

March 24, 2023

Mr. Gregory Guertin, Senior Planner
City of Cranston
869 Park Avenue
Cranston, RI 02910

Re: **Traffic Engineering Review Services**
 Knights Corner Development
 1381 Cranston Street
 Cranston, Rhode Island
 Pare Project No.: 23045.00

Dear Mr. Guertin:

Pare Corporation (Pare) has completed our review of materials associated with the proposed redevelopment of the former Cranston Print Works facility at 1381 Cranston Street in Cranston, RI. The information provided that was included as part of our review are:

- Traffic Impact and Access Study, Proposed Mixed-Use Development, Prepared by Vanasse & Associates, Inc., dated February 2023
- Plans associated with the proposed Knights Corner Development, located at 1390 Cranston Street, including:
 - Architectural Plans (labeled conceptual), prepared by South County Architecture & Design, Inc., dated January 31, 2023
 - Cover Sheet
 - Drawing No. C1.02 – Proposed Site Plan
 - Drawing No. A1.10 – Ground Floor
 - Drawing No. A1.11 – Second Floor
 - Drawing No. A10.01 – Perspectives
 - Drawing No. A10.02 – Rendering
 - Existing Survey Plan, Prepared by National Land Surveyors-Developers, Inc., revised October 25, 2017
 - Concept Plan 02 (labeled draft), Prepared by DiPrete Engineering, dated January 11, 2023

Based on our review, we offer the following comments:

Traffic Impact and Access Study:

1. Introduction Section: Appears accurately described.
2. Existing Conditions Section: It should be noted that the City recently painted white edge lines on Cranston Street and Dyer Avenue in the vicinity of the project to create approximately 12-foot travel lanes and paved shoulders that are intended to make the area more attractive for alternate modes of travel, such as bicycling.

3. Future Conditions Section:

- a. General Background Growth – Between 2010 and 2020, Cranston’s population grew at an average rate of 0.3 percent per year. The 1% per year background growth factor appears appropriate.
 - b. Specific Development by Others – The study indicates that estimates for the Knights Corner Development were developed and included in the future conditions analysis. What land uses were used to generate these projections? How were these trips distributed? Please provide backup information.
 - c. Previous Site Trip Generation – While it is noted that industrial use could occupy the site in the future, this is not currently proposed. As such, we believe it is inappropriate to add these trips to the no-build conditions.
 - d. Proposed Site Trips – The land uses referenced to generate the anticipated site-generated trips appears to be appropriate.
 - e. Previous To Proposed Use Comparison – While it is noted that the Cranston Print Works facility once had a significant workforce on-site, this ended more than a decade ago. We suggest basing previous site trip generation values on uses and employment levels present on-site only within the last five years.
 - f. Trip Distribution and Assignment – The directional distribution of the anticipated site-generated trips appears to be reasonable.
 - g. Table 9 – Based on comments 3.c. and 3.e. above, the values in this table will likely change.
4. Parking Generation Section: The parking demand analysis appears to be appropriate.
5. Sight Distance Evaluation Section:
- a. Why was no speed study conducted on Dyer Avenue? We recommend that at least spot speed studies be conducted in the vicinity of the proposed site access points on Dyer Avenue to base the sight distance analysis on actual operating speeds.
 - b. The duplexes on Dyer Avenue near the site access points are located directly at the back of the sidewalk, less than 10 feet from the curb line. Do these structures limit intersection sight distance?
6. Traffic Operations Analysis Section:
- a. The traffic capacity analyses appears to have been conducted using industry standards.
 - b. Based on comments 3.c. and 3.e. above, we anticipate the future condition analyses will need to be re-run and the analysis results presented in a revised table.
 - c. We note that under building conditions, the Cranston Street eastbound approach at Dyer Avenue is over capacity. The existing conditions analyses indicate that this is not the current condition. The applicant’s engineer should address this.
7. General: There is no discussion regarding how pedestrians and bicyclists associated with the development will be accommodated. The applicant’s engineer should address this.



Mr. Gregory Guertin

(3)

March 24, 2023

We hope that this review is helpful in the Planning Commission's review of the proposed development application. If you have any questions, feel free to reach out to me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Derek L. Hug', with a stylized flourish at the end.

Derek L. Hug, P.E., PTOE
Managing Engineer

DLH/kl

Z:\JOBS\23 Jobs\23045.00 Cranston-PrintWorks\TIASreview-RI\REPORTS\23045.00 TIAS Peer Review.docx

Ref: 9575

March 30, 2023

Mr. Gregory Guertin, Senior Planner
City of Cranston
869 Park Avenue
Cranston, RI 02910

Re: Traffic Peer Review Response to Comments
Cranston PrintWorks Redevelopment
Cranston, Rhode Island

Dear Mr. Guertin:

Vanasse & Associates, Inc. (VAI) hereby submits the following responses to comments provided by Pare Corporation in their traffic peer review of the redevelopment of the former Cranston PrintWorks facility at 1381 Cranston Street in Cranston, Rhode Island. For ease of review, we have provided the initial comment followed by our responses as appropriate.

PARE Corporation, March 24, 2023

Comment: *1. Introduction Section: Appears accurately described.*

Response: No response required.

Comment: *2. Existing Conditions Section: It should be noted that the City recently painted white edge lines on Cranston Street and Dyer Avenue in the vicinity of the project to create approximately 12-foot travel lanes and paved shoulders that are intended to make the area more attractive for alternate modes of travel, such as bicycling.*

Response: Comment acknowledged.

Comment: *3. Future Conditions Section:*

a. General Background Growth – Between 2010 and 2020, Cranston's population grew at an average rate of 0.3 percent per year. The 1% per year background growth factor appears appropriate.

Response: No response required.

Comment: *b. Specific Development by Others – The study indicates that estimates for the Knights Corner Development were developed and included in the future conditions analysis. What land uses were used to generate these projections? How were these trips distributed? Please provide backup information.*

Response: Trips were calculated using Institute of Transportation Engineers (ITE) data from the 11th Edition of the *Trip Generation* manual for the proposed uses. Trip generation was based on

Land Use Code (LUC) 221, *Multifamily Housing (Mid-Rise)* for 156 units and LUC 932, *High-Turnover (Sit-Down) Restaurant* for 2,000 square feet (sf). The component sizes were provided by the project attorney. The ITE calculation worksheets along with the trip assignment traffic flow diagrams are provided in the Appendix to this letter.

Comment: *c. Previous Site Trip Generation – While it is noted that industrial use could occupy the site in the future, this is not currently proposed. As such, we believe it is inappropriate to add these trips to the no-build conditions.*

Response: The reoccupying trips have been removed from the No-Build condition.

Comment: *d. Proposed Site Trips – The land uses referenced to generate the anticipated site-generated trips appears to be appropriate.*

Response: No response required.

Comment: *e. Previous To Proposed Use Comparison – While it is noted that the Cranston Print Works facility once had a significant workforce on-site, this ended more than a decade ago. We suggest basing previous site trip generation values on uses and employment levels present on-site only within the last five years.*

Response: Refer back to response for comment 3c.

Comment: *f. Trip Distribution and Assignment – The directional distribution of the anticipated site-generated trips appears to be reasonable.*

Response: No response required.

Comment: *g. Table 9 – Based on comments 3.c. and 3.e. above, the values in this table will likely change.*

Response: As noted above, the analysis has been revised and the updated results are provided in Tables 14R and 15R.



Table 14R
SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/ Peak Hour/Movement	2028 No-Build				2028 Build			
	V/C	Delay	LOS	Queue Avg/95 th	V/C	Delay	LOS	Queue Avg/95 th
<i>Cranston Street at Dyer Avenue</i>								
<i>Weekday Morning:</i>								
Cranston St EB LT/TH/RT	1.20	126.4	F	16/23	1.22	136.0	F	17/24
Cranston St WB LT/TH/RT	0.94	43.7	D	10/17	0.96	47.9	D	10/17
Dyer Ave NB LT/TH/RT	0.79	26.8	C	9/11	0.81	28.1	C	9/11
Dyer Ave SB LT/TH	0.66	20.4	C	8/8	0.70	21.6	C	9/9
Dyer Ave SB RT	0.20	13.6	B	1/2	0.20	13.6	B	1/2
Overall	--	54.5	D	--	--	58.7	E	--
<i>Weekday Evening:</i>								
Cranston St EB LT/TH/RT	1.12	99.9	F	15/19	1.15	112.1	F	12/20
Cranston St WB LT/TH/RT	0.88	32.4	C	10/19	0.90	35.8	D	11/20
Dyer Ave NB LT/TH/RT	0.61	19.0	B	7/11	0.61	19.0	B	7/11
Dyer Ave SB LT/TH	0.49	16.8	B	5/8	0.51	17.2	B	6/9
Dyer Ave SB RT	0.14	13.0	B	1/2	0.14	13.0	B	1/2
Overall	--	40.5	D	--	--	44.4	D	--

^aVolume-to-capacity ratio.

^bControl (signal) delay per vehicle in seconds.

^cLevel of service.

^dQueue length in vehicles.

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.



Table 15R
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Unsignalized Intersection/ Critical Movement/Peak Hour	2028 No-Build				2028 Build			
	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue
Dyer Avenue at Puritan Avenue and North Site Driveway:								
<i>Weekday Morning:</i>								
North Site Driveway EB LT/TH/RT	--	--	--	--	2	35.0	E	0
Puritan Avenue WB LT/TH/RT	22	29.5	D	1	22	34.9	D	1
<i>Weekday Evening:</i>								
North Site Driveway EB LT/TH/RT	--	--	--	--	3	28.3	D	0
Puritan Avenue WB LT/TH/RT	49	28.2	D	2	49	38.1	E	2
Dyer Avenue at Governor Street and South Site Driveway:								
<i>Weekday Morning:</i>								
South Site Driveway EB LT/TH/RT	--	--	--	--	22	27.9	D	1
Governor Street WB LT/TH/RT	13	28.3	D	1	13	38.5	E	1
<i>Weekday Evening:</i>								
South Site Driveway EB LT/TH/RT	--	--	--	--	13	21.8	C	0
Governor Street WB LT/TH/RT	22	18.6	C	1	22	22.5	C	1
Cranston Street at Cranston Print Works Driveway:								
<i>Weekday Morning:</i>								
Cranston Print Works Driveway SB LT/RT	2	25.6	D	1	21	24.1	C	1
<i>Weekday Evening:</i>								
Cranston Print Works Driveway SB LT/RT	0	0.0	A	0	15	22.3	C	1
Cranston Street at Haven Avenue:								
<i>Weekday Morning:</i>								
Cranston Street SB LT/RT	26	14.1	B	1	26	14.2	B	1
<i>Weekday Evening:</i>								
Cranston Street SB LT/RT	38	15.0	C	1	38	15.2	C	1

^aDemand in vehicles per hour.

