384 Arlington Avenue Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Strategy Report (Revision #3 for SPA)

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1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines, incorporating the 2023 Revision to Transportation Impact Assessment Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for the TIA Study PM. As shown in the Screening Form, a TIA is required, and this study has been prepared to support a site plan application.

2 Existing and Planned Conditions

2.1 Proposed Development

The existing site is the Ottawa Korean Community Church building and surface parking lot and was recently rezoned to Residential Fifth Density (R5B[2916]-c S488-h). The proposed residential development is for a 24-storey residential building comprising 296 residential dwelling units, with 78 vehicle parking spaces and 296 bike parking spaces. Vehicular access to below grade parking is proposed via a right-in/right-out access on Raymond Street, and the development is anticipated to be built-out in a single phase by 2026.

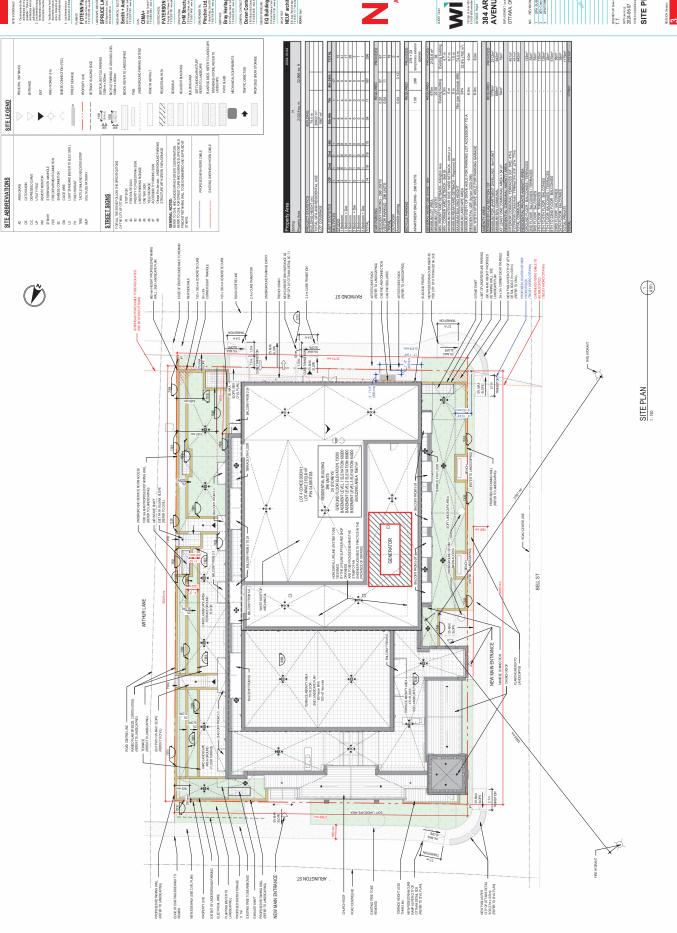
Figure 1: Area Context Plan

The Popular St. Area C

Figure 1 illustrates the study area context. Figure 2 illustrates the proposed concept plan.

Source: http://maps.ottawa.ca/geoOttawa/ Accessed: January 18, 2024











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2.2 Existing Conditions

2.2.1 Area Road Network

Highway 417: Highway 417 is a Ministry of Transportation of Ontario urban freeway with a divided eight-lane urban cross-section within the study area. The posted speed limit is 100 km/h and the right-of-way is variable.

Bronson Avenue: Bronson Avenue is a City of Ottawa arterial road with a four-lane urban cross-section. Sidewalks are present on both sides of the road, and no stopping is permitted during the peak hours. Within the study area, the posted speed limit is 50 km/h, and the City-protected right-of-way is 23.0 metres. Bronson Avenue is designated as a truck route.

Catherine Street: Catherine Street is a City of Ottawa arterial one-way road with a three-lane urban cross-section, sidewalks are present on both sides of the road, and no stopping is permitted during the peak hours. The posted speed limit is 50 km/h, and the City-protected right-of-way is 23.0 metres. Catherine Street is designated as a truck route.

Raymond Street: Raymond Street is a City of Ottawa arterial one-way road between Bronson Avenue and the Highway 417 on-ramp, and a one-way local road to the west of the on-ramp. The urban cross-section reduces from a three-lane width to a single lane west of the Highway 417 on-ramp with parking lanes located on the north side. Parking is restricted to one hour between 7AM and 7PM. The posted speed limit is 30 km/h. The City-protected right-of-way is 23.0 metres between Bronson Avenue and the Highway 417 on-ramp, and the existing right-of-way varies between 12.5 to 19.5 metres west of Highway 417 on-ramp. Raymond Street is designated as a truck route east of the Highway 417 on-ramp and west of Booth Street.

Booth Street: Booth Street is a City of Ottawa major collector road with a two-lane urban cross-section. Sidewalks on both sides of the road, and framed parking is provided on the east side of the road north of Raymond Street. The posted speed limit is 40 km/h, and the existing right-of-way is 20.0 metres. Booth Street south of Raymond Street is designated as a truck route.

Gladstone Avenue: Gladstone Avenue is a City of Ottawa City of Ottawa major collector road with a two-lane urban cross-section. Sidewalks are present on both sides of the road. On-street parking is permitted on the north side of the road between Bronson Avenue and Lebreton Street North, and framed parking is provided on the north side of the road west of Lebreton Street North within the study area and on the south side of the road between Lebreton Street N and Booth Street. The posted speed limit is 40 km/h. The City-protected right-of-way is 22.0 metres between Preston Street and Rochester Street, 20.0 metres between Rochester Street and Booth Street, and the existing right-of-way varies from 20.0 to approximately 36.0 metres east of Booth Street. Gladstone Avenue is a truck route.

Arlington Avenue: Arlington Avenue is a City of Ottawa local road with a two-lane urban cross-section. Sidewalks are present on both sides of the road. East of Bronson Avenue within the study area, on-street parking is permitted on the south side of the road and west of Cambridge Street North on-street parking is permitted on the north side of the road. The posted speed limit is 30 km/h, and the existing right-of-way is 15.5 metres.

Bell Street North: Bell Street North is a City of Ottawa local road with a two-lane urban cross-section south of Gladstone Avenue and a one-way (southbound) road with one-lane cross-section north of Gladstone Avenue. Sidewalks are present on both sides of the road. South of Gladstone, on-street parking is permitted on the west side of the road, with a winter restriction between December 1st and March 31st. Between Arlington Street and Gladstone Avenue, the east side of the road is reserved for permit parking and valet service for the LIV apartments at 207 Bell Street. North of Gladstone Avenue, on-street parking is permitted on the ease side of the road. The



posted speed limit is 30 km/h, and the existing right-of-way is 16.5 metres with a narrower portion of 10.5 metres along the 207 Bell Street frontage due to partial ownership by that parcel.

Lebreton Street North: Lebreton Street North is a City of Ottawa local road with a two-lane urban cross-section, sidewalks on both sides of the road. On-street parking, signed one-hour between 7AM and 7PM, is permitted on one side of the road, alternating sides every block within the study area. The posted speed limit is 30 km/h north of Gladstone Avenue and the unposted speed limit is assumed to be 50 km/h to the south, and the existing right-of-way is 20.0 metres.

Louisa Street: Louisa Street is a City of Ottawa local road with a two-lane urban cross-section, sidewalks on both sides of the road. On-street parking, signed one-hour between 7AM and 7PM, is permitted on the south side of the road to the east of Lebreton Street North and on the north side to the west. The unposted speed limit is assumed to be 50 km/h, and the existing right-of-way is 20.0 metres.

Arthur Street: Arthur Street is a City of Ottawa local road with a two-lane urban cross-section with sidewalks on both sides of the road and on-street parking permitted on the west side of the road. The posted speed limit is 30 km/h, and the existing right-of-way is 20.0 metres.

Arthur Lane North: Arthur Lane North is a City of Ottawa local one-way (southbound) road north of Arlington Avenue and a two-way local road south of Arlington Avenue. While circulation on the section of roadway south of Arlington Avenue is two-way, one-way signage is provided on Arthur Lane North at Raymond Street, where access to this portion of the lane is from Arlington Avenue only. The speed limit is 30 km/h as part of the gateway area, and the existing right-of-way is 6.0 metres.

2.2.2 Existing Intersections

The key signalized area intersections within 400 metres of the site have been summarized below:

Bronson Avenue at Catherine Street/Raymond Street The intersection of Bronson Avenue at Catherin Street/Raymond Street is a signalized intersection. The northbound approach consists of an auxiliary left-turn lane and two through lanes, the southbound approach consists of a through and a shared through/right-tun lane and the westbound approach consists of an auxiliary left-turn lane, an auxiliary shared left-turn/through lane, a through lane and a shared through/right-turn lane. No turn restrictions are noted beyond the one-way on Catherine Street/Raymond Street does not permit any movements from the west side of the intersection.

Bronson Avenue at Arlington Avenue

The intersection of Bronson Avenue at Arlington Avenue is a signalized intersection. The northbound and southbound approaches each consist of a shared left-turn/through lane and shared through/right-turn lane, and the eastbound and westbound approaches each consist of a shared all movements lane. No turn restrictions are noted.

Bronson Avenue at Gladstone Avenue

The intersection of Bronson Avenue at Gladstone Avenue is a signalized intersection. The northbound and southbound approaches each consist of an auxiliary left-turn lane, through lane and a shared through/right-turn lane, and the eastbound and westbound approaches each consist of an auxiliary left-turn lane and a shared



through/right-turn lane. Right turns on red are restricted at all approaches weekdays between 7:00AM and 7:00PM.

Bronson Avenue at Highway 417 EB Ramp The intersection of Bronson Avenue at the Highway 417 eastbound off-ramp is a signalized intersection. The northbound and southbound approaches each consist of two through lanes. The eastbound approach consists of an auxiliary left-turn lane and a right-turn lane.

Booth Street at Gladstone Avenue

The intersection of Booth Street at Gladstone Avenue is a signalized intersection. The northbound and southbound approaches each consist of a shared all movement lane, which operate as an auxiliary left-turn movement and a shared through/right turn movement. The eastbound approach consists of an auxiliary left-turn lane, a through lane, and an auxiliary channelized right-turn lane, and the westbound approach consists of an auxiliary left-turn lane and a shared through/right-turn lane. No right-turns are permitted on the eastbound approach from the through lane.

Arthur Street/Arthur Lane at Gladstone Avenue

The intersection of Arthur Street/Arthur Lane at Gladstone Avenue is a signalized intersection. The southbound, eastbound and westbound approaches all consist of a shared all movements lane. No turn restrictions are noted beyond the one-way on Arthur Lane south of Gladstone Avenue does not permit any movements from the south side of the intersection.

Booth Street at Raymond Street

The intersection of Booth Street at Raymond Street is a signalized intersection. The northbound approach consists of an auxiliary left-turn lane and a through lane, the southbound approach consists of a shared through/right-turn lane, and the westbound approach consists of a shared left-turn/through lane and an auxiliary right-turn lane. No turn restrictions are noted beyond the one-way on Catherine Street/Raymond Street does not permit any movements from the west side of the intersection.

2.2.3 Existing Driveways

Within 200 metres of the site access on the boundary streets, driveways to attached, detached, and low-rise residential land uses are generally present. Twelve such residential driveways are present on Arlington Avenue, one on Bell Street North, and four on Raymond Street are present.

On Bell Street North, a driveway to a high-rise residential building is additionally present. On Arlington Avenue, two driveways to a sport and health centre are present, and on Raymond Street, a driveway to an embassy and two driveways to low-rise commercial land uses are present. All driveways to the subject site are proposed as being removed as part of redevelopment. Figure 3 illustrates the existing area driveways.



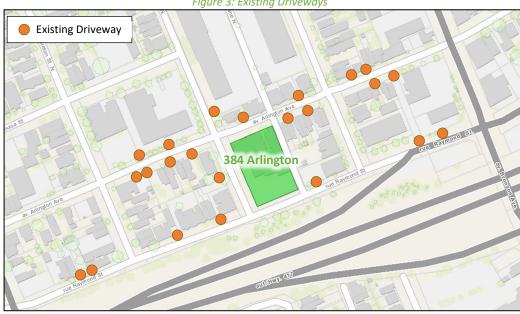


Figure 3: Existing Driveways

Source: http://maps.ottawa.ca/geoOttawa/ Accessed: January 18, 2024

2.2.4 Cycling and Pedestrian Facilities

Sidewalks are generally provided along both sides of the study area roadways, with the exception of Raymond Street where a sidewalk is provided on the north side only.

Cycling facilities include the designations of Gladstone Avenue and Booth Street as suggested routes. Figure 4 illustrates the pedestrian facilities in the study area and Figure 5 illustrates the cycling facilities.

