TIMMONS GROUP
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COMMONWEALTH OF VIRGINIA
4/9/19
STEPHEN O. SCHMIDT
Lic. No. 049985
PROFESSIONAL ENGINEER

To: Mike Sawyer, PE (City of Richmond)
From: Steve Schmidt, PE, PTOE (Timmons Group)
RE: Fulton Yard Traffic Assessment – Properties A & B
Date: April 9, 2019
Copy: M. Ann Neil Cosby (McGuire Woods); Savannah Kappeler (TG)

Timmons Group prepared a traffic assessment in support of the proposed Fulton Yard development. The analysis was completed at the request of the City to determine the impact of the traffic generated by the proposed development on the following intersections:

- Route 5 (East Main Street/Old Osbourne Turnpike) / Orleans Street - Signalized
- Williamsburg Avenue / Orleans Street – Unsignalized

In the City, the proposed is generally located between Route 5 (East Main Street/Orleans Street) and the CSX railing with Nicholson Street to the north and Goddin Street to the south as shown on **Figure 1** (all Figures are located at the end of this report).

Background

The Fulton Yard development consists of three (3) separate properties (parcels) (identified for clarification as Property A, Property B, and Property C), which are currently owned by CSX. Property A is wholly located in the City of Richmond whereas Property B is bisected by the City/County line (Property B is further identified as Property B-1 in the City and Property B-2 in the County). Property C is wholly located in Henrico County.

The Applicant is seeking to rezone Property A, Property B-1, Property B-2, and Property C and to develop the properties as a cohesive mixture of uses included residential, office, and retail space. As the properties are not contiguous to each other (except Property B-1 and B-2), access to each site would be provided via separate entrances. **Figure 2** shows the preliminary layout for the overall Fulton Yard development.

This assessment reviews site traffic related to Properties A and B only. A traffic impact analysis (TIA) was completed for Property C by Timmons Group and submitted to Henrico County staff, dated March 26, 2019.

For purposes of this analysis, the development of Property A was assumed to consist of 16,000 S.F. of office space and 4,000 S.F. of retail space. Access to Property A consists of an inbound only entrance along the southern half of Nicholson Street, approximately 395 feet east of Route 5 and an outbound only exit on Route 5, approximately 125 feet north of the intersection with Orleans Street. **Figure 2-A** shows a preliminary layout with identified site access points for Property A.

The development of Property B was assumed to consist of 276 multi-family units and 6,456 S.F. of retail space. Access to Property B is provided via two (2) full movement entrances. The first entrance is located along the southern half of Orleans Street approximately 545 feet east of Route 5, and the second entrance is located along the western half of 37th Street approximately 190 feet south of Orleans Street. **Figure 2-B** shows a preliminary layout with identified site access points for Property B.

For purposes of this analysis, the development of all the properties was assumed to be complete by 2024.

Existing Roadway Characteristics and Traffic Volumes

Route 5 (East Main Street/Old Osbourne Turnpike) is a 3-lane, undivided facility with one travel lane in each direction and a center turn lane within the study area. Route 5 is a classified by VDOT's functional classification as a minor arterial roadway. The roadway provides access north-south between the City of Richmond and Henrico County and has a posted speed limit of 30 mph. Based on the 48-hour tube count data collected on Tuesday, February 5, 2019, Route 5 carries approximately 8,600 vehicles per day in the vicinity of the site.

For purposes of this analysis, Route 5 was assumed to run north-south through the study area.

Williamsburg Avenue is a 4-lane, divided, facility with median breaks at cross-street locations, with a posted speed limit of 35 mph within the study area. Based on 2017 VDOT traffic data, Williamsburg Avenue carries approximately 12,000 vehicles per day. Williamsburg Avenue is classified as a minor arterial within the study limits.

For purposes of this analysis, Williamsburg Avenue was assumed to run north-south through the study area.

Orleans Street is a 2-lane, undivided facility with a posted speed limit of 25 mph within the study area. Based on 2017 VDOT traffic data, Orleans Street carries approximately 1,700 vehicles per day. Orleans Street is classified as a minor arterial within the study limits.

For purposes of this analysis, Orleans Street was assumed to run east-west through the study area.

The existing geometry is shown on **Figure 3**.

Peak Hour Traffic Data

Peak hour directional turning movement (DTM) counts were performed at the following intersections:

- Route 5 (Old Osbourne Turnpike) / Orleans Street - Signalized
- Williamsburg Avenue / Orleans Street – Unsignalized

The data was collected on Tuesday, February 5, 2019 from 7:00 – 9:00 AM (AM peak hour) and 4:00 – 6:00 PM (PM peak hour) when public schools were in session. A copy of the complete count data is included in Appendix A.

The counts indicate the AM peak hour at the intersections occurred between 7:00 – 8:00 AM and the PM peak hour between 4:30 – 5:30 PM. The existing 2019 traffic volumes are shown on **Figure 4**.

Background Traffic Volumes

The background traffic volumes were developed based on a 2% annual growth rate (consistent with the Property C study) and traffic from the completion of Rocketts Landing and Fulton Yard Parcel C.

The 2% annual background traffic growth rate was compounded annually for the 5-year period from 2019 to 2024 and was applied to all movements from the existing traffic counts. The resulting 2024 existing plus background traffic growth is shown on **Figure 5**.

Traffic from the two (2) other developments were included in the 2024 background conditions:

1. Rocketts Landing
2. Fulton Yard – Property C

The trip generation related to the two (2) approved background developments is included in Appendices B and C.

The Rocketts Landing development is anticipated to be completely built out by 2024; refer to Appendix B for Rocketts Landing site plan and projected traffic volumes based on the latest master plan (9/26/2018). At the times of the counts, all of Rocketts Landing was built except parcels 17-23. Traffic from the remaining unbuilt parcels (17-23) was distributed to the surrounding roadway network and is shown on **Figure 6**.

As discussed above, there is one (1) additional parcel associated with the Fulton Yard development that is anticipated to be completed by 2024. For the purpose of this study, traffic related to the Property C was included as background traffic. Refer to Appendix C for site-generated traffic projections for Property C. The traffic from Property C was distributed to the surrounding roadway network and is shown on **Figure 7**.

The 2024 total background includes traffic growth (**Figure 5**) plus approved background development traffic (**Figures 6 and 7**). Refer to **Figure 8** for 2024 total background traffic volumes.

Site Trip Generation/Distribution

Site traffic for the proposed Fulton Yard development (Properties A and B) was based on the site plan shown on Figure 2 and subsequently distributed to the existing roadway network shown on Figure 3.

The site-generated traffic volumes shown in **Table 1** were estimated using the 10th edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual* and was calculated using the number residential units and the size of the commercial buildings (square feet) as the independent variable. As noted above, for purposes of this analysis, site-generated traffic volumes include traffic projections from Properties A and B only.

The distribution of external trips generated by the development was based on the existing travel patterns, the nature of the use, and local knowledge and is consistent with the Property C TIA discussed above. The following trip distributions were assumed:

- 80% to/from the north (toward the City of Richmond)
    - For Property A, all 80% is assumed on Route 5

  - For Property B, 40% is assumed on Route 5 and 40% on Williamsburg Avenue
- 20% to/from the south on Route 5 (toward Henrico County)

The site-generated traffic is shown on **Figure 9** and **Figure 10** for Property A and Property B, respectively.

Table 1:
Site-Generated Traffic for Fulton Yard – Properties A & B

LAND USE[1]	ITE CODE	AMOUNT	UNITS	WEEKDAY						
					AM PEAK HOUR			PM PEAK HOUR		
				ADT	IN	OUT	TOTAL	IN	OUT	TOTAL
Property A										
Commercial										
Retail	820	4,000	S.F.	151	2	2	4	7	8	15
Office	710	16,000	S.F.	156	16	3	19	3	15	18
Property A Total		**20,000**	**S.F.**	**307**	**18**	**5**	**23**	**10**	**23**	**33**
Property B										
Building B1										
Retail	820	3,228	S.F.	122	2	1	3	6	6	12
Apartments (Mid-Rise)	221	108	D.U.	587	10	27	37	29	19	48
Building B1 Subtotal				709	12	28	40	35	25	60
Building B2										
Retail	820	3,228	S.F.	122	2	1	3	6	6	12
Apartments (Mid-Rise)	221	108	D.U.	587	10	27	37	29	19	48
Building B2 Subtotal				709	12	28	40	35	25	60
Building B3										
Apartments (Mid-Rise)	221	60	D.U.	325	5	16	21	16	11	27
Property B Total				**1,743**	**29**	**72**	**101**	**86**	**61**	**147**
Fulton Yard Trip Generation Total (Property A and B)				**2,050**	**47**	**77**	**124**	**96**	**84**	**180**

Source: ITE Trip Generation, 10th Edition.
1. All development program numbers were obtained from the January 4, 2019 Scoping Study prepared by 3north.

Projected Total Traffic

The 2024 total background traffic volumes (**Figure 8**) were combined with the site-generated traffic (**Figures 9 and 10**) to calculate the 2024 total traffic volumes.

The 2024 total traffic volumes are shown on **Figure 11**.

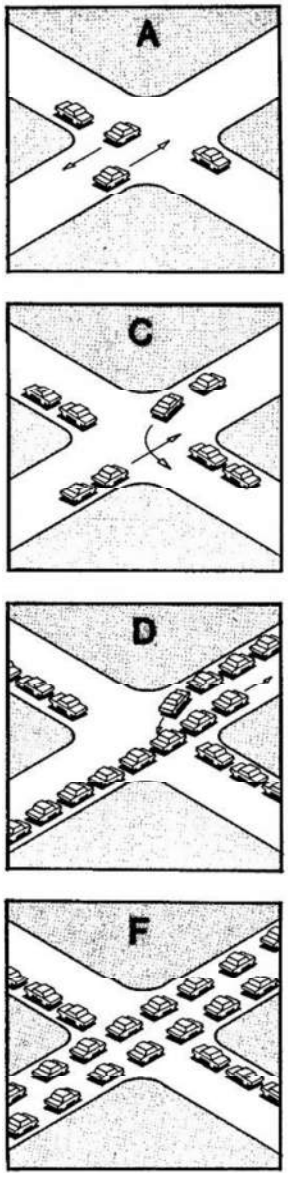
Capacity Analysis Overview

Capacity analysis allows traffic engineers to determine the impacts of traffic on the surrounding roadway network. The Highway Capacity Manual methodologies govern how the capacity analyses are conducted and how the results are interpreted. Levels of service (LOS) are determined for each part of the roadway network, with LOS A through D representing acceptable results and LOS E and F representing unacceptable results. Table 2 shows in detail how each of these levels of service are interpreted.

Table 2: Level of Service Definitions

Level of Service	Roadway Segments or Controlled Access Highways	Intersections
A	Free flow, low traffic density.	No vehicle waits longer than one signal indication.
B	Delay is not unreasonable, stable traffic flow.	On a rare occasion motorists wait through more than one signal indication.
C	Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists.	Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable.
D	Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups.	Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive backups.
E	Actual capacity of the roadway invloves delay to all motorists due to congestion.	Very long queues may create lengthly delays, especially for left-turning vehicles.
F	Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases.	Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage ares during part or all of an hour.

SOURCE: *"A Policy on Design of Design of Urban Highways and Arterial Streets"* - AASHTO, 1973 based upon material published in *"Highway Capacity Manual"*, National Academy of Sciences, 1965.



For both unsignalized and signalized intersections, level of service is defined in terms of delay, a measure of driver discomfort, frustration, fuel consumption and lost travel time. Table 3 summarizes the delay associated with each LOS category:

Table 3: Unsignalized and Signalized Intersection Level of Service Criteria

Unsignalized Intersections		Signalized Intersections	
Level of Service	Delay per Vehicle (sec)	Level of Service	Delay per Vehicle (sec)
A	≤10.0	A	≤ 10.0
B	>10.0 to ≤15.0	B	>10. to ≤20.0
C	>15.0 to ≤25.0	C	>20.1 to ≤35.0
D	>25.0 to ≤35.0	D	>35.1 to ≤55.0
E	>35.0 to ≤50.0	E	>55.1 to ≤80.0
F	>50.0	F	> 80.1

Capacity analyses were performed to assess traffic conditions for each of the analysis scenarios. The analysis includes delay, level of service, and maximum queuing. The intersections were analyzed using SYNCHRO Version 10 based on HCM 2000 methodologies.

The capacity analysis was performed based on the existing lane use shown on **Figure 3**, the existing peak hour counts shown on **Figure 4**, the background traffic volumes shown on **Figure 8**, and the total traffic volumes shown on **Figure 11.**

The results of the existing analysis are summarized in **Table 4** and the analysis worksheets are contained in Appendix D. The results of the background analysis are summarized in **Table 5** and the analysis worksheets are contained in Appendix E. The results of the total analysis are summarized in **Table 6** and the analysis worksheets are contained in Appendix F.

Capacity Analysis Findings

Route 5/Orleans Street

As shown in **Table 4**, under 2019 **Existing Conditions**, the Route 5/Orleans Street intersection operates at an overall LOS D in the AM peak hour and LOS B in the PM peak hour. The northbound approach to the intersection operates at a LOS E in the AM peak hour. The SB left queue exceeds the available storage in the AM peak hour.

As shown in **Table 5,** under 2024 **Background Conditions** (without development of the site), with the growth in existing traffic and the traffic from other developments, the Route 5/Orleans Street intersection will operate at an overall LOS F in the AM peak hour and C in the PM peak hour. The northbound through movement will operate at an LOS F in the AM peak with maximum queues that

extend back toward the Route 5/Rocketts Way intersection. The SB left turn queues will exceed the available storage in both peak hours.

As shown in **Table 6,** with **Full-Buildout** of the proposed Fulton Yards development, the Route 5/Orleans Street intersection will continue to operate at LOS F in the AM peak hour and LOS D in the PM peak hour. The overall delay at the intersection increases by only 1.6 seconds/vehicle in the AM peak hour. All queues are contained within the available storage with the exceptions noted under background conditions.

It is noted that the existing traffic signal cycle length is 110 seconds in both peak hours and the signal is not coordinated with any other traffic signals. A change in traffic signal timings (increasing the cycle length) will allow the Route 5/Orleans Street intersection to operate at an overall LOS D in both peak hours. This would bring the delays within acceptable levels of service and reduce queuing and delay below the 2024 background conditions prior to the development of Fulton Yards.

Williamsburg Ave/Orleans Street

As shown in **Tables 4, 5, and 6**, all movements the Williamsburg Avenue/Orleans Street intersection operate at LOS D or better in each of the scenarios. All maximum queues are contained within the available storage in all peak hours.

Conclusions

Under **Existing Conditions**, the signalized intersection of Route 5 / Orleans Street operates at a level of service (LOS) D in the AM and LOS B in the PM peak hour.

During 2024 **Background Conditions**, traffic is anticipated to increase along the mainline (Route 5), with the AM peak hour anticipated to operate at a LOS F and the PM peak hour a LOS D.

At **Full-Buildout**, the Route 5/Orleans Street intersection will continue to operate at LOS F in the AM peak hour and LOS D in the PM peak hour. The overall delay at the intersection increases by only 1.6 seconds/vehicle in the AM peak hour. All queues are contained within the available storage with the exceptions noted under background conditions.

Traffic signal timing adjustments will allow the Route 5/Orleans Street intersection to operate at LOS D in both peak hours in all future scenarios.