^bDelay in seconds per vehicle.

^cLevel of service.

^d95th percentile queue length in feet.

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; NEB = northeastbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

Comment: 4. *Parking Generation Section: The parking demand analysis appears to be appropriate.*

Response: No response required.

Comment: 5. *Sight Distance Evaluation Section:*

a. *Why was no speed study conducted on Dyer Avenue? We recommend that at least spot speed studies be conducted in the vicinity of the proposed site access points on Dyer Avenue to base the sight distance analysis on actual operating speeds.*

Response: The sight distances were measured in the field at greater than 500+ feet and the speed limit is posted for 25 miles per hour (mph). According to the AASHTO Green Book this sight distance would be acceptable for speeds over 55 miles per hour (mph) for stopping sight distance (SSD) and greater than 45 mph for intersection sight distance (ISD). It is for this reason that we believe a speed study does not need to be conducted on Dyer Avenue.

Comment: b. *The duplexes on Dyer Avenue near the site access points are located directly at the back of the sidewalk, less than 10 feet from the curb line. Do these structures limit*



intersection sight distance?

Response: The duplexes are existing buildings and did not block the sight distance measurements.

Comment: *6. Traffic Operations Analysis Section:*

a. The traffic capacity analyses appears to have been conducted using industry standards.

Response: No response required.

Comment: *b. Based on comments 3.c. and 3.e. above, we anticipate the future condition analyses will need to be re-run and the analysis results presented in a revised table.*

Response: Refer to the response to comment 3g.

Comment: *c. We note that under building conditions, the Cranston Street eastbound approach at Dyer Avenue is over capacity. The existing conditions analyses indicate that this is not the current condition. The applicant's engineer should address this.*

Response: It should be noted that under existing conditions, the Cranston Street eastbound approach is shown to be at capacity under the 2023 Existing weekday morning condition and at 97 percent of capacity under the 2023 Existing weekday evening condition. Even under the revised condition prepared for this response letter, both of the 2028 No Build conditions are shown to be well over capacity, without the addition of the Project. This indicates an existing issue with the intersection.

However, a review of operations at the intersection indicates the Cranston Street eastbound approach at the Dyer Avenue intersection can benefit from modifications to the traffic signal timing. The results of adjustments to the signal timing are shown in Table 14RR.



Table 14RR
SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/ Peak Hour/Movement	2028 No-Build				2028 Build				2028 Build Mitigated			
	V/C	Delay	LOS	Queue Avg/95 th	V/C	Delay	LOS	Queue Avg/95 th	V/C	Delay	LOS	Queue Avg/95 th
<i>Cranston Street at Dyer Avenue</i>												
<i>Weekday Morning:</i>												
Cranston St EB LT/TH/RT	1.20	126.4	F	16/23	1.22	136.0	F	17/24	1.05	70.5	E	15/22
Cranston St WB LT/TH/RT	0.94	43.7	D	10/17	0.96	47.9	D	10/17	0.83	25.9	C	9/15
Dyer Ave NB LT/TH/RT	0.79	26.8	C	9/11	0.81	28.1	C	9/11	1.06	79.3	E	12/15
Dyer Ave SB LT/TH	0.66	20.4	C	8/8	0.70	21.6	C	9/9	0.81	29.9	C	10/10
Dyer Ave SB RT	0.20	13.6	B	1/2	0.20	13.6	B	1/2	0.23	16.4	B	2/2
Overall	--	54.5	D	--	--	58.7	E	--	--	49.9	D	--
<i>Weekday Evening:</i>												
Cranston St EB LT/TH/RT	1.12	99.9	F	15/19	1.15	112.1	F	12/20	0.93	40.6	D	8/17
Cranston St WB LT/TH/RT	0.88	32.4	C	10/19	0.90	35.8	D	11/20	0.78	20.3	C	9/14
Dyer Ave NB LT/TH/RT	0.61	19.0	B	7/11	0.61	19.0	B	7/11	0.72	24.9	C	9/14
Dyer Ave SB LT/TH	0.49	16.8	B	5/8	0.51	17.2	B	6/9	0.62	22.4	C	7/10
Dyer Ave SB RT	0.14	13.0	B	1/2	0.14	13.0	B	1/2	0.17	15.7	B	1/3
Overall	--	40.5	D	--	--	44.4	D	--	--	26.1	C	--

^aVolume-to-capacity ratio.

^bControl (signal) delay per vehicle in seconds.

^cLevel of service.

^dQueue length in vehicles.

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.



As shown in Table 14RR, modifications to the signal timing can improve delays on the Cranston Street eastbound approach. The City may wish to review the possibilities for retiming or other modifications to the intersection to increase capacity.

Comment: 7. *General: There is no discussion regarding how pedestrians and bicyclists associated with the development will be accommodated. The applicant's engineer should address this.*

Response: The site is an adaptive re-use of a former mill complex with constraints on physical space. However, the Applicant will propose indoor and outdoor bicycle parking spaces for residents. Additional details will be provided on the site plans provided by Allen & Major, Inc.

I trust that these responses address the comments and if additional information is required, please do not hesitate to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.

A handwritten signature in blue ink, appearing to read 'Scott W. Thornton', is positioned above the printed name.