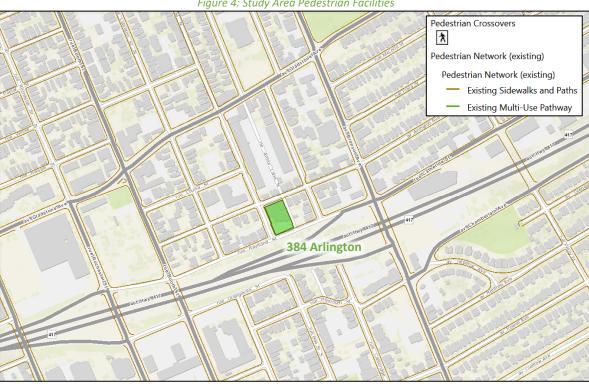
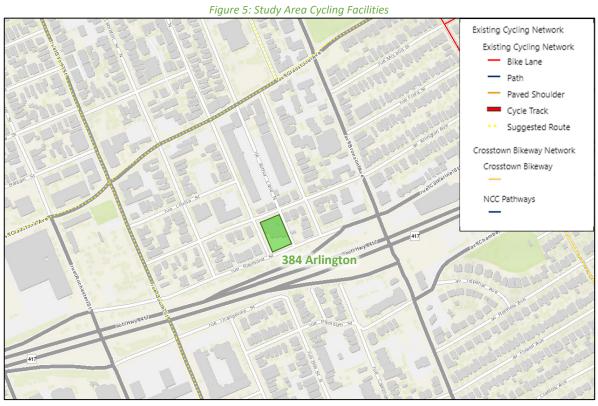


Figure 4: Study Area Pedestrian Facilities

Source: http://maps.ottawa.ca/geoOttawa/ Accessed: May 24, 2024





Source: http://maps.ottawa.ca/geoOttawa/ Accessed: May 24, 2024

Pedestrian and cyclist volumes included in study area intersection counts, presented in Section 2.2.7, have been compiled and are illustrated in Figure 6 and Figure 7 respectively. The City of Ottawa notes that the active mode volumes collected in March may be lower than in other months.



Gladstone Booth Arlington Catherine Raymond 33(31) Hwy 417 EB Ramp

Figure 6: Existing Pedestrian Counts



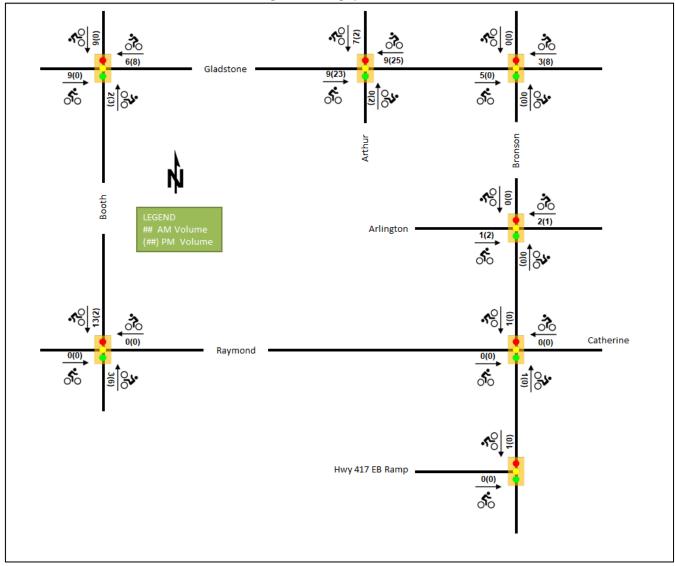


Figure 7: Existing Cyclist Counts

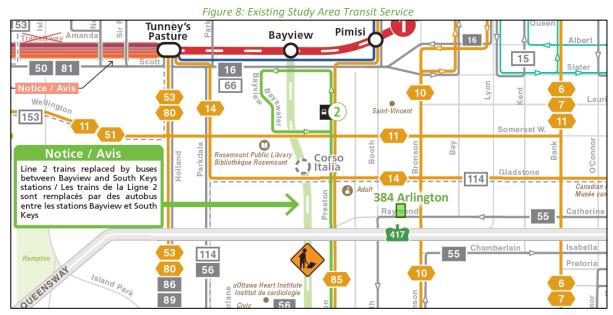
2.2.5 Existing Transit

Within the study area, the routes #10, 14, 55 and 114 area travel in proximity of the proposed site. The frequency of these routes within proximity of the proposed site as of January 18, 2024 are:

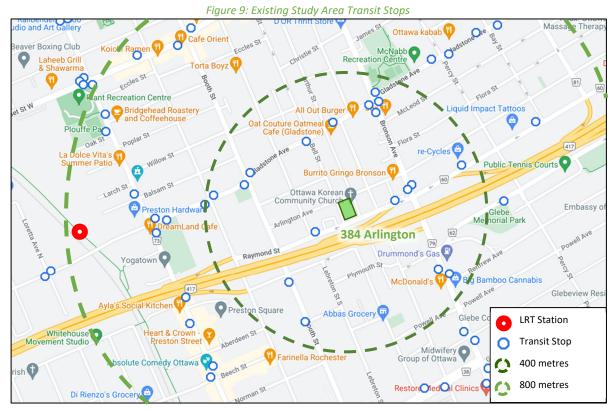
- Route #10 15-minute service during the day, 30-minute service during the early morning and evenings
- Route #14 15-20-minute service during the day, 30-minute service during the evenings
- Route #55 15-20-minute service during the day, 30-minute service during the evenings
- Route #114 two trips downtown in the AM, and two trips to Carlington in the PM

Figure 8 illustrates the transit system map in the study area and Figure 9 illustrates nearby transit stops. All transit information is per January 18, 2024, and for general context of the area.





Source: http://www.octranspo.com/ Accessed: January 18, 2024



Source: http://www.octranspo.com/ Accessed: January 18, 2024

2.2.6 Existing Area Traffic Management Measures

Traffic management measures within the study area include on-street parking on local roads, bulb-outs at intersections along Booth Street, Raymond Street, Bell Street, and Gladstone Avenue, speed humps on Arlington Avenue approximately 110 and 188 metres east of Bronson Avenue, and vehicular directional closures on Arlington Avenue approximately 50 metres east of Bronson Avenue.



2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were acquired from the City of Ottawa and Ontario Traffic Inc. for the study area intersections. Table 1 summarizes the intersection count dates and sources.

Table 1: Intersection Count Date

Intersection	Count Date	Source
Bronson Avenue at Highway 417 EB Ramp	Thursday, March 7, 2024	Ontario Traffic Inc.
Bronson Avenue at Catherine Street/Raymond Street	Thursday, March 7, 2024	Ontario Traffic Inc.
Bronson Avenue at Arlington Avenue	Thursday, March 7, 2024	Ontario Traffic Inc.
Bronson Avenue at Gladstone Avenue	Thursday, March 7, 2024	Ontario Traffic Inc.
Booth Street at Gladstone Avenue	Thursday, March 7, 2024	Ontario Traffic Inc.
Arthur Street/Arthur Lane at Gladstone Avenue	Thursday, September 21, 2022	City of Ottawa
Booth Street at Raymond Street	Thursday, March 7, 2024	Ontario Traffic Inc.

Figure 10 illustrates the existing traffic counts and Table 2 summarizes the existing intersection operations. The level of service for signalized intersections is based on volume to capacity ratio (v/c) calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. Detailed turning movement count data is included in Appendix B and the Synchro worksheets are provided in Appendix C.

Figure 10: Existing Traffic Counts

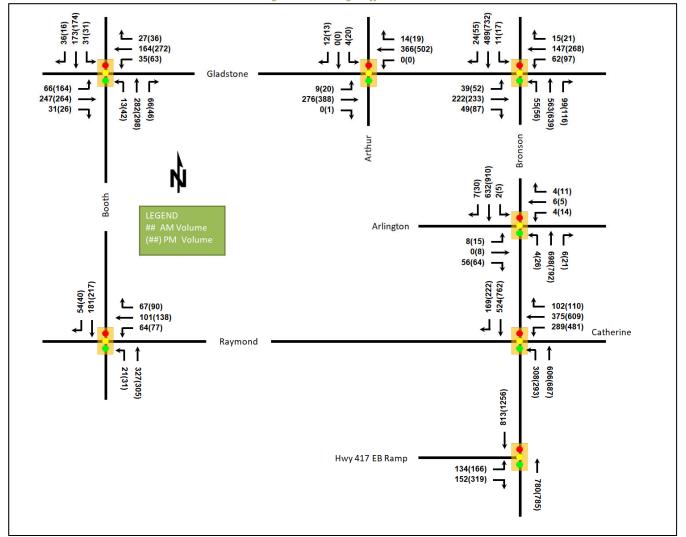




Table 2: Existing Intersection Operations

Table 2: Existing Intersection Operations AM Peak Hour PM Peak Hour									
Intersection	Intersection Lane LOS V/C		Delay (s) Q (95 th)		100				
	EDI		-				-	Delay (s)	
Bronson Avenue at	EBL	A	0.29	30.6	41.0	A	0.36	31.7	49.8
Highway 417 EB	EBR	Α	0.32	11.6	24.1	С	0.74	41.0	96.2
Ramp	NBT	Α	0.45	14.0	66.5	A	0.45	13.9	66.7
Signalized	SBT	Α	0.48	49.1	m62.1	С	0.72	68.0	131.6
	Overall	Α	0.41	30.2	-	С	0.72	45.4	-
Bronson Avenue at	WBL	Α	0.60	44.6	75.9	D	0.87	59.4	#127.0
Catherine	WBT/R	Α	0.59	36.6	57.5	D	0.85	42.2	#88.1
Street/Raymond	NBL	В	0.65	22.9	52.0	E	0.92	59.8	#95.5
Street	NBT	Α	0.33	8.4	30.2	Α	0.38	13.3	48.7
Signalized	SBT/R	Е	1.00	104.9	#125.4	E	0.94	46.1	#145.7
Signanzea	Overall	С	0.75	48.2	-	E	0.93	40.4	-
	EB	Α	0.31	16.7	14.2	Α	0.40	19.3	18.3
Bronson Avenue at	WB	А	0.08	34.0	7.9	Α	0.19	29.4	12.2
Arlington Avenue	NB	Α	0.31	2.0	14.8	Α	0.39	2.0	m12.8
Signalized	SB	Α	0.28	4.1	28.9	Α	0.42	2.3	21.6
	Overall	Α	0.30	3.9	-	Α	0.40	3.4	-
	EBL	Α	0.16	28.4	14.5	Α	0.20	22.7	16.6
	EBT/R	В	0.70	41.3	78.6	Α	0.57	28.6	81.9
	WBL	Α	0.38	35.6	23.2	Α	0.40	27.8	30.5
Bronson Avenue at	WBT/R	Α	0.40	31.5	45.7	Α	0.48	26.1	70.8
Gladstone Avenue	NBL	Α	0.20	15.7	14.1	Α	0.48	28.4	13.3
Signalized	NBT/R	A	0.48	17.2	60.1	В	0.69	20.1	44.3
org.nam_ca	SBL	A	0.05	13.3	4.1	A	0.13	22.8	7.7
	SBT/R	A	0.36	15.6	44.3	В	0.69	29.1	95.0
	Overall	A	0.51	22.5	-	A	0.59	25.5	-
	EBL	A	0.16	14.9	15.0	A	0.48	21.5	41.1
	EBT/R	A	0.41	16.3	51.3	A	0.39	16.6	55.0
	WBL	A	0.10	14.4	9.2	A	0.18	15.4	15.2
Booth Street at	WBT/R	A	0.10	14.3	34.1	A	0.18	16.8	58.6
Gladstone Avenue	NBL	A	0.28	19.8	5.3	A	0.42	25.6	14.9
Signalized	NBT/R	D	0.03	42.8	# 88.3	C	0.10	36.9	#104.3
Signanzea	SBL	A	0.84	25.3	10.8	A	0.72	28.0	12.5
	SBT/R	A		25.4	44.2			28.1	
			0.51			A	0.41		49.3
A	Overall	Α ^	0.53	25.6	- 22.0	Α	0.56	24.1	47.2
Arthur Street /	EB	A	0.22	4.1	32.0	A	0.34	5.5	47.3
Arthur Lane at	WB	A	0.29	4.5	44.6	A	0.42	6.3	64.2
Gladstone Avenue	SB	A	0.06	2.7	1.6	Α	0.13	11.1	7.2
Signalized	Overall	Α	0.30	4.3	-	Α	0.39	6.1	- 20.7
	WBL/T	A	0.27	13.2	24.8	A	0.39	18.8	39.7
Booth Street at	WBR	Α	0.12	3.9	6.1	A	0.17	4.5	8.4
Raymond Street	NBL	Α	0.06	11.2	5.1	Α	0.08	10.4	6.6
Signalized	NBT	Α	0.50	16.1	48.8	Α	0.40	13.4	44.7
g	SBT/R	Α	0.37	12.5	31.6	Α	0.35	12.0	35.6
	Overall	A veh/h/lane	0.39	13.4	-	Α	0.40	13.3	-

Notes: Saturation flow rate of 1800 veh/h/lane

Queue is measured in metres Peak Hour Factor = 0.90 m = metered queue

= volume for the 95th %ile cycle exceeds capacity

V/C = volume-to-capacity ratio

The study area intersections generally operate well during both peak hours.