The Williamsburg Avenue/Orleans Street intersection will operate at LOS D or better with no queuing issues in all analysis scenarios.

Table 4: Intersection Level of Service and Delay Summary
2019 Existing Traffic Conditions

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR			PM PEAK HOUR		
			Delay [1] (sec/veh)	LOS [1]	Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	Maximum Queue Length (ft)
1. Route 5 (N-S) at	EB L-T-R		41.2	D	95	46.2	D	116
Orleans Street (E-W)	*EB Approach*		*41.2*	*D*	--	*46.2*	*D*	--
Signalized	WB L-T-R		40.2	D	70	42.0	D	110
	WB Approach		*40.2*	*D*	--	*42.0*	*D*	--
	NB Left	100	9.1	A	70	14.8	B	59
	NB Thru-Right		56.2	E	495	16.1	B	317
	NB Approach		*56.0*	*E*	--	*16.1*	*B*	--
	SB Left	80	28.5	C	123	0.8	A	78
	SB Thru-Right		9.7	A	195	2.9	A	135
	SB Approach		*13.7*	*B*	--	*2.7*	*A*	--
	Overall		**44.3**	**D**	**--**	**11.4**	**B**	**--**
2. Williamsburg Ave (N-S) at	EB L-T-R		14.1	B	85	16.9	C	109
Orleans Street (E-W)	*EB Approach*		*14.1*	B	--	*16.9*	*C*	--
Unsignalized	WB L-T-R		11.0	B	33	9.4	A	21
	WB Approach		*11.0*	*B*	--	*9.4*	A	--
	NB Left	50	7.8	A	28	8.8	A	31
	NB Thru-Right		†	†	0	†	†	0
	NB Approach		*0.3*	*A*	--	*0.7*	A	--
	SB Thru-Left		0.0	A	0	0.1	A	15
	SB Thru-Right	200	†	†	0	†	†	4
	SB Approach		*0.0*	*A*	--	*0.1*	A	--

[1] *Overall intersection LOS and delay reported for signalized intersections and roundabouts only.*

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

Table 5: Intersection Level of Service and Delay Summary
2024 Background Traffic Conditions

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR			PM PEAK HOUR		
			Delay [1] (sec/veh)	LOS [1]	Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	Maximum Queue Length (ft)
1. Route 5 (N-S) at	EB L-T-R		43.6	D	104	50.6	D	124
Orleans Street (E-W)	*EB Approach*		*43.6*	*D*	--	*50.6*	*D*	--
Signalized	WB L-T-R		40.8	D	87	43.6	D	123
	WB Approach		*40.8*	*D*	--	*43.6*	*D*	--
	NB Left	100	10.8	B	71	35.1	D	31
	NB Thru-Right		158.5	F	492	25.7	C	535
	NB Approach		*158.1*	*F*	--	*25.8*	*C*	--
	SB Left	80	43.8	D	170	28.6	C	170
	SB Thru-Right		14.2	B	346	41.3	D	509
	SB Approach		*17.7*	*B*	--	*40.3*	*D*	--
	Overall		**104.2**	**F**	**--**	**35.0**	**C**	**--**
2. Williamsburg Ave (N-S) at	EB L-T-R		15.4	C	97	19.6	C	108
Orleans Street (E-W)	*EB Approach*		*15.4*	C	--	*19.6*	*C*	--
Unsignalized	WB L-T-R		11.3	B	33	9.6	A	20
	WB Approach		*11.3*	*B*	--	*9.6*	A	--
	NB Left	50	7.9	A	33	9.1	A	41
	NB Thru-Right		†	†	0	†	†	5
	NB Approach		*0.3*	*A*	--	*0.8*	A	--
	SB Thru-Left		0.0	A	0	0.1	A	23
	SB Thru-Right	200	†	†	0	†	†	7
	SB Approach		*0.0*	*A*	--	*0.1*	A	--

[1] *Overall intersection LOS and delay reported for signalized intersections and roundabouts only.*

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

Table 6: Intersection Level of Service and Delay Summary
2024 Total Traffic Conditions

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR			PM PEAK HOUR		
			Delay [1] (sec/veh)	LOS [1]	Maximum Queue Length (ft)	Delay [1] (sec/veh)	LOS [1]	Maximum Queue Length (ft)
1. Route 5 (N-S) at	EB L-T-R		44.7	D	101	56.0	E	131
Orleans Street (E-W)	*EB Approach*		*44.7*	*D*	--	*56.0*	*E*	--
Signalized	WB L-T-R		43.0	D	120	47.8	D	156
	WB Approach		*43.0*	*D*	--	*47.8*	*D*	--
	NB Left	100	10.8	B	84	35.7	D	14
	NB Thru-Right		163.4	F	501	27.6	C	538
	NB Approach		*162.9*	*F*	--	*27.6*	*C*	--
	SB Left	80	46.5	D	170	42.5	D	170
	SB Thru-Right		14.2	B	356	43.8	D	507
	SB Approach		*18.5*	*B*	--	*43.7*	*D*	--
	Overall		**105.8**	**F**	**--**	**38.1**	**D**	**--**
2. Williamsburg Ave (N-S) at	EB L-T-R		19.4	C	124	26.6	D	147
Orleans Street (E-W)	*EB Approach*		*19.4*	C	--	*26.6*	*D*	--
Unsignalized	WB L-T-R		11.3	B	35	9.6	A	18
	WB Approach		*11.3*	*B*	--	*9.6*	A	--
	NB Left	50	7.9	A	36	9.2	A	48
	NB Thru-Right		†	†	0	†	†	5
	NB Approach		*0.3*	*A*	--	*0.8*	A	--
	SB Thru-Left		0.0	A	0	0.1	A	24
	SB Thru-Right	200	†	†	0	†	†	6
	SB Approach		*0.0*	*A*	--	*0.0*	A	--

[1] *Overall intersection LOS and delay reported for signalized intersections and roundabouts only.*

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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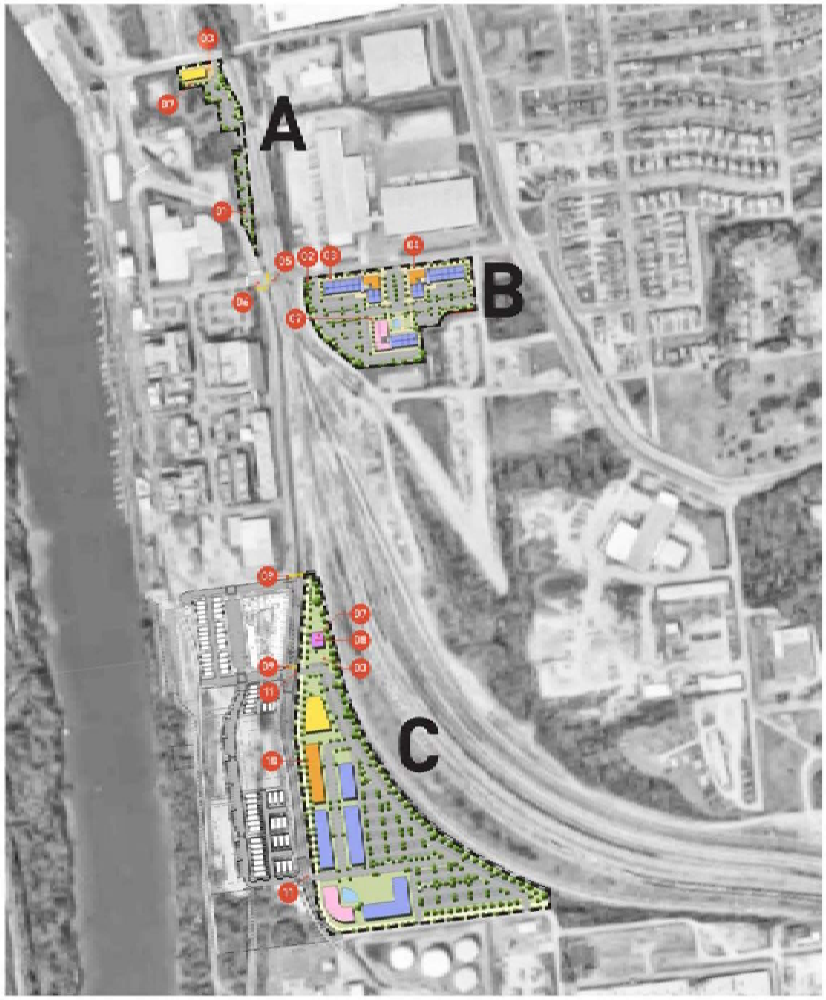
Site Location Map
Fulton Yards Traffic Assessment
Properties A & B
City of Richmond, Virginia

Figure
1



FULTON YARD: 3 SITES

LEGEND:

- Property Line
- Commercial
- Residential over Commercial
- Residential
- Residential over Amenity
- Amenity

NOTES:

01 Dedicated PULSE & Capital Trail Parking
02 Proposed Bus Shelter for GRTC 48 Rte
03 Proposed Bike Share Station
Investments Rocketts Landing LLC
04 Proposed sidewalk at Orleans - South
05 Railroad Trestle Improvements
New Lighting
New sidewalks (North South)
Public Art Installation
Historic Fulton Focus
06 Proposed Crosswalks at Orleans/Rte 5
North and West - Existing
South and East - Proposed
07 Covered Bike Storage
08 Covered Water Craft Storage
09 Proposed Crosswalk at Site C/Rte 5
10 Pedestrian Way
11 Improvements to Rte 5.
Align entrances to Rocketts
Dedicated Turn Lanes

IMPROVEMENTS

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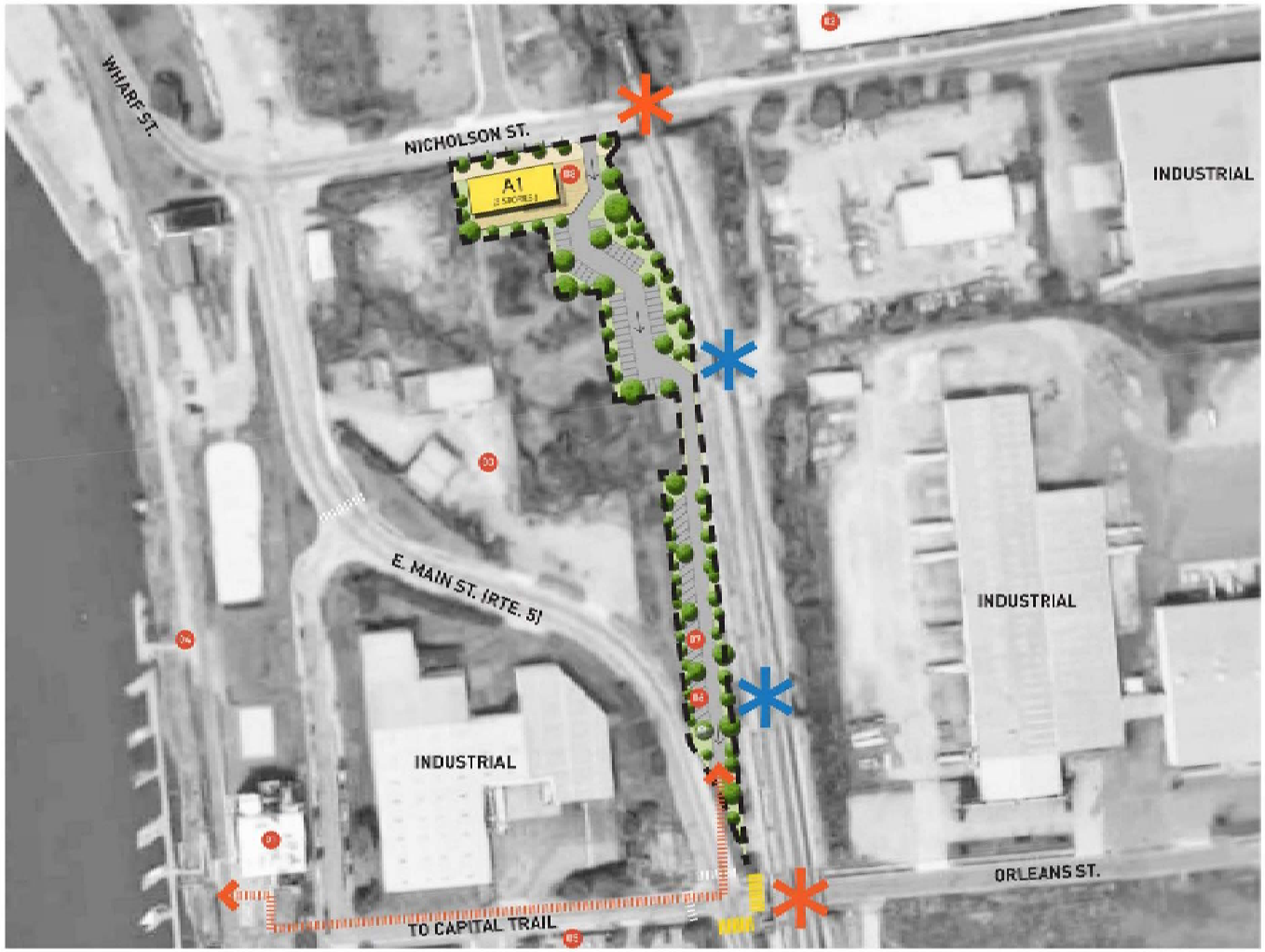
Preliminary Layout – Overall
Fulton Yards Traffic Assessment – Properties A & B
City of Richmond, Virginia

Figure 2



PROPERTY A: GATEWAY

LEGEND:

- Property Line
- Commercial
- Railroad Overpass
- Future Connection at Existing Railroad Overpass
- Proposed Crosswalk

NOTES:

01 The Boathouse at Rocketts Landing
02 Stone Brewing
03 Parcel owned by Central Virginia Investments Rocketts Landing LLC
04 Capital Trail
05 PULSE Bus Stop
06 Dedicated Pulse Parking
07 Dedicated Capital Trail Parking
08 RVA Bike Share Station

SITE FEATURES:

1.42 Acres

A1:
Gateway Commercial Building
4,300 SF Footprint
5 Stories
1st Floor Retail (4,300 SF)
Floors 2-5 Office (16,000 SF)
Parking
Street Parking: 6 Spaces
Site Parking: 64 Spaces
Incl. 6 dedicated PULSE Parking Spaces
Total Parking: 70 Spaces

PROPERTY A

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Preliminary Layout – Property A
Fulton Yards Traffic Assessment – Properties A & B
City of Richmond, Virginia

Figure 2-A

PROPERTY B: ORLEANS STREET

LEGEND:

- Property Line
- Railroad Overpass
- Residential
- Residential over Commercial
- Residential over Amenity

NOTES:

01 Strategic Telecom Supply
02 PULSE Bus Stop
03 Manchester Industries

SITE FEATURES:

B1 (B2 SIM.):
5 Stories
Level 1: Partial Commercial - 3,228 SF
Partial Residential
Breezeway
Levels 2-5: Residential
108 Units Per Building

B3:
5 Stories
Level 1: Partial Amenity
Clubhouse, Fitness, Leasing
Partial Residential
Levels 2-4: Residential
Level 5 - Partial Residential
Clubhouse & Roof Deck
60 Units at B3

TOTALS:
Total Unit Count: 276 Units
Street Parking: 30 Spaces
Site Parking: 256 Spaces
Total Parking: 286 Spaces

