	$14,651.09
	Earthwork Component Total			$29,234.95

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Existing Roadway Pavement Width L/R	13.70 / 13.50
Structural Spread Rate	0
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	0.00 / 8.30
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,098.29 SY	$15.28	$16,781.87
285-709	OPTIONAL BASE,BASE GROUP 09	517.94 SY	$43.71	$22,639.16
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	1,632.44 SY	$4.02	$6,562.41
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	82.19 TN	$100.88	$8,291.33
337-7-83		134.68 TN	$146.68	$19,754.86

	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22			
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	41.10 TN	$146.68	$6,028.55

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	14.00 EA	$8.07	$112.98
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.41 GM	$1,165.75	$477.96
710-11-231	PAINTED PAVT MARK,STD,YELLOW,SKIP,6"	0.20 GM	$573.71	$114.74
	Roadway Component Total			$80,763.86

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	5.00 / 5.00
New Total Outside Shoulder Width L/R	5.00 / 5.00
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Existing Paved Outside Shoulder Width L/R	0.00 / 0.00
New Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	0
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	600.16 SY	$4.57	$2,742.73

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	269.00 LF	$32.40	$8,715.60
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	228.00 SY	$61.69	$14,065.32
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	180.00 SY	$62.59	$11,266.20
527-2	DETECTABLE WARNINGS	99.00 SF	$30.24	$2,993.76

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,242.33	LF	$1.70	$2,111.96
104-11	FLOATING TURBIDITY BARRIER	10.23	LF	$11.97	$122.45
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	10.23	LF	$3.98	$40.72
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$844.61	$844.61
104-18	INLET PROTECTION SYSTEM	1.00	EA	$100.55	$100.55
107-1	LITTER REMOVAL	0.25	AC	$48.27	$12.07
107-2	MOWING	0.25	AC	$65.78	$16.44
	Shoulder Component Total				$43,032.42

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	16.00	LF	$98.22	$1,571.52
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	8.00	LF	$185.53	$1,484.24
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	2.00	EA	$1,370.92	$2,741.84
570-1-1	PERFORMANCE TURF	41.33	SY	$4.57	$188.88
	Drainage Component Total				$5,986.48

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$398.82	$398.82
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	3.00	AS	$1,386.20	$4,158.60
700-1-50	SINGLE POST SIGN, RELOCATE	1.00	AS	$230.67	$230.67
700-1-60	SINGLE POST SIGN, REMOVE	3.00	AS	$37.06	$111.18
700-2-13	MULTI- POST SIGN, F&I GM, 21-30 SF	1.00	AS	$3,817.39	$3,817.39
700-2-60	MULTI- POST SIGN, REMOVE	1.00	AS	$1,036.42	$1,036.42
	Signing Component Total				$9,753.08

Sequence 2 Total $168,770.79

Sequence: 3 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.030 MI
160 LF

Description: Signalization

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Existing Roadway Pavement Width L/R	34.00 / 34.00
Structural Spread Rate	165
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	0.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	1,208.77 SY	$4.02	$4,859.26
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	99.72 TN	$146.68	$14,626.93

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	3

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	16.00 EA	$8.07	$129.12
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.24 GM	$1,165.75	$279.78
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.18 GM	$627.85	$113.01
	Roadway Component Total			$20,008.10

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	12.25 / 12.25
New Total Outside Shoulder Width L/R	12.25 / 12.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	5.00 / 5.00

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	319.97	LF	$1.70	$543.95
104-11	FLOATING TURBIDITY BARRIER	3.03	LF	$11.97	$36.27
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	3.03	LF	$3.98	$12.06
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$844.61	$844.61
104-18	INLET PROTECTION SYSTEM	2.00	EA	$100.55	$201.10
107-1	LITTER REMOVAL	0.26	AC	$48.27	$12.55
107-2	MOWING	0.26	AC	$65.78	$17.10
	Shoulder Component Total				$1,667.64

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$398.82	$398.82
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,386.20	$1,386.20
700-1-50	SINGLE POST SIGN, RELOCATE	1.00	AS	$230.67	$230.67
700-1-60	SINGLE POST SIGN, REMOVE	1.00	AS	$37.06	$37.06
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00	AS	$5,567.93	$5,567.93
700-2-60	MULTI- POST SIGN, REMOVE	1.00	AS	$1,036.42	$1,036.42
	Signing Component Total				$8,657.10

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Strain Pole
Multiplier	1
Description	

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	750.00	LF	$10.14	$7,605.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	200.00	LF	$22.69	$4,538.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$6,429.49	$6,429.49
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	1.00	PI	$6,363.17	$6,363.17
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	14.00	EA	$752.44	$10,534.16
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$2,922.21	$2,922.21
639-2-1	ELECTRICAL SERVICE WIRE, F&I	30.00	LF	$5.38	$161.40
641-2-16	PREST CNC POLE,F&I,TYP P-VI	4.00	EA	$12,810.78	$51,243.12
650-1-14		12.00	AS	$1,012.44	$12,149.28

	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W			
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00 AS	$635.32	$5,082.56
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00 EA	$405.04	$4,860.48
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00 AS	$1,049.23	$12,590.76
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00 EA	$241.87	$1,934.96
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	$24,853.56	$24,853.56
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00 EA	$208.50	$834.00
	Signalizations Component Total			$152,102.15

Sequence 3 Total $182,434.99

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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 101010-1-52-01 **Letting Date:** 01/2099