At the intersection of Bronson Avenue at Catherine Street/Raymond Street, the southbound through/right movement is at theoretical capacity and may be subject to high delays and extended queues during the AM peak hour. During the PM peak hour at this intersection, the westbound left, westbound through/right, northbound left, and southbound through/right movements may exhibit extended queues.

At the intersection of Booth Street at Gladstone Avenue, the northbound through/right movement may exhibit extended queues during both peak hours.

2.2.8 Collision Analysis

Collision data have been acquired from the City of Ottawa open data website (data.ottawa.ca) for five years prior to the commencement of this TIA for the surrounding study are road network. Table 3 summarizes the collisions types and conditions in the study area, Figure 11 illustrates the intersections and segments analyzed, and Table 4 summarizes the total collisions for each of these locations. Collision data are included in Appendix D.

Table 3: Study Area Collision Summary, 2018-2022

		Number	%
Total (Collisions	117	100%
	Fatality	0	0%
Classification	Non-Fatal Injury	24	21%
	Property Damage Only	93	79%
	Angle	33	28%
	Rear end	25	21%
	Sideswipe	28	24%
Initial Impact Type	Turning Movement	18	15%
	SMV Unattended	3	3%
	SMV Other	8	7%
	Other	2	2%
	Dry	84	72%
	Wet	20	17%
Road Surface Condition	Loose Snow	3	3%
Road Surface Condition	Slush	3	3%
	Packed Snow	3	3%
	Ice	4	3%
Pedestrian Involved		5	4%
Cyclists Involved		2	2%



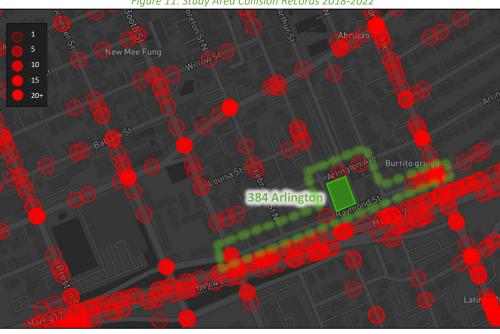


Figure 11: Study Area Collision Records 2018-2022

Table 4: Summary of Collision Locations, 2018-2022

	Number	%
Intersections / Segments	117	100%
Bronson Ave @ Catherine St/Raymond St	93	79%
Booth St @ Raymond St	11	9%
Raymond St btwn Hwy 417 Ic121a Ramp16 & Bronson Ave	8	7%
Arlington Ave btwn Bell St N & Arthur Lane N	2	2%
Arlington Ave @ Bell St	1	1%
Arlington Ave btwn Arthur Lane N & Cambridge St N	1	1%
Raymond St btwn Lebreton St N & Bell St N	1	1%

Within the study area during the five-year time period examined, five pedestrian collisions and two cyclist collisions were noted. One pedestrian and one cyclist collisions were noted at the intersection of Bronson Avenue at Catherine Street/Raymond Street, and one pedestrian collision was noted at the intersection of Booth Street at Raymond Street. Further discussion on these collisions will be provided below within this section.

One additional pedestrian collision is noted to have occurred at the intersection of Arlington Avenue at Bell Street North, and one additional collision involving both a cyclist and a pedestrian was noted to have occurred on the segment of Raymond Street between Arthur Lane and Bell Street North. The pedestrian collision at Arlington Avenue at Bell Street North occurred at 11:29PM on a January night, in dark conditions with loose snow on the road and no mitigations are recommended to address conditions at this intersection. The collision on Raymond Street involving both a cyclist and a pedestrian occurred in dark conditions at 7:26 PM on night in late October, which is not considered a peak time for active modes or vehicles. This segment of roadway currently has a sidewalk on the north side of the roadway and is traffic calmed with a pavement width of approximately 7 metres and narrowings to 6 metres. No further mitigation is considered required to address conditions on this segment.

The intersections of Bronson Avenue at Catherine Street/Raymond Street and Booth Street at Raymond Street are noted to have experienced higher collisions than other study area locations. Table 5 and Table 6 summarize the collision types and conditions for each of these intersections, respectively.



Table 5: Bronson Avenue at Catherine Street/Raymond Street Collision Summary

		Number	%
To	tal Collisions	93	100%
	Fatality	0	0%
Classification	Non-Fatal Injury	17	18%
	Property Damage Only	76	82%
	Angle	29	31%
	Rear end	19	20%
Initial Impact	Sideswipe	23	25%
Type	Turning Movement	18	19%
	SMV Other	3	3%
	Other	1	1%
	Dry	69	74%
Road Surface	Wet	15	16%
Condition	Slush	2	2%
Condition	Packed Snow	3	3%
	Ice	4	4%
Pedestrian Involved		1	1%
Cyclists Involved		1	1%

The Bronson Avenue at Catherine Street/Raymond Street intersection had a total of 93 collisions during the 2018-2022 time period, with 76 involving property damage only and the remaining 17 having non-fatal injuries. The collision types are most represented by angle with 29 collisions, followed by sideswipe with 23, rear end with 10, turning movement with 18, SMV (other) with three, and the "other" collision type with one. Sideswipe and rear end collisions are typical of congested conditions, although the sideswipe collisions on the northbound approach may be influenced by the short left-turn lane developing from the upstream intersection. Historically, 77% of the turning movement collisions were a result of drivers attempting northbound left turns in conflict with drivers completing a southbound through movement. Seventy percent of these collisions occurred at night, thus are not considered to be associated with congestion. This collision pattern may be influenced by the advanced stop line for the northbound approach where northbound left-turning vehicles are required to drive over 20 metres to enter the intersection and speeds along Bronson Avenue. The majority of angle collisions have historically been a result of non-compliance with traffic control and these collisions occur on all approaches. Weather conditions do not affect collisions at this location.

One pedestrian collision and one cyclist collision were noted to have occurred during the five-year time period. The pedestrian collision occurred was the result of a southbound right-turning vehicle failing to yield the right-of-way to a pedestrian in dark and rainy conditions. The cyclist collision was also the result of a turning movement in dark and rainy conditions. This intersection is planned to be modified as part of the Chamberlain Avenue, Catherine Street, and Isabella Street Functional Design Study and subsequent planning efforts, where it is recommended that lighting and surface reflectivity be evaluated as part of the proposed design. No mitigation is required for the two vulnerable user collision within the five-year period, and no further review is required to support this study.

Table 6: Booth Street at Raymond Street Collision Summary

		Number	%
Total Collisions		11	100%
	Fatality	0	0%
Classification	Non-Fatal Injury	2	18%
	Property Damage Only	9	82%



		Number	%
To	tal Collisions	11	100%
	Angle	4	36%
Initial Impact	Rear end	1	9%
Initial Impact	Sideswipe	3	27%
Туре	SMV Other	2	18%
	Other	1	9%
	Dry	6	55%
Road Surface	Wet	3	27%
Condition	Loose Snow	1	9%
	Slush	1	9%
Pedestrian Involv	red	1	9%
Cyclists Involved		0	0%

The Booth Street at Raymond Street intersection had a total of 11 collisions during the 2018-2022 time period, with nine involving property damage only and the remaining two having non-fatal injuries. The collision types are most represented by angle with four collisions, followed by sideswipe with three collisions, and two or fewer as rear end, SMV (other), and other. Historically, over half of angle collisions were a result of northbound through drivers not complying with traffic control in conflict with westbound drivers. The highway overpass over the northbound approach does not obscure the traffic signal on the approach and furthermore an additional lowered signal head is located over the sidewalk on the east side of the intersection to provide additional signal visibility. No other patterns in the collisions were noted, and weather conditions may affect collisions at this location.

One collision involving a pedestrian was noted within the five-year time period. This collision occurred under rainy and wet conditions and was the result of a westbound left-turning vehicle failing to yield right-of-way to a pedestrian. No geometric or mitigable issues were identified at the intersection, and no further review is required to support this study.

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

2.3.1.1 Official Plan (2022)

Within the Ultimate Transit Network, Bronson Avenue and Gladstone Avenue are transit priority corridors.

Bronson Avenue is a Mainstreet corridor, and Gladstone Avenue and Booth Street are Minor Corridors within design priority areas in the Official Plan.

2.3.1.2 Transportation Master Plan (2013)

Within the Transportation Master Plan (TMP), the Road Transit and Transit Priority Affordable Network diagram shows a new station, Corso Italia Station, along the Trillium LRT line at Gladstone Avenue which is expected to be completed in 2024 and is within 800 metres of the site. Gladstone Avenue and Bronson Avenue south of Carling Avenue are designated as isolated measures transit priority corridors within the Affordable Network diagram.

2.3.1.3 Transportation Master Plan – Part 1 (2023)

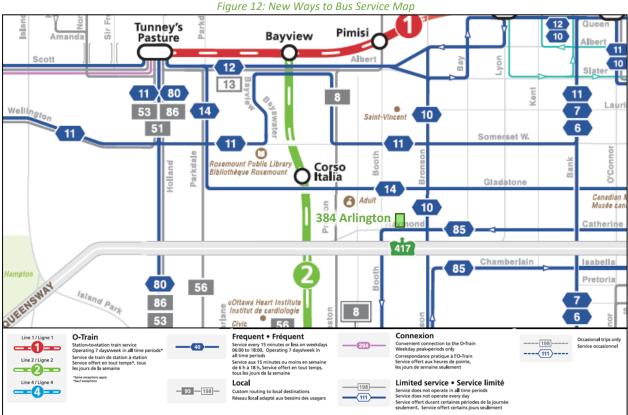
The active transportation project list includes feasibility study of adding cycling facilities on Gladstone Avenue from Percy Street to Corso Italia Station. However, timing for this project is currently undefined.

2.3.1.4 OC Transpo's New Ways to Bus

Responding to recent ridership trends and anticipating the upcoming completion of the Stage 2 expansion of LRT service within the City, the OC Transpo bus service is planned to be recalibrated to focus on frequency, local service



in neighbourhoods, and connections to key destinations. These changes are expected in 2024, and the new service map is illustrated in Figure 12.



Source: https://www.octranspo.com/en/plan-your-trip/service-changes/new-ways-to-bus#new-network Accessed: July 18, 2024

2.3.1.5 The Chamberlain Avenue, Catherine Street, and Isabella Street Functional Design Study

The Chamberlain Avenue, Catherine Street, and Isabella Street Functional Design Study, conducted in 2019, is currently planned for implementation after the build-out horizon, but does not propose any notable improvements for the intersection of Bronson Avenue at Catherine Street/Raymond Street.

2.3.1.6 Planned Construction Projects

Ottawa's Planned Construction Projects portal lists integrated road, sewer, and water infrastructure upgrades on Booth Street between Orangeville Street and Gladstone Avenue commencing in 2026 at the earliest, pending budget approval. No designs are available at this time.

2.3.2 Other Study Area Developments

245-267 Rochester Street, 27-29 Balsam Street

The application includes a site plan for the construction of a mixed-use building including 118 residential dwelling units and 5,125 square feet of commercial space. The development is anticipated to be built-out by 2025 and to generate 35 new AM and 40 new PM peak hour two-way auto trips. (Parsons, 2023)

818 Gladstone Avenue

The application includes a site plan for the construction of a mixed-use development comprising 270 residential dwelling units and 448 square metres of commercial space. The development is anticipated to be built-out by 2024 and to generate 13 new AM and 12 new PM peak hour two-way auto trips. (J.L. Richards, 2021)



18 Louisa Street

The application includes a site plan for the redevelopment of a portion of a three-storey building and surface parking lot into a ten-storey residential building consisting of 139 residential dwelling units. The development is anticipated to be built-out in 2025 and to generate 90 new AM and 97 new PM peak hour two-way vehicles trips. (CGH, 2021)

448-460 Bronson Avenue

The application includes a zoning by-law amendment to permit the construction of a nine-storey mixed-use building comprising 92 residential dwelling units and 534 square metres of ground floor commercial space. The development was initially anticipated to be built-out in 2022. No traffic generation forecasting has been done to date for the development. (BTE, 2021)

273-281 Bell Street

The application includes zoning by-law amendment and site plan applications to permit the construction of a six-storey residential building comprising 49 dwelling units. No TIA was required.

370 Cambridge Street North

The application includes a site plan for the construction of a low-rise residential building comprising 20 dwelling units. No TIA was required.