SITE B

1 FULTON YARD | APRIL 1, 2019

ZIMMER DEVELOPMENT COMPANY

3 NORTH

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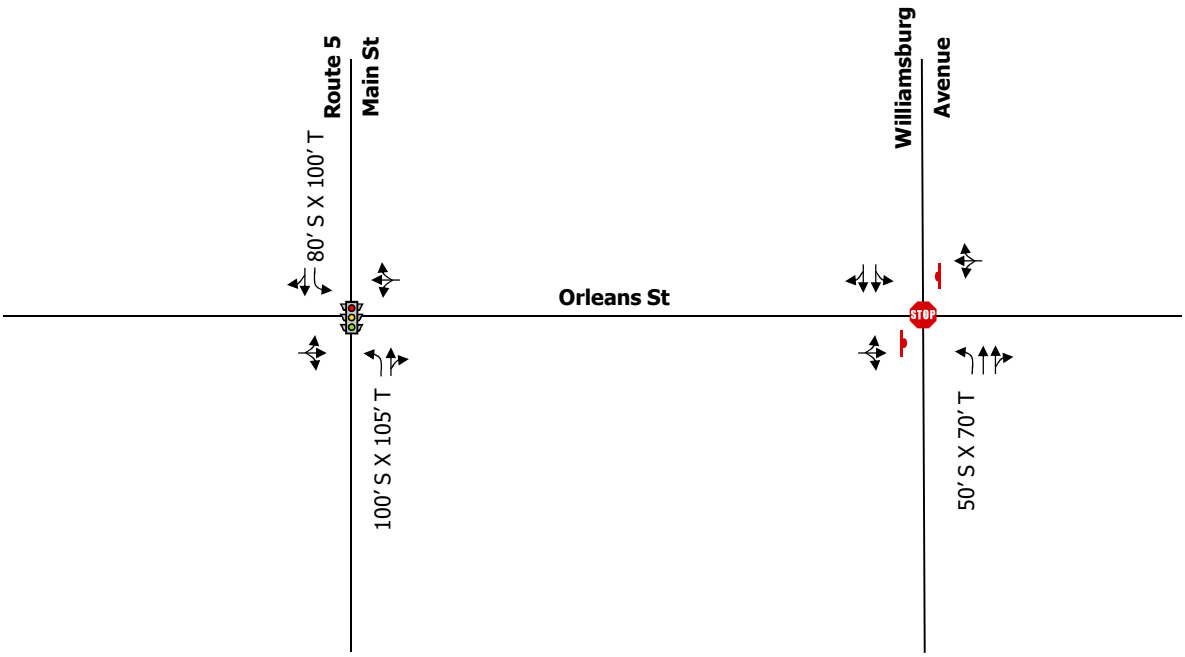
Preliminary Layout – Property B
Fulton Yards Traffic Assessment – Properties A & B
City of Richmond, Virginia

Figure 2-B



LEGEND:

———	Existing Road		Signalized Intersection
T	Taper Length (in feet)	STOP	Stop Controlled Intersection
S	Storage Length (in feet)		Stop Sign Location
			Lane Configuration

NOT TO SCALE

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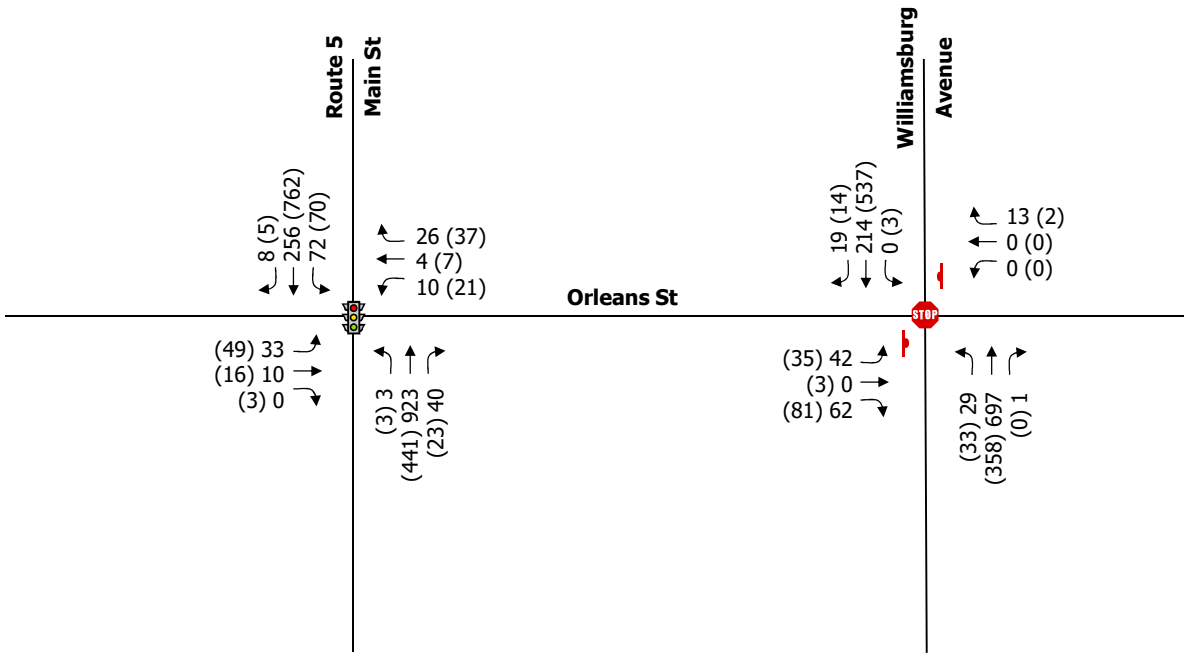
Existing Lane Use Configuration
Fulton Yards Traffic Assessment
Properties A & B
City of Richmond, Virginia

Figure 3



LEGEND:

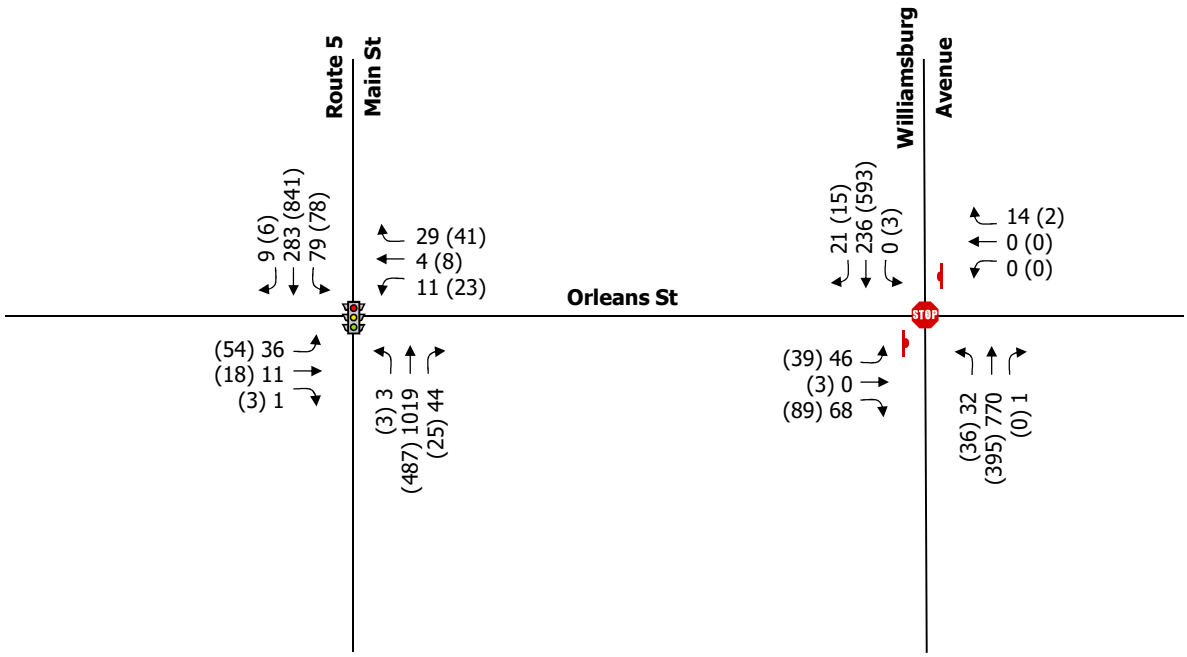
- Existing Road
- X — AM Peak Hour Volumes
- (X) — PM Peak Hour Volumes
- Signalized Intersection
- Stop Controlled Intersection
- Stop Sign Location
- Lane Configuration

NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

2019 Existing Peak Hour Volumes
Fulton Yards Traffic Assessment
Properties A & B
City of Richmond, Virginia

Figure 4



LEGEND:

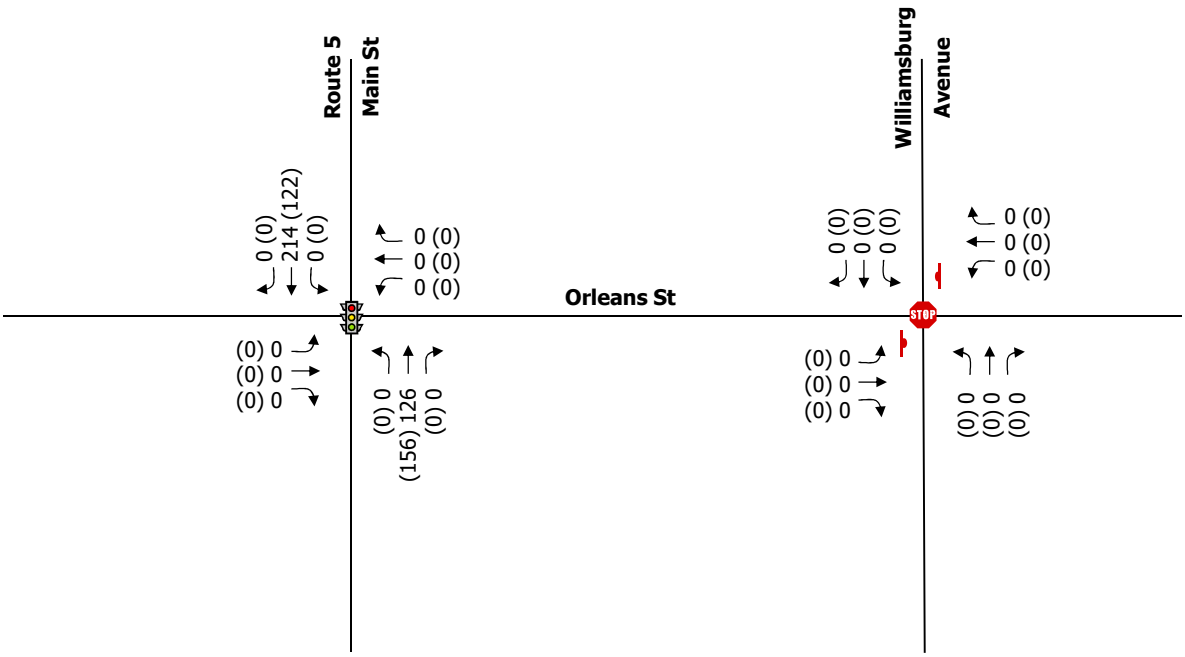
- Existing Road
- X — AM Peak Hour Volumes
- (X) — PM Peak Hour Volumes
- Signalized Intersection
- Stop Controlled Intersection
- Stop Sign Location
- Lane Configuration

NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

2024 Existing + Background Traffic Growth
Fulton Yards Traffic Assessment
Properties A & B
City of Richmond, Virginia

Figure 5



LEGEND:

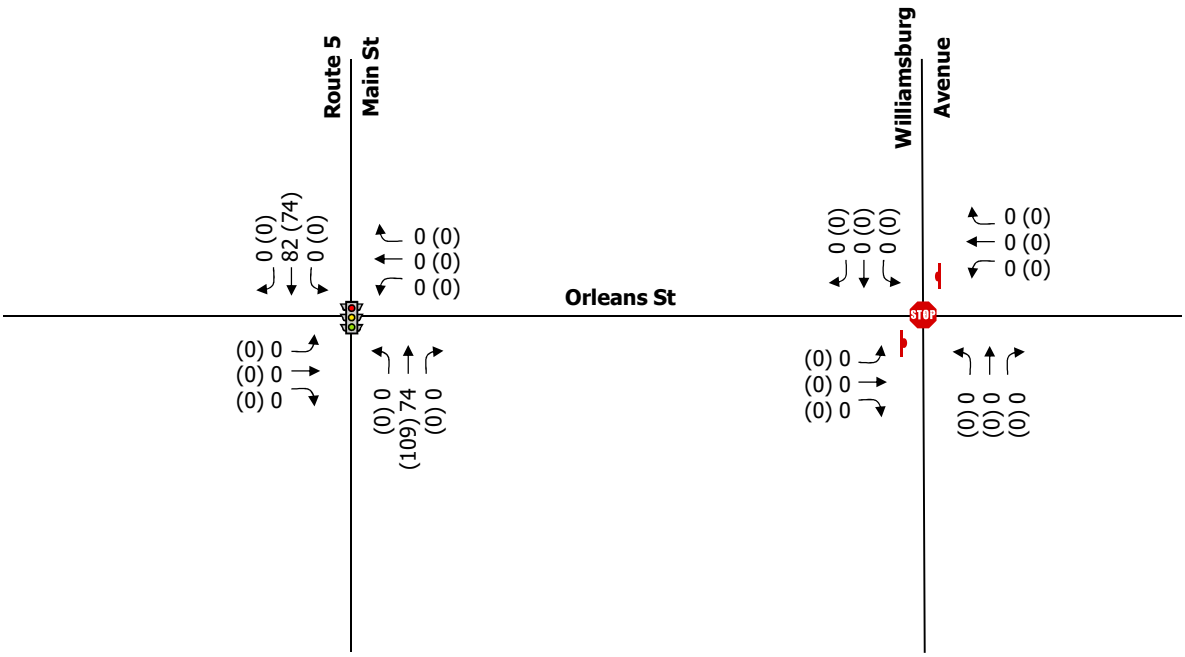
- Existing Road
- X — AM Peak Hour Trips
- (X) — PM Peak Hour Trips
- Signalized Intersection
- Stop Controlled Intersection
- Stop Sign Location
- Lane Configuration

NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Rocketts Landing Peak Hour Trips
Fulton Yards Traffic Assessment
Properties A & B
City of Richmond, Virginia

Figure 6



LEGEND:

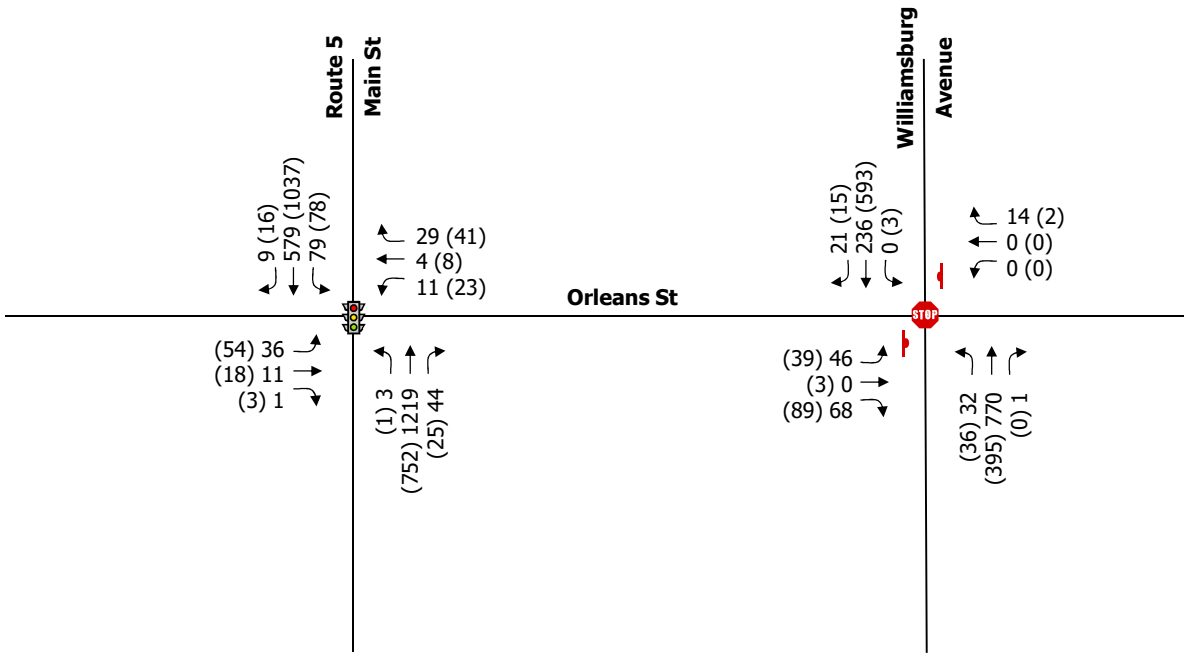
- Existing Road
- X — AM Peak Hour Trips
- (X) — PM Peak Hour Trips
- Signalized Intersection
- Stop Controlled Intersection
- Stop Sign Location
- Lane Configuration

NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Fulton Yards – Property C Site Trips
Fulton Yards Traffic Assessment
Properties A & B
City of Richmond, Virginia

Figure 7



LEGEND:

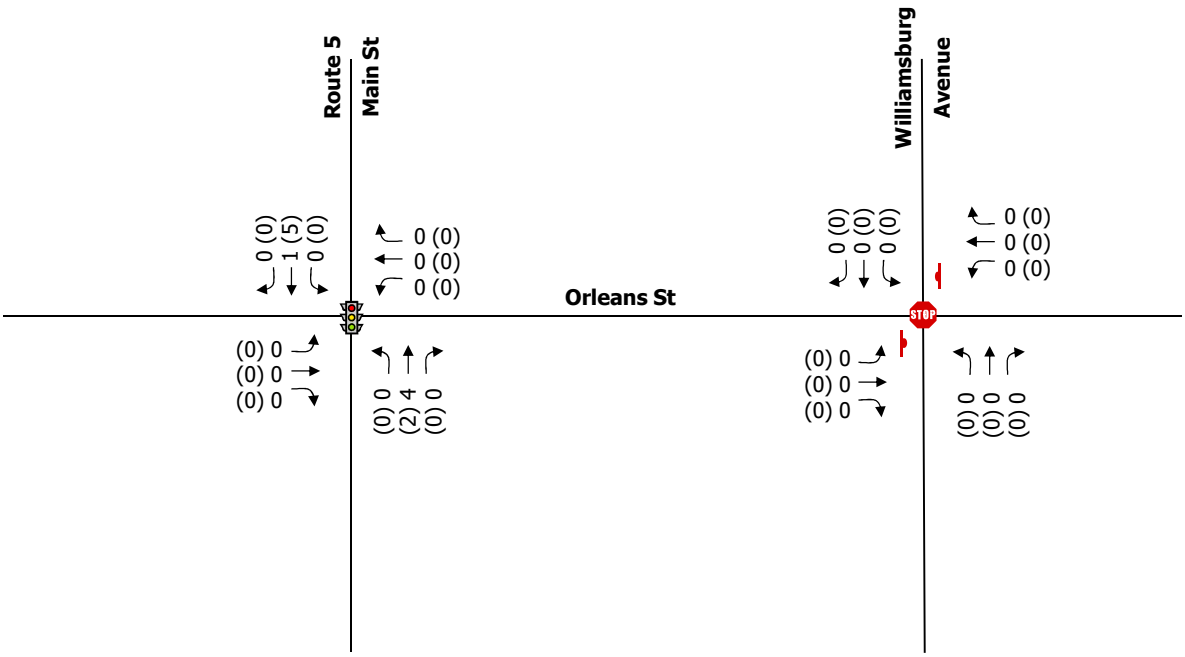
- Existing Road
- X — AM Peak Hour Volumes
- (X) — PM Peak Hour Volumes
- Signalized Intersection
- Stop Controlled Intersection
- Stop Sign Location
- Lane Configuration

NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

2024 Total Background Traffic Volumes
Fulton Yards Traffic Assessment
Properties A & B
City of Richmond, Virginia

Figure 8



LEGEND:

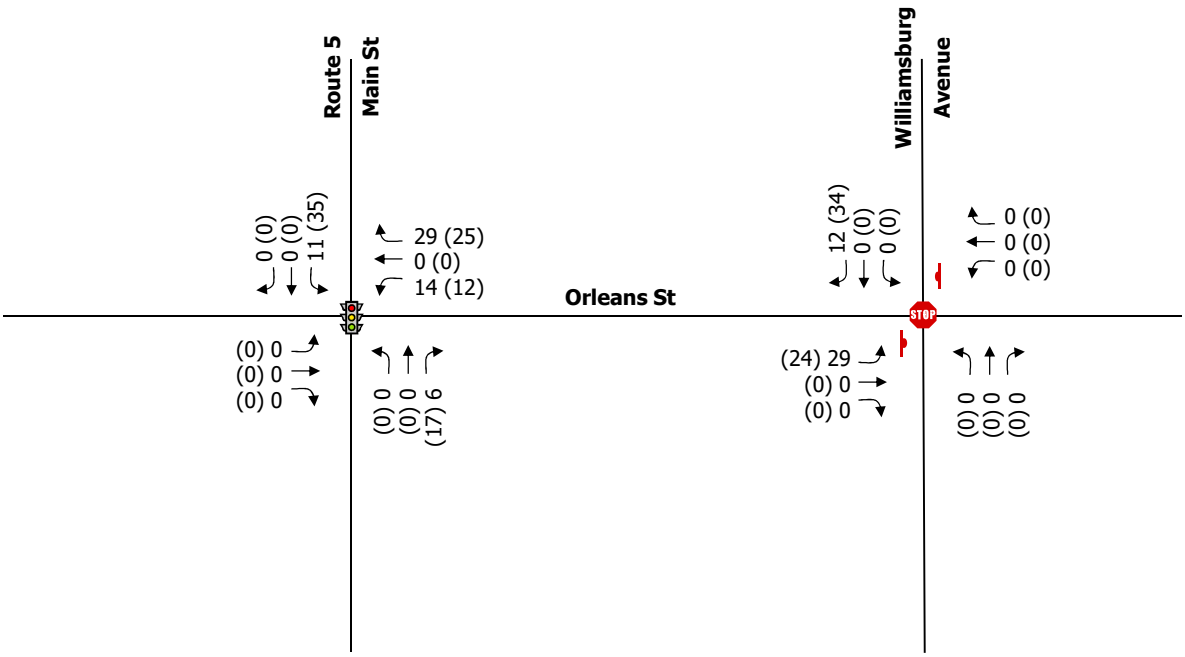
- Existing Road
- X — AM Peak Hour Trips
- (X) — PM Peak Hour Trips
- Signalized Intersection
- Stop Controlled Intersection
- Stop Sign Location
- Lane Configuration

NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Site-Generate Traffic Assignments – Property A
Fulton Yards Traffic Assessment
Properties A & B
City of Richmond, Virginia

Figure 9



LEGEND:

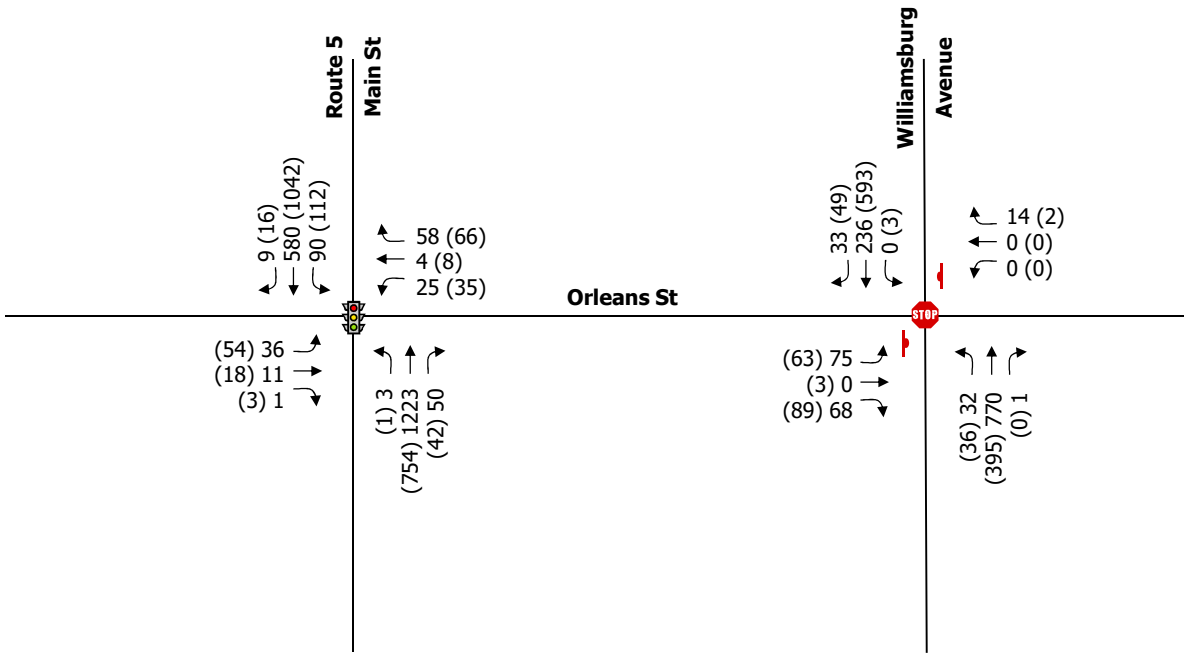
- Existing Road
- X — AM Peak Hour Trips
- (X) — PM Peak Hour Trips
- Signalized Intersection
- Stop Controlled Intersection
- Stop Sign Location
- Lane Configuration

NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Site-Generate Traffic Assignments – Property B
Fulton Yards Traffic Assessment
Properties A & B
City of Richmond, Virginia

Figure 10



LEGEND:

- Existing Road
- X — AM Peak Hour Volumes
- (X) — PM Peak Hour Volumes
- Signalized Intersection
- Stop Controlled Intersection
- Stop Sign Location
- Lane Configuration

NOT TO SCALE

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

2024 Total Future Traffic Volumes
Fulton Yards Traffic Assessment
Properties A & B
City of Richmond, Virginia

Figure 11

APPENDIX A

2019 Traffic Count Data

Peggy Malone & Associates
(888) 247-8602

File Name : 4-Rt 5 and Orleans St AM
Site Code :
Start Date : 2/5/2019
Page No : 1

Groups Printed- Car

	Main St Southbound					Orleans St Westbound					Main St Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	2	52	9	0	63	6	1	3	0	10	4	225	0	0	229	0	0	2	0	2	304
07:15 AM	4	59	22	0	85	5	1	1	0	7	8	247	0	0	255	0	3	6	0	9	356
07:30 AM	1	64	20	0	85	8	1	2	0	11	7	228	0	0	235	0	5	13	0	18	349
07:45 AM	1	74	19	0	94	4	1	3	0	8	16	207	1	0	224	0	1	7	0	8	334
Total	8	249	70	0	327	23	4	9	0	36	35	907	1	0	943	0	9	28	0	37	1343
08:00 AM	6	33	18	0	57	4	5	0	0	9	4	229	2	0	235	1	2	9	0	12	313
08:15 AM	3	65	9	0	77	5	5	3	0	13	2	192	2	0	196	1	0	5	0	6	292
08:30 AM	6	60	12	0	78	1	6	5	0	12	5	140	1	0	146	0	2	0	0	2	238
08:45 AM	5	67	11	0	83	5	1	4	0	10	7	119	1	0	127	0	0	1	0	1	221
Total	20	225	50	0	295	15	17	12	0	44	18	680	6	0	704	2	4	15	0	21	1064
Grand Total	28	474	120	0	622	38	21	21	0	80	53	1587	7	0	1647	2	13	43	0	58	2407
Apprch %	4.5	76.2	19.3	0		47.5	26.2	26.2	0		3.2	96.4	0.4	0		3.4	22.4	74.1	0		
Total %	1.2	19.7	5	0	25.8	1.6	0.9	0.9	0	3.3	2.2	65.9	0.3	0	68.4	0.1	0.5	1.8	0	2.4	

	Main St Southbound				Orleans St Westbound				Main St Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	4	59	**22**	85	5	1	1	7	8	**247**	0	**255**	0	3	6	9	**356**
07:30 AM	1	64	20	85	**8**	1	2	**11**	7	228	0	235	0	**5**	**13**	**18**	349
07:45 AM	1	**74**	19	**94**	4	1	**3**	8	**16**	207	1	224	0	1	7	8	334
08:00 AM	**6**	33	18	57	4	**5**	0	9	4	229	**2**	235	**1**	2	9	12	313
Total Volume	12	230	79	321	21	8	6	35	35	911	3	949	1	11	35	47	1352
% App. Total	3.7	71.7	24.6		60	22.9	17.1		3.7	96	0.3		2.1	23.4	74.5		
PHF	.500	.777	.898	.854	.656	.400	.500	.795	.547	.922	.375	.930	.250	.550	.673	.653	.949

Peggy Malone & Associates
(888) 247-8602

File Name : 4-Rt 5 and Orleans St AM
Site Code :
Start Date : 2/5/2019
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Groups Printed- Truck

	Main St Southbound					Orleans St Westbound					Main St Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	1	1	0	2	1	0	0	0	1	3	2	1	0	6	0	1	1	0	2	11
07:15 AM	0	1	0	0	1	0	0	0	0	0	2	7	0	0	9	0	0	1	0	1	11
07:30 AM	0	2	0	0	2	1	0	0	0	1	0	3	1	0	4	0	0	2	0	2	9
07:45 AM	0	3	1	0	4	1	0	1	0	2	0	4	0	0	4	0	0	1	0	1	11
Total	0	7	2	0	9	3	0	1	0	4	5	16	2	0	23	0	1	5	0	6	42
08:00 AM	0	1	1	0	2	0	0	5	0	5	2	5	0	0	7	0	0	2	0	2	16
08:15 AM	0	2	2	0	4	0	0	0	0	0	3	3	1	0	7	1	0	2	0	3	14
08:30 AM	0	5	0	0	5	1	0	1	0	2	1	0	0	0	1	0	0	1	0	1	9
08:45 AM	0	4	1	0	5	0	0	4	0	4	1	5	0	0	6	0	0	2	0	2	17
Total	0	12	4	0	16	1	0	10	0	11	7	13	1	0	21	1	0	7	0	8	56
Grand Total	0	19	6	0	25	4	0	11	0	15	12	29	3	0	44	1	1	12	0	14	98
Apprch %	0	76	24	0		26.7	0	73.3	0		27.3	65.9	6.8	0		7.1	7.1	85.7	0		
Total %	0	19.4	6.1	0	25.5	4.1	0	11.2	0	15.3	12.2	29.6	3.1	0	44.9	1	1	12.2	0	14.3	