Description: VHB Project# 6330805

District: 05 **County:** 79 VOLUSIA **Market Area:** 06 **Units:** English

Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.376 MI

Project Manager:

Version 36 Project Grand Total **$619,082.43**

Description: Beresford Ave./SR 15A Intersection Improvements

Project Sequences Subtotal			**$487,274.64**
102-1	Maintenance of Traffic	10.00 %	$48,727.46
101-1	Mobilization	10.00 %	$53,600.21
Project Sequences Total			**$589,602.31**
Project Unknowns		0.00 %	$0.00
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$29,480.12	$29,480.12
Project Non-Bid Subtotal					**$29,480.12**
Version 36 Project Grand Total					**$619,082.43**

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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 101010-1-52-01 **Letting Date:** 01/2099

Description: VHB Project# 6330805

District: 05 **County:** 79 VOLUSIA **Market Area:** 06 **Units:** English

Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.376 MI

Project Manager:

Version 38 Project Grand Total **$615,945.22**

Description: Gale Dr./SR 15A Intersection Improvements

Sequence: 1 WUR - Widen/Resurface, Undivided, Rural **Net Length:** 0.104 MI
550 LF

Description: Gayle Drive

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.10
Alignment Number	1
Distance	0.103
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.10	AC	$25,011.98	$2,501.20

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	298.00	SY	$26.59	$7,923.82
	Earthwork Component Total				$10,425.02

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2

Existing Roadway Pavement Width L/R	10.80 / 10.10
Structural Spread Rate	0
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	6.00 / 5.30
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,302.08	SY	$17.09	$22,252.55
285-709	OPTIONAL BASE,BASE GROUP 09	731.12	SY	$39.20	$28,659.90
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	1,277.63	SY	$2.44	$3,117.42
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	113.98	TN	$146.98	$16,752.78
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	105.40	TN	$127.88	$13,478.55
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	56.99	TN	$127.88	$7,287.88

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	14.00	EA	$5.64	$78.96
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.42	GM	$1,122.62	$471.50
710-11-231	PAINTED PAVT MARK,STD,YELLOW,SKIP,6"	0.21	GM	$573.71	$120.48
	Roadway Component Total				$92,220.02

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	5.00 / 5.00
New Total Outside Shoulder Width L/R	5.00 / 5.00
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Existing Paved Outside Shoulder Width L/R	0.00 / 0.00
New Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	0
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	611.31	SY	$4.57	$2,793.69

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	107.00	LF	$32.40	$3,466.80
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	210.00	SY	$61.69	$12,954.90
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	52.00	SY	$62.59	$3,254.68
527-2	DETECTABLE WARNINGS	43.00	SF	$30.24	$1,300.32

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,265.40	LF	$1.70	$2,151.18
104-11	FLOATING TURBIDITY BARRIER	10.42	LF	$11.97	$124.73
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	10.42	LF	$3.98	$41.47
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$844.61	$844.61
104-18	INLET PROTECTION SYSTEM	1.00	EA	$100.55	$100.55
107-1	LITTER REMOVAL	0.25	AC	$48.27	$12.07
107-2	MOWING	0.25	AC	$65.78	$16.44
	Shoulder Component Total				$27,061.45

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	16.00	LF	$98.22	$1,571.52
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	8.00	LF	$185.53	$1,484.24
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	2.00	EA	$1,370.92	$2,741.84
570-1-1	PERFORMANCE TURF	42.10	SY	$4.57	$192.40
	Drainage Component Total				$5,990.00

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$398.82	$398.82
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	3.00	AS	$1,386.20	$4,158.60

700-1-50	SINGLE POST SIGN, RELOCATE	1.00 AS	$230.67	$230.67
700-1-60	SINGLE POST SIGN, REMOVE	3.00 AS	$37.06	$111.18
700-2-13	MULTI- POST SIGN, F&I GM, 21-30 SF	1.00 AS	$2,835.91	$2,835.91
700-2-60	MULTI- POST SIGN, REMOVE	1.00 AS	$1,036.42	$1,036.42
	Signing Component Total			$8,771.60

Sequence 1 Total $144,468.09

Sequence: 2 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.112 MI
590 LF

Description: SR 15A

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.17
Alignment Number	1
Distance	0.112
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.17 AC	$25,011.98	$4,252.04
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	69.21 CY	$35.29	$2,442.42

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	55.00 SY	$26.59	$1,462.45
	Earthwork Component Total			$8,156.91

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Existing Roadway Pavement Width L/R	34.00 / 34.00
Structural Spread Rate	0
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	6.40 / 0.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	588.47 SY	$17.09	$10,056.95
285-709	OPTIONAL BASE,BASE GROUP 09	441.02 SY	$39.20	$17,287.98

327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	4,456.09 SY	$2.44	$10,872.86
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	69.20 TN	$146.98	$10,171.02
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	367.63 TN	$127.88	$47,012.52
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	34.60 TN	$127.88	$4,424.65

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	3

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	60.00 EA	$5.64	$338.40
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.89 GM	$1,122.62	$999.13
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.67 GM	$480.19	$321.73
	Roadway Component Total			$101,485.24

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	12.25 / 12.25
New Total Outside Shoulder Width L/R	12.25 / 12.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	5.00 / 5.00

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	366.00 LF	$32.40	$11,858.40
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	263.00 SY	$61.69	$16,224.47
527-2	DETECTABLE WARNINGS	20.00 SF	$30.24	$604.80
	Shoulder Component Total			$28,687.67