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of:

- Bronson Avenue at:
 - Catherine Street/Raymond Street
 - o Arlington Avenue
 - o Gladstone Avenue
 - Highway 417 EB Ramp
- Booth Street at:
 - Gladstone Avenue
 - Raymond Street
- Arthur Street/Arthur Lane at Gladstone Avenue

The boundary roads will be Raymond Street, Bell Street, Arthur Lane, and Arlington Avenue and no screenlines are present within proximity to the site.

3.2 Time Periods

As the proposed development is composed primarily of residential units the AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2026. As a result, the full build-out plus five years horizon year is 2031.



4 Development-Generated Travel Demand

4.1 Mode Shares

Examining the mode shares recommended in the TRANS Trip Generation Manual (2020) for the subject district, derived from the most recent National Capital Region Origin-Destination survey (OD Survey), the existing average district mode shares by land use for Ottawa Inner have been summarized in Table 8.

Travel Mode	Multi-Unit	(High-Rise)
Travel Mode	AM	PM
Auto Driver	26%	25%
Auto Passenger	6%	8%
Transit	28%	21%
Cycling	5%	6%
Walking	35%	40%
Total	100%	100%

Table 7: TRANS Trip Generation Manual Recommended Mode Shares – Ottawa Inner

The proposed development is approximately a one kilometre walk from the future Corso Italia LRT station on the Trillium line. The developer has internal sustainability targets for development, including a 25% relative reduction of residential auto travel for the site through the employment of TDM measures. Based on this proximity to rapid transit, the relative amounts of vehicle and bicycle parking proposed (detailed in Section 7.1), and the recommended TDM program (detailed in Section 9.3), custom mode shares are proposed for the site and are summarized in Table 8.

Table 8: Proposed	Development Mod	de Shares		
Tuescal 84 and a	Multi-Unit (High-Rise)			
Travel Mode	AM	PM		
Auto Driver	20%	19%		
Auto Passenger	8%	10%		
Transit	32%	25%		
Cycling	5%	6%		
Walking	35%	40%		
Total	100%	100%		

Table 8: Proposed Development Mode Shares

4.2 Trip Generation

This TIA has been prepared using the vehicle and person trip rates for the residential dwellings using the TRANS Trip Generation Manual (2020). Table 9 summarizes the person trip rates for the proposed residential land use for each peak period.

Table 9: Trip Generation Person Trip Rates

Land Use	Land Use Code	Peak Period	Person Trip Rates	
Multi Unit (Uiah Dian)	221 & 222	AM	0.80	
Multi-Unit (High-Rise)	(TRANS)	PM	0.90	

Using the above person trip rates, the total person trip generation has been estimated. Table 10 summarizes the total person trip generation for the residential land use.



Table 10: Total Residential Person Trip Generation

Land Use	Unito	AM Peak Period			PM Peak Period		
	Units	In	Out	Total	In	Out	Total
Multi-Unit (High-Rise)	296	74	164	238	155	112	267

Using the proposed development mode shares, and the person trip rates, the person trips by mode have been projected. Trip generation by peak hour has been forecasted using the prescribed peak period conversion factors presented in the TRANS Trip Generation Manual (2020) for the residential trips. Table 11 summarizes the trip generation by mode and peak hour.

Table 11: Trip Generation by Mode

_	Traval Mada	AM Peak Hour				PM Peak Hour			
Travel Mode		Mode Share In Out Total N		Mode Share	ln	Out	Total		
	Auto Driver	20%	7	16	23	19%	12	10	22
ait se)	Auto Passenger	8%	3	6	9	10%	7	5	12
ulti-Unit igh-Rise)	Transit	32%	13	29	42	25%	17	14	31
ulti igh	Cycling	5%	2	5	7	6%	4	4	8
ΣΞ	Walking	35%	14	34	48	40%	31	25	56
	Total	100%	39	90	129	100%	71	58	129

As shown above, a total of 23 AM and 22 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

4.3 Trip Distribution

To understand the travel patterns of the subject development, the OD Survey has been reviewed to determine the travel for residential developments, and these patterns were applied based on the build-out of Ottawa Inner. Table 12 below summarizes the distributions.

Table 12: OD Survey Distribution – Ottawa Inner

To/From	% of Trips
North	30%
South	20%
East	40%
West	10%
Total	100%

4.4 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Table 13 summarizes the proportional assignment to the study area roadways, and Figure 12 illustrates the new site generated volumes.

Table 13: Trip Assignment

To/From	Inbound Via	Outbound Via
North	5% Booth St, 25% Bronson Ave	10% Booth St, 20% Bronson Ave
South	10% Booth St, 10% Bronson Ave	5% Raymond, 5% Booth St, 10% Bronson Ave
East	10% Gladstone Ave, 30% Catherine St	10% Gladstone Ave, 30% Bronson Ave (S)
West	10% Hwy 417 EB Ramp	10% Raymond St
Total	100%	100%



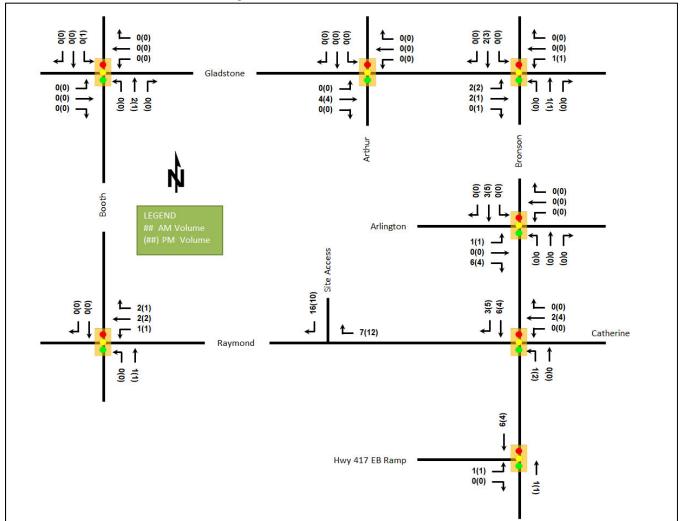


Figure 13: New Site Generation Auto Volumes

5 Exemption Review

Table 14 summarizes the exemptions for this TIA.

Table 14: Exemption Review

Module	Element	Explanation	Exempt/Required
Site Design and TDM			
4.1 Development	4.1.2 Circulation and Access	Only required for site plan and zoning by- law applications	Required
Design	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
4.2 Parking	4.2.1 Parking Supply	Only required for site plan and zoning by- law applications	Required
4.3 Boundary Street Design		All applications	Required
4.5 Transportation Demand Management	All Elements	Only required when the development generates more than 60 person-trips	Required
Network Impact		'	



Module	Element	Explanation	Exempt/Required
3.2 Background Network Travel Demand	All Elements	Only required when one or more other Network Impact Modules are triggered	Exempt
3.3 Demand Rationalization		Only required when one or more other Network Impact Modules are triggered	Exempt
4.6 Neighbourhood Traffic Calming	4.6.1 Adjacent Neighbourhoods	If the development meets all of the following criteria along the route(s) site generated traffic is expected to utilize between an arterial road and the site's access: 1. Access to Collector or Local; 2. "Significant sensitive land use presence" exists, where there is at least two of the following adjacent to the subject street segment: • School (within 250m walking distance); • Park; • Retirement / Older Adult Facility (i.e. long-term care and retirement homes); • Licenced Child Care Centre; • Community Centre; or • 50%, or greater, of adjacent property along the route(s) is occupied by residential lands and a minimum of 10 occupied residential units are present on the route. 3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision; 4. At least 75 site-generated auto trips; 5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more. Only required when the development	Exempt
4.7 Transit	Capacity 4.7.2 Transit Priority Requirements	generates more than 75 transit trips Only required when the development generates more than 75 auto trips	Exempt
4.8 Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt
4.9 Intersection Design	4.9.1 Intersection Control	Only required when the development generates more than 75 auto trips	Exempt



Module	Element	Explanation	Exempt/Required
	4.9.2 Intersection	Only required when the development	Exempt – Access
	Design	generates more than 75 auto trips	Intersection Design Element
			required in all applications

6 Development Design

6.1 Design for Sustainable Modes

The proposed development is a residential building with bicycle and vehicle parking provided in three below-grade parking levels. A total of 296 bike spaces are provided, including 20 external spaces within surface racks and the remainder within the below-grade parking levels accessed by a ramp with a 16% grade. Elevators are to be provided to the parking levels, accommodating cyclists for ease of use.

Existing sidewalks are provided on the boundary roads of Arlington Street, Bell Street North, and Raymond Street, and hard surface connections will be provided between building entrances and these facilities which are to be reconstructed as part of the development. Local bus stops to routes discussed in Section 2.2.5 are located within 300 metres of the site entrances. The future Corso Italia Station is within a one kilometre walk of the site entrances.

The infrastructure TDM checklist is provided in Appendix E.

6.2 Circulation and Access

A 6.0-metre-wide right-in-right-out access is proposed on Raymond Street. The ramp to underground parking has a 16% slope with 8% transition slopes. The top of the ramp is approximately 3.5 metres from the back of the existing sidewalk on Raymond Street.

Emergency services can access the development via the four public right-of-way frontages, and garbage collection is to take place on the local roadway of Raymond Street.

7 Parking

7.1 Parking Supply

The site proposes a total of 78 vehicle parking spaces and 296 bicycle parking spaces.

Site-specific zoning has a minimum vehicle parking rate of 0.2 spaces per unit for residents and 0.04 spaces per unit for visitors. The minimum vehicle parking provision therefore equates to 57 residential parking spaces and eleven visitor parking spaces. The site proposes 67 residential parking spaces and eleven visitor parking spaces, and the proposed vehicle parking provision meets the minimum vehicle parking established for the site.

Per the Ottawa Accessibility Design Standards, four accessible parking spaces are required for sites with 78 parking spaces, and the development is proposed as meeting this requirement.

Site-specific zoning has a minimum bicycle parking rate of 1.0 spaces per unit, totalling 297 bicycle parking spaces. A total of 296 bicycle parking is proposed, including 276 internal and 20 external spaces. Therefore, minimum bicycle parking provision requirements are being met.

8 Boundary Street Design

Table 15 summarizes the MMLOS analysis for the boundary streets of Bell Street, Arthur Lane, Arlington Avenue, and Raymond Street. The existing and future conditions for both streets will be the same and are considered in



one row. The boundary street analysis is based on the policy area of "General Urban Area". The MMLOS worksheets has been provided in Appendix F.

Table 15: Boundary Street MMLOS Analysis

Segment	Pedestri	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target	
Bell Street	В	С	Α	D	-	-	-	-	
Arthur Lane	С	С	Α	D	-	-	-	-	
Arlington Avenue	В	С	Α	D	-	-	-	-	
Raymond Street	С	С	D	D	-	-	-	-	

The boundary streets meet the MMLOS targets. No infrastructure improvements or mitigation measures are required on the basis of the analysis.

9 Transportation Demand Management

9.1 Context for TDM

The mode shares used within the TIA represent a shift from auto modes to sustainable modes given the proximity of LRT and the reduction in vehicle parking for the development. Overall, the modal shares are likely to be achieved.

The subject site is not within a design priority area, and no age restrictions are noted. The total bedroom is 421 including 159 one-bedroom units, 128 two-bedroom units, and two (2) three-bedroom units.

9.2 Need and Opportunity

The subject site has been assumed to rely predominantly on walking and transit, and those assumptions have been carried through the analysis.

The study area intersections may have residual capacity with signal timing adjustments. Risks associated with failing to meet mode share targets are low given only a 6% reduction to auto travel has been assumed beyond the typical recommended area mode shares trip generation of the area.

9.3 TDM Program

The "suite of post occupancy TDM measures" has been summarized in the TDM checklists for the residential land uses. The checklist is provided in Appendix E. The key TDM measures recommended include:

- Conduct surveys to identify post-occupancy travel-related behaviours, attitudes, challenges and solutions
- Offer on-site cycling courses for residents, or subsidize off-site courses
- Display local area information with walking/cycling maps and relevant transit schedules and route maps
- Provide a multimodal travel option information package to new residents
- Inclusion of a 1-month Presto card for first time new condo purchase and apartment rental, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
- Contract with provider to install on-site bikeshare (or other micromobility) station
- Provide residents with bikeshare (or other micromobility) memberships, either free or subsidized
- Contract with provider to install on-site carshare vehicles and promote their use by residents
- Provide residents with carshare memberships, either free or subsidized
- Unbundle parking cost from purchase or rental costs



10 Intersection Design

10.1 Intersection Control

The site access on Raymond Street is proposed to be stop-controlled on the minor approach of the access.