	Main St Southbound				Orleans St Westbound				Main St Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	1	1	2	0	0	**5**	**5**	2	**5**	0	**7**	0	0	**2**	2	16
08:15 AM	0	2	**2**	4	0	0	0	0	**3**	3	**1**	7	**1**	0	2	**3**	14
08:30 AM	0	**5**	0	**5**	**1**	0	1	2	1	0	0	1	0	0	1	1	9
08:45 AM	0	4	1	5	0	0	4	4	1	5	0	6	0	0	2	2	**17**
Total Volume	0	12	4	16	1	0	10	11	7	13	1	21	1	0	7	8	56
% App. Total	0	75	25		9.1	0	90.9		33.3	61.9	4.8		12.5	0	87.5		
PHF	.000	.600	.500	.800	.250	.000	.500	.550	.583	.650	.250	.750	.250	.000	.875	.667	.824

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File Name : 4-Rt 5 and Orleans St AM
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Groups Printed- Car - Truck

	Main St Southbound					Orleans St Westbound					Main St Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	2	53	10	0	65	7	1	3	0	11	7	227	1	0	235	0	1	3	0	4	315
07:15 AM	4	60	22	0	86	5	1	1	0	7	10	254	0	0	264	0	3	7	0	10	367
07:30 AM	1	66	20	0	87	9	1	2	0	12	7	231	1	0	239	0	5	15	0	20	358
07:45 AM	1	77	20	0	98	5	1	4	0	10	16	211	1	0	228	0	1	8	0	9	345
Total	8	256	72	0	336	26	4	10	0	40	40	923	3	0	966	0	10	33	0	43	1385
08:00 AM	6	34	19	0	59	4	5	5	0	14	6	234	2	0	242	1	2	11	0	14	329
08:15 AM	3	67	11	0	81	5	5	3	0	13	5	195	3	0	203	2	0	7	0	9	306
08:30 AM	6	65	12	0	83	2	6	6	0	14	6	140	1	0	147	0	2	1	0	3	247
08:45 AM	5	71	12	0	88	5	1	8	0	14	8	124	1	0	133	0	0	3	0	3	238
Total	20	237	54	0	311	16	17	22	0	55	25	693	7	0	725	3	4	22	0	29	1120
Grand Total	28	493	126	0	647	42	21	32	0	95	65	1616	10	0	1691	3	14	55	0	72	2505
Apprch %	4.3	76.2	19.5	0		44.2	22.1	33.7	0		3.8	95.6	0.6	0		4.2	19.4	76.4	0		
Total %	1.1	19.7	5	0	25.8	1.7	0.8	1.3	0	3.8	2.6	64.5	0.4	0	67.5	0.1	0.6	2.2	0	2.9	
Car	28	474	120	0	622	38	21	21	0	80	53	1587	7	0	1647	2	13	43	0	58	2407
% Car	100	96.1	95.2	0	96.1	90.5	100	65.6	0	84.2	81.5	98.2	70	0	97.4	66.7	92.9	78.2	0	80.6	96.1
Truck	0	19	6	0	25	4	0	11	0	15	12	29	3	0	44	1	1	12	0	14	98
% Truck	0	3.9	4.8	0	3.9	9.5	0	34.4	0	15.8	18.5	1.8	30	0	2.6	33.3	7.1	21.8	0	19.4	3.9

	Main St Southbound				Orleans St Westbound				Main St Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	4	60	**22**	86	5	1	1	7	10	**254**	0	**264**	0	3	7	10	**367**
07:30 AM	1	66	20	87	**9**	1	2	12	7	231	1	239	0	**5**	**15**	**20**	358
07:45 AM	1	**77**	20	**98**	5	1	4	10	**16**	211	1	228	0	1	8	9	345
08:00 AM	**6**	34	19	59	4	**5**	**5**	**14**	6	234	**2**	242	**1**	2	11	14	329
Total Volume	12	237	81	330	23	8	12	43	39	930	4	973	1	11	41	53	1399
% App. Total	3.6	71.8	24.5		53.5	18.6	27.9		4	95.6	0.4		1.9	20.8	77.4		
PHF	.500	.769	.920	.842	.639	.400	.600	.768	.609	.915	.500	.921	.250	.550	.683	.663	.953

Peggy Malone & Associates
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File Name : 4-Rt 5 and Orleans St AM
Site Code :
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Groups Printed- Pedestrians

	Main St Southbound					Orleans St Westbound					Main St Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	3
Total	0	0	0	2	2	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	5
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4
Grand Total	0	0	0	5	5	0	0	0	1	1	0	0	0	1	1	0	0	0	2	2	9
Apprch %	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	100		
Total %	0	0	0	55.6	55.6	0	0	0	11.1	11.1	0	0	0	11.1	11.1	0	0	0	22.2	22.2	

	Main St Southbound				Orleans St Westbound				Main St Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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File Name : 4-Rt 5 and Orleans St PM
Site Code :
Start Date : 2/5/2019
Page No : 1

Groups Printed- Car

	Main St Southbound					Orleans St Westbound					Main St Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	1	130	8	0	139	11	0	7	0	18	8	99	1	0	108	0	4	5	0	9	274
04:15 PM	1	159	18	0	178	11	3	6	0	20	4	87	2	0	93	1	3	2	0	6	297
04:30 PM	2	186	20	0	208	9	0	4	0	13	5	104	0	0	109	2	1	5	0	8	338
04:45 PM	1	200	15	0	216	6	1	5	0	12	6	101	0	0	107	0	3	10	0	13	348
Total	5	675	61	0	741	37	4	22	0	63	23	391	3	0	417	3	11	22	0	36	1257
05:00 PM	2	179	17	0	198	8	2	8	1	19	6	97	1	0	104	0	6	15	0	21	342
05:15 PM	0	194	13	0	207	12	4	4	0	20	4	133	2	0	139	1	6	13	0	20	386
05:30 PM	4	207	13	0	224	15	3	4	0	22	2	75	4	0	81	3	1	10	0	14	341
05:45 PM	4	190	10	0	204	5	6	7	0	18	8	85	0	0	93	2	4	10	0	16	331
Total	10	770	53	0	833	40	15	23	1	79	20	390	7	0	417	6	17	48	0	71	1400
Grand Total	15	1445	114	0	1574	77	19	45	1	142	43	781	10	0	834	9	28	70	0	107	2657
Apprch %	1	91.8	7.2	0		54.2	13.4	31.7	0.7		5.2	93.6	1.2	0		8.4	26.2	65.4	0		
Total %	0.6	54.4	4.3	0	59.2	2.9	0.7	1.7	0	5.3	1.6	29.4	0.4	0	31.4	0.3	1.1	2.6	0	4	

	Main St Southbound				Orleans St Westbound				Main St Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	200	15	216	6	1	5	12	**6**	101	0	107	0	3	10	13	348
05:00 PM	2	179	**17**	198	8	2	**8**	18	6	97	1	104	0	**6**	**15**	**21**	341
05:15 PM	0	194	13	207	12	**4**	4	20	4	**133**	2	**139**	1	6	13	20	**386**
05:30 PM	**4**	**207**	13	**224**	**15**	3	4	**22**	2	75	**4**	81	**3**	1	10	14	341
Total Volume	7	780	58	845	41	10	21	72	18	406	7	431	4	16	48	68	1416
% App. Total	0.8	92.3	6.9		56.9	13.9	29.2		4.2	94.2	1.6		5.9	23.5	70.6		
PHF	.438	.942	.853	.943	.683	.625	.656	.818	.750	.763	.438	.775	.333	.667	.800	.810	.917

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Groups Printed- Truck

	Main St Southbound					Orleans St Westbound					Main St Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	1	0	0	1	1	0	0	0	1	1	1	0	0	2	0	0	2	0	2	6
04:15 PM	0	4	1	0	5	0	2	4	0	6	3	3	0	0	6	0	0	1	0	1	18
04:30 PM	0	0	0	0	0	1	0	0	0	1	1	3	0	0	4	0	0	2	0	2	7
04:45 PM	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4
Total	0	6	3	0	9	2	2	4	0	8	5	7	0	0	12	0	0	6	0	6	35
05:00 PM	0	1	1	0	2	1	0	0	0	1	0	2	0	0	2	0	0	2	0	2	7
05:15 PM	0	1	2	0	3	0	0	0	0	0	1	1	0	0	2	0	0	1	0	1	6
05:30 PM	0	3	0	0	3	1	1	0	0	2	1	3	0	0	4	0	0	1	0	1	10
05:45 PM	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	5
Total	0	6	4	0	10	2	1	0	0	3	2	6	0	0	8	0	0	7	0	7	28
Grand Total	0	12	7	0	19	4	3	4	0	11	7	13	0	0	20	0	0	13	0	13	63
Apprch %	0	63.2	36.8	0		36.4	27.3	36.4	0		35	65	0	0		0	0	100	0		
Total %	0	19	11.1	0	30.2	6.3	4.8	6.3	0	17.5	11.1	20.6	0	0	31.7	0	0	20.6	0	20.6	

	Main St Southbound				Orleans St Westbound				Main St Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	**4**	1	**5**	0	**2**	**4**	**6**	**3**	**3**	0	**6**	0	0	1	1	**18**
04:30 PM	0	0	0	0	**1**	0	0	1	1	3	0	4	0	0	**2**	**2**	7
04:45 PM	0	1	**2**	3	0	0	0	0	0	0	0	0	0	0	1	1	4
05:00 PM	0	1	1	2	1	0	0	1	0	2	0	2	0	0	2	2	7
Total Volume	0	6	4	10	2	2	4	8	4	8	0	12	0	0	6	6	36
% App. Total	0	60	40		25	25	50		33.3	66.7	0		0	0	100		
PHF	.000	.375	.500	.500	.500	.250	.250	.333	.333	.667	.000	.500	.000	.000	.750	.750	.500

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Groups Printed- Car - Truck

	Main St Southbound					Orleans St Westbound					Main St Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	1	131	8	0	140	12	0	7	0	19	9	100	1	0	110	0	4	7	0	11	280
04:15 PM	1	163	19	0	183	11	5	10	0	26	7	90	2	0	99	1	3	3	0	7	315
04:30 PM	2	186	20	0	208	10	0	4	0	14	6	107	0	0	113	2	1	7	0	10	345
04:45 PM	1	201	17	0	219	6	1	5	0	12	6	101	0	0	107	0	3	11	0	14	352
Total	5	681	64	0	750	39	6	26	0	71	28	398	3	0	429	3	11	28	0	42	1292
05:00 PM	2	180	18	0	200	9	2	8	1	20	6	99	1	0	106	0	6	17	0	23	349
05:15 PM	0	195	15	0	210	12	4	4	0	20	5	134	2	0	141	1	6	14	0	21	392
05:30 PM	4	210	13	0	227	16	4	4	0	24	3	78	4	0	85	3	1	11	0	15	351
05:45 PM	4	191	11	0	206	5	6	7	0	18	8	85	0	0	93	2	4	13	0	19	336
Total	10	776	57	0	843	42	16	23	1	82	22	396	7	0	425	6	17	55	0	78	1428
Grand Total	15	1457	121	0	1593	81	22	49	1	153	50	794	10	0	854	9	28	83	0	120	2720
Apprch %	0.9	91.5	7.6	0		52.9	14.4	32	0.7		5.9	93	1.2	0		7.5	23.3	69.2	0		
Total %	0.6	53.6	4.4	0	58.6	3	0.8	1.8	0	5.6	1.8	29.2	0.4	0	31.4	0.3	1	3.1	0	4.4	
Car	15	1445	114	0	1574	77	19	45	1	142	43	781	10	0	834	9	28	70	0	107	2657
% Car	100	99.2	94.2	0	98.8	95.1	86.4	91.8	100	92.8	86	98.4	100	0	97.7	100	100	84.3	0	89.2	97.7
Truck	0	12	7	0	19	4	3	4	0	11	7	13	0	0	20	0	0	13	0	13	63
% Truck	0	0.8	5.8	0	1.2	4.9	13.6	8.2	0	7.2	14	1.6	0	0	2.3	0	0	15.7	0	10.8	2.3

	Main St Southbound				Orleans St Westbound				Main St Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	201	17	219	6	1	5	12	**6**	101	0	107	0	3	11	14	352
05:00 PM	2	180	**18**	200	9	2	**8**	19	6	99	1	106	0	**6**	**17**	**23**	348
05:15 PM	0	195	15	210	12	**4**	4	20	5	**134**	2	**141**	1	6	14	21	**392**
05:30 PM	**4**	**210**	13	**227**	**16**	4	4	**24**	3	78	**4**	85	**3**	1	11	15	351
Total Volume	7	786	63	856	43	11	21	75	20	412	7	439	4	16	53	73	1443
% App. Total	0.8	91.8	7.4		57.3	14.7	28		4.6	93.8	1.6		5.5	21.9	72.6		
PHF	.438	.936	.875	.943	.672	.688	.656	.781	.833	.769	.438	.778	.333	.667	.779	.793	.920

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Groups Printed- Pedestrians

	Main St Southbound					Orleans St Westbound					Main St Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	1	131	8	0	140	12	0	7	0	19	9	100	1	0	110	0	4	7	0	11	280
04:15 PM	1	163	19	0	183	11	5	10	0	26	7	90	2	0	99	1	3	3	0	7	315
04:30 PM	2	186	20	0	208	10	0	4	0	14	6	107	0	0	113	2	1	7	0	10	345
04:45 PM	1	201	17	0	219	6	1	5	0	12	6	101	0	0	107	0	3	11	0	14	352
Total	5	681	64	0	750	39	6	26	0	71	28	398	3	0	429	3	11	28	0	42	1292
05:00 PM	2	180	18	0	200	9	2	8	1	20	6	99	1	0	106	0	6	17	0	23	349
05:15 PM	0	195	15	0	210	12	4	4	0	20	5	134	2	0	141	1	6	14	0	21	392
05:30 PM	4	210	13	0	227	16	4	4	0	24	3	78	4	0	85	3	1	11	0	15	351
05:45 PM	4	191	11	0	206	5	6	7	0	18	8	85	0	0	93	2	4	13	0	19	336
Total	10	776	57	0	843	42	16	23	1	82	22	396	7	0	425	6	17	55	0	78	1428
Grand Total	15	1457	121	0	1593	81	22	49	1	153	50	794	10	0	854	9	28	83	0	120	2720
Apprch %	0.9	91.5	7.6	0		52.9	14.4	32	0.7		5.9	93	1.2	0		7.5	23.3	69.2	0		
Total %	0.6	53.6	4.4	0	58.6	3	0.8	1.8	0	5.6	1.8	29.2	0.4	0	31.4	0.3	1	3.1	0	4.4	