DRAINAGE COMPONENT

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	2.00 EA	$5,723.35	$11,446.70

425-2-61	MANHOLES, P-8, <10'	1.00 EA	$5,338.29	$5,338.29
430-174-118	PIPE CULV, OPT MATL, ROUND,18"SD	176.00 LF	$136.02	$23,939.52
	Drainage Component Total			$40,724.51

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	3.00 AS	$398.82	$1,196.46
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00 AS	$1,386.20	$1,386.20
700-1-50	SINGLE POST SIGN, RELOCATE	1.00 AS	$230.67	$230.67
700-1-60	SINGLE POST SIGN, REMOVE	3.00 AS	$37.06	$111.18
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00 AS	$5,567.93	$5,567.93
700-2-60	MULTI- POST SIGN, REMOVE	1.00 AS	$1,036.42	$1,036.42
	Signing Component Total			$9,528.86

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Strain Pole
Multiplier	1
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	750.00 LF	$10.16	$7,620.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	200.00 LF	$20.45	$4,090.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00 PI	$6,750.06	$6,750.06
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	1.00 PI	$5,958.09	$5,958.09
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	14.00 EA	$758.43	$10,618.02
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00 AS	$2,661.67	$2,661.67
639-2-1	ELECTRICAL SERVICE WIRE, F&I	30.00 LF	$4.98	$149.40
641-2-16	PREST CNC POLE,F&I,TYP P-VI	4.00 EA	$12,452.00	$49,808.00
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	12.00 AS	$974.81	$11,697.72
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00 AS	$586.58	$4,692.64
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00 EA	$375.05	$4,500.60
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00 AS	$971.28	$11,655.36
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00 EA	$276.05	$2,208.40
670-5-111		1.00 AS	$28,596.65	$28,596.65

	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT			
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00 EA	$186.87	$747.48
	Signalizations Component Total			$151,754.09

Sequence 2 Total $340,337.28

Date: 2/10/2021 4:13:50 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 101010-1-52-01 **Letting Date:** 01/2099

Description: VHB Project# 6330805

District: 05 **County:** 79 VOLUSIA **Market Area:** 06 **Units:** English

Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.376 MI

Project Manager:

Version 38 Project Grand Total **$615,945.22**

Description: Gale Dr./SR 15A Intersection Improvements

Project Sequences Subtotal			**$484,805.37**
102-1	Maintenance of Traffic	10.00 %	$48,480.54
101-1	Mobilization	10.00 %	$53,328.59
Project Sequences Total			**$586,614.50**
Project Unknowns		0.00 %	$0.00
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$29,330.72	$29,330.72
Project Non-Bid Subtotal					**$29,330.72**
Version 38 Project Grand Total					**$615,945.22**

Date: 2/18/2021 9:37:09 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 101010-1-52-01 **Letting Date:** 01/2099

Description: VHB Project# 6330805

District: 05 **County:** 79 VOLUSIA **Market Area:** 06 **Units:** English

Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.376 MI

Project Manager:

Version 37 Project Grand Total **$2,687,256.39**

Description: Baresford Ave./SR 15A Roundabout

Sequence: 1 NDU - New Construction, Divided, Urban **Net Length:** 0.066 MI
350 LF

Description: SR 15A NB Leg

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.066
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.80 AC	$25,011.98	$20,009.58
120-6	EMBANKMENT	2,740.34 CY	$29.58	$81,059.26

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	600.00 SY	$26.59	$15,954.00
	Earthwork Component Total			$117,022.84

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5

Roadway Pavement Width L/R	33.45 / 43.32
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	3,387.45 SY	$17.09	$57,891.52
285-709	OPTIONAL BASE,BASE GROUP 09	2,986.05 SY	$39.20	$117,053.16
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	492.70 TN	$146.98	$72,417.05
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	246.35 TN	$127.88	$31,503.24

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	3

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	36.00 EA	$5.64	$203.04
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.53 GM	$1,122.62	$594.99
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.40 GM	$480.19	$192.08
	Roadway Component Total			$279,855.07

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	16.62 / 13.35
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	9.37 / 6.10

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	350.06 LF	$32.40	$11,341.94
520-1-10	CONCRETE CURB & GUTTER, TYPE F	350.06 LF	$32.40	$11,341.94
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	601.72 SY	$61.69	$37,120.11

X-Items

Pay item	Description	Quantity Unit	Unit Price

				Extended Amount
570-1-2	PERFORMANCE TURF, SOD	739.00 SY	$4.06	$3,000.34

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	700.13 LF	$1.70	$1,190.22
104-11	FLOATING TURBIDITY BARRIER	16.58 LF	$11.97	$198.46
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	16.58 LF	$3.98	$65.99
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$844.61	$844.61
104-18	INLET PROTECTION SYSTEM	4.00 EA	$100.17	$400.68
107-1	LITTER REMOVAL	1.69 AC	$48.27	$81.58
107-2	MOWING	1.69 AC	$65.78	$111.17
	Shoulder Component Total			$65,697.04

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	384.00 LF	$23.85	$9,158.40
570-1-1	PERFORMANCE TURF	211.00 SY	$4.57	$964.27
	Median Component Total			$10,122.67