10.2 Intersection Location and Design

Vehicular access is proposed via a single 6.0-metre-wide right-in/right-out access on the one-way (westbound) Raymond Street. The site access is proposed to be located approximately 8.5 metres west of the Arthur Lane right-of-way and approximately 22.75 metres east of the Bell Street right-of-way. No traffic hazards are noted based on the proximity between the access and Arthur Lane along the local road.

The ramp grade is proposed to be 16% with 3.0-metre transition slopes of 8% grade at the top and bottom. The top of the ramp is approximately 3.5 metres from the back of the sidewalk on Raymond Street, with a slope of 2% sloping towards the road within this area. The resulting profile on approach to the sidewalk results in the back tires of a TAC-P passenger vehicle template being approximately 0.06 metres below the back edge of the sidewalk when a vehicle is stopped 0.5 metres from the back of the sidewalk. No vertical sightline issues are resultant from this relatively flat condition. Continuous elements within the boulevard such as retaining walls and shrubs are limited to less than 0.75 metres above the surface of the ramp at the garage opening, and thus no potential horizontal sightline obstructions are present.

The site access does not comply with provision 25(1)(u) of the Private Approach By-Law which requires a maximum grade of 2% within the first nine metres of the property line. It is recommended based on the foregoing discussion that the access be approved in line with provision 25(1)(v) of the Private Approach By-Law.

The distance from the garage door to the roadway is approximately 5.2 metres. Given the presence of the parking lane on Raymond Street, and the overall roadway width of 7.5 metres including the parking lane, no operational impacts are anticipated on Raymond Street by not providing the typical minimum recommended eight metres of throat length for local roads, and the proposed configuration is supportable.

10.2.1 Recommended Design Elements

The site access is recommended to comply with City standard SC7.1 with a continuous depressed sidewalk across the access.

11 Summary of Improvements Indicated and Modifications Options

The following summarizes the analysis and results presented in this TIA report:

Proposed Site and Screening

- The proposed site includes 296 residential dwelling units with 78 underground vehicle parking spaces, and
 296 bike parking spaces
- Accesses will be provided via a right-in/right-out access on Raymond Street
- The development is proposed to be completed as a single phase by 2026
- The trip generation and safety triggers were met for the TIA Screening

Existing Conditions

- Bronson Avenue, Catherine Street, and Raymond Street east of the 417 on-ramp are arterial roads, and Booth Street and Gladstone Avenue are major collector roads in the study area
- Sidewalks are generally provided on both sides of the study area roadways



- The study area intersections generally operate well during both peak hours, with queuing noted on various movements at the intersection of Bronson Avenue at Catherine Street/Raymond Street, primarily during the PM peak hour
- The intersections of Bronson Avenue at Catherine Street/Raymond Street and Booth Street at Raymond Street are noted to have experienced higher collisions than other locations within the study area
- At the intersection of Bronson Avenue at Catherine Street/Raymond Street, sideswipe and rear end
 collisions are typical of congested conditions, turning movement collisions may be influenced by the
 advanced stop line for the northbound approach where northbound left-turning vehicles are required to
 drive over 20 metres to enter the intersection and speeds along Bronson Avenue, and the angle collisions
 have historically been a result of non-compliance with traffic control and these collisions occur on the
 northbound, southbound and westbound approaches
- At the intersection of Booth Street at Raymond Street, historically, over half of angle collisions were a
 result of northbound through drivers not complying with traffic control in conflict with westbound drivers

Planned Conditions

- The new Corso Italia Station along the Trillium LRT line at Gladstone Avenue is expected to be completed in 2024
- The active transportation project list includes feasibility study of adding cycling facilities on Gladstone Avenue from Percy Street to Corso Italia Station
- Bronson Avenue is a transit priority corridor within the Transportation Master Plan (2013) and the Official
 Plan

Development Generated Travel Demand

- The proposed development is forecasted produce 129 two-way person trips during both the AM peak hour and PM peak hours
- Of the forecasted person trips, 23 two-way trips are forecast to be vehicle trips during the AM peak hour and 22 two-way trips to be vehicle trips during the PM peak hour
- Of the forecasted trips, 30% are anticipated to travel north, 20% to travel south, 40% to travel east, and 10% to travel west

Development Design

- Bicycle parking is proposed within surface racks and within the below-grade parking levels accessed via a ramp with a 16% grade, with elevators provided to the parking levels for cyclist ease of use
- Local bus stops are located within 300 metres of the site entrances, and Corso Italia Station is within a one kilometre walk of the site entrances
- Hard surface connections are proposed between building entrances and existing sidewalks on the boundary roads of Arlington Street, Bell Street North and Raymond Street, which are to be rebuilt as part of construction
- Emergency services are anticipated to access the development via the four public rights-of-way fronting the site, and garbage collection is anticipated on the local roadway of Raymond Street

Parking

- The site proposes a total of 78 vehicle parking spaces and 296 bicycle parking spaces
- The site proposes four accessible parking spaces



• The proposed vehicle parking and bicycle parking meets the site-specific zoning requirements and meets the accessible parking requirements

Boundary Street Design

 The boundary streets meet the MMLOS targets and no mitigation or area improvements are required on the basis of the analysis

TDM

- Supportive TDM measures recommended to be included within the proposed development are:
 - Conduct surveys to identify post-occupancy travel-related behaviours, attitudes, challenges and solutions
 - Offer on-site cycling courses for residents, or subsidize off-site courses
 - Display local area information with walking/cycling maps and relevant transit schedules and route maps
 - o Provide a multimodal travel option information package to new residents
 - o Inclusion of a 1-month Presto card for first time new condo purchase and apartment rental, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
 - o Contract with provider to install on-site bikeshare (or other micromobility) station
 - o Provide residents with bikeshare (or other micromobility) memberships, either free or subsidized
 - o Contract with provider to install on-site carshare vehicles and promote their use by residents
 - o Provide residents with carshare memberships, either free or subsidized
 - Unbundle parking cost from purchase or rental costs

Intersection Design

- Vehicular access is proposed via a single 6.0-metre-wide right-in/right-out access on Raymond Street, which is one-way (westbound)
- The site access is proposed to be located approximately 8.5 metres west of the Arthur Lane right-of-way and approximately 22.75 metres east of the Bell Street right-of-way
- The ramp grade is proposed to be 16% with 3.0-metre transition slopes of 8% grade at the top and bottom, approximately 3.5 metres from the back of the sidewalk on Raymond Street
- The site access does not comply with provision 25(1)(u) of the Private Approach By-Law which requires a maximum grade of 2% within the first nine metres of the property line
- Given the sufficient offset from Raymond Street, no sightline obstructions being present, and no traffic hazards anticipated to be present from the spacing of the proposed site access from Arthur Lane, it is recommended that the access be approved in line with provision 25(1)(v) of the Private Approach By-Law
- The typical minimum recommended eight metres of throat length for the local road is not being provided, but the given the 5.2 metres between the roadway and the proposed garage, and the 7.5 metres of asphalt including a parking lane on Raymond Street, no operational issues are anticipated from the throat and the configuration is supportable
- The site access is recommended to comply with City standard SC7.1 with a continuous depressed sidewalk across the access



12 Conclusion

It is recommended that, from a transportation perspective, the proposed development applications proceed.

Prepared By:

Reviewed By:



John Kingsley Transportation Engineering-Intern Andrew Harte, P.Eng. Senior Transportation Engineer



Appendix A

TIA Screening Form and PM Certification Form





City of Ottawa 2017 TIA Guidelines Step 1 - Screening Form Date: 30-Aug-24
Project Number: 2021-137
Project Reference: 384 Arlington

1.1 Description of Proposed Development	
Municipal Address	384 Arlington Avenue
Description of Location	Block fronting Raymond St, Bell St N, Arlington Ave,
Description of Location	Arthur Ln N
Land Use Classification	Residential 5th Density– R5B[2916]-c S488-h
Development Size	296 high-rise dwelling units
Accesses	One RIRO on Raymond St
Phase of Development	Single
Buildout Year	2026
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Townhomes or apartments	
Development Size	296 Units	
Trip Generation Trigger	Yes	

1.3 Location Triggers		
Does the development propose a new driveway to a boundary street that		
is designated as part of the City's Transit Priority, Rapid Transit or Spine/	No	
Cross-Town Bicycle Networks?		
Is the development in a Design Priority Area (DPA) or Transit-	No	
oriented Development (TOD) zone, or PMTSA?	No	
Location Trigger	No	

1.4. Safety Triggers			
Are posted speed limits on a boundary street 80 km/hr or greater?	No		
Are there any horizontal/vertical curvatures on a boundary street limits	N		
sight lines at a proposed driveway?	No		
Is the proposed driveway within the area of influence of an adjacent traffic			
signal or roundabout (i.e. within 300 m of intersection in rural conditions,	No		
or within 150 m of intersection in urban/ suburban conditions)?			
Is the proposed driveway within auxiliary lanes of an intersection?	No		
Does the proposed driveway make use of an existing median break that	No	Ne	
serves an existing site?	NO		
Is there is a documented history of traffic operations or safety concerns on	Yes	Bronson Ave at Catherine	
·		St/Raymond St 80 collisions	
the boundary streets within 500 m of the development?		from 2015-2019	
Does the development include a drive-thru facility?	No		
Safety Trigger	Yes	·	



TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below.

CERTIFICATION

- 1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
- 2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
- 3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
- 4. I am either a licensed¹ or registered² professional in good standing, whose field of expertise [check $\sqrt{\text{appropriate field(s)}}$] is either transportation engineering $\sqrt{\text{or}}$ or transportation planning \square .
- License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

Dated at Ottawa (City)	this 20 day of September	, 2018
Name:	Andrew Harte (Please Print)	
Professional Title:	Professional Engineer	
Signature	of Individual certifier that s/he meets the above four criteria	-

Office Contact Information (Please Print)
Address: 6 Plaza Court
City / Postal Code: Ottawa / K2H 7W1
Telephone / Extension: (613) 697-3797
E-Mail Address: Andrew.Harte@CGHTransportation.com



Appendix B

Turning Movement Counts





Ontario Traffic Inc.
Traffic Monitoring · Services & Products

Bronson Ave & Hwy 417 EB Ramp

Intersection: Count Date:

From: T0:

Peak Hour Diagram

One Hour Peak From: 10:00:00 07:00:00 Specified Period

T0:

08:00:00 00:00:60

** Signalized Intersection **

Mar 07, 2024

2408800001

Site Code:

Weather conditions:

Clear

Major Road: Bronson Ave runs N/S



Bronson Ave	-	- 00	783	813	-
	15	8 6	}	Totals	
pproach	In Total	1668	28	_	1727
ਰ	드	35	29	0	14

0 0 0

134 152 Hwy 417 EB Ramp Se CD ED Totals 147 129 2 2 0 0

× × ×	Peds: 8
Peds: 38	

Peds: 0

Peds: 0

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780	756	24	0	
Totals	Œ	ß	*	
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Out In Total 276 10

276

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West Approach

Out In Total

930 1686

756

a 8

South Approach

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Totals	780	0
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	Bronson Ave	

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	Bronson Ave	

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	0	Bronson Ave
	*	

0 286

780 965 1745

🖨 - Cars

- Trucks

💑 - Bicycles

Comments

Ontario Traffic Inc. Traffic Monitoring · Services & Products

Bronson Ave & Hwy 417 EB Ramp Mar 07, 2024 2408800001 Intersection: Count Date: Site Code:

** Signalized Intersection **

Clear 13:30:00 Weather conditions:

12:30:00 11:30:00

<u>.</u>:

11:30:00

From:

Specified Period

One Hour Peak From:

Peak Hour Diagram

Major Road: Bronson Ave runs N/S

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Bronson Ave	C	۰ ۶	764	794	→	Peds: 0	z -	S ≥	Peds: 9	•
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£	le:	1537	99	0	93			4	•	١,
roac	In Total	15			15	ᇤ	tals	143	448	
Ар	드	773	26	0	799 1593	89	□ Totals	136	436	
North Approach	Out	764	30	0	794	Hwy 417 EB Ramp		7	12 4	Moct Annual
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		Totals	Œ ć	9 1	8	
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436 4	West Approach	드	0	0	0	0
12 4	West	Out	572	19	0	591
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=	Total	Totals	929	0
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0		*	0	0
0	591			
			Bronson Ave	

oach	Total	1837	61	0	1898
South Approach	드	1200	42	0	1242
Sout	Out	637	19	0	929
		Ø	ß	*	

_	1242	929	•
	0	0	*
	42	19	ß
	1200	637	4

🗞 - Bicycles

🞝 - Trucks

🖨 - Cars



Specified Period

16:15:00 One Hour Peak From: 15:00:00 18:00:00 From:

Bronson Ave & Hwy 417 EB Ramp

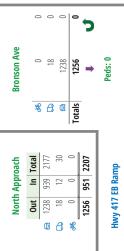
Mar 07, 2024 2408800001 Intersection: Count Date: Site Code:

Weather conditions:

** Signalized Intersection **

Clear

Major Road: Bronson Ave runs N/S



36 □ □ □ Totale

	4	•
Intals	166	319
1	164	318
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8	0	0

Peds: 0

Peds: 41

Peds: 7

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10
0 Totals **a** 8 0 485 Out In Total 482 West Approach

482 ¢

e 0 € % 485

Out In Total

775 1556 2331

0 0

a 48

South Approach

0 0 0 **Bronson Ave**

785 1575 2360

🔁 - Cars

🗞 - Bicycles

Comments

- Trucks

Ontario Traffic Inc. Traffic Monitoring · Services & Products

Specified Period From:

08:00:00 00:00:60

From:

10:00:00 00:00:70

One Hour Peak

Peak Hour Diagram

Bronson Ave & Catherine St - Raymond St 2408800002 Intersection: Site Code:

Mar 07, 2024

Count Date:

Major Road: Bronson Ave runs N/S

** Signalized Intersection **

Clear

Weather conditions:

Out In Total Ea 731 0 731 Eb 35 0 35 As 0 0 0 992 0 992 East Approach °°°

Bronson Ave

17 506 **524**

0/9 22 **a** 8

Out In Total

North Approach

169 164

Totals * A O

693 708 1401

0

Catherine St

Peds: 17

Peds: 33
Z 00

Peds: 20

Totals

K

Raymond St

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	-
is:	
Peds:	

West Approach

 Out
 In
 Total

 885
 783
 1668
 South Approach

West	West Approach	oach	_	F	—	C
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0 852 852

914 813 1727 **a** 8 **_ •**|• • • **Bronson Ave**

36 - Bicycles

- Trucks

🔁 - Cars



Specified Period From:

One Hour Peak From: 13:30:00 11:30:00

> Bronson Ave & Catherine St - Raymond St Mar 07, 2024 2408800002 Intersection: Site Code:

Count Date:

Weather conditions:

11:30:00 T0:

** Signalized Intersection **

Clear

Major Road: Bronson Ave runs N/S

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Bronson Ave	0	00	143	151	ı,
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ne St		107 6 0 334 12 0 299 15 0
Catherine	Totals	346 3 314 2
	2	416

Peds: 35

Peds: 35

Totals

R.

Raymond St

Peds: 38

334 12 (299 15 (South Approach	In Total	764 1537	30 55
314		South /		773	
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	- 1				

Peds: 0

Totals 335 463

Out In Total

West Approach

oach.	Total	1537	22	0	1592
South Approach	드	764	30	0	794
South	Out	773	25	0	798
		Œ	ß	R	•

4 8

Bronson Ave

- Trucks

🖨 - Cars

💑 - Bicycles

Comments

Ontario Traffic Inc. Traffic Monitoring - Services & Products

Peak Hour Diagram

One Hour Peak From: 15:00:00 Specified Period From:

15:45:00 16:45:00

T0: 18:00:00

Weather conditions:

Bronson Ave & Catherine St - Raymond St

Intersection: Count Date:

Mar 07, 2024

2408800002

Site Code:

Clear

Major Road: Bronson Ave runs N/S

٠.
Intersection **
** Signalized

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ac	Total	=			12
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Bronson Ave

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Raymond St

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Out In Total North Approach

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atherine St	₫		110	603	473
Cat	Totals		110	609	481
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	P	eds	: 31		

eds: 31	
₩ ⊗	Peds: 0

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Totals	19	609	481	
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West Approach

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473	Αρproach
481	South
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0	Brons

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ë	onson Ave	

1243	980	
0	0	*
71	3	ß

36 - Bicycles

- Trucks

🖨 - Cars



Specified Period From:

One Hour Peak From: 10:00:00 07:00:00

> Bronson Ave & Arlington Ave Intersection:

00:00:60 08:00:00 .o

To:

** Signalized Intersection **

Mar 07, 2024 2408800003 Count Date: Site Code:

Clear Weather conditions:

Major Road: Bronson Ave runs N/S

Out In Total © 619 683 1302 641 710 1351 49 North Approach 0 27 0 22

	Bron	Bronson Ave	Je	
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(1)	2	612	2	0
Totals	7	632	2	0
	7	-	4	5

proach		20	0	2	22
Appro	드	∞	0	0	∞
East	Out	12	0	2	14
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Total	20	0	2	22
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Out	12	0	2	14
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Peds: 25

□ ⊕ Totals **Arlington Ave**

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Peds: 18

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Peds: 15

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Totals **a** 8

 Out
 In
 Total

 60
 12
 72

West Approach

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South Approach	드	699	22	1	692
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49	22	27	ß	
1350	699	681	Ф	
Total	드	Out		
oach.	South Approach	Sout		

Bronson Ave

36 - Bicycles

- Trucks

🖨 - Cars

Comments

Ontario Traffic Inc. Traffic Monitoring · Services & Products

12:30:00 11:30:00

<u>.</u>:

13:30:00 11:30:00

One Hour Peak

Specified Period

From:

Peak Hour Diagram

From:

Bronson Ave & Arlington Ave Intersection:

Mar 07, 2024 2408800003

Clear

Weather conditions:

Major Road: Bronson Ave runs N/S

** Signalized Intersection **

Count Date:

Site Code:

0 0 2 21 17 570 **19 591**

Out In Total North Approach

Totals \$ A O

Bronson Ave

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Peds: 16

Peds: 14	
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Peds: 7

CD CA Totals **Arlington Ave**

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West Approach

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ı Ave	
Bronson	

36 - Bicycles - Trucks

🖨 - Cars



Specified Period From:

One Hour Peak From: 18:00:00 15:00:00

Bronson Ave & Arlington Ave

Mar 07, 2024 2408800003 Intersection: Count Date:

Site Code:

Clear

16:15:00 <u>ان</u>

To:

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Weather conditions:

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Major Road: Bronson Ave runs N/S

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Bronson Ave	0	10	006	910	<u>-</u>
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Approach	드	32	0	2	34
East	Out	29	0	-	30
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Peds: 23

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West Approach

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Sout	Out	829	10	0	020
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oach	Total	1805	22	0	1827
South Approach	드	9/6	12	0	988
Sout	Out	829	10	0	839
		₫	ß	*	



Bronson Ave 782 26 **a** 8

🗞 - Bicycles

- Trucks

🖨 - Cars

Comments

From: Ontario Traffic Inc. Traffic Monitoring - Services & Products

One Hour Peak Peak Hour Diagram Specified Period

From: <u>.</u>: 10:00:00 07:00:00

00:00:60 08:00:00

Bronson Ave & Gladstone Ave

Intersection: Count Date:

Site Code:

Mar 07, 2024 2408800004

Clear Weather conditions:

Major Road: Bronson Ave runs N/S

** Signalized Intersection **

	Nort	North Approach	.oach		Bron	Bronson Ave	بو
	Out	드	_	56	_	_	
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_	5 8	_	_
~ %	~ 	7	Gladistorie

 Out
 In
 Total

 © 213
 308
 521

East Approach



Peds: 27

Peds: 27	
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□ 🛱 Totals **Gladstone Ave**

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Totals	0	15	147	62
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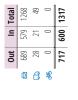
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19	Approach
62	South
4	

Peds: 52

West Approach

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73	689	Ø.	0 0
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Ave	
Bronson	





🖨 - Cars

36 - Bicycles



Specified Period From:

One Hour Peak

13:00:00 12:00:00 From: <u>ان</u> 11:30:00 13:30:00

To:

Mar 07, 2024 Count Date:

Bronson Ave & Gladstone Ave

Intersection:

2408800004

Site Code:

Clear Weather conditions:

*	
Intersection	
Signalized	
*	

Major Road: Bronson Ave runs N/S

oach	Total	1005	38	0	1043
North Approach	드	463	20	0	483
Nort	Out	542	2	0	260
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	Bron	Bronson Ave	e Ve	
 *	0	0	0	0
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(]	27	484	31	0
Totals	78	501	33	0
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4	tal	278	22	14	614
oac					9
Approach	드	321	13	∞	342
East	Out	257	6	9	272
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614	Ave
347	Gladstone
7/7	Glad
	342

Peds: 59

Gladstone Ave	Totals		25 25	179 165	
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Peds: 28

CD 🕾 Totals Gladstone Ave

Peds: 34

Totals

West Approach

	Totals	(1)	ß	卷
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122	640	287	'
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tals		414		0
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	Bron	Bronson Ave	ve	

🗞 - Bicycles

- Trucks

🖨 - Cars

Comments

Ontario Traffic Inc. Traffic Monitoring: Services & Products

Peak Hour Diagram

One Hour Peak Specified Period

From: T0: 18:00:00 15:00:00 From:

17:15:00 16:15:00

Clear

Bronson Ave & Gladstone Ave

Intersection: Count Date:

Site Code:

Mar 07, 2024 2408800004

Weather conditions:

Major Road: Bronson Ave runs N/S

** Signalized Intersection **

Bronson Ave	-	6 10	54 722	Totals 55 732	7
oach	Total	1496	70	0	1516
North Approach	드	703	6	0	712
Nort	Out	793	=	0	804
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ach	Total	732	12	∞	752
East Approach	드	329	7	0	366
East	Out	373	2	∞	386
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Ave	Totals	0	52	233	87
Gladstone Ave	Ф	0	57	227	8
Glads	ß	0	-	9	0

Peds: 55
Z 00
Peds: 65

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Gladstone Ave

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Peds: 71

West Approach

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170	906	798	Ø
Tota	ᄪ	Out	
oacu	south Approach	Sout	

- Trucks

🖨 - Cars

36 - Bicycles



Specified Period From:

09:15:00 08:15:00 One Hour Peak From: .i 10:00:00 07:00:00

Booth St & Gladstone Ave 2408800005 Intersection: Site Code:

Weather conditions:

Mar 07, 2024 Count Date:

Clear

** Signalized Intersection **

Major Road: Gladstone Ave runs E/W

Out In Total © 230 365 595 240 375 615 0 0 North Approach 6 ß

	80	Booth St		
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ß	0	0	_	0
(]	33	167	30	0
Totals	36	173	33	0
	7	→	4	5

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Approach	n T	317	_	10	344
East A	Out	207	13	9	526
		Ф	ß	鬈	,

Approact	=	_			570
₹	=	317	17	10	344
	Ont	207	13	9	526
		Ø	ß	B	

Glac otals 0

	Totals	ø	ß	R.
t	0	0	0	0
4	27	24	\sim	0
1	164	151	6	4
L	35	32	-	7

Peds: 31

Peds: 22

🗅 🖨 Totals Gladstone Ave

Peds: 38

Peds: 32

13 282

Totals

West Approach

1 2	ach	Total	280	10	10	009
32	South Approach	n T	225	9	00	239
32	South	Out	355	4	7	361
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-		
-	th St	
0	Booth	
8		

🖨 - Cars

-Trucks

💑 - Bicycles

Comments

Ontario Traffic Inc. Traffic Monitoring · Services & Products

Peak Hour Diagram

12:00:00 13:00:00 One Hour Peak From: <u>.</u>: 13:30:00 11:30:00 Specified Period From:

Weather conditions:

Booth St & Gladstone Ave

Intersection: Count Date:

2408800005 Mar 07, 2024

Site Code:

Clear

ntersection **
** Signalized

Major Road: Gladstone Ave runs E/W

249 281 530 11 16 27 6 4 10 266 301 567 Out In Total East Approach 249 281 CD 11 16

	8	Booth St		
*	0	0	0	0
ß	_	-	c	0
(]	37	108	30	0
Totals	38	109	33	0
	4	→	<u> </u>	5

180 316 496

Out In Total

North Approach

0	0	0	5
\sim	30	33	<u></u>
-	108	109	→
_	37	38	•
ß	(]	Totals	

tone Ave	4
Glads	Totals

Peds: 28

Ξ × ω
Peds: 18

CD 🛱 Totals **Gladstone Ave**

0 44 1
Peds: 20
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13	0	31	187	31	
Totals	0	3	203	32	
	t	4	1	4	

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	* a
Peds: 34	- 29
Pe	* 4
	-

oach	Total	376	13	4	393
South Approach	드	167	6	_	177
South	Out	209	4	3	216
		Œ	ß	*	

8 F	F	Totals 16 162	16	6	34	9	
363 22 24 4 4	ach	otal	903	3	\$	6	646
	Approach	In Total			末 7	5	257 646

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7	th St
0	Booth
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=	216		
	3	*	
	4	ß	
=	209	(13	
1	5		1.