	Main St Southbound				Orleans St Westbound				Main St Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	201	17	219	6	1	5	12	**6**	101	0	107	0	3	11	14	352
05:00 PM	2	180	**18**	200	9	2	**8**	19	6	99	1	106	0	**6**	**17**	**23**	348
05:15 PM	0	195	15	210	12	**4**	4	20	5	**134**	2	**141**	1	6	14	21	**392**
05:30 PM	**4**	**210**	13	**227**	**16**	4	4	**24**	3	78	**4**	85	**3**	1	11	15	351
Total Volume	7	786	63	856	43	11	21	75	20	412	7	439	4	16	53	73	1443
% App. Total	0.8	91.8	7.4		57.3	14.7	28		4.6	93.8	1.6		5.5	21.9	72.6		
PHF	.438	.936	.875	.943	.672	.688	.656	.781	.833	.769	.438	.778	.333	.667	.779	.793	.920

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Groups Printed- Car

	Williamsburg Ave Southbound					Orleans St Westbound					Williamsburg Ave Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	5	33	0	0	38	2	0	0	0	2	1	113	3	0	117	7	0	3	0	10	167
07:15 AM	6	63	0	0	69	6	0	0	0	6	0	191	7	1	199	17	0	8	0	25	299
07:30 AM	2	49	0	0	51	2	0	0	0	2	0	212	11	0	223	19	0	13	0	32	308
07:45 AM	6	48	0	0	54	3	0	0	0	3	0	154	4	0	158	11	0	18	0	29	244
Total	19	193	0	0	212	13	0	0	0	13	1	670	25	1	697	54	0	42	0	96	1018
08:00 AM	6	50	0	0	56	4	0	0	0	4	0	141	10	0	151	16	0	3	0	19	230
08:15 AM	1	45	0	0	46	4	0	0	0	4	0	132	7	0	139	9	0	3	0	12	201
08:30 AM	8	56	1	0	65	2	1	0	0	3	0	109	4	0	113	15	1	3	0	19	200
08:45 AM	6	34	0	0	40	0	0	0	0	0	0	85	10	0	95	12	0	3	0	15	150
Total	21	185	1	0	207	10	1	0	0	11	0	467	31	0	498	52	1	12	0	65	781
Grand Total	40	378	1	0	419	23	1	0	0	24	1	1137	56	1	1195	106	1	54	0	161	1799
Apprch %	9.5	90.2	0.2	0		95.8	4.2	0	0		0.1	95.1	4.7	0.1		65.8	0.6	33.5	0		
Total %	2.2	21	0.1	0	23.3	1.3	0.1	0	0	1.3	0.1	63.2	3.1	0.1	66.4	5.9	0.1	3	0	8.9	

	Williamsburg Ave Southbound				Orleans St Westbound				Williamsburg Ave Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**6**	**63**	0	**69**	**6**	0	0	**6**	0	191	7	198	17	0	8	25	298
07:30 AM	2	49	0	51	2	0	0	2	0	**212**	**11**	**223**	**19**	0	13	**32**	**308**
07:45 AM	6	48	0	54	3	0	0	3	0	154	4	158	11	0	**18**	29	244
08:00 AM	6	50	0	56	4	0	0	4	0	141	10	151	16	0	3	19	230
Total Volume	20	210	0	230	15	0	0	15	0	698	32	730	63	0	42	105	1080
% App. Total	8.7	91.3	0		100	0	0		0	95.6	4.4		60	0	40		
PHF	.833	.833	.000	.833	.625	.000	.000	.625	.000	.823	.727	.818	.829	.000	.583	.820	.877

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Groups Printed- Truck

	Williamsburg Ave Southbound					Orleans St Westbound					Williamsburg Ave Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	3	0	0	3	0	0	0	0	0	0	9	1	0	10	5	0	0	0	5	18
07:15 AM	0	2	0	0	2	0	0	0	0	0	0	8	0	0	8	2	0	0	0	2	12
07:30 AM	0	9	0	0	9	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	14
07:45 AM	0	7	0	0	7	0	0	0	0	0	0	6	2	0	8	1	0	0	0	1	16
Total	0	21	0	0	21	0	0	0	0	0	0	27	4	0	31	8	0	0	0	8	60
08:00 AM	2	6	0	0	8	0	0	0	0	0	0	4	3	0	7	2	0	0	0	2	17
08:15 AM	0	5	0	0	5	0	0	0	0	0	0	9	0	0	9	4	0	0	0	4	18
08:30 AM	0	5	0	0	5	0	0	0	0	0	0	6	3	0	9	1	0	0	0	1	15
08:45 AM	2	8	0	0	10	0	0	0	0	0	0	11	3	0	14	2	0	0	0	2	26
Total	4	24	0	0	28	0	0	0	0	0	0	30	9	0	39	9	0	0	0	9	76
Grand Total	4	45	0	0	49	0	0	0	0	0	0	57	13	0	70	17	0	0	0	17	136
Apprch %	8.2	91.8	0	0		0	0	0	0		0	81.4	18.6	0		100	0	0	0		
Total %	2.9	33.1	0	0	36	0	0	0	0	0	0	41.9	9.6	0	51.5	12.5	0	0	0	12.5	

	Williamsburg Ave Southbound				Orleans St Westbound				Williamsburg Ave Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	**2**	6	0	8	0	0	0	0	0	4	**3**	7	2	0	0	2	17
08:15 AM	0	5	0	5	0	0	0	0	0	9	0	9	**4**	0	0	**4**	18
08:30 AM	0	5	0	5	0	0	0	0	0	6	3	9	1	0	0	1	15
08:45 AM	2	**8**	0	**10**	0	0	0	0	0	**11**	3	**14**	2	0	0	2	**26**
Total Volume	4	24	0	28	0	0	0	0	0	30	9	39	9	0	0	9	76
% App. Total	14.3	85.7	0		0	0	0		0	76.9	23.1		100	0	0		
PHF	.500	.750	.000	.700	.000	.000	.000	.000	.000	.682	.750	.696	.563	.000	.000	.563	.731

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Groups Printed- Car - Truck

	Williamsburg Ave Southbound					Orleans St Westbound					Williamsburg Ave Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	5	36	0	0	41	2	0	0	0	2	1	122	4	0	127	12	0	3	0	15	185
07:15 AM	6	65	0	0	71	6	0	0	0	6	0	199	7	1	207	19	0	8	0	27	311
07:30 AM	2	58	0	0	60	2	0	0	0	2	0	216	12	0	228	19	0	13	0	32	322
07:45 AM	6	55	0	0	61	3	0	0	0	3	0	160	6	0	166	12	0	18	0	30	260
Total	19	214	0	0	233	13	0	0	0	13	1	697	29	1	728	62	0	42	0	104	1078
08:00 AM	8	56	0	0	64	4	0	0	0	4	0	145	13	0	158	18	0	3	0	21	247
08:15 AM	1	50	0	0	51	4	0	0	0	4	0	141	7	0	148	13	0	3	0	16	219
08:30 AM	8	61	1	0	70	2	1	0	0	3	0	115	7	0	122	16	1	3	0	20	215
08:45 AM	8	42	0	0	50	0	0	0	0	0	0	96	13	0	109	14	0	3	0	17	176
Total	25	209	1	0	235	10	1	0	0	11	0	497	40	0	537	61	1	12	0	74	857
Grand Total	44	423	1	0	468	23	1	0	0	24	1	1194	69	1	1265	123	1	54	0	178	1935
Apprch %	9.4	90.4	0.2	0		95.8	4.2	0	0		0.1	94.4	5.5	0.1		69.1	0.6	30.3	0		
Total %	2.3	21.9	0.1	0	24.2	1.2	0.1	0	0	1.2	0.1	61.7	3.6	0.1	65.4	6.4	0.1	2.8	0	9.2	
Car	40	378	1	0	419	23	1	0	0	24	1	1137	56	1	1195	106	1	54	0	161	1799
% Car	90.9	89.4	100	0	89.5	100	100	0	0	100	100	95.2	81.2	100	94.5	86.2	100	100	0	90.4	93
Truck	4	45	0	0	49	0	0	0	0	0	0	57	13	0	70	17	0	0	0	17	136
% Truck	9.1	10.6	0	0	10.5	0	0	0	0	0	0	4.8	18.8	0	5.5	13.8	0	0	0	9.6	7

	Williamsburg Ave Southbound				Orleans St Westbound				Williamsburg Ave Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	6	**65**	0	**71**	**6**	0	0	**6**	0	199	7	206	**19**	0	8	27	310
07:30 AM	2	58	0	60	2	0	0	2	0	**216**	12	**228**	19	0	13	**32**	**322**
07:45 AM	6	55	0	61	3	0	0	3	0	160	6	166	12	0	**18**	30	260
08:00 AM	**8**	56	0	64	4	0	0	4	0	145	**13**	158	18	0	3	21	247
Total Volume	22	234	0	256	15	0	0	15	0	720	38	758	68	0	42	110	1139
% App. Total	8.6	91.4	0		100	0	0		0	95	5		61.8	0	38.2		
PHF	.688	.900	.000	.901	.625	.000	.000	.625	.000	.833	.731	.831	.895	.000	.583	.859	.884

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Groups Printed- Pedestrians

	Williamsburg Ave Southbound					Orleans St Westbound					Williamsburg Ave Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
08:30 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3
Grand Total	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4
Apprch %	0	0	0	100		0	0	0	0		0	0	0	0		0	0	0	100		
Total %	0	0	0	75	75	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25	

	Williamsburg Ave Southbound				Orleans St Westbound				Williamsburg Ave Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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Groups Printed- Car

	Williamsburg Ave Southbound					Orleans St Westbound					Williamsburg Ave Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	2	73	3	0	78	1	0	0	0	1	0	82	12	0	94	13	0	15	0	28	201
04:15 PM	1	108	0	0	109	1	0	0	0	1	1	84	12	0	97	20	0	10	0	30	237
04:30 PM	3	119	1	2	125	0	0	0	0	0	0	72	4	0	76	21	1	10	0	32	233
04:45 PM	2	145	1	1	149	1	0	0	0	1	0	92	7	0	99	20	2	5	0	27	276
Total	8	445	5	3	461	3	0	0	0	3	1	330	35	0	366	74	3	40	0	117	947
05:00 PM	4	125	2	0	131	0	0	0	0	0	0	88	7	0	95	23	0	11	0	34	260
05:15 PM	5	133	3	0	141	1	0	0	0	1	0	98	13	0	111	12	0	8	0	20	273
05:30 PM	5	117	2	0	124	0	0	0	0	0	1	112	14	0	127	16	0	3	0	19	270
05:45 PM	9	114	1	0	124	0	0	1	0	1	0	85	9	0	94	13	2	5	0	20	239
Total	23	489	8	0	520	1	0	1	0	2	1	383	43	0	427	64	2	27	0	93	1042
Grand Total	31	934	13	3	981	4	0	1	0	5	2	713	78	0	793	138	5	67	0	210	1989
Apprch %	3.2	95.2	1.3	0.3		80	0	20	0		0.3	89.9	9.8	0		65.7	2.4	31.9	0		
Total %	1.6	47	0.7	0.2	49.3	0.2	0	0.1	0	0.3	0.1	35.8	3.9	0	39.9	6.9	0.3	3.4	0	10.6	

	Williamsburg Ave Southbound				Orleans St Westbound				Williamsburg Ave Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	2	**145**	1	**148**	**1**	0	0	**1**	0	92	7	99	20	**2**	5	27	**275**
05:00 PM	4	125	2	131	0	0	0	0	0	88	7	95	**23**	0	**11**	**34**	260
05:15 PM	**5**	133	**3**	141	1	0	0	1	0	98	13	111	12	0	8	20	273
05:30 PM	5	117	2	124	0	0	0	0	**1**	**112**	**14**	**127**	16	0	3	19	270
Total Volume	16	520	8	544	2	0	0	2	1	390	41	432	71	2	27	100	1078
% App. Total	2.9	95.6	1.5		100	0	0		0.2	90.3	9.5		71	2	27		
PHF	.800	.897	.667	.919	.500	.000	.000	.500	.250	.871	.732	.850	.772	.250	.614	.735	.980

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Groups Printed- Truck

	Williamsburg Ave Southbound					Orleans St Westbound					Williamsburg Ave Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	6	0	0	6	0	0	0	0	0	0	5	1	0	6	1	0	0	0	1	13
04:15 PM	0	2	0	0	2	0	0	0	0	0	0	3	5	0	8	3	0	0	0	3	13
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	8
04:45 PM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	9
Total	0	17	0	0	17	0	0	0	0	0	0	13	7	0	20	6	0	0	0	6	43
05:00 PM	0	4	0	0	4	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	9
05:15 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	5
05:30 PM	0	4	0	0	4	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	7
05:45 PM	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	7
Total	0	15	0	0	15	0	0	0	0	0	0	5	2	0	7	5	0	1	0	6	28
Grand Total	0	32	0	0	32	0	0	0	0	0	0	18	9	0	27	11	0	1	0	12	71
Apprch %	0	100	0	0		0	0	0	0		0	66.7	33.3	0		91.7	0	8.3	0		
Total %	0	45.1	0	0	45.1	0	0	0	0	0	0	25.4	12.7	0	38	15.5	0	1.4	0	16.9	

	Williamsburg Ave Southbound				Orleans St Westbound				Williamsburg Ave Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**6**	0	**6**	0	0	0	0	0	**5**	1	6	1	0	0	1	**13**
04:15 PM	0	2	0	2	0	0	0	0	0	3	**5**	**8**	**3**	0	0	**3**	13
04:30 PM	0	5	0	5	0	0	0	0	0	1	1	2	1	0	0	1	8
04:45 PM	0	4	0	4	0	0	0	0	0	4	0	4	1	0	0	1	9
Total Volume	0	17	0	17	0	0	0	0	0	13	7	20	6	0	0	6	43
% App. Total	0	100	0		0	0	0		0	65	35		100	0	0		
PHF	.000	.708	.000	.708	.000	.000	.000	.000	.000	.650	.350	.625	.500	.000	.000	.500	.827

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Groups Printed- Car - Truck

	Williamsburg Ave Southbound					Orleans St Westbound					Williamsburg Ave Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	2	79	3	0	84	1	0	0	0	1	0	87	13	0	100	14	0	15	0	29	214
04:15 PM	1	110	0	0	111	1	0	0	0	1	1	87	17	0	105	23	0	10	0	33	250
04:30 PM	3	124	1	2	130	0	0	0	0	0	0	73	5	0	78	22	1	10	0	33	241
04:45 PM	2	149	1	1	153	1	0	0	0	1	0	96	7	0	103	21	2	5	0	28	285
Total	8	462	5	3	478	3	0	0	0	3	1	343	42	0	386	80	3	40	0	123	990
05:00 PM	4	129	2	0	135	0	0	0	0	0	0	90	8	0	98	24	0	12	0	36	269
05:15 PM	5	135	3	0	143	1	0	0	0	1	0	99	13	0	112	14	0	8	0	22	278
05:30 PM	5	121	2	0	128	0	0	0	0	0	1	113	15	0	129	17	0	3	0	20	277
05:45 PM	9	119	1	0	129	0	0	1	0	1	0	86	9	0	95	14	2	5	0	21	246
Total	23	504	8	0	535	1	0	1	0	2	1	388	45	0	434	69	2	28	0	99	1070
Grand Total	31	966	13	3	1013	4	0	1	0	5	2	731	87	0	820	149	5	68	0	222	2060
Apprch %	3.1	95.4	1.3	0.3		80	0	20	0		0.2	89.1	10.6	0		67.1	2.3	30.6	0		
Total %	1.5	46.9	0.6	0.1	49.2	0.2	0	0	0	0.2	0.1	35.5	4.2	0	39.8	7.2	0.2	3.3	0	10.8	
Car	31	934	13	3	981	4	0	1	0	5	2	713	78	0	793	138	5	67	0	210	1989
% Car	100	96.7	100	100	96.8	100	0	100	0	100	100	97.5	89.7	0	96.7	92.6	100	98.5	0	94.6	96.6
Truck	0	32	0	0	32	0	0	0	0	0	0	18	9	0	27	11	0	1	0	12	71
% Truck	0	3.3	0	0	3.2	0	0	0	0	0	0	2.5	10.3	0	3.3	7.4	0	1.5	0	5.4	3.4