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	3.00 EA	$5,723.35	$17,170.05
425-1-451	INLETS, CURB, TYPE J-5, <10'	1.00 EA	$6,445.26	$6,445.26
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00 EA	$4,284.90	$4,284.90
425-2-41	MANHOLES, P-7, <10'	1.00 EA	$4,986.59	$4,986.59
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	176.00 LF	$125.70	$22,123.20
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00 LF	$185.53	$2,968.48
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	336.00 LF	$222.72	$74,833.92
570-1-1	PERFORMANCE TURF	20.16 SY	$4.57	$92.13
	Drainage Component Total			$132,904.53

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	2.00	AS	$398.82	$797.64
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,386.20	$1,386.20
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$6,558.13	$6,558.13
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$8,067.09	$8,067.09
	Signing Component Total				$16,809.06

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	350.06	LF	$10.16	$3,556.61
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	45.68	LF	$20.45	$934.16
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	2.00	EA	$758.43	$1,516.86
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	1,187.23	LF	$2.18	$2,588.16
715-4-13	LIGHT POLE COMPLETE, F&I-STD, 40'	2.00	EA	$6,146.33	$12,292.66
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	2.00	EA	$555.91	$1,111.82
	Subcomponent Total				$22,000.27
	Lighting Component Total				$22,000.27

Sequence 1 Total $644,411.48

Sequence: 2 NDU - New Construction, Divided, Urban **Net Length:** 0.067 MI
356 LF

Description: SR 15A SB Leg

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.067
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.81 AC	$25,011.98	$20,259.70
120-6	EMBANKMENT	2,533.31 CY	$29.58	$74,935.31

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	633.00 SY	$26.59	$16,831.47
	Earthwork Component Total			$112,026.48

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Roadway Pavement Width L/R	29.78 / 37.20
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	3,056.55 SY	$17.09	$52,236.44
285-709	OPTIONAL BASE,BASE GROUP 09	2,648.48 SY	$39.20	$103,820.42
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	437.00 TN	$146.98	$64,230.26
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	218.50 TN	$127.88	$27,941.78

Pavement Marking Subcomponent

Description	Value

Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	3

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	36.00	EA	$5.64	$203.04
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.54	GM	$1,122.62	$606.21
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.40	GM	$480.19	$192.08
	Roadway Component Total				$249,230.23

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	13.55 / 13.17
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	6.30 / 5.92

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	355.87	LF	$32.40	$11,530.19
520-1-10	CONCRETE CURB & GUTTER, TYPE F	355.87	LF	$32.40	$11,530.19
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	483.20	SY	$61.69	$29,808.61

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	127.00	SY	$62.59	$7,948.93
570-1-2	PERFORMANCE TURF, SOD	699.00	SY	$4.06	$2,837.94

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	711.74	LF	$1.70	$1,209.96
104-11	FLOATING TURBIDITY BARRIER	16.85	LF	$11.97	$201.69
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	16.85	LF	$3.98	$67.06
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$844.61	$844.61
104-18	INLET PROTECTION SYSTEM	4.00	EA	$100.17	$400.68

107-1	LITTER REMOVAL	1.72 AC	$48.27	$83.02
107-2	MOWING	1.72 AC	$65.78	$113.14
	Shoulder Component Total			$66,576.02

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	323.00	LF	$23.85	$7,703.55
570-1-1	PERFORMANCE TURF	113.00	SY	$4.57	$516.41
	Median Component Total				$8,219.96

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	3.00	EA	$5,723.35	$17,170.05
425-1-451	INLETS, CURB, TYPE J-5, <10'	1.00	EA	$6,445.26	$6,445.26
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$4,284.90	$4,284.90
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,986.59	$4,986.59
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	184.00	LF	$125.70	$23,128.80
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	$185.53	$2,968.48
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	344.00	LF	$222.72	$76,615.68
570-1-1	PERFORMANCE TURF	20.49	SY	$4.57	$93.64
	Drainage Component Total				$135,693.40

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	2.00	AS	$398.82	$797.64
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,386.20	$1,386.20
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$6,558.13	$6,558.13
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$8,067.09	$8,067.09
	Signing Component Total				$16,809.06

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	**Value**
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	355.87	LF	$10.16	$3,615.64
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	46.44	LF	$20.45	$949.70
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	2.00	EA	$758.43	$1,516.86
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	1,206.93	LF	$2.18	$2,631.11
715-4-13	LIGHT POLE COMPLETE, F&I-STD, 40'	2.00	EA	$6,146.33	$12,292.66
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	2.00	EA	$555.91	$1,111.82
	Subcomponent Total				$22,117.78
	Lighting Component Total				$22,117.79

Sequence 2 Total $610,672.94

Sequence: 3 NDU - New Construction, Divided, Urban **Net Length:** 0.023 MI
121 LF

Description: Beresford EB Leg

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	30.00 / 30.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.023
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.17 AC	$25,011.98	$4,252.04
120-6	EMBANKMENT	648.17 CY	$29.58	$19,172.87
	Earthwork Component Total			$23,424.91

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	14.75 / 16.52
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	558.75 SY	$17.09	$9,549.04
285-709	OPTIONAL BASE,BASE GROUP 09	420.10 SY	$39.20	$16,467.92
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	69.32 TN	$146.98	$10,188.65
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	34.66 TN	$127.88	$4,432.32

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	3.00 EA	$5.64	$16.92
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.18 GM	$1,122.62	$202.07
	Roadway Component Total			$40,856.92