Scott W. Thornton, P.E.
Principal

Technical Appendix

cc: File



APPENDIX

BACKGROUND TRIP GENERATION DATA

BACKGROUND FIGURES

CAPACITY ANALYSIS

BACKGROUND TRIP GENERATION DATA

Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 30

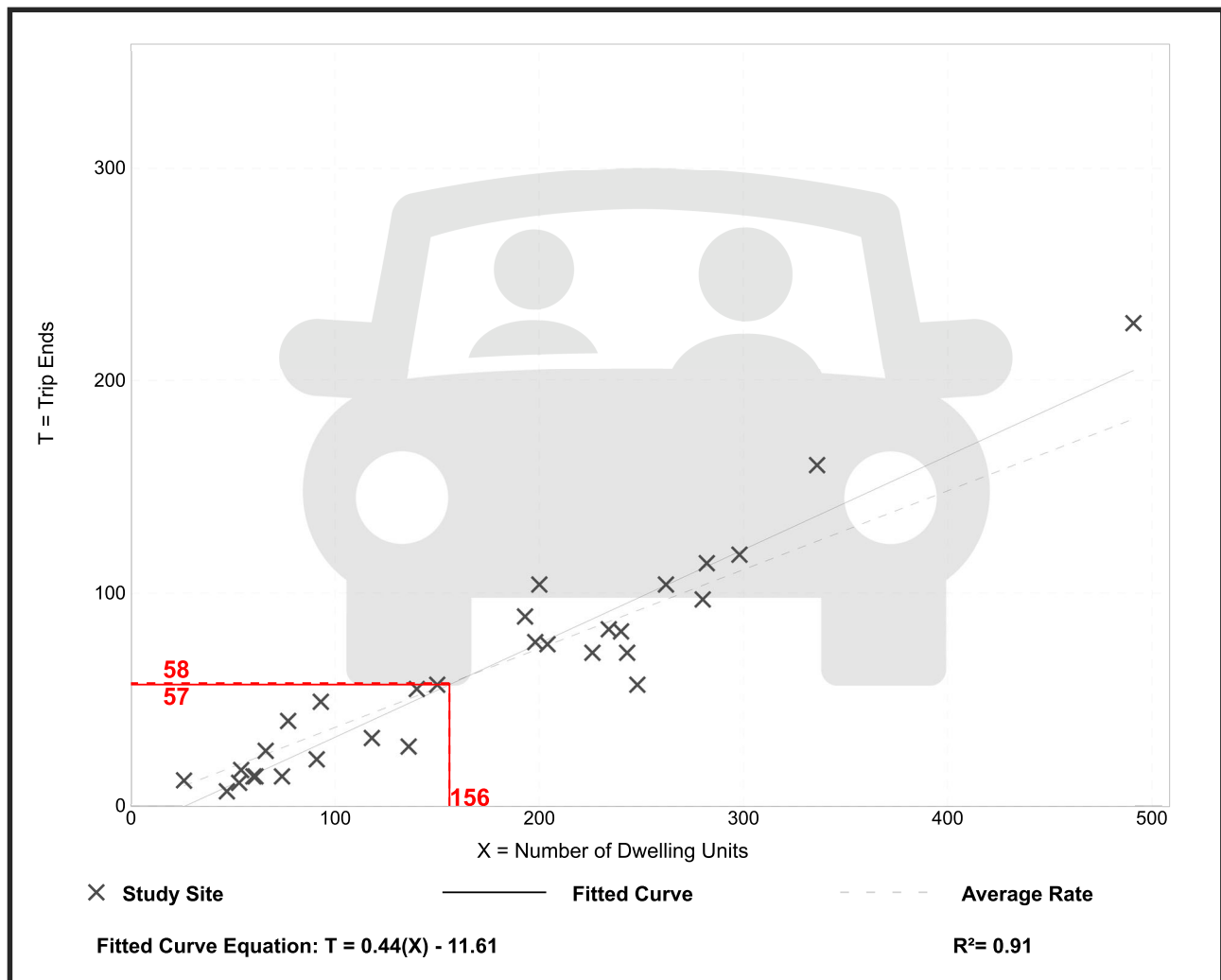
Avg. Num. of Dwelling Units: 173

Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

Data Plot and Equation



Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 31

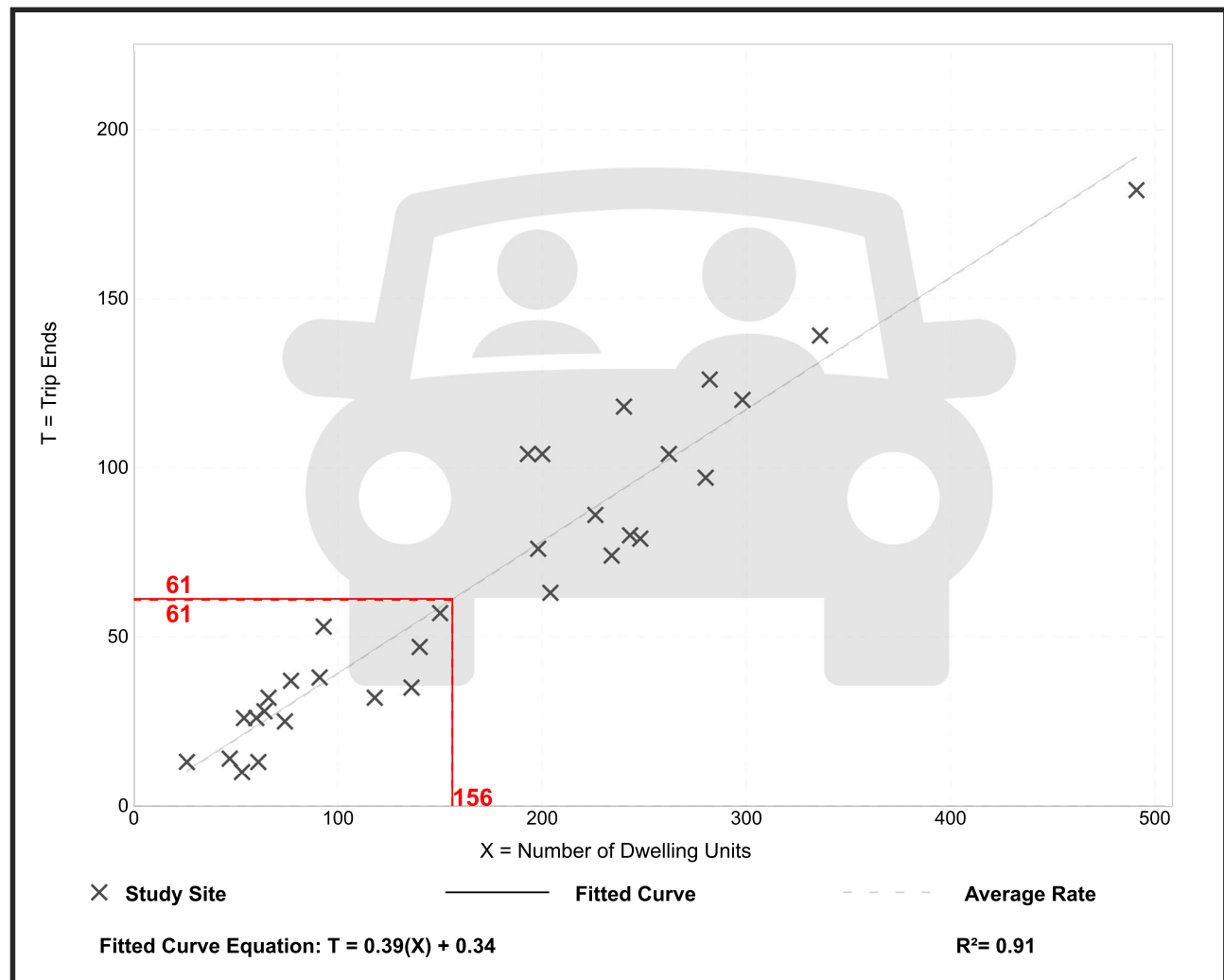
Avg. Num. of Dwelling Units: 169

Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant

(932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 37

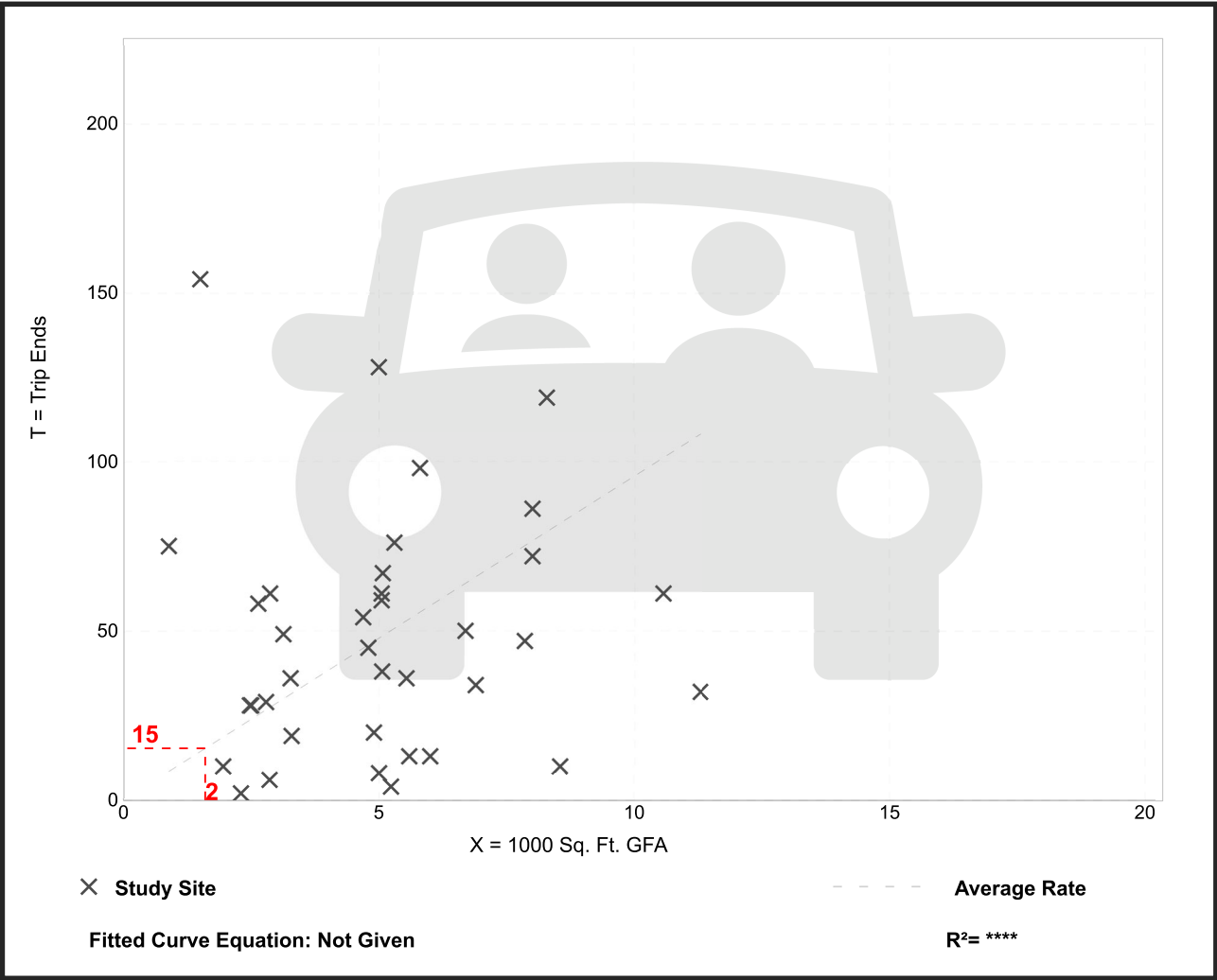
Avg. 1000 Sq. Ft. GFA: 5

Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.57	0.76 - 102.39	11.61

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant

(932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 104

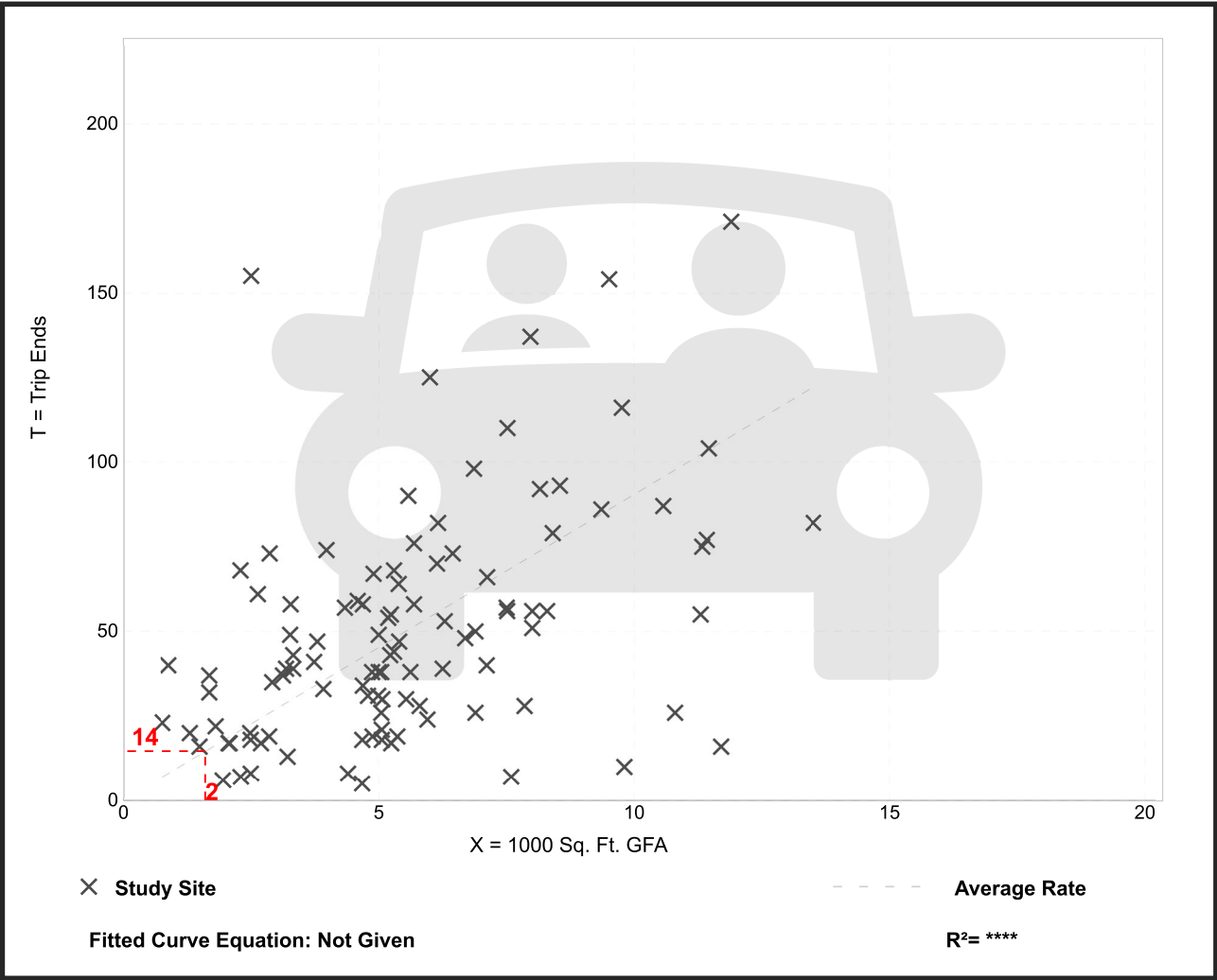
Avg. 1000 Sq. Ft. GFA: 6

Directional Distribution: 61% entering, 39% exiting

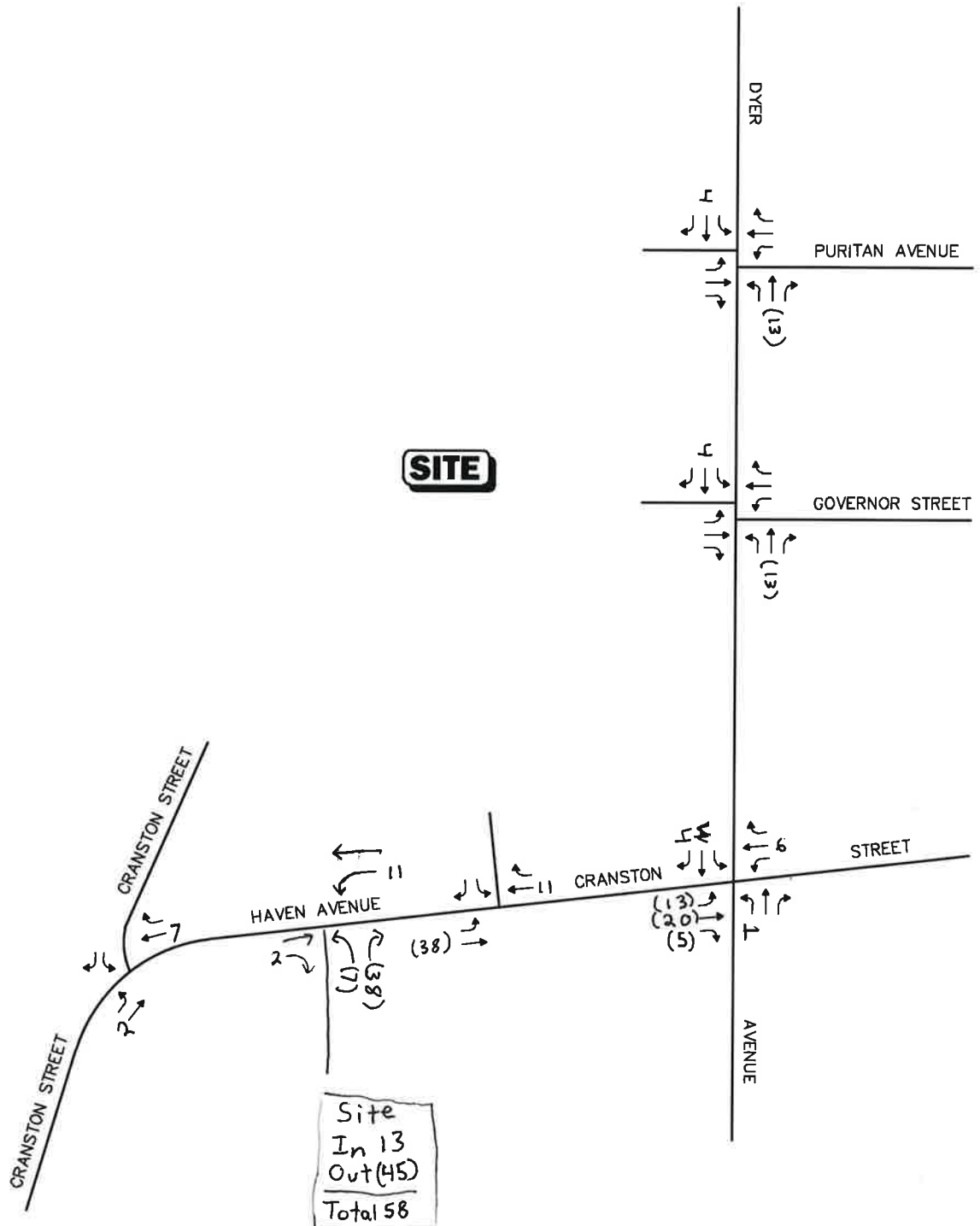
Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.05	0.92 - 62.00	6.18

Data Plot and Equation



BACKGROUND FIGURES



Not To Scale

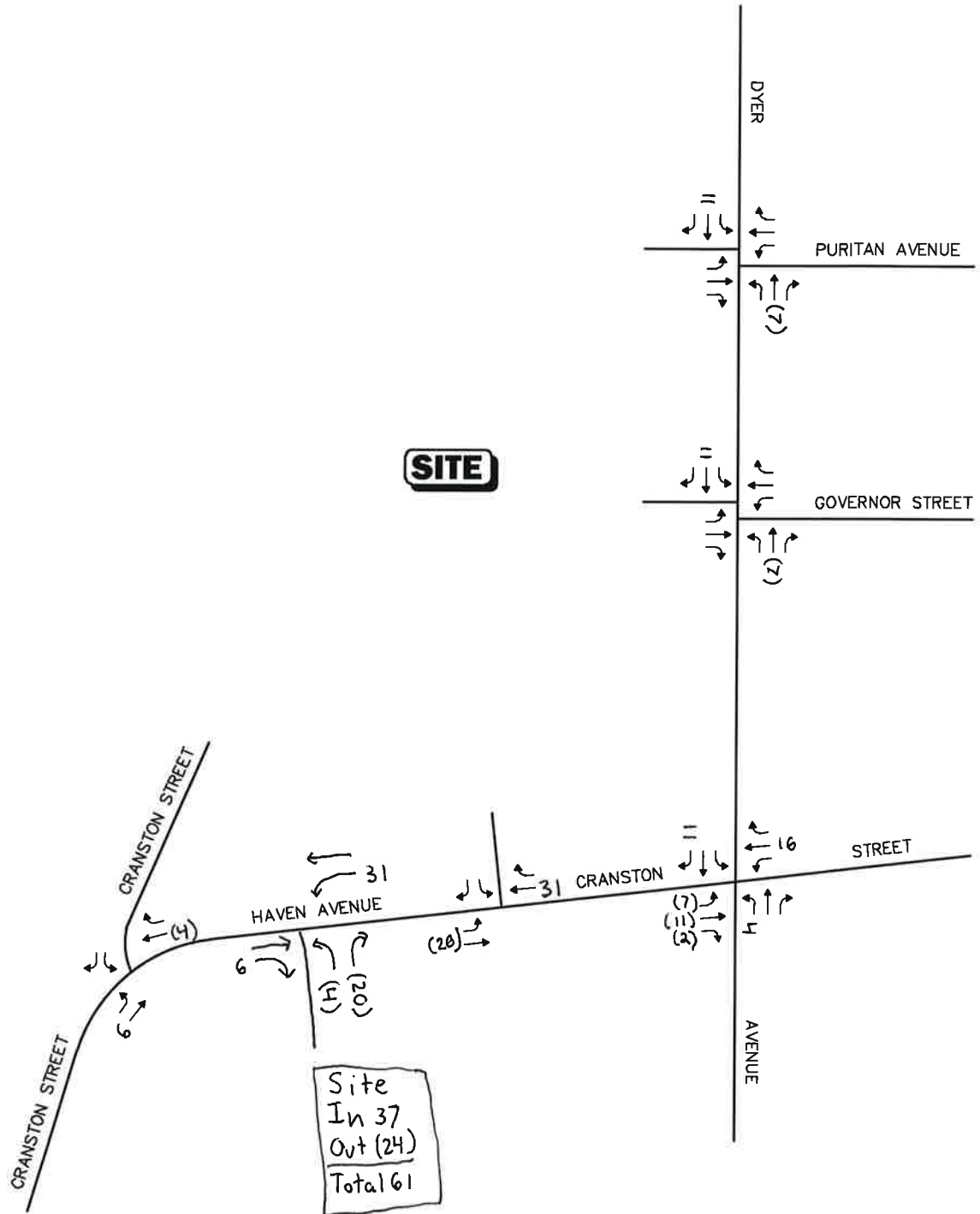


Vanasse &
Associates inc

Figure 3

A-1

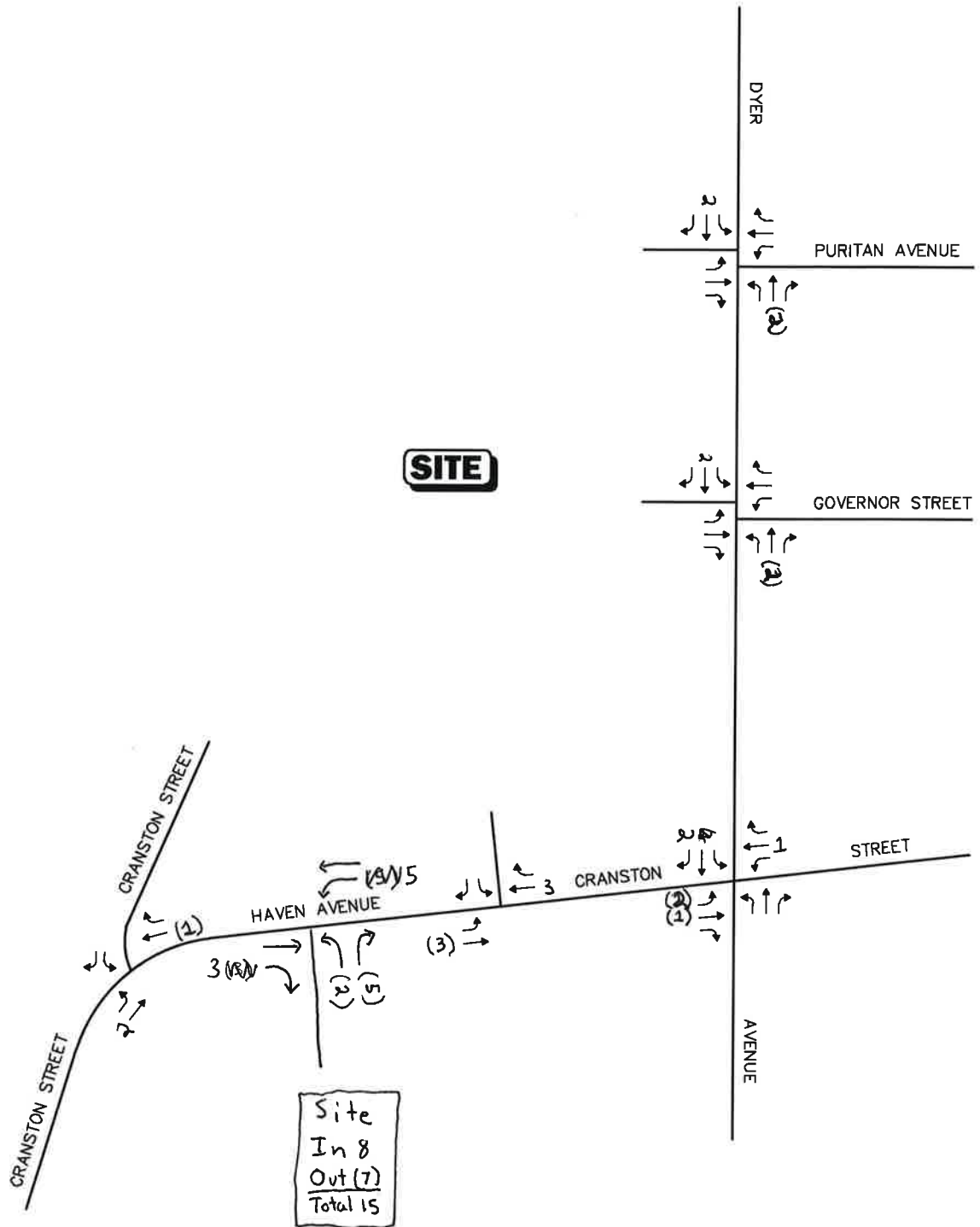
Build Knights Corner
Weekday Morning
Peak-Hour Traffic Volumes
Residential Component