	Williamsburg Ave Southbound				Orleans St Westbound				Williamsburg Ave Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	2	**149**	1	**152**	**1**	0	0	**1**	0	96	7	103	21	**2**	5	28	**284**
05:00 PM	4	129	2	135	0	0	0	0	0	90	8	98	**24**	0	**12**	**36**	269
05:15 PM	**5**	135	**3**	143	1	0	0	1	0	99	13	112	14	0	8	22	278
05:30 PM	5	121	2	128	0	0	0	0	**1**	**113**	**15**	**129**	17	0	3	20	277
Total Volume	16	534	8	558	2	0	0	2	1	398	43	442	76	2	28	106	1108
% App. Total	2.9	95.7	1.4		100	0	0		0.2	90	9.7		71.7	1.9	26.4		
PHF	.800	.896	.667	.918	.500	.000	.000	.500	.250	.881	.717	.857	.792	.250	.583	.736	.975

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Groups Printed- Pedestrians

	Williamsburg Ave Southbound					Orleans St Westbound					Williamsburg Ave Northbound					Orleans St Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	2
04:15 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	0	0	3	3	0	0	0	0	0	0	0	0	1	1	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	2	2	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	5
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	3	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	6
Grand Total	0	0	0	4	4	0	0	0	6	6	0	0	0	0	0	0	0	0	1	1	11
Apprch %	0	0	0	100		0	0	0	100		0	0	0	0		0	0	0	100		
Total %	0	0	0	36.4	36.4	0	0	0	54.5	54.5	0	0	0	0	0	0	0	0	9.1	9.1	

	Williamsburg Ave Southbound				Orleans St Westbound				Williamsburg Ave Northbound				Orleans St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

APPENDIX B

Rocketts Landing Development

Table 1: Rockett's Landing Remaining Development

LAND USE[1,2]	ITE CODE	AMOUNT	UNITS	WEEKDAY ADT	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
Block 17										
Multi-Family Housing (Mid-Rise)	221	127	D.U.	690	11	32	43	34	22	56
Office	710	6,390	S.F.	74	28	4	32	1	7	8
Block 17 Total Trips				***764***	***39***	***36***	***75***	***35***	***29***	***64***
Block 18										
Multi-Family Housing (Mid-Rise)	221	156	D.U.	848	14	39	53	41	27	68
Office	710	11,250	S.F.	127	32	5	37	2	12	14
Block 18 Total Trips				***975***	***46***	***44***	***90***	***43***	***39***	***82***
Block 19										
Multi-Family Housing (Low-Rise)	220	28	D.U.	171	3	11	14	12	7	19
Office	710	35,124	S.F.	385	52	8	60	7	35	42
Block 19 Total Trips				***556***	***55***	***19***	***74***	***19***	***42***	***61***
Block 20										
Multi-Family Housing (Low-Rise)	220	11	D.U.	42	1	5	6	5	3	8
Multi-Family Housing (Mid-Rise)	221	64	D.U.	347	6	16	22	18	11	29
Office	710	10,150	S.F.	115	31	5	36	2	11	13
Block 20 Total Trips				***504***	***38***	***26***	***64***	***25***	***25***	***50***
Block 21										
Office	710	20,315	S.F.	226	40	6	46	4	21	25
Block 21 Total Trips				***226***	***40***	***6***	***46***	***4***	***21***	***25***
Block 22										
Multi-Family Housing (Low-Rise)	220	52	D.U.	352	6	20	26	21	12	33
Block 22 Total Trips				***352***	***6***	***20***	***26***	***21***	***12***	***33***
Block 23										
Office	710	26,035	S.F.	288	44	7	51	5	27	32
Block 23 Total Trips				***288***	***44***	***7***	***51***	***5***	***27***	***32***
Total Rocketts Landing Remaining Trips										
Office	*710*	*109,264*	*S.F.*	*1,215*	*227*	*35*	*262*	*21*	*113*	*134*
Apartments (Low-Rise)	*220*	*91*	*D.U.*	*565*	*10*	*36*	*46*	*38*	*22*	*60*
Apartments (Mid-Rise)	*221*	*347*	*D.U.*	*1,885*	*31*	*87*	*118*	*93*	*60*	*153*
Total Trips				***3,665***	***268***	***158***	***426***	***152***	***195***	***347***

Source: ITE Trip Generation, 10th Edition.

1. Multi-family housing (low-rise) includes townhomes and condo/apartment units with 1 or 2 floors.
2. Multi-family housing (mid-rise) includes apartment units with 3 to 10 floors.

APPENDIX C

Fulton Yard – Property C Development

Table 1: Fulton Yard Trip Generation - Property C

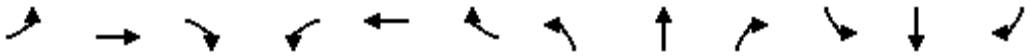
LAND USE(1)	ITE CODE	AMOUNT	UNITS	WEEKDAY						
				ADT	AM PEAK HOUR			PM PEAK HOUR		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Property C(2)										
Building C2										
Office	710	65,300	S.F.	702	76	12	88	12	64	76
Building C2 Subtotal				702	76	12	88	12	64	76
Building C3										
Retail	820	15,000	S.F.	566	9	5	14	27	30	57
Apartments (Mid-Rise)	221	64	D.U.	443	7	24	31	25	15	40
Building C3 Subtotal				1,009	16	29	45	52	45	97
Building C4										
Apartments (Mid-Rise)	221	64	D.U.	347	6	16	22	18	11	29
Building C4 Subtotal				347	6	16	22	18	11	29
Building C5										
Apartments (Mid-Rise)	221	40	D.U.	216	4	10	14	11	7	18
Building C5 Subtotal				216	4	10	14	11	7	18
Building C6										
Apartments (Mid-Rise)	221	64	D.U.	347	6	16	22	18	11	29
Building C6 Subtotal				347	6	16	22	18	11	29
Building C7										
Apartments (Mid-Rise)	221	36	D.U.	194	3	10	13	10	7	17
Building C7 Subtotal				194	3	10	13	10	7	17
Building C8										
Apartments (Mid-Rise)	221	76	D.U.	412	7	19	26	21	13	34
Building C8 Subtotal				412	7	19	26	21	13	34
Property C Summary										
Office	*710*	*65,300*	*S.F.*	*702*	*76*	*12*	*88*	*12*	*64*	*76*
Retail	*820*	*15,000*	*S.F.*	*566*	*9*	*5*	*14*	*27*	*30*	*57*
Apartments (Mid-Rise)	*221*	*344*	*D.U.*	*1,959*	*33*	*95*	*128*	*103*	*64*	*167*
Total Trips				***3,227***	***118***	***112***	***230***	***142***	***158***	***300***

Source: ITE Trip Generation, 10th Edition.

1. All development program numbers were obtained from the January 4, 2019 Scoping Study prepared by 3north.
2. Building C1 (Canoe and Bike Shed) is considered an amenity and will not generate additional trips.

APPENDIX D

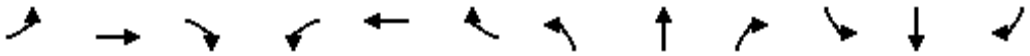
2019 Existing Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	10	0	10	4	26	3	923	40	72	256	8
Future Volume (vph)	33	10	0	10	4	26	3	923	40	72	256	8
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		1.00			0.91		1.00	0.99		1.00	1.00	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1641			1516		1626	1703		1630	1707	
Flt Permitted		0.78			0.94		0.48	1.00		0.08	1.00	
Satd. Flow (perm)		1320			1436		826	1703		143	1707	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92
Adj. Flow (vph)	39	12	0	12	5	31	4	1003	47	85	301	9
RTOR Reduction (vph)	0	0	0	0	26	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	51	0	0	22	0	4	1048	0	85	309	0
Confl. Peds. (#/hr)	3		1	1		3	3		1	1		3
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.4			17.4		66.2	66.2		67.2	67.2	
Effective Green, g (s)		17.4			17.4		66.2	66.2		67.2	67.2	
Actuated g/C Ratio		0.16			0.16		0.60	0.60		0.61	0.61	
Clearance Time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Grp Cap (vph)		208			227		564	1024		225	1042	
v/s Ratio Prot							0.00	c0.62		c0.03	0.18	
v/s Ratio Perm		c0.04			0.02		0.00			0.20		
v/c Ratio		0.25			0.10		0.01	1.02		0.38	0.30	
Uniform Delay, d1		40.5			39.6		9.1	21.9		37.9	10.2	
Progression Factor		0.95			1.00		1.00	1.00		0.63	0.88	
Incremental Delay, d2		2.8			0.8		0.0	34.3		4.6	0.7	
Delay (s)		41.2			40.2		9.1	56.2		28.5	9.7	
Level of Service		D			D		A	E		C	A	
Approach Delay (s)		41.2			40.2			56.0			13.7	
Approach LOS		D			D			E			B	

Intersection Summary			
HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.2
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	0	62	0	0	13	29	697	1	0	214	19
Future Volume (Veh/h)	42	0	62	0	0	13	29	697	1	0	214	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	0	67	0	0	14	32	758	1	0	233	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1070	
pX, platoon unblocked												
vC, conflicting volume	700	1066	127	1006	1076	380	254			759		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	700	1066	127	1006	1076	380	254			759		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	85	100	93	100	100	98	98			100		
cM capacity (veh/h)	312	215	900	177	212	618	1308			848		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	113	14	32	505	254	116	138
Volume Left	46	0	32	0	0	0	0
Volume Right	67	14	0	0	1	0	21
cSH	510	618	1308	1700	1700	848	1700
Volume to Capacity	0.22	0.02	0.02	0.30	0.15	0.00	0.08
Queue Length 95th (ft)	21	2	2	0	0	0	0
Control Delay (s)	14.1	11.0	7.8	0.0	0.0	0.0	0.0
Lane LOS	B	B	A				
Approach Delay (s)	14.1	11.0	0.3			0.0	
Approach LOS	B	B					

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	43.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection: 1: Old Osborne Turnpike/Main Street & Orleans Street

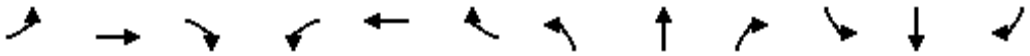
Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	95	70	70	495	123	195
Average Queue (ft)	30	24	3	432	42	80
95th Queue (ft)	73	57	34	551	93	157
Link Distance (ft)	418	1042		445		644
Upstream Blk Time (%)				31		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)			150		145	
Storage Blk Time (%)				37	0	1
Queuing Penalty (veh)				1	0	1

Intersection: 2: Williamsburg Avenue & Orleans Street

Movement	EB	WB	NB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	85	33	28
Average Queue (ft)	30	10	4
95th Queue (ft)	65	31	18
Link Distance (ft)	1042	74	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

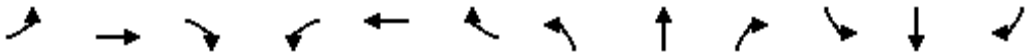
Zone wide Queuing Penalty: 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	16	3	21	7	37	3	441	23	70	762	5
Future Volume (vph)	49	16	3	21	7	37	3	441	23	70	762	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.92		1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1636			1529		1628	1704		1630	1713	
Flt Permitted		0.76			0.89		0.29	1.00		0.30	1.00	
Satd. Flow (perm)		1286			1384		494	1704		507	1713	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.96	0.88	0.95	0.85
Adj. Flow (vph)	58	19	4	25	8	44	4	519	24	80	802	6
RTOR Reduction (vph)	0	2	0	0	37	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	79	0	0	40	0	4	541	0	80	808	0
Confl. Peds. (#/hr)	2		4	4		2	6					6
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.4			17.4		64.2	64.2		67.2	67.2	
Effective Green, g (s)		17.4			17.4		64.2	64.2		67.2	67.2	
Actuated g/C Ratio		0.16			0.16		0.58	0.58		0.61	0.61	
Clearance Time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Grp Cap (vph)		203			218		383	994		434	1046	
v/s Ratio Prot							0.00	c0.32		0.02	c0.47	
v/s Ratio Perm		c0.06			0.03		0.01			0.09		
v/c Ratio		0.39			0.18		0.01	0.54		0.18	0.77	
Uniform Delay, d1		41.5			40.1		14.8	14.0		10.7	15.8	
Progression Factor		0.99			1.00		1.00	1.00		0.04	0.04	
Incremental Delay, d2		5.0			1.8		0.0	2.1		0.4	2.2	
Delay (s)		46.2			42.0		14.8	16.1		0.8	2.9	
Level of Service		D			D		B	B		A	A	
Approach Delay (s)		46.2			42.0			16.1			2.7	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.2
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	3	81	0	0	2	33	358	0	3	537	14
Future Volume (Veh/h)	35	3	81	0	0	2	33	358	0	3	537	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	3	88	0	0	2	36	389	0	3	584	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1059	
pX, platoon unblocked												
vC, conflicting volume	866	1058	300	848	1066	194	599			389		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	866	1058	300	848	1066	194	599			389		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	99	87	100	100	100	96			100		
cM capacity (veh/h)	239	214	697	213	212	814	974			1166		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	129	2	36	259	130	295	307
Volume Left	38	0	36	0	0	3	0
Volume Right	88	2	0	0	0	0	15
cSH	431	814	974	1700	1700	1166	1700
Volume to Capacity	0.30	0.00	0.04	0.15	0.08	0.00	0.18
Queue Length 95th (ft)	31	0	3	0	0	0	0
Control Delay (s)	16.9	9.4	8.8	0.0	0.0	0.1	0.0
Lane LOS	C	A	A			A	
Approach Delay (s)	16.9	9.4	0.7			0.1	
Approach LOS	C	A					

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	50.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection: 1: Old Osborne Turnpike/Main Street & Orleans Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	116	110	59	317	78	135
Average Queue (ft)	49	41	3	147	29	48
95th Queue (ft)	98	87	30	261	63	106
Link Distance (ft)	418	1042		523		644
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150		145	
Storage Blk Time (%)				7		0
Queuing Penalty (veh)				0		0

Intersection: 2: Williamsburg Avenue & Orleans Street

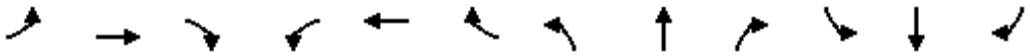
Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	LT	TR
Maximum Queue (ft)	109	21	31	15	4
Average Queue (ft)	38	1	9	1	0
95th Queue (ft)	78	9	26	9	3
Link Distance (ft)	1042	69			
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			93		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 0