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	13.55 / 13.17
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	6.30 / 5.92

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	157.00 LF	$32.40	$5,086.80
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	117.00 SY	$61.69	$7,217.73
570-1-2	PERFORMANCE TURF, SOD	225.00 SY	$4.06	$913.50
	Shoulder Component Total			$13,218.03

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	117.00 LF	$23.85	$2,790.45
570-1-1	PERFORMANCE TURF	43.00 SY	$4.57	$196.51
	Median Component Total			$2,986.96

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	1.00 EA	$5,723.35	$5,723.35
425-1-451	INLETS, CURB, TYPE J-5, <10'	1.00 EA	$6,445.26	$6,445.26
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00 EA	$4,284.90	$4,284.90
425-2-41	MANHOLES, P-7, <10'	1.00 EA	$4,986.59	$4,986.59

430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	64.00 LF	$125.70	$8,044.80
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	8.00 LF	$185.53	$1,484.24
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	120.00 LF	$222.72	$26,726.40
570-1-1	PERFORMANCE TURF	6.96 SY	$4.57	$31.81
	Drainage Component Total			$57,727.35

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$398.82	$398.82
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,386.20	$1,386.20
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$6,558.13	$6,558.13
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$8,067.09	$8,067.09
	Signing Component Total				$16,410.24

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	120.91	LF	$10.16	$1,228.45
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	15.78	LF	$20.45	$322.70
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	1.00	EA	$758.43	$758.43
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	410.07	LF	$2.18	$893.95
715-4-13	LIGHT POLE COMPLETE, F&I-STD, 40'	1.00	EA	$6,146.33	$6,146.33
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	1.00	EA	$555.91	$555.91
	Subcomponent Total				$9,905.77
	Lighting Component Total				$9,905.77

Sequence 3 Total $164,530.18

Sequence: 4 NDU - New Construction, Divided, Urban **Net Length:** 0.050 MI
262 LF

Description: Spring Garden Leg

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	30.00 / 30.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.050
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.36 AC	$25,011.98	$9,004.31
120-6	EMBANKMENT	1,391.72 CY	$29.58	$41,167.08
	Earthwork Component Total			$50,171.39

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	17.78 / 12.18
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,172.09 SY	$17.09	$20,031.02
285-709	OPTIONAL BASE,BASE GROUP 09	871.80 SY	$39.20	$34,174.56
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	143.85 TN	$146.98	$21,143.07
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	71.92 TN	$127.88	$9,197.13

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	7.00 EA	$5.64	$39.48
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.40 GM	$1,122.62	$449.05
	Roadway Component Total			$85,034.31

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	13.55 / 13.17
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	6.30 / 5.92

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	173.00 LF	$32.40	$5,605.20
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	105.00 SY	$61.69	$6,477.45
570-1-2	PERFORMANCE TURF, SOD	966.00 SY	$4.06	$3,921.96

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	523.78 LF	$1.70	$890.43
104-11	FLOATING TURBIDITY BARRIER	12.40 LF	$11.97	$148.43
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	12.40 LF	$3.98	$49.35
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$844.61	$844.61
104-18	INLET PROTECTION SYSTEM	3.00 EA	$100.17	$300.51
107-1	LITTER REMOVAL	1.26 AC	$48.27	$60.82
107-2	MOWING	1.26 AC	$65.78	$82.88
	Shoulder Component Total			$18,381.64

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7		102.00 LF	$23.85	$2,432.70

	CONCRETE CURB & GUTTER, TYPE E			
570-1-1	PERFORMANCE TURF	30.00 SY	$4.57	$137.10
	Median Component Total			$2,569.80

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	2.00	EA	$5,723.35	$11,446.70
425-1-451	INLETS, CURB, TYPE J-5, <10'	1.00	EA	$6,445.26	$6,445.26
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$4,284.90	$4,284.90
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,986.59	$4,986.59
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	136.00	LF	$125.70	$17,095.20
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	$185.53	$2,968.48
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	248.00	LF	$222.72	$55,234.56
570-1-1	PERFORMANCE TURF	15.08	SY	$4.57	$68.92
	Drainage Component Total				$102,530.61

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	2.00	AS	$398.82	$797.64
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,386.20	$1,386.20
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$6,558.13	$6,558.13
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$8,067.09	$8,067.09
	Signing Component Total				$16,809.06

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	261.89	LF	$10.16	$2,660.80
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	34.17	LF	$20.45	$698.78
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	2.00	EA	$758.43	$1,516.86
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	888.19	LF	$2.18	$1,936.25
715-4-13		2.00	EA	$6,146.33	$12,292.66

	LIGHT POLE COMPLETE, F&I-STD, 40'			
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	2.00 EA	$555.91	$1,111.82
	Subcomponent Total			$20,217.17
	Lighting Component Total			$20,217.17
Sequence 4 Total				$295,713.98

Sequence: 5 NDU - New Construction, Divided, Urban **Net Length:** 0.039 MI
206 LF

Description: Beresford WB Leg

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	30.00 / 30.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.039
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.28 AC	$25,011.98	$7,003.35
120-6	EMBANKMENT	1,194.53 CY	$29.58	$35,334.20

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	200.00 SY	$26.59	$5,318.00
	Earthwork Component Total			$47,655.55

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	20.51 / 19.91
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,160.93 SY	$17.09	$19,840.29
285-709	OPTIONAL BASE,BASE GROUP 09	924.81 SY	$39.20	$36,252.55
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	152.59 TN	$146.98	$22,427.68
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	76.30 TN	$127.88	$9,757.24