A-2

Figure

Build Knights Corner
 Weekday Morning Evening
 Peak-Hour Traffic Volumes
 Residential Component



Not To Scale



Vanasse &
Associates inc

A-3

Figure

Build Knights Corner
Weekday Morning Morning
Peak-Hour Traffic Volumes
Restaurant Component



Not To Scale



Build Knights Corner
Weekday Morning Evening
Peak-Hour Traffic Volumes
Restaurant Component




CAPACITY ANALYSIS

2028 No-Build Weekday Morning Peak Hour
2028 No-Build Weekday Evening Peak Hour
2028 Build Weekday Morning Peak Hour
2028 Build Weekday Evening Peak Hour
2028 Build Weekday Morning Peak Hour Mitigated
2028 Build Weekday Evening Peak Hour Mitigated

2028 No-Build Weekday Morning Peak Hour

2028 No-Build Weekday Morning
1: Dyer Avenue & Puritan Avenue

03/29/2023




Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	6	429	33	12	500
Future Vol, veh/h	16	6	429	33	12	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	56	56	79	79	69	69
Heavy Vehicles, %	0	0	1	3	30	1
Mvmt Flow	29	11	543	42	17	725
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1323	564	0	0	585	0
Stage 1	564	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.4	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.47	-
Pot Cap-1 Maneuver	174	529	-	-	866	-
Stage 1	573	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	168	529	-	-	866	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	573	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	26.5	0		0.2		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	206		866	-	
HCM Lane V/C Ratio	-	0.191		0.02	-	
HCM Control Delay (s)	-	26.5		9.2	0	
HCM Lane LOS	-	D		A	A	
HCM 95th %tile Q(veh)	-	0.7		0.1	-	

2028 No-Build Weekday Morning
2: Dyer Avenue & Governor Street

03/29/2023

Intersection

Int Delay, s/veh 0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	1	459	5	8	509
Future Vol, veh/h	12	1	459	5	8	509
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	69	69	78	78	69	69
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	17	1	588	6	12	738


















Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1353	591	0
Stage 1	591	-	-
Stage 2	762	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	167	511	-
Stage 1	557	-	-
Stage 2	464	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	164	511	-
Mov Cap-2 Maneuver	164	-	-
Stage 1	557	-	-
Stage 2	455	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.3	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	173	992
HCM Lane V/C Ratio	-	-	0.109	0.012
HCM Control Delay (s)	-	-	28.3	8.7
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.4	0

2028 No-Build Weekday Morning
3: Dyer Avenue & Cranston Street

03/29/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	410	29	108	320	43	37	275	127	34	347	135
Future Volume (vph)	148	410	29	108	320	43	37	275	127	34	347	135
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.988			0.961				0.850
Flt Protected		0.988			0.989			0.996			0.996	
Satd. Flow (prot)	0	1847	0	0	1888	0	0	1840	0	0	1933	1620
Flt Permitted		0.690			0.705			0.827			0.922	
Satd. Flow (perm)	0	1290	0	0	1346	0	0	1528	0	0	1789	1620
Satd. Flow (RTOR)		4			8			35				89
Adj. Flow (vph)	170	471	33	127	376	51	49	362	167	49	496	193
Lane Group Flow (vph)	0	674	0	0	554	0	0	578	0	0	545	193
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	38.0	38.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	48.7%	48.7%		48.7%	48.7%		51.3%	51.3%		51.3%	51.3%	51.3%
Maximum Green (s)	33.0	33.0		33.0	33.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		1.20			0.94			0.80			0.66	0.25
Control Delay		128.5			47.7			27.1			21.1	8.2
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		128.5			47.7			27.1			21.1	8.2
Queue Length 50th (ft)		~405			244			216			196	29
Queue Length 95th (ft)		#579			#410			261			206	44
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		564			591			724			825	775
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		1.20			0.94			0.80			0.66	0.25
Intersection Summary												
Cycle Length: 78												

2028 No-Build Weekday Morning
3: Dyer Avenue & Cranston Street

03/29/2023

Actuated Cycle Length: 78

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

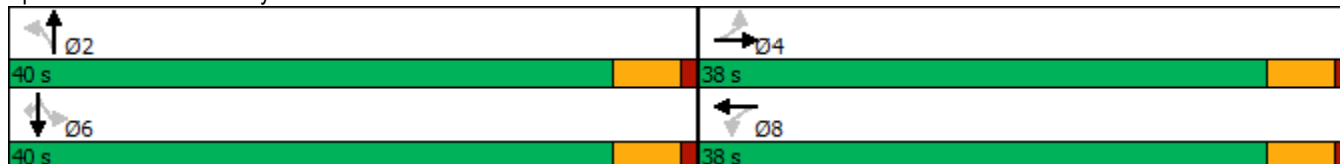
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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


















Queue shown is maximum after two cycles.

Splits and Phases: 3: Dyer Avenue & Cranston Street






2028 No-Build Weekday Morning
3: Dyer Avenue & Cranston Street

03/29/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	410	29	108	320	43	37	275	127	34	347	135
Future Volume (vph)	148	410	29	108	320	43	37	275	127	34	347	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.96			1.00	0.85
Flt Protected		0.99			0.99			1.00			1.00	1.00
Satd. Flow (prot)		1847			1887			1840			1932	1620
Flt Permitted		0.69			0.70			0.83			0.92	1.00
Satd. Flow (perm)		1291			1345			1528			1790	1620
Peak-hour factor, PHF	0.87	0.87	0.87	0.85	0.85	0.85	0.76	0.76	0.76	0.70	0.70	0.70
Adj. Flow (vph)	170	471	33	127	376	51	49	362	167	49	496	193
RTOR Reduction (vph)	0	2	0	0	5	0	0	19	0	0	0	49
Lane Group Flow (vph)	0	672	0	0	549	0	0	559	0	0	545	144
Heavy Vehicles (%)	0%	1%	5%	4%	1%	0%	0%	2%	3%	3%	1%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		33.0			33.0			35.0			35.0	35.0
Effective Green, g (s)		34.0			34.0			36.0			36.0	35.0
Actuated g/C Ratio		0.44			0.44			0.46			0.46	0.45
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		562			586			705			826	726
v/s Ratio Prot												
v/s Ratio Perm		c0.52			0.41			c0.37			0.30	0.09
v/c Ratio		1.20			0.94			0.79			0.66	0.20
Uniform Delay, d1		22.0			21.0			17.8			16.3	13.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		104.4			22.7			8.9			4.1	0.6
Delay (s)		126.4			43.7			26.8			20.4	13.6
Level of Service		F			D			C			C	B
Approach Delay (s)		126.4			43.7			26.8			18.6	
Approach LOS		F			D			C			B	
Intersection Summary												
HCM 2000 Control Delay		54.5			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.99										
Actuated Cycle Length (s)		78.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		98.0%			ICU Level of Service			F				
Analysis Period (min)		15										
c Critical Lane Group												

2028 No-Build Weekday Morning
4: Cranston Street & Cranston Print Works

03/29/2023

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	585	491	1	2	0
Future Vol, veh/h	0	585	491	1	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	78	78	50	50
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	672	629	1	4	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	630	0	-	0	1302	630
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	672	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	962	-	-	-	179	485
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	511	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	962	-	-	-	179	485
Mov Cap-2 Maneuver	-	-	-	-	179	-
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	511	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		25.6		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	962	-	-	-	179	
HCM Lane V/C Ratio	-	-	-	-	0.022	
HCM Control Delay (s)	0	-	-	-	25.6	
HCM Lane LOS	A	-	-	-	D	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

2028 No-Build Weekday Morning
5: Cranston Street & Haven Avenue

03/29/2023

Intersection

Int Delay, s/veh 0.6

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations 

Traffic Vol, veh/h 24 517 466 4 4 22

Future Vol, veh/h 24 517 466 4 4 22

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 92 92 88 88 89 89

Heavy Vehicles, % 0 1 2 0 0 16

Mvmt Flow 26 562 530 5 4 25

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 535 0 - 0 1147 533

Stage 1 - - - - 533 -

Stage 2 - - - - 614 -

Critical Hdwy 4.1 - - - 6.4 6.36

Critical Hdwy Stg 1 - - - - 5.4 -

Critical Hdwy Stg 2 - - - - 5.4 -

Follow-up Hdwy 2.2 - - - 3.5 3.444

Pot Cap-1 Maneuver 1043 - - - 222 520

Stage 1 - - - - 593 -

Stage 2 - - - - 544 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1043 - - - 214 520

Mov Cap-2 Maneuver - - - - 214 -

Stage 1 - - - - 572 -

Stage 2 - - - - 544 -

Approach EB WB SB

HCM Control Delay, s 0.4 0 14.1

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1043 - - - 426

HCM Lane V/C Ratio 0.025 - - - 0.069

HCM Control Delay (s) 8.5 0 - - 14.1




HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0.1 - - - 0.2

2028 No-Build Weekday Evening Peak Hour




2028 No-Build Weekday Evening
1: Dyer Avenue & Puritan Avenue

03/29/2023

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	5	539	33	17	480
Future Vol, veh/h	44	5	539	33	17	480
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	91	91	91	91
Heavy Vehicles, %	3	0	1	3	20	2
Mvmt Flow	56	6	592	36	19	527
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1175	610	0	0	628	0
Stage 1	610	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Critical Hdwy	6.43	6.2	-	-	4.3	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	2.38	-
Pot Cap-1 Maneuver	211	498	-	-	873	-
Stage 1	540	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	204	498	-	-	873	-
Mov Cap-2 Maneuver	204	-	-	-	-	-
Stage 1	540	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	28.2	0		0.3		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	217	873	-	
HCM Lane V/C Ratio	-	-	0.289	0.021	-	
HCM Control Delay (s)	-	-	28.2	9.2	0	
HCM Lane LOS	-	-	D	A	A	
HCM 95th %tile Q(veh)	-	-	1.2	0.1	-	

2028 No-Build Weekday Evening
2: Dyer Avenue & Governor Street

03/29/2023

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	11	560	9	6	514
Future Vol, veh/h	11	11	560	9	6	514
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	93	93	93	93
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	17	17	602	10	6	553


















Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1172	607	0	0	612
Stage 1	607	-	-	-	-
Stage 2	565	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	215	500	-	-	977
Stage 1	548	-	-	-	-
Stage 2	573	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	213	500	-	-	977
Mov Cap-2 Maneuver	213	-	-	-	-
Stage 1	548	-	-	-	-
Stage 2	568	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.6	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	299	977
HCM Lane V/C Ratio	-	-	0.117	0.007
HCM Control Delay (s)	-	-	18.6	8.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0