- Trucks

🖨 - Cars

36 - Bicycles



Specified Period

16:15:00 One Hour Peak From: 15:00:00

Booth St & Gladstone Ave

18:00:00 From:

> 2408800005 Intersection: Site Code:

Mar 07, 2024

Count Date:

Clear Weather conditions:

** Signalized Intersection **

Major Road: Gladstone Ave runs E/W

				=	
oach.	In Total	715	_	3	719
North Approach	드	494	_	3	498
Nort	Out	221	0	0	221
		¢3	ß	R	

	8	Booth St		
*	0	0	0	0
ß	0	0	0	0
(1	16	174	31	0
Totals	19	174	31	0
_	7	→	4	5

712	341	371	
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15	6	9	A
689	332	357	Œ
2	ᄪ	Out	
ach	Approach	East	

proach	Total	689	15	∞	712
Appro	드	332	6	0	341
East	Out	357	9	∞	371
		4	ß	R	

	Glad	stone A	We	
	Totals	@	8	*
t	0	0	0	0
+	36	36	С	_

	Totals	(1)	ß	*
U	0	0	0	0
4	36	36	0	0
ļ	272	259	2	∞
L)	63	62	-	0

Peds: 28

Peds: 29

Totals Gladstone Ave

Peds: 43

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	5	000	> t	
ı	7/7	697	2	
L	63	62	-	
				- 1
	South	Approach	ach	

Peds: 41

42 298

Totals **a** 8

West Approach

oach	Total	643	\sim	3	649
South Approach	드	262	-	0	263
Sout	Out	381	2	~	386
		ø	ß	*	•

649	263	386	
3	0	3	*
3	_	2	ß
643	262	381	(1
Total	므	Out	
oach	south Approach	Sout	

Booth St

🗞 - Bicycles

- Trucks

🖨 - Cars

Comments

Ontario Traffic Inc. Traffic Monitoring: Services & Products

Peak Hour Diagram

One Hour Peak From: 07:00:00 Specified Period From:

10:00:00

00:00:60

08:00:00

Weather conditions:

Booth St & Raymond St

Intersection: Count Date:

Site Code:

Mar 07, 2024 2408800006

Clear

Major Road: Booth St runs N/S

** u	
Intersectio	
ignalized	
S **	

Booth St

North Approach

0	0	0	0	כ		Peds: 63
13	2	166	181	→	Peds: 23	z -
0	0	54	54	7	Pec	≥
*	ß	(]	Totals			Peds: 26

CD CA Totals Raymond St

B

Rayn	Totals	19	101	99
Raymond !	Œ	99	88	82
St	8	2	\sim	9

» Seds: 6	s: 63	
	φ •	Peds: 6

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4	4	22	9

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₽ 17	21	0	0	

 Out
 In
 Total

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 173
 173

West Approach

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16	13	3	B
13	∞	2	ß
564	224	340	ø
Total	드	Out	
oacu	soum Approacn	Sour	

0 22	319 0	2 0	3 0	h St
, .			0	Booth St
Totals	4	ß	*	

245	348		
Ţ.,	3	*	
-	5	ß	
77.	340	di	

💑 - Bicycles

- Trucks

🖨 - Cars



Specified Period

One Hour Peak From: From: 11:30:00 13:30:00

> Booth St & Raymond St 2408800006 Intersection: Count Date: Site Code:

Weather conditions:

12:30:00

** Signalized Intersection **

Mar 07, 2024

Clear

Major Road: Booth Struns N/S

					כ
Booth St	c	n ~	134	4	→
900	0	· -	44	45	7
	56	8 8	Q	Totals	-
pach	In Total	378	13	2	396
North Approach	드	200	6	2	211
				_	_
Nort	Out	178	4	~	185
Nort	Out	178	4	% %	185

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	0	14	ß	0
_	0	162	Ø3	0
In To	드	Out		C
ac	East Approac	East		



	Kay	mond	ž	
	Totals	₫	a	*
4	59	99	\sim	0
1	75	69	9	0
•	42	37	S	0

Peds: 46

Peds: 21

Totals

Raymond St

Peds: 9

Œ	99	69	37
ß	\sim	9	2
*	0	0	0

0	2	oach	Total	171 326	14	2
5	37	South Approach	므	171	∞	~
2	45	Sout	0ut	155	9	2
ļ	L			Ø	ß	*

11 152

Totals

 Out
 In
 Total

 0
 124
 124

West Approach

oach	Total	326	14	5	345
South Approach	드	171	∞	3	182
Sout	Out	155	9	2	163
		Ø	ß	B	

0	0	0	
144	9	2	Booth St
=	0	0	800
₫	ß	*	

- Trucks 🖨 - Cars

💑 - Bicycles

Comments

Ontario Traffic Inc. Traffic Monitoring · Services & Products

Peak Hour Diagram

r Peak	16:15	14.14
One Hour Peak	From:	F
Period	15:00:00	0000
Specified Period	From:	F

16:15:00 17:15:00 T0:

20	CIEG	
Weather	conditions:	

Booth St & Raymond St

Intersection: Count Date:

Mar 07, 2024

2408800006

Site Code:

Major Road: Booth St runs N/S

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East	Out	303	2	0	305
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Booth St	^	₇ ←	214	217	-
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ach	otal	642	\sim	_	652
North Approach	In Total	388	7	2	395
th A					L .
Nor	Out	254	_	2	257
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305 0 305

 Out
 In
 Total

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 303

East Approach

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>	40	₽ •	Pe	≥
9	(]	Totals		Peds: 35

□ 🖨 Totals

Raymond St

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-	3	3	0	
1	138	138	0	
L	1	72	2	



38 0 275 2

0 0 0

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2: 7	_
Peds:	F

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72	
11	South
L +	

—	305
F	33
	Totals

West Approach

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-	305	298	2	2	Booth St
	_	0	0	_	ă

4 8

 Out
 In Total

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 208
 208

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0 209 209

0	0	0	0	
305	298	2	2	Booth St
31	30	0	-	8



Booth St	
	Π

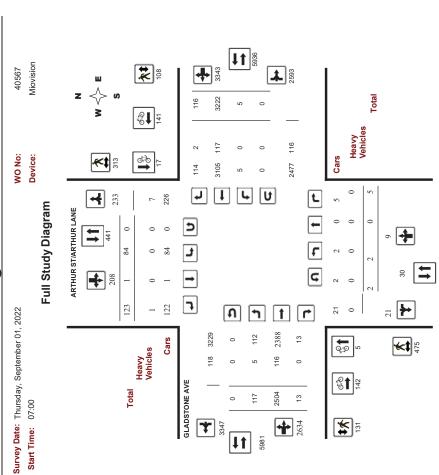
36 - Bicycles

- Trucks

🖨 - Cars

Transportation Services - Traffic Services

Turning Movement Count - Study Results GLADSTONE AVE @ ARTHUR ST/ARTHUR LANE





Transportation Services - Traffic Services

Turning Movement Count - Study Results GLADSTONE AVE @ ARTHUR ST/ARTHUR LANE

40567	Miovision
WO No:	Device:
Survey Date: Thursday, September 01, 2022	Start Time: 07:00

Full Study Peak Hour Diagram

Z ♦ 0	2 25 31 31 31 32 31 31 32 31 31 32 31 31 31 31 31 31 31 31 31 31 31 31 31	19 0 19 19 19 19 19 19 19 19 19 19 19 19 19	Total
ARTHUR ST/ARTHUR LANE TT T2 39	13 0 20 0 0 0 0 0 2 13 0 20 0 37	Full Study Full Study 16:00 17:00 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 =
	Total Heavy Vehicles Cars	GLADSTONE AVE 515 516 0 0 0 924 409 14 374 409 1388 14 374 409 1 0 1	*** * * * * * * * * *



Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

GLADSTONE AVE @ ARTHUR ST/ARTHUR LANE

40567

WO No:

Survey Date: Thursday, September 01, 2022

11 8 <u>*</u> Miovision **4** 88 \$80 Total 4 0 0 **#** ≥ Device: 12 ₫ **Ö (4)** Cars 268 350 0 0 U Ł **4** 8 ARTHUR ST/ARTHUR LANE <u>د</u> د 0 **≒** 0 AM Period 09:00 10:00 Peak Hour Ł 0 0 **+** Ç 0 <u>+</u> 2 0 ٦ 。 **+** ค 1 ٢ 0 0 264 Cars **←\$ ₹**000 0 Heavy Vehicles 12 **%1** 0 Start Time: 07:00 GLADSTONE AVE 276 0 285 = 378 663



Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram GLADSTONE AVE @ ARTHUR ST/ARTHUR LANE

40567 Miovision	u DZ z ⊹ o	13 422 436 366	Total
WO No: Device:	₹ 1 % ∰ %	12 1 402 20 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Cars Heavy Vehicles
	34 4	1 L U	2 0 2
	12 0 0 12 0 12 0	MD Period Peak Hour 11:30 12:30	
er 01, 2022	37 37 37 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
Survey Date: Thursday, September 01, 2022 Start Time: 07:00	Heavy Vehicles Cars	20 426 0 0 1 20 12 340	€
le: Thursda 3: 07:00	Ξ̈́	GLADSTONE AVE 446 21 21 352 374	1
Survey Date: Start Time:		446 820 8374	15

Comments

Comments

2024-Mar-01

Page 1 of 9 2024-Mar-01

Page 2 of 9



Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram GLADSTONE AVE @ ARTHUR ST/ARTHUR LANE

Miovision

40567

WO No: Device:

Survey Date: Thursday, September 01, 2022

Start Time: 07:00

2	9 0 19
ARTHUR ST/ARTHUR LANE T2 33 13 0 0 0 0 0 0 37	PM Period F
Heavy Vehicles Cars	GLADSTONE AVE 515 516 0 0 0 0 0 0 0 1 409 1 0 1 0 1 7 508

Page 3 of 9 2024-Mar-01

Appendix C

Synchro Intersection Worksheets – Existing Conditions



Existing AM Peak Hour 384 Arlington Ave Lanes, Volumes, Timings 1: Bronson & Raymond/Catherine