Pavement Marking Subcomponent

Description	Value

Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	5.00 EA	$5.64	$28.20
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.31 GM	$1,122.62	$348.01
	Roadway Component Total			$88,653.97

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	13.55 / 13.17
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	6.30 / 5.92

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	247.00 LF	$32.40	$8,002.80
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	123.00 SY	$61.69	$7,587.87
570-1-2	PERFORMANCE TURF, SOD	322.00 SY	$4.06	$1,307.32

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	411.84 LF	$1.70	$700.13
104-11	FLOATING TURBIDITY BARRIER	9.75 LF	$11.97	$116.71
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	9.75 LF	$3.98	$38.80
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$844.61	$844.61
104-18	INLET PROTECTION SYSTEM	2.00 EA	$100.17	$200.34
107-1	LITTER REMOVAL	0.99 AC	$48.27	$47.79
107-2	MOWING	0.99 AC	$65.78	$65.12
	Shoulder Component Total			$18,911.49

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00

Performance Turf Width 5.34

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	74.00	LF	$23.85	$1,764.90
570-1-1	PERFORMANCE TURF	9.00	SY	$4.57	$41.13
	Median Component Total				$1,806.03

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	2.00	EA	$5,723.35	$11,446.70
425-1-451	INLETS, CURB, TYPE J-5, <10'	1.00	EA	$6,445.26	$6,445.26
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$4,284.90	$4,284.90
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,986.59	$4,986.59
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	104.00	LF	$125.70	$13,072.80
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	$185.53	$2,968.48
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	200.00	LF	$222.72	$44,544.00
570-1-1	PERFORMANCE TURF	11.86	SY	$4.57	$54.20
	Drainage Component Total				$87,802.93

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$398.82	$398.82
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,386.20	$1,386.20
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$6,558.13	$6,558.13
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$8,067.09	$8,067.09
	Signing Component Total				$16,410.24

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	205.92	LF	$10.16	$2,092.15
630-2-12		26.87	LF	$20.45	$549.49

	CONDUIT, F& I, DIRECTIONAL BORE			
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	1.00 EA	$758.43	$758.43
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	698.37 LF	$2.18	$1,522.45
715-4-13	LIGHT POLE COMPLETE, F&I-STD, 40'	1.00 EA	$6,146.33	$6,146.33
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	1.00 EA	$555.91	$555.91
	Subcomponent Total			$11,624.76
	Lighting Component Total			$11,624.76
Sequence 5 Total				$272,864.97

Sequence: 6 NDU - New Construction, Divided, Urban **Net Length:** 0.077 MI
405 LF

Description: Roundabout

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	64.50 / 18.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.077
Top of Structural Course For Begin Section	103.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	103.00
Horizontal Elevation For End Section	103.00
Front Slope L/R	4 to 1 / 4 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.77 AC	$25,011.98	$19,259.22
120-1	REGULAR EXCAVATION	326.30 CY	$33.81	$11,032.20

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	200.00 SY	$26.59	$5,318.00
	Earthwork Component Total			$35,609.43

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	13.36 / 13.36
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,666.70 SY	$17.09	$28,483.90
285-709	OPTIONAL BASE,BASE GROUP 09	1,202.33 SY	$39.20	$47,131.34
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	198.38 TN	$146.98	$29,157.89
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	99.19 TN	$127.88	$12,684.42

Pavement Marking Subcomponent

Description	Value

Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	10.00 EA	$5.64	$56.40
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.61 GM	$1,122.62	$684.80
	Roadway Component Total			$118,198.75

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	13.55 / 13.17
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	6.30 / 5.92

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	268.00 SY	$62.59	$16,774.12

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	809.95 LF	$1.70	$1,376.92
104-11	FLOATING TURBIDITY BARRIER	19.18 LF	$11.97	$229.58
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	19.18 LF	$3.98	$76.34
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$844.61	$844.61
104-18	INLET PROTECTION SYSTEM	4.00 EA	$100.17	$400.68
107-1	LITTER REMOVAL	1.95 AC	$48.27	$94.13
107-2	MOWING	1.95 AC	$65.78	$128.27
	Shoulder Component Total			$19,924.64

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	207.00	LF	$23.85	$4,936.95
520-2-8	CONCRETE CURB, TYPE RA	283.00	LF	$38.97	$11,028.51
570-1-1	PERFORMANCE TURF	363.00	SY	$4.57	$1,658.91
	Median Component Total				$17,624.37
Sequence 6 Total					$191,357.19

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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 101010-1-52-01 **Letting Date:** 01/2099

Description: VHB Project# 6330805

District: 05 **County:** 79 VOLUSIA **Market Area:** 06 **Units:** English

Contract Class: **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.376 MI

Project Manager:

Version 37 Project Grand Total **$2,687,256.39**

Description: Baresford Ave./SR 15A Roundabout

Project Sequences Subtotal			**$2,179,550.74**
102-1	Maintenance of Traffic	10.00 %	$217,955.07
101-1	Mobilization	10.00 %	$239,750.58
Project Sequences Total			**$2,637,256.39**
Project Unknowns		0.00 %	$0.00
Design/Build		0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$50,000.00	$50,000.00
Project Non-Bid Subtotal					**$50,000.00**
Version 37 Project Grand Total					**$2,687,256.39**

2019 URBAN MOBILITY REPORT

APPENDIX C - Value of Delay Time for Use in Mobility Monitoring Efforts

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Sponsored by
Texas Department of Transportation

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Summary

The estimated value of delay time is the average cost of the extra travel time due to congestion. Congestion cost, as presented in the *2019 Urban Mobility Report,* is a function of both the time and fuel used while the motorist is in congested traffic. (Computations for the cost of extra fuel consumed during congestion are shown in the Appendix A methodology). This memo focuses on the computation of an updated value of delay time for passenger cars and trucks. This value of delay time serves as an input for urban area congestion cost computation.