2028 No-Build Weekday Evening
3: Dyer Avenue & Cranston Street

03/29/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	273	22	103	389	54	24	348	102	52	316	150
Future Volume (vph)	178	273	22	103	389	54	24	348	102	52	316	150
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.987			0.971				0.850
Flt Protected		0.982			0.991			0.997			0.993	
Satd. Flow (prot)	0	1827	0	0	1899	0	0	1887	0	0	1922	1669
Flt Permitted		0.553			0.820			0.970			0.889	
Satd. Flow (perm)	0	1029	0	0	1572	0	0	1836	0	0	1721	1669
Satd. Flow (RTOR)		4			9			23				103
Adj. Flow (vph)	189	290	23	114	432	60	27	387	113	55	336	160
Lane Group Flow (vph)	0	502	0	0	606	0	0	527	0	0	391	160
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	38.0	38.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	48.7%	48.7%		48.7%	48.7%		51.3%	51.3%		51.3%	51.3%	51.3%
Maximum Green (s)	33.0	33.0		33.0	33.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		1.12			0.88			0.61			0.49	0.20
Control Delay		102.6			36.5			18.8			17.3	6.0
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		102.6			36.5			18.8			17.3	6.0
Queue Length 50th (ft)		~285			256			175			127	15
Queue Length 95th (ft)		#469			#461			276			203	48
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		450			690			859			794	805
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		1.12			0.88			0.61			0.49	0.20
Intersection Summary												
Cycle Length: 78												

2028 No-Build Weekday Evening
3: Dyer Avenue & Cranston Street

03/29/2023

Actuated Cycle Length: 78

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

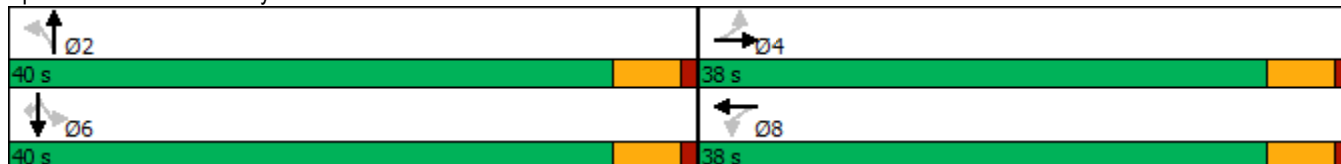
~ Volume exceeds capacity, queue is theoretically infinite.

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


















Queue shown is maximum after two cycles.

Splits and Phases: 3: Dyer Avenue & Cranston Street






2028 No-Build Weekday Evening
3: Dyer Avenue & Cranston Street

03/29/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	273	22	103	389	54	24	348	102	52	316	150
Future Volume (vph)	178	273	22	103	389	54	24	348	102	52	316	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.97			1.00	0.85
Flt Protected		0.98			0.99			1.00			0.99	1.00
Satd. Flow (prot)		1825			1898			1888			1922	1669
Flt Permitted		0.55			0.82			0.97			0.89	1.00
Satd. Flow (perm)		1029			1571			1835			1722	1669
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	189	290	23	114	432	60	27	387	113	55	336	160
RTOR Reduction (vph)	0	2	0	0	5	0	0	12	0	0	0	57
Lane Group Flow (vph)	0	500	0	0	601	0	0	515	0	0	391	103
Heavy Vehicles (%)	1%	2%	0%	1%	1%	2%	0%	1%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		33.0			33.0			35.0			35.0	35.0
Effective Green, g (s)		34.0			34.0			36.0			36.0	35.0
Actuated g/C Ratio		0.44			0.44			0.46			0.46	0.45
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		448			684			846			794	748
v/s Ratio Prot												
v/s Ratio Perm		c0.49			0.38			c0.28			0.23	0.06
v/c Ratio		1.12			0.88			0.61			0.49	0.14
Uniform Delay, d1		22.0			20.1			15.7			14.6	12.6
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		77.9			12.3			3.2			2.2	0.4
Delay (s)		99.9			32.4			19.0			16.8	13.0
Level of Service		F			C			B			B	B
Approach Delay (s)		99.9			32.4			19.0			15.7	
Approach LOS		F			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			40.5									
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			78.0									
Intersection Capacity Utilization			98.4%									
Analysis Period (min)			15									
c Critical Lane Group												




2028 No-Build Weekday Evening
4: Cranston Street & Cranston Print Works

03/29/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	473	563	0	0	0
Future Vol, veh/h	2	473	563	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	82	82	25	25
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	2	503	687	0	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	687	0	-	0	1194	687
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	507	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	916	-	-	-	208	450
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	916	-	-	-	207	450
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	609	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	916	-	-	-	-	
HCM Lane V/C Ratio	0.002	-	-	-	-	
HCM Control Delay (s)	8.9	0	-	-	0	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

2028 No-Build Weekday Evening
5: Cranston Street & Haven Avenue

03/29/2023

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	426	463	17	11	27
Future Vol, veh/h	16	426	463	17	11	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	88	88	71	71
Heavy Vehicles, %	0	1	1	0	0	4
Mvmt Flow	16	439	526	19	15	38
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	545	0	-	0	1007	536
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	471	-
Critical Hdwy	4.1	-	-	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.336
Pot Cap-1 Maneuver	1034	-	-	-	269	541
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1034	-	-	-	264	541
Mov Cap-2 Maneuver	-	-	-	-	264	-
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	632	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		15		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1034	-	-	-	415	
HCM Lane V/C Ratio	0.016	-	-	-	0.129	
HCM Control Delay (s)	8.5	0	-	-	15	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.4	

2028 Build Weekday Morning Peak Hour

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	0	16	0	6	1	441	33	12	504	2
Future Vol, veh/h	2	0	0	16	0	6	1	441	33	12	504	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	56	92	56	92	79	79	69	69	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	3	30	1	0
Mvmt Flow	2	0	0	29	0	11	1	558	42	17	730	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1352	1367	731	1346	1347	579	732	0	0	600	0	0
Stage 1	765	765	-	581	581	-	-	-	-	-	-	-
Stage 2	587	602	-	765	766	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.4	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.47	-	-
Pot Cap-1 Maneuver	128	148	425	130	152	519	882	-	-	854	-	-
Stage 1	399	415	-	503	503	-	-	-	-	-	-	-
Stage 2	499	492	-	399	415	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	122	143	425	126	147	519	882	-	-	854	-	-
Mov Cap-2 Maneuver	122	143	-	126	147	-	-	-	-	-	-	-
Stage 1	398	401	-	502	502	-	-	-	-	-	-	-
Stage 2	488	491	-	385	401	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	35		34.9			0			0.2			
HCM LOS	E		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	882	-	-	122	159	854	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.018	0.247	0.02	-	-				
HCM Control Delay (s)	9.1	0	-	35	34.9	9.3	0	-				
HCM Lane LOS	A	A	-	E	D	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.9	0.1	-	-				

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	0	10	12	0	1	4	460	5	8	509	4
Future Vol, veh/h	12	0	10	12	0	1	4	460	5	8	509	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	69	92	69	92	78	78	69	69	92
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	13	0	11	17	0	1	4	590	6	12	738	4


















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1366	1368	740	1371	1367	593	742	0	0	596	0	0
Stage 1	764	764	-	601	601	-	-	-	-	-	-	-
Stage 2	602	604	-	770	766	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	126	148	420	125	148	509	874	-	-	990	-	-
Stage 1	399	416	-	491	493	-	-	-	-	-	-	-
Stage 2	490	491	-	396	415	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	123	144	420	119	144	509	874	-	-	990	-	-
Mov Cap-2 Maneuver	123	144	-	119	144	-	-	-	-	-	-	-
Stage 1	396	407	-	488	490	-	-	-	-	-	-	-
Stage 2	485	488	-	378	406	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	27.9		38.5		0.1		0.1	
HCM LOS	D		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	874	-	-	181	126	990	-
HCM Lane V/C Ratio	0.005	-	-	0.132	0.15	0.012	-
HCM Control Delay (s)	9.1	0	-	27.9	38.5	8.7	0
HCM Lane LOS	A	A	-	D	E	A	A
HCM 95th %tile Q(veh)	0	-	-	0.4	0.5	0	-

2028 Build Weekday Morning
3: Dyer Avenue & Cranston Street

02/21/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Future Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.987			0.961				0.850
Flt Protected		0.988			0.989			0.996			0.995	
Satd. Flow (prot)	0	1846	0	0	1887	0	0	1840	0	0	1930	1620
Flt Permitted		0.690			0.702			0.809			0.898	
Satd. Flow (perm)	0	1289	0	0	1339	0	0	1495	0	0	1742	1620
Satd. Flow (RTOR)		5			9			35				87
Adj. Flow (vph)	170	482	36	127	381	55	49	363	167	60	499	193
Lane Group Flow (vph)	0	688	0	0	563	0	0	579	0	0	559	193
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	38.0	38.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	48.7%	48.7%		48.7%	48.7%		51.3%	51.3%		51.3%	51.3%	51.3%
Maximum Green (s)	33.0	33.0		33.0	33.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		1.22			0.96			0.82			0.70	0.25
Control Delay		138.4			51.6			28.7			22.3	8.3
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		138.4			51.6			28.7			22.3	8.3
Queue Length 50th (ft)		~419			252			220			206	29
Queue Length 95th (ft)		#593			#422			265			215	45
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		564			588			708			804	774
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		1.22			0.96			0.82			0.70	0.25
Intersection Summary												
Cycle Length: 78												

2028 Build Weekday Morning
3: Dyer Avenue & Cranston Street

02/21/2023

Actuated Cycle Length: 78

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

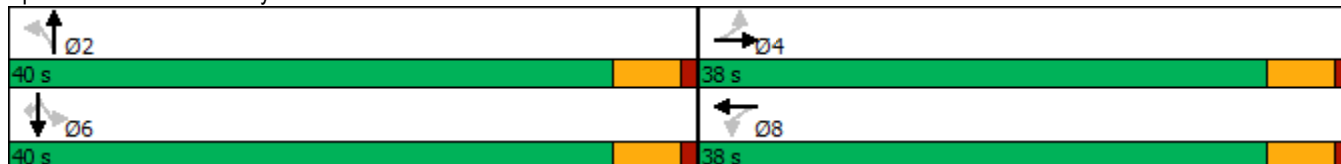
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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


















Queue shown is maximum after two cycles.