APPENDIX E

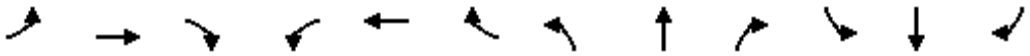
2024 Total Background Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	11	1	11	4	29	3	1219	44	79	579	9
Future Volume (vph)	36	11	1	11	4	29	3	1219	44	79	579	9
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		1.00			0.91		1.00	0.99		1.00	1.00	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1638			1513		1630	1705		1630	1711	
Flt Permitted		0.78			0.93		0.23	1.00		0.07	1.00	
Satd. Flow (perm)		1330			1426		394	1705		115	1711	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92
Adj. Flow (vph)	42	13	1	13	5	34	4	1325	52	93	681	10
RTOR Reduction (vph)	0	1	0	0	29	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	55	0	0	23	0	4	1376	0	93	691	0
Confl. Peds. (#/hr)	3		1	1		3	3		1	1		3
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.0			16.0		68.8	68.8		68.8	68.8	
Effective Green, g (s)		16.0			16.0		68.8	68.8		68.8	68.8	
Actuated g/C Ratio		0.15			0.15		0.63	0.63		0.63	0.63	
Clearance Time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Grp Cap (vph)		193			207		347	1066		195	1070	
v/s Ratio Prot							0.00	c0.81		0.04	c0.40	
v/s Ratio Perm		c0.04			0.02		0.01			0.26		
v/c Ratio		0.29			0.11		0.01	1.29		0.48	0.65	
Uniform Delay, d1		41.9			40.8		10.7	20.6		43.9	12.9	
Progression Factor		0.95			0.97		1.00	1.00		0.81	0.86	
Incremental Delay, d2		3.7			1.1		0.1	137.9		8.1	3.0	
Delay (s)		43.6			40.8		10.8	158.5		43.8	14.2	
Level of Service		D			D		B	F		D	B	
Approach Delay (s)		43.6			40.8			158.1			17.7	
Approach LOS		D			D			F			B	

Intersection Summary			
HCM 2000 Control Delay	104.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.2
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	0	68	0	0	14	32	770	1	0	236	21
Future Volume (Veh/h)	46	0	68	0	0	14	32	770	1	0	236	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	50	0	74	0	0	15	35	837	1	0	257	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1070	
pX, platoon unblocked												
vC, conflicting volume	772	1176	140	1110	1188	419	280			838		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	772	1176	140	1110	1188	419	280			838		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	100	92	100	100	97	97			100		
cM capacity (veh/h)	276	185	882	147	182	583	1280			792		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	124	15	35	558	280	128	152
Volume Left	50	0	35	0	0	0	0
Volume Right	74	15	0	0	1	0	23
cSH	468	583	1280	1700	1700	792	1700
Volume to Capacity	0.27	0.03	0.03	0.33	0.16	0.00	0.09
Queue Length 95th (ft)	26	2	2	0	0	0	0
Control Delay (s)	15.4	11.3	7.9	0.0	0.0	0.0	0.0
Lane LOS	C	B	A				
Approach Delay (s)	15.4	11.3	0.3			0.0	
Approach LOS	C	B					

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	46.7%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection: 1: Old Osborne Turnpike/Main Street & Orleans Street

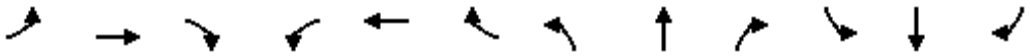
Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	104	87	71	492	170	346
Average Queue (ft)	36	27	4	464	66	192
95th Queue (ft)	81	65	38	480	152	324
Link Distance (ft)	418	1042		445		644
Upstream Blk Time (%)				46		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)			150		145	
Storage Blk Time (%)				39	0	13
Queuing Penalty (veh)				1	1	10

Intersection: 2: Williamsburg Avenue & Orleans Street

Movement	EB	WB	NB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	97	33	33
Average Queue (ft)	34	11	6
95th Queue (ft)	74	32	24
Link Distance (ft)	1042	74	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

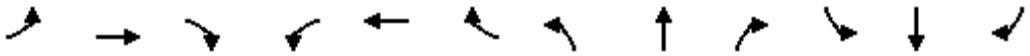
Zone wide Queuing Penalty: 12



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	18	3	23	8	41	1	752	25	78	1037	16
Future Volume (vph)	54	18	3	23	8	41	1	752	25	78	1037	16
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1637			1529		1630	1708		1630	1710	
Flt Permitted		0.72			0.90		0.07	1.00		0.09	1.00	
Satd. Flow (perm)		1221			1402		116	1708		158	1710	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.96	0.88	0.95	0.85
Adj. Flow (vph)	64	21	4	27	9	48	1	885	26	89	1092	19
RTOR Reduction (vph)	0	2	0	0	41	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	87	0	0	43	0	1	910	0	89	1110	0
Confl. Peds. (#/hr)	2		4	4		2	6					6
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.2			16.2		68.4	68.4		68.5	68.5	
Effective Green, g (s)		16.2			16.2		68.4	68.4		68.5	68.5	
Actuated g/C Ratio		0.15			0.15		0.62	0.62		0.62	0.62	
Clearance Time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Grp Cap (vph)		179			206		197	1062		221	1064	
v/s Ratio Prot							0.00	c0.53		0.03	c0.65	
v/s Ratio Perm		c0.07			0.03		0.00			0.22		
v/c Ratio		0.49			0.21		0.01	0.86		0.40	1.04	
Uniform Delay, d1		43.1			41.3		35.0	16.8		18.1	20.8	
Progression Factor		0.99			1.00		1.00	1.00		1.37	0.30	
Incremental Delay, d2		8.0			2.3		0.0	8.9		3.7	35.1	
Delay (s)		50.6			43.6		35.1	25.7		28.6	41.3	
Level of Service		D			D		D	C		C	D	
Approach Delay (s)		50.6			43.6			25.8			40.3	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.2
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	3	89	0	0	2	36	395	0	3	593	15
Future Volume (Veh/h)	39	3	89	0	0	2	36	395	0	3	593	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	3	97	0	0	2	39	429	0	3	645	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1059	
pX, platoon unblocked												
vC, conflicting volume	954	1166	330	934	1174	214	661			429		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	954	1166	330	934	1174	214	661			429		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	80	98	85	100	100	100	96			100		
cM capacity (veh/h)	206	184	665	180	182	790	923			1127		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	142	2	39	286	143	326	338
Volume Left	42	0	39	0	0	3	0
Volume Right	97	2	0	0	0	0	16
cSH	388	790	923	1700	1700	1127	1700
Volume to Capacity	0.37	0.00	0.04	0.17	0.08	0.00	0.20
Queue Length 95th (ft)	41	0	3	0	0	0	0
Control Delay (s)	19.6	9.6	9.1	0.0	0.0	0.1	0.0
Lane LOS	C	A	A			A	
Approach Delay (s)	19.6	9.6	0.8			0.1	
Approach LOS	C	A					

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	54.3%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection: 1: Old Osborne Turnpike/Main Street & Orleans Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	124	123	31	535	170	509
Average Queue (ft)	49	48	1	265	67	421
95th Queue (ft)	98	97	20	439	154	532
Link Distance (ft)	418	1042		523		644
Upstream Blk Time (%)				1		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)			150		145	
Storage Blk Time (%)				19	0	36
Queuing Penalty (veh)				0	0	28

Intersection: 2: Williamsburg Avenue & Orleans Street

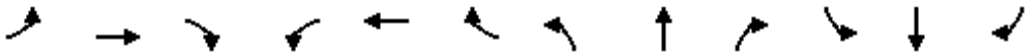
Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	LT	TR
Maximum Queue (ft)	108	20	41	23	7
Average Queue (ft)	42	1	11	1	0
95th Queue (ft)	81	10	30	12	6
Link Distance (ft)	1042	69			
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			93		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 28

APPENDIX F

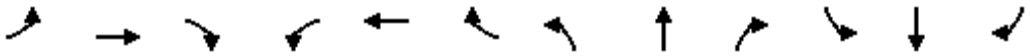
2024 Total Future Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	11	1	25	4	58	3	1223	50	90	580	9
Future Volume (vph)	36	11	1	25	4	58	3	1223	50	90	580	9
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		1.00			0.91		1.00	0.99		1.00	1.00	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1640			1507		1630	1703		1630	1711	
Flt Permitted		0.72			0.90		0.23	1.00		0.07	1.00	
Satd. Flow (perm)		1222			1381		393	1703		115	1711	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92
Adj. Flow (vph)	42	13	1	29	5	68	4	1329	59	106	682	10
RTOR Reduction (vph)	0	1	0	0	58	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	55	0	0	44	0	4	1387	0	106	692	0
Confl. Peds. (#/hr)	3		1	1		3	3		1	1		3
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.0			16.0		68.8	68.8		68.8	68.8	
Effective Green, g (s)		16.0			16.0		68.8	68.8		68.8	68.8	
Actuated g/C Ratio		0.15			0.15		0.63	0.63		0.63	0.63	
Clearance Time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Grp Cap (vph)		177			200		347	1065		195	1070	
v/s Ratio Prot							0.00	c0.81		0.04	c0.40	
v/s Ratio Perm		c0.05			0.03		0.01			0.29		
v/c Ratio		0.31			0.22		0.01	1.30		0.54	0.65	
Uniform Delay, d1		42.1			41.5		10.8	20.6		44.1	13.0	
Progression Factor		0.95			0.98		1.00	1.00		0.82	0.87	
Incremental Delay, d2		4.5			2.5		0.1	142.8		10.4	3.0	
Delay (s)		44.7			43.0		10.8	163.4		46.5	14.2	
Level of Service		D			D		B	F		D	B	
Approach Delay (s)		44.7			43.0			162.9			18.5	
Approach LOS		D			D			F			B	

Intersection Summary			
HCM 2000 Control Delay	105.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.2
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	0	68	0	0	14	32	770	1	0	236	33
Future Volume (Veh/h)	75	0	68	0	0	14	32	770	1	0	236	33
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	0	74	0	0	15	35	837	1	0	257	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1070	
pX, platoon unblocked												
vC, conflicting volume	778	1183	146	1110	1200	419	293			838		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	778	1183	146	1110	1200	419	293			838		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	70	100	92	100	100	97	97			100		
cM capacity (veh/h)	273	183	874	147	179	583	1265			792		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	156	15	35	558	280	128	164
Volume Left	82	0	35	0	0	0	0
Volume Right	74	15	0	0	1	0	36
cSH	405	583	1265	1700	1700	792	1700
Volume to Capacity	0.39	0.03	0.03	0.33	0.16	0.00	0.10
Queue Length 95th (ft)	44	2	2	0	0	0	0
Control Delay (s)	19.4	11.3	7.9	0.0	0.0	0.0	0.0
Lane LOS	C	B	A				
Approach Delay (s)	19.4	11.3	0.3			0.0	
Approach LOS	C	B					

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	48.2%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection: 1: Old Osborne Turnpike/Main Street & Orleans Street

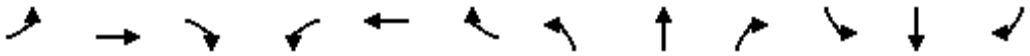
Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	101	120	84	501	170	356
Average Queue (ft)	38	52	3	464	73	199
95th Queue (ft)	82	99	38	482	157	344
Link Distance (ft)	418	1042		445		644
Upstream Blk Time (%)				46		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)			150		145	
Storage Blk Time (%)				39	0	13
Queuing Penalty (veh)				1	1	12

Intersection: 2: Williamsburg Avenue & Orleans Street

Movement	EB	WB	NB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	124	35	36
Average Queue (ft)	47	10	7
95th Queue (ft)	97	32	26
Link Distance (ft)	1042	74	
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			95
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

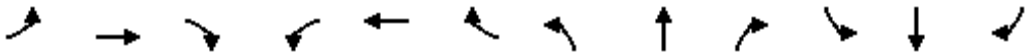
Zone wide Queuing Penalty: 14



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	18	3	35	8	66	1	754	42	112	1042	16
Future Volume (vph)	54	18	3	35	8	66	1	754	42	112	1042	16
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.92		1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1638			1519		1630	1704		1630	1710	
Flt Permitted		0.62			0.89		0.07	1.00		0.08	1.00	
Satd. Flow (perm)		1050			1370		116	1704		137	1710	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.96	0.88	0.95	0.85
Adj. Flow (vph)	64	21	4	41	9	78	1	887	44	127	1097	19
RTOR Reduction (vph)	0	2	0	0	51	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	87	0	0	77	0	1	929	0	127	1115	0
Confl. Peds. (#/hr)	2		4	4		2	6					6
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.2			16.2		68.4	68.4		68.5	68.5	
Effective Green, g (s)		16.2			16.2		68.4	68.4		68.5	68.5	
Actuated g/C Ratio		0.15			0.15		0.62	0.62		0.62	0.62	
Clearance Time (s)		4.6			4.6		5.8	5.8		5.8	5.8	
Lane Grp Cap (vph)		154			201		197	1059		210	1064	
v/s Ratio Prot							0.00	c0.55		0.05	c0.65	
v/s Ratio Perm		c0.08			0.06		0.00			0.33		
v/c Ratio		0.57			0.38		0.01	0.88		0.60	1.05	
Uniform Delay, d1		43.6			42.4		35.7	17.3		20.2	20.8	
Progression Factor		1.00			1.00		1.00	1.00		1.66	0.32	
Incremental Delay, d2		12.3			5.4		0.0	10.3		8.9	37.1	
Delay (s)		56.0			47.8		35.7	27.6		42.5	43.8	
Level of Service		E			D		D	C		D	D	
Approach Delay (s)		56.0			47.8			27.6			43.7	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.2
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	3	89	0	0	2	36	395	0	3	593	49
Future Volume (Veh/h)	63	3	89	0	0	2	36	395	0	3	593	49
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	68	3	97	0	0	2	39	429	0	3	645	53
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1059	
pX, platoon unblocked												
vC, conflicting volume	972	1184	349	934	1211	214	698			429		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	972	1184	349	934	1211	214	698			429		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	66	98	85	100	100	100	96			100		
cM capacity (veh/h)	199	179	647	179	173	790	894			1127		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	168	2	39	286	143	326	376
Volume Left	68	0	39	0	0	3	0
Volume Right	97	2	0	0	0	0	53
cSH	331	790	894	1700	1700	1127	1700
Volume to Capacity	0.51	0.00	0.04	0.17	0.08	0.00	0.22
Queue Length 95th (ft)	68	0	3	0	0	0	0
Control Delay (s)	26.6	9.6	9.2	0.0	0.0	0.1	0.0
Lane LOS	D	A	A			A	
Approach Delay (s)	26.6	9.6	0.8			0.0	
Approach LOS	D	A					

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	55.7%	ICU Level of Service		B
Analysis Period (min)	15			

Intersection: 1: Old Osborne Turnpike/Main Street & Orleans Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	131	156	14	538	170	507
Average Queue (ft)	52	66	1	276	98	425
95th Queue (ft)	106	126	7	479	192	517
Link Distance (ft)	418	1042		523		644
Upstream Blk Time (%)				2		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)			150		145	
Storage Blk Time (%)				19	1	35
Queuing Penalty (veh)				0	11	39

Intersection: 2: Williamsburg Avenue & Orleans Street

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	LT	TR
Maximum Queue (ft)	147	18	48	24	6
Average Queue (ft)	53	2	12	1	0
95th Queue (ft)	108	11	34	13	3
Link Distance (ft)	1042	69			
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			93		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 50