The 2017 value of delay time estimate for passenger vehicle motorists and truck drivers incorporates several changes from previous estimates.

- The value of delay time for private vehicle drivers and passengers uses the median hourly wage rate for all occupations as produced by the Bureau of Labor Statistics (*1*) as a base**. Researchers estimate the 2017 value of delay time for personal travel at $18.12 per person per hour.**
- The commercial value of travel time is now based on an annual survey by the American Transportation Research Institute (*2*), the leading trade association for the trucking industry. The survey results are modified for the Urban Mobility Report calculations using travel speed, type of vehicle, and vehicle occupancy. **The 2017 hourly value of commercial travel time is estimated to be $52.14.**
- Neither the value of delay time for personal nor commercial vehicles include the cost of fuel.

What Changed and Why?

In previous reports, the hourly value of delay time first calculated in 1986 (*3*) was updated by the Consumer Price Index (*4*) for each Urban Mobility Report. Beginning with the 2019 report, the median hourly wage rate for all occupations as published by the Bureau of Labor Statistics (*1*) will be used. It is believed this wage rate will prove more representative of the value of personal delay time. This value should be multiplied by the passenger car occupancy rate to determine the value of person-hours of delay time.

There is one major change in the calculation of the commercial value of delay time. In previous years, the commercial truck value of delay time has fundamentally relied on a value produced by a now dated study and subsequently adjusted by the Consumer Price Index and, in recent years, by the Producer Price Index (*5*). The *2019 Urban Mobility Report* will use the American Transportation Research Institute's annual study of trucking operational costs as a basis for estimating the commercial truck value of delay time (*2*). TTI researchers believe the ATRI membership survey is timelier and more representative of the actual operating cost borne by commercial truckers.

Introduction

For passenger car motorists, the value of delay time is based upon hourly wage rates. For truck drivers, the value of delay time is expressed as the wage rate of the driver multiplied by truck occupancy plus the various operating cost components associated with a panel truck or a tractor-trailer combination vehicle. This memo summarizes the components of each value of delay time cost estimate and the updated values of time used in the *2019 Urban Mobility Report* calculations beginning with 2017 data.

Previous Methodology for Passenger Vehicle Motorist's Value of Delay Time

In earlier iterations of value of delay time calculations, a speed choice model developed by Chui and McFarland (*3*) of the Texas Transportation Institute (TTI) was used for value of time calculations. The model derived its utility from the notion that speed is regarded as one of the most important factors in any traveler's choice. Travel time is directly related to the choice of speed that one chooses to travel. The first attempts to discern any relationship between speed and the value of travel time were made by Mohring (*6*). The speed choice model assumes that a rational driver chooses to drive at a speed which minimizes his or her total trip cost (i.e., a speed at which his or her marginal cost is equal to or less than the marginal benefit).

The travel characteristics in Texas during the development of the speed choice model included a relatively small number of toll roads and small percentage of people using mass transit systems in Texas. The model was developed to analyze the nature of traffic in Texas at that time. The research indicated the value of delay time was $11.98 in 1997 in Texas and was consistent at the time with estimates produced by other states.

Using this methodology, Column 2 of Exhibit C-1 takes the $11.98 value of delay time found in 1997 and adjusts it for inflation by the Consumer Price Index (*4*) back to 1982 as well as forward to 2017. Annual Consumer Price Index values are shown in Column 3 of Exhibit C-1.

With the **previous calculation method**, the hourly value of delay time per person for passenger vehicle travel was estimated to be $18.29 for 2017.

Exhibit C-1: Value of Passenger Vehicle Motorist's Time Using Old Methodology

Column 1	Column 2	Column 3
Year	Personal Value of Time	Consumer Price Index (1982-1984 base year)
1980	$6.15	82.4
1981	$6.78	90.9
1982	$7.20	96.5
1983	$7.43	99.6
1984	$7.75	103.9
1985	$8.03	107.6
1986	$8.18	109.6
1987	$8.48	113.6
1988	$8.83	118.3
1989	$9.25	124.0
1990	$9.75	130.7
1991	$10.17	136.2
1992	$10.47	140.3
1993	$10.78	144.5
1994	$11.06	148.2
1995	$11.37	152.4
1996	$11.71	156.9
1997	$11.98	160.5
1998	$12.17	163.0
1999	$12.43	166.6
2000	$12.85	172.2
2001	$13.22	177.1
2002	$13.43	179.9
2003	$13.73	184.0
2004	$14.10	188.9
2005	$14.58	195.3
2006	$15.06	201.8
2007	$15.47	207.3
2008	$16.07	215.3
2009	$16.01	214.5
2010	$16.28	218.1
2011	$16.79	224.9
2012	$17.14	229.6
2013	$17.39	233.0
2014	$17.67	236.7
2015	$17.69	237.0
2016	$17.91	240.0
2017	$18.29	245.1