Splits and Phases: 3: Dyer Avenue & Cranston Street






2028 Build Weekday Morning
3: Dyer Avenue & Cranston Street

02/21/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Future Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.96			1.00	0.85
Flt Protected		0.99			0.99			1.00			0.99	1.00
Satd. Flow (prot)		1846			1886			1840			1929	1620
Flt Permitted		0.69			0.70			0.81			0.90	1.00
Satd. Flow (perm)		1290			1339			1495			1741	1620
Peak-hour factor, PHF	0.87	0.87	0.87	0.85	0.85	0.85	0.76	0.76	0.76	0.70	0.70	0.70
Adj. Flow (vph)	170	482	36	127	381	55	49	363	167	60	499	193
RTOR Reduction (vph)	0	3	0	0	5	0	0	19	0	0	0	48
Lane Group Flow (vph)	0	685	0	0	558	0	0	560	0	0	559	145
Heavy Vehicles (%)	0%	1%	5%	4%	1%	0%	0%	2%	3%	3%	1%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		33.0			33.0			35.0			35.0	35.0
Effective Green, g (s)		34.0			34.0			36.0			36.0	35.0
Actuated g/C Ratio		0.44			0.44			0.46			0.46	0.45
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		562			583			690			803	726
v/s Ratio Prot												
v/s Ratio Perm		c0.53			0.42			c0.37			0.32	0.09
v/c Ratio		1.22			0.96			0.81			0.70	0.20
Uniform Delay, d1		22.0			21.3			18.1			16.7	13.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		114.0			26.6			10.1			5.0	0.6
Delay (s)		136.0			47.9			28.1			21.6	13.6
Level of Service		F			D			C			C	B
Approach Delay (s)		136.0			47.9			28.1			19.6	
Approach LOS		F			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			58.7									
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			78.0									
Intersection Capacity Utilization			99.4%									
Analysis Period (min)			15									
c Critical Lane Group												

2028 Build Weekday Morning
4: Cranston Street & Cranston Print Works

02/21/2023

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	585	491	5	13	8
Future Vol, veh/h	5	585	491	5	13	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	78	78	50	50
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	6	672	629	6	26	16
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	635	0	-	0	1316	632
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	684	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	958	-	-	-	176	484
Stage 1	-	-	-	-	534	-
Stage 2	-	-	-	-	505	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	958	-	-	-	174	484
Mov Cap-2 Maneuver	-	-	-	-	174	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	505	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		24.1		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	958	-	-	-	230	
HCM Lane V/C Ratio	0.006	-	-	-	0.183	
HCM Control Delay (s)	8.8	0	-	-	24.1	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.7	

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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Lane Configurations

Traffic Vol, veh/h	24	522	474	4	4	22
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Future Vol, veh/h	24	522	474	4	4	22
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Stop	Stop
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RT Channelized	-	None	-	None	-	None
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Storage Length	-	-	-	-	0	-
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Veh in Median Storage, #	-	0	0	-	0	-
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Grade, %	-	0	0	-	0	-
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Peak Hour Factor	92	92	88	88	89	89
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Heavy Vehicles, %	0	1	2	0	0	16
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Mvmt Flow	26	567	539	5	4	25
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Major/Minor	Major1	Major2	Minor2
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Conflicting Flow All	544	0	0	1161	542
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Stage 1	-	-	-	542	-
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Stage 2	-	-	-	619	-
---------	---	---	---	-----	---

Critical Hdwy	4.1	-	-	6.4	6.36
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Critical Hdwy Stg 1	-	-	-	5.4	-
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Critical Hdwy Stg 2	-	-	-	5.4	-
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Follow-up Hdwy	2.2	-	-	3.5	3.444
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Pot Cap-1 Maneuver	1035	-	-	218	514
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Stage 1	-	-	-	587	-
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Stage 2	-	-	-	541	-
---------	---	---	---	-----	---

Platoon blocked, %	-	-	-	-	-
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Mov Cap-1 Maneuver	1035	-	-	210	514
--------------------	------	---	---	-----	-----

Mov Cap-2 Maneuver	-	-	-	210	-
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Stage 1	-	-	-	565	-
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Stage 2	-	-	-	541	-
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Approach	EB	WB	SB
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HCM Control Delay, s	0.4	0	14.2
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HCM LOS			B
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Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
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Capacity (veh/h)	1035	-	-	-	420
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HCM Lane V/C Ratio	0.025	-	-	-	0.07
--------------------	-------	---	---	---	------

HCM Control Delay (s)	8.6	0	-	-	14.2
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HCM Lane LOS	A	A	-	-	B
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HCM 95th %tile Q(veh)	0.1	-	-	-	0.2
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2028 Build Weekday Evening Peak Hour

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	0	44	0	5	0	546	33	17	490	3
Future Vol, veh/h	3	0	0	44	0	5	0	546	33	17	490	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	78	92	78	92	91	91	91	91	92
Heavy Vehicles, %	0	0	0	3	0	0	0	1	3	20	2	0
Mvmt Flow	3	0	0	56	0	6	0	600	36	19	538	3





Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1199	1214	540	1196	1197	618	541	0	0	636	0	0
Stage 1	578	578	-	618	618	-	-	-	-	-	-	-
Stage 2	621	636	-	578	579	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.13	6.5	6.2	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4	3.3	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	164	183	546	162	187	493	1038	-	-	867	-	-
Stage 1	505	504	-	475	484	-	-	-	-	-	-	-
Stage 2	478	475	-	500	504	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	158	177	546	158	181	493	1038	-	-	867	-	-
Mov Cap-2 Maneuver	158	177	-	158	181	-	-	-	-	-	-	-
Stage 1	505	488	-	475	484	-	-	-	-	-	-	-
Stage 2	472	475	-	485	488	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	28.3		38.1		0		0.3	
HCM LOS	D		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1038	-	-	158	170	867	-
HCM Lane V/C Ratio	-	-	-	0.021	0.37	0.022	-
HCM Control Delay (s)	0	-	-	28.3	38.1	9.2	0
HCM Lane LOS	A	-	-	D	E	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	1.6	0.1	-


















2028 Build Weekday Evening
2: Dyer Avenue & South Project Site Driveway/Governor Street

02/21/2023

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	6	11	0	11	9	560	9	6	514	10
Future Vol, veh/h	7	0	6	11	0	11	9	560	9	6	514	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	63	92	63	92	93	93	93	93	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	8	0	7	17	0	17	10	602	10	6	553	11
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1207	1203	559	1201	1203	607	564	0	0	612	0	0
Stage 1	571	571	-	627	627	-	-	-	-	-	-	-
Stage 2	636	632	-	574	576	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	162	186	532	163	186	500	1018	-	-	977	-	-
Stage 1	509	508	-	475	479	-	-	-	-	-	-	-
Stage 2	469	477	-	507	505	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	154	182	532	158	182	500	1018	-	-	977	-	-
Mov Cap-2 Maneuver	154	182	-	158	182	-	-	-	-	-	-	-
Stage 1	501	503	-	468	472	-	-	-	-	-	-	-
Stage 2	446	470	-	496	500	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	21.8		22.5			0.1			0.1			
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1018	-	-	229	240	977	-	-				
HCM Lane V/C Ratio	0.01	-	-	0.062	0.146	0.007	-	-				
HCM Control Delay (s)	8.6	0	-	21.8	22.5	8.7	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0	-	-				

2028 Build Weekday Evening
3: Dyer Avenue & Cranston Street

02/21/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Future Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.985			0.971				0.850
Flt Protected		0.982			0.991			0.997			0.992	
Satd. Flow (prot)	0	1827	0	0	1895	0	0	1887	0	0	1920	1669
Flt Permitted		0.547			0.821			0.968			0.873	
Satd. Flow (perm)	0	1017	0	0	1570	0	0	1832	0	0	1689	1669
Satd. Flow (RTOR)		4			10			23				101
Adj. Flow (vph)	189	298	24	114	442	68	28	389	113	61	337	160
Lane Group Flow (vph)	0	511	0	0	624	0	0	530	0	0	398	160
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	38.0	38.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	48.7%	48.7%		48.7%	48.7%		51.3%	51.3%		51.3%	51.3%	51.3%
Maximum Green (s)	33.0	33.0		33.0	33.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		1.15			0.90			0.62			0.51	0.20
Control Delay		114.6			39.8			19.0			17.7	6.1
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		114.6			39.8			19.0			17.7	6.1
Queue Length 50th (ft)		~297			268			177			130	16
Queue Length 95th (ft)		#484			#482			278			209	49
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		445			690			857			779	804
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		1.15			0.90			0.62			0.51	0.20
Intersection Summary												
Cycle Length: 78												

2028 Build Weekday Evening
3: Dyer Avenue & Cranston Street

02/21/2023

Actuated Cycle Length: 78

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

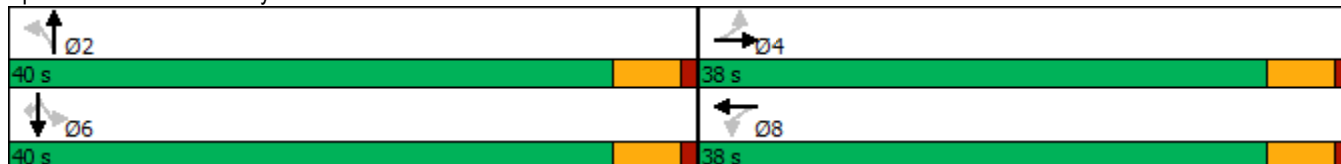
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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


















Queue shown is maximum after two cycles.

Splits and Phases: 3: Dyer Avenue & Cranston Street



2028 Build Weekday Evening
3: Dyer Avenue & Cranston Street

02/21/2023




												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Future Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.97			1.00	0.85
Flt Protected		0.98			0.99			1.00			0.99	1.00
Satd. Flow (prot)		1826			1896			1888			1920	1669
Flt Permitted		0.55			0.82			0.97			0.87	1.00
Satd. Flow (perm)		1018			1571			1833			1690	1669
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	189	298	24	114	442	68	28	389	113	61	337	160
RTOR Reduction (vph)	0	2	0	0	6	0	0	12	0	0	0	56
Lane Group Flow (vph)	0	509	0	0	618	0	0	518	0	0	398	104
Heavy Vehicles (%)	1%	2%	0%	1%	1%	2%	0%	1%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		33.0			33.0			35.0			35.0	35.0
Effective Green, g (s)		34.0			34.0			36.0			36.0	35.0
Actuated g/C Ratio		0.44			0.44			0.46			0.46	0.45
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		443			684			846			780	748
v/s Ratio Prot												
v/s Ratio Perm		c0.50			0.39			c0.28			0.24	0.06
v/c Ratio		1.15			0.90			0.61			0.51	0.14
Uniform Delay, d1		22.0			20.5			15.8			14.8	12.6
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		90.1			15.4			3.3			2.4	0.4
Delay (s)		112.1			35.8			19.0			17.2	13.0
Level of Service		F			D			B			B	B
Approach Delay (s)		112.1			35.8			19.0			16.0	
Approach LOS		F			D			B			B	
Intersection Summary												
HCM 2000 Control Delay		44.4			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.87										
Actuated Cycle Length (s)		78.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		100.4%			ICU Level of Service			G				
Analysis Period (min)		15										
c Critical Lane Group												

2028 Build Weekday Evening
4: Cranston Street & Cranston Print Works

02/21/2023

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	473	563	10	8	7
Future Vol, veh/h	11	473	563	10	8	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	82	82	25	25
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	12	503	687	12	32	28




Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	699	0	0 1220 693
Stage 1	-	-	- 693 -
Stage 2	-	-	- 527 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	907	-	- 201 447
Stage 1	-	-	- 500 -
Stage 2	-	-	- 596 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	907	-	- 197 447
Mov Cap-2 Maneuver	-	-	- 197 -
Stage 1	-	-	- 491 -
Stage 2	-	-	- 596 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	22.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	907	-	-	-	267
HCM Lane V/C Ratio	0.013	-	-	-	0.225
HCM Control Delay (s)	9	0	-	-	22.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.8

2028 Build Weekday Evening
5: Cranston Street & Haven Avenue


















02/21/2023

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	435	470	17	11	27
Future Vol, veh/h	16	435	470	17	11	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	88	88	71	71
Heavy Vehicles, %	0	1	1	0	0	4
Mvmt Flow	16	448	534	19	15	38
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	553	0	-	0	1024	544
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	480	-
Critical Hdwy	4.1	-	-	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.336
Pot Cap-1 Maneuver	1027	-	-	-	263	535
Stage 1	-	-	-	-	586	-
Stage 2	-	-	-	-	627	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1027	-	-	-	257	535
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	627	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		15.2		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1027	-	-	-	-	407
HCM Lane V/C Ratio	0.016	-	-	-	-	0.132
HCM Control Delay (s)	8.6	0	-	-	-	15.2
HCM Lane LOS	A	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	-	0.5

2028 Build Weekday Morning Peak Hour Mitigated

2028 Build Weekday Morning Mitigated
3: Dyer Avenue & Cranston Street

03/28/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Future Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.987			0.961				0.850
Flt Protected		0.988			0.989			0.996			0.995	
Satd. Flow (prot)	0	1846	0	0	1887	0	0	1840	0	0	1930	1620
Flt Permitted		0.715			0.723			0.697			0.873	
Satd. Flow (perm)	0	1336	0	0	1379	0	0	1288	0	0	1693	1620
Satd. Flow (RTOR)		5			10			32				79
Adj. Flow (vph)	170	482	36	127	381	55	49	363	167	60	499	193
Lane Group Flow (vph)	0	688	0	0	563	0	0	579	0	0	559	193
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	42.0	42.0		42.0	42.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	46.2%
Maximum Green (s)	37.0	37.0		37.0	37.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		1.05			0.83			1.06			0.81	0.28
Control Delay		72.9			30.2			79.4			31.3	10.5
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		72.9			30.2			79.4			31.3	10.5
Queue Length 50th (ft)		~371			220			~305			232	35
Queue Length 95th (ft)		#545			#374			#373			243	52
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		653			676			547			694	691
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		1.05			0.83			1.06			0.81	0.28
Intersection Summary												
Cycle Length: 78												

2028 Build Weekday Morning Mitigated

3: Dyer Avenue & Cranston Street

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Actuated Cycle Length: 78

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

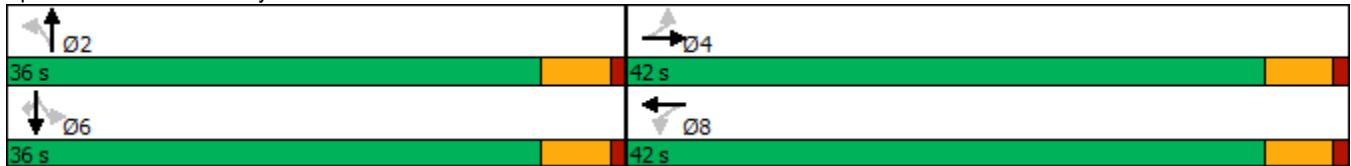
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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


















Queue shown is maximum after two cycles.

Splits and Phases: 3: Dyer Avenue & Cranston Street



2028 Build Weekday Morning Mitigated
3: Dyer Avenue & Cranston Street


















03/28/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Future Volume (vph)	148	419	31	108	324	47	37	276	127	42	349	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.96			1.00	0.85
Flt Protected		0.99			0.99			1.00			0.99	1.00
Satd. Flow (prot)		1846			1886			1840			1929	1620
Flt Permitted		0.71			0.72			0.70			0.87	1.00
Satd. Flow (perm)		1335			1378			1289			1694	1620
Peak-hour factor, PHF	0.87	0.87	0.87	0.85	0.85	0.85	0.76	0.76	0.76	0.70	0.70	0.70
Adj. Flow (vph)	170	482	36	127	381	55	49	363	167	60	499	193
RTOR Reduction (vph)	0	3	0	0	5	0	0	19	0	0	0	48
Lane Group Flow (vph)	0	685	0	0	558	0	0	560	0	0	559	145
Heavy Vehicles (%)	0%	1%	5%	4%	1%	0%	0%	2%	3%	3%	1%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		37.0			37.0			31.0			31.0	31.0
Effective Green, g (s)		38.0			38.0			32.0			32.0	31.0
Actuated g/C Ratio		0.49			0.49			0.41			0.41	0.40
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		650			671			528			694	643
v/s Ratio Prot												
v/s Ratio Perm		c0.51			0.40			c0.43			0.33	0.09
v/c Ratio		1.05			0.83			1.06			0.81	0.23
Uniform Delay, d1		20.0			17.2			23.0			20.3	15.6
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		50.5			8.6			56.3			9.7	0.8
Delay (s)		70.5			25.9			79.3			29.9	16.4
Level of Service		E			C			E			C	B
Approach Delay (s)		70.5			25.9			79.3			26.5	
Approach LOS		E			C			E			C	
Intersection Summary												
HCM 2000 Control Delay			49.9									
HCM 2000 Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			78.0									
Intersection Capacity Utilization			99.4%									
Analysis Period (min)			15									
c Critical Lane Group												

2028 Build Weekday Evening Peak Hour Mitigated

2028 Build Weekday Evening Mitigated
3: Dyer Avenue & Cranston Street

03/28/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Future Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.985			0.971				0.850
Flt Protected		0.982			0.991			0.997			0.992	
Satd. Flow (prot)	0	1827	0	0	1895	0	0	1887	0	0	1920	1669
Flt Permitted		0.591			0.833			0.967			0.840	
Satd. Flow (perm)	0	1099	0	0	1593	0	0	1830	0	0	1625	1669
Satd. Flow (RTOR)		5			12			20				87
Adj. Flow (vph)	189	298	24	114	442	68	28	389	113	61	337	160
Lane Group Flow (vph)	0	511	0	0	624	0	0	530	0	0	398	160
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	45.0	45.0		45.0	45.0		33.0	33.0		33.0	33.0	33.0
Total Split (%)	57.7%	57.7%		57.7%	57.7%		42.3%	42.3%		42.3%	42.3%	42.3%
Maximum Green (s)	40.0	40.0		40.0	40.0		28.0	28.0		28.0	28.0	28.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	0.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	2	2		2	2		2	2		2	2	2
v/c Ratio		0.93			0.78			0.72			0.62	0.23
Control Delay		44.2			23.0			26.5			24.5	9.6
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		44.2			23.0			26.5			24.5	9.6
Queue Length 50th (ft)		204			216			214			157	23
Queue Length 95th (ft)		#411			352			#347			255	63
Internal Link Dist (ft)		247			568			316			467	
Turn Bay Length (ft)												50
Base Capacity (vph)		615			894			734			641	689
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.83			0.70			0.72			0.62	0.23
Intersection Summary												
Cycle Length: 78												

2028 Build Weekday Evening Mitigated

3: Dyer Avenue & Cranston Street

03/28/2023

Actuated Cycle Length: 74

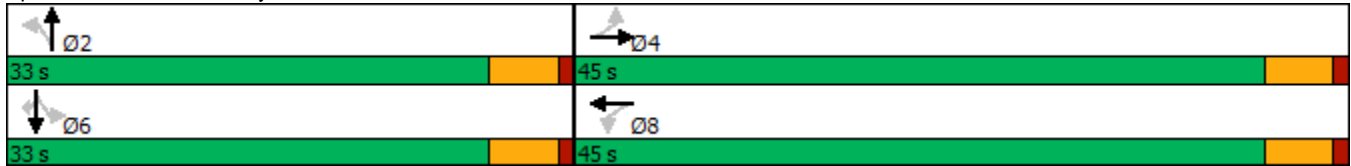
Natural Cycle: 55

Control Type: Actuated-Uncoordinated

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


















Queue shown is maximum after two cycles.

Splits and Phases: 3: Dyer Avenue & Cranston Street



2028 Build Weekday Evening Mitigated
3: Dyer Avenue & Cranston Street

03/28/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Future Volume (vph)	178	280	23	103	398	61	25	350	102	57	317	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	13	13	13	13	13
Total Lost time (s)		4.0			4.0			4.0			4.0	5.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			0.97			1.00	0.85
Flt Protected		0.98			0.99			1.00			0.99	1.00
Satd. Flow (prot)		1826			1896			1888			1920	1669
Flt Permitted		0.59			0.83			0.97			0.84	1.00
Satd. Flow (perm)		1098			1595			1831			1625	1669
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	189	298	24	114	442	68	28	389	113	61	337	160
RTOR Reduction (vph)	0	3	0	0	6	0	0	12	0	0	0	54
Lane Group Flow (vph)	0	508	0	0	618	0	0	518	0	0	398	106
Heavy Vehicles (%)	1%	2%	0%	1%	1%	2%	0%	1%	0%	4%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		35.7			35.7			28.2			28.2	28.2
Effective Green, g (s)		36.7			36.7			29.2			29.2	28.2
Actuated g/C Ratio		0.50			0.50			0.40			0.40	0.38
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		545			792			723			642	636
v/s Ratio Prot												
v/s Ratio Perm		c0.46			0.39			c0.28			0.24	0.06
v/c Ratio		0.93			0.78			0.72			0.62	0.17
Uniform Delay, d1		17.4			15.3			18.9			17.9	15.1
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		23.1			5.0			6.0			4.5	0.6
Delay (s)		40.6			20.3			24.9			22.4	15.7
Level of Service		D			C			C			C	B
Approach Delay (s)		40.6			20.3			24.9			20.4	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay		26.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.84										
Actuated Cycle Length (s)		73.9			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		100.4%			ICU Level of Service			G				
Analysis Period (min)		15										
c Critical Lane Group												