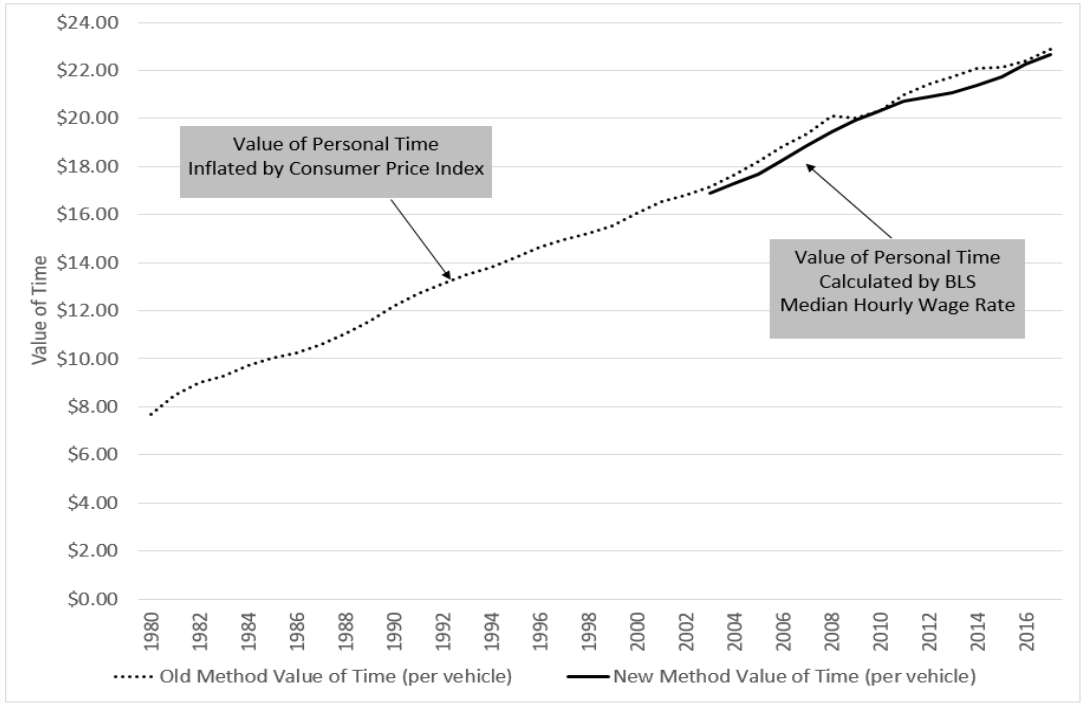
New Methodology for Passenger Vehicle Motorist's Value of Delay Time

There has long been a concern that using the perceived value of delay time from an earlier study and adjusting it with the Consumer Price Index for many years might prove to be problematic. The CPI (a rate of change based on a market basket of goods for all urban consumers) may not be reflective of the actual value of passenger vehicle travel.

An alternative is to use data published in the Occupational Employment Statistics series by the Bureau of Labor Statistics (*1*) that provide both a mean and median hourly wage for all job classifications. The median hourly wage was chosen for use in this study because the median value eliminates the effect of extremes at either end of the wage range.

As shown in Exhibit C-2, the two time values have been similar for many years. The **median hourly wage for all occupations from the Bureau of Labor Statistics** will be used in future Urban Mobility Reports as a surrogate for the value of delay time for passenger vehicle motorists because it is measured independently and annually and does not rely on adjustments by the CPI inflation measure.

Exhibit C-2. Hourly Value of Personal Travel: 1980 to 2017



Using the **new methodology** for passenger vehicles, the 2017 value of delay time is $18.12 per person (Exhibit C-3).

Exhibit C-3: Value of Passenger Vehicle Motorist's Time Using New Methodology

Column 1	Column 2	Column 3	Column 4
Year	Personal Value of Time	Consumer Price Index (1982-1984 base year)	Bureau of Labor Statistics Median Hourly Wage
1980	$6.15	82.4	
1981	$6.78	90.9	
1982	$7.20	96.5	
1983	$7.43	99.6	
1984	$7.75	103.9	
1985	$8.03	107.6	
1986	$8.18	109.6	
1987	$8.48	113.6	
1988	$8.83	118.3	
1989	$9.25	124.0	
1990	$9.75	130.7	
1991	$10.17	136.2	
1992	$10.47	140.3	
1993	$10.78	144.5	
1994	$11.06	148.2	
1995	$11.37	152.4	
1996	$11.71	156.9	
1997	$11.98	160.5	
1998	$12.17	163.0	
1999	$12.43	166.6	
2000	$12.85	172.2	
2001	$13.22	177.1	
2002	$13.43	179.9	
2003	$13.73	184.0	$13.53
2004	$14.10	188.9	$13.83
2005	$14.58	195.3	$14.15
2006	$15.06	201.8	$14.61
2007	$15.47	207.3	$15.10
2008	$16.07	215.3	$15.57
2009	$16.01	214.5	$15.95
2010	$16.28	218.1	$16.27
2011	$16.79	224.9	$16.57
2012	$17.14	229.6	$16.71
2013	$17.39	233.0	$16.87
2014	$17.67	236.7	$17.09
2015	$17.69	237.0	$17.40
2016	$17.91	240.0	$17.81
2017	$18.29	245.1	$18.12