Lane Group WBL	MBT 375 375 375 336 39	NBL 308 308 308 342 59 59 59 59 59 60 60 60 60 60 60 60 60 60 60 60 60 60		SBT 18.24 5.24 7.70 NA 6 6.33 3.3.0 0.00 6.8 Lag Yess 7.00 C-Max 7.00 C-Max 7.00 T-10 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	5 5 5.0 11.8 20.0 118% 13.2 3.3 3.5 3.5 Max	Ø9 9 22.9 3.3 3.3 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9
tions (vph) 289 (vph) 289 (vph) 212 (vph) 212 (vph) 212 (vph) 212 (vph) 213	375 375 375 375 375 376 8 8 8 8 10.0 28.3 3.0 3.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0			4th 770 NA	5 11.8 13.2 3.3 3.5 7 es 7 es 3.0 Max	9 23.0 21% 11.8 8 16.8 3.3 3.0 Max
(vph) 289 (vph) 289 (vph) 289 (vph) 212 es 8 es 8 es 8 in (s) 10.0 s) 34.0 a) 30.9% in (s) 27.7 in (s) 3.3 it (s) 6.3	375 375 375 639 NA 8 8 8 8 8 8 10.0 28.3 34.0 30.9% 27.7 27.7 3.0 30.9% 3.3 3.0 3.0 6.3 3.0 8 8 3.0 8 8 3.0 8 8 3.0 8 8 8 3.0 8 8 3.0 8 8 3.0 8 8 8 3.0 8 8 8 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8			524 770 NA 6 6 6 10.0 24.8 33.0 26.2 3.3 3.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	5.0 11.8 13.2 3.3 3.5 7 es 7 es 3.0 Max	9 22.18 23.0 23.0 16.8 3.3 2.9 Max
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es 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9	NA 8 8 8 8 8 34.0 28.3 34.0 27.7 27.7 27.7 3.0 0.0 0.0 0.0 6.3			NA 6 6 6 70 10.0 24.8 33.0 33.2 33.3 3.5 0.0 6.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1	5.0 11.8 20.0 11.8 3.3 3.5 3.5 Max	9 5.0 2.3 8 2.9 3.3 3.0 Max
es es 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 9	8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9			6 6.8 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	5.0 11.8 20.0 11.8 13.2 3.3 3.5 3.5 Max	9 23.0 22.1% 16.8 3.0 3.0 Max
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(s) 10.0 (s) 28.3 (s) 28.3 (s) 28.3 (s) 30.9% (s) 27.7 (s) 3.3 (s) 3.0 (s) 6.3	10.0 28.3 34.0 30.9% 27.7 3.0 0.0 6.3			6 24.8 33.0 26.2 3.3.0 30.0% 26.2 3.3.5 3.5 3.5 3.5 3.5 3.0 7.8 3.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7	5.0 20.0 11.8 13.2 3.3 3.5 3.5 Max	5.0 23.0 23.0 23.0 3.3 3.3 2.9 Max
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(s) 28.3 34.0 34.0 30.9% n (s) 27.7 3.3 1) 3.0 51 (s) 6.3	28.3 34.0 30.9% 27.7 3.0 0.0 6.3 3.0			24.8 33.0 30.0% 26.2 3.3 3.5 0.0 6.8 6.8 7 es	11.8 20.0 18% 13.2 3.3 3.5 3.5 3.0 Max	11.8 21.3.0 22.3.0 16.8 3.3.3 3.0 Max
34.0 30.9% 10.5 27.7 3.3 10.0 54.(s) 6.3	34.0 30.9% 27.7 3.3 3.0 0.0 6.3			33.0 26.2 26.2 3.3 3.5 0.0 6.8 Fes 3.0 7.0	20.0 18% 13.2 3.3 3.5 Max	23.0 21% 3.3 2.9 3.0 Max
30.9% n (s) 27.7 3.3) 3.0) 3.0 st (s) 0.0	30.9% 27.7 3.3 3.0 0.0 6.3 3.0			30.0% 26.2 3.3 3.3 3.5 0.0 6.8 Lag Yes 3.0 C-Max	18% 13.2 3.3 3.5 Yes 7 Yes 3.0	21% 16.8 3.3 2.9 Max
	3.3 3.0 0.0 6.3 3.0 3.0			26.2 3.3 3.5 0.0 6.8 Lag Yes 3.0 C-Max	13.2 3.3 3.5 3.5 Yes 3.0 Max	16.8 3.3 3.0 Max
t (s)	3.0 3.0 3.0 Max			3.3 3.5 0.0 6.8 Lag Yes 3.0 3.0 7.0	3.3 3.5 3.6 7 Yes 3.0 Max	3.3 Max
t (s)	3.0 6.3 3.0 Max			3.5 0.0 6.8 Lag Yes 3.0 3.0 7.0	3.5 Yes 3.0 Max	2.9 3.0 Max
	6.3 6.3 3.0			0.0 6.8 Lag Yes 3.0 C-Max 7.0	Lead Yes 3.0 Max	3.0 Max
	6.3 3.0 Max			6.8 Lag Yes 3.0 C-Max	Lead Yes 3.0 Max	3.0 Max
(2)	3.0 Max			Lag Yes 3.0 C-Max 7.0	Yes 3.0 Max	3.0 Max
Lead/Lag	3.0			Yes 3.0 C-Max 7.0	Yes 3.0 Max	3.0 Max
Optimize?	3.0 Max	O		3.0 C-Max 7.0	3.0 Max	3.0 Max
sion (s)	Max	_		C-Max 7.0	Max	Max
Recall Mode Max	\N		0.7	7.0		
	2.0					
~	15.0		0.01	10.0		
/hr)	11	0	8	20 50		
Act Effet Green (s) 27.7	27.7	2.69	2.69	7.97		
g/C Ratio	0.25	0.63	0.63	0.24		
	0.59	0.65	0.33	9.		
	36.6	19.9	7.9	69.1		
Ŋ	0.0	3.0	0.5	35.8		
Delay 44	36.6	22.9	8.4	104.9		
O SO		ပ	∢	ш		
Approach Delay	38.6		13.3	104.9		
			ш	ш		
	44.1	32.3		æ 1.		
m) 75.9	57.5	52.0		#125.4		
	247.5		60.4	26.5		
÷		45.0				
35	1083	526	2065	772		
ر	0	100	006	111		
Spillback Cap Reductn 0	0	0	0	13 28		
Storage Cap Reductn 0	0	0	0	0		
Reduced v/c Ratio 0.60	0.59	0.80	0.58	1.21		
Intersection Summary						
Cycle Length: 110						
Actuated Cycle Length: 110						
Offset 38 (35%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	2:NBTL a	nd 6:SBT,	Start of	Green		
Natural Cycle: 90						

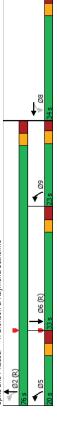
CGH Transportation Page 1 03-27-2024 JK

Lanes, Volumes, Timings 1: Bronson & Raymond/Catherine

Existing AM Peak Hour 384 Adington Ave

Intersection LOS: D ICU Level of Service D Control Type: Actuated-Coordinated
Maximum v0c Ratio: 1.00
Intersection Signal Delay. 48.2
Intersection Capacity Utilization 74.4%
Intersection Capacity Utilization 74.4%
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Bronson & Raymond/Catherine



CGH Transportation Page 2 03-27-2024 JK

Lanes, Volumes, Timings 2: Bronson & Arlington

Existing AM Peak Hour 384 Arlington Ave

EBL EBT WBL WBT 8 0 4 6 8 0 4 6 8 0 4 6 8 0 4 6 8 0 4 6 8 0 10 10 10 15 22.6 22.6 22.6 22.6 22.6 22.6 23.0 23.0 23.0 23.0 23.0 23.0 23.0 23.0	NBL 4 4 4 4 4 4 4 4 4 4 4 4 4 4 17.2 2 2 2 2 2 2 2 2 17.2 17.2 17.9 17.9 17.0 C-Max C C-Max C 7.0 5.0 18	414 698 2 698 2 698 2 698 2 787 0 787 0 100 100 172 172 813 313 33 33 33 33 30 50 60	SBL SBT 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
tions (tph) 8 (tph) 4 (tph) 8 0 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	4 4 4 4 4 4 4 4 4 4 4 4 4 10.0 10.0 117.2 17.7 17.9 1.9 3.3 3.3 1.9 7.0 5.0 18		32
(vph) 8 0 4 6 6 (vph) 8 0 4 6 6 (vph) 8 10 4 6 6 6 6 6 6 6 6 (vph) 9 70 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		
(vph) 8 0 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	4 4 4 6 79 10.0 10.0 10.0 17.2 87.3 17.3 17.9 17.0 87.0 17.9 17.0 17.0 17.0 17.0 17.0 18.1 18.1 18.1 18.1 18.1 18.1 18.1 18		92
es 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Perm 10.0 17.2 17.2 17.2 17.9 18.18 1.9 1.9 1.9 1.9 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		C-F
es 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Perm 2 2 2 2 2 2 10.0 17.2 17.2 17.9 18.18 3.3 3.3 1.9 1.9 7.0 C-Max C 7.0 5.0 18		79 8 8 8
es 4 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9	2 2 2 2 2 10.0 10.0 172 3 3 3 3 1.9 7 7 7 7 7 7 7 7 7 7 7 7 7 0 5.0 18		
(\$) 100 100 100 100 (\$) 2.05 2.05 2.05 2.05 2.05 2.05 2.05 2.05	2 10.0 17.2 87.0 87.0 81.8 81.8 3.3 1.9 7.0 5.0 1.8		P O
(s) 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	10.0 17.2 87.3 17.2 81.8 3.3 1.9 1.9 7.0 7.0 7.0 18		
(s) 100 100 100 100 100 100 100 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	10.0 17.2 17.2 18.8 1.9 1.9 1.9 7.0 5.0 18		6
(s) 100 100 100 100 100 100 100 100 100 10	100 170 87.0 791% 77 81.8 3.3 1.9 7.0 7.0 7.0 7.0 1.8		0
(s) 22.6 22.6 22.6 22.6 22.6 23.0 23.0 23.0 23.0 23.0 23.0 23.0 23.0	79.1% 81.8 7.3 3.3 1.9 7.0 C-Max C 7.0 5.0 18		Ö
10.00	79.1% 7/ 79.1% 7/ 3.3 3.3 1.9 1.9 5.0 5.0 5.0 5.0 5.0		2
(s) 174 174 174 174 174 174 174 174 174 174	79.1% 73 81.8 81.8 3.3 1.9 5.0 5.0 18		Č 0
Green (s) 174 174 174 174 174 174 174 174 174 174	81.8 3.3 1.9 1.9 5.0 18		Ŏ
me (s) 3.3 3.3 3.3 3.3 3.3 me (s) me (s) 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3	3.3 1.9 3.0 C-Max C 7.0 5.0 18		Ŏ
me (s) 2.3 2.3 2.3 2.3 4.0 2.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	1.9 3.0 C-Max C 7.0 5.0 18		<u> </u>
Adjust(s) 0.0 0.0 Time (s) 5.6 5.6 Optimize? 3.0 3.0 3.0 3.0 Atension (s) 7.0 7.0 7.0 7.0 Atension (s) 7.0 7.0 7.0 7.0 Atension (s) 10.0 10.0 10.0 Atension (s) 10.0 10.0 10.0 Atension (s) 10.0 10.0 10.0 Atension (s) 10.0	3.0 C-Max C 7.0 5.0		ਹੌ
Time (s) 5.6 5.6	3.0 C-Max C 7.0 5.0		ਹ
Optimize? 3.0 3.0 3.0 de sis) 7.0 7.0 7.0 7.0 a (s) 7.0 7.0 7.0 7.0 7.0 n Calls (#hr) 15 15 25 25 25 25 25 26 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27	3.0 C-Max C 7.0 5.0 18		ਹ
Optimize? 3.0 3.0 3.0 3.0 de	3.0 C-Max C 7.0 5.0		ਹ
tension (s) 3.0 3.0 3.0 3.0 de de None None None None None Orde Orde Orde Orde Orde Orde Orde Ord	3.0 C-Max C- 7.0 5.0		ਹੋ
de None None None None None None None Non	C-Max C 7.0 5.0 18		ਹ
(s) (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	7.0 5.0 18		
rutwalk (s) 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	5.0 8 18		-,
10 C Allas (#hr) 15 15 25 25 25 25 25 25 25 25 25 25 25 25 25	<u> </u>		
14.2 14.2		38.2 1.31 1.9	
3/C Katio 0.13 (a) 18/4 (b) 18/4 (c) 18/4		1.9 1.9	89.2
lay (6.6 (6.6 (6.6 (6.6 (6.6 (6.6 (6.6 (6.		1.9	0.81
16.6 16.7 16.7 16.7 1.7 14.2 80.9 270		0; c	0.28
16.7 : 16.7 : 16.7 : 17.1 : 14.2 : 14.2 : 270 : 2.70			3.9
16.7		0	0.2
16.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1		2.0	4.1
16.7 1.7 1.4.2 1.4.2 80.9 27 270		V	A
1.7 14.2 80.9 2: 270		2.0	4.1
1.7 14.2 80.9 2: 270		⋖	A
14.2 80.9 2. 270		12.2	22.3
80.9 270		14.8	28.9
270		5.93	207.2
270			
(2505	2524
0	4,	571	0
16		0	828
Storage Cap Reducth 0 0 0		0	0
Reduced v/c Ratio 0.06	0	0.41	0.43
ntersection Summary			
Sycle Length: 110			
Actuated Cycle Length: 110			
Offset: 11 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	of Groom		

CGH Transportation Page 3

03-27-2024 JK

Lanes, Volumes, Timings Existing AM Peak Hour 2: Bronson & Arlington 384 Adington Ave

Control Type: Actuated-Coordinated
Maximum We Ratio: 0.31
Intersection LOS: A
Intersection Capacity Utilization 44.2%
Analysis Period (min) 15

Splits and Phases: 2: Bronson & Arlington

↑	→
878	23 s
→	₹ ₀₈
878	23 s

03-27-2024 CGH Transportation
JK

Compared C	Lanes, volumes, immigs 3: Bronson & Gladstone	stone											
Fell EBT Well Wilt Wilt Net Net Sell Sell 67		1	†	-	ţ	•	←	۶	-				
1	Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø2	ZØ
39 222 62 147 55 563 11 449 4	Lane Configurations	F	4	F	æ	F	4₽	*	4₽				
Perm NA Perm N	Traffic Volume (vph)	න ශ	222	3 83	147	S 18	563	- - - -	489				
Perm NA	Lane Group Flow (vph)	43	301	69	180	9 29	736	- 6	570				
4 8 2 6 1 3 5 4 8 8 2 6 6 1 3 5 10 1	Turn Type	Perm	Ž Ž	Perm	N N	Perm	N S	Perm	N AN				
100 100	Protected Phases		4		∞		2		9	_	က	2	7
100 100 100 100 100 100 100 100 100 100	Permitted Phases	4		∞ (2		9					
100 100 100 100 100 100 100 100 100 100	Detector Phase	4	4	∞	∞	2	2	9	9				
100 100 100 100 100 100 100 100 100 100	Switch Phase		0	9	0	9	9	4	9		•	•	7
262 2.62 2.62 2.63 2.63 5.63 5.63 5.63 5.63 5.63 5.63 5.63 5	Minimum Initial (s)	10.0	10.0	10.0r	0.07	0.00	0.00	70.0	10.0 0.02	0.5	0.5	0.5	0.0
3.7% 3.3.7% 3.3.7% 3.3.7% 5.5.9% 5.5.9% 5.5.9% 5.6.	Minimum Split (S)	320	320	30.0	79.7	72.0	72.0	72.0	73.0	0.0	0.0	0.0	0.0
2.56 2.66 2.66 2.60 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	Total Split (s)	32.7%	32 70/	32 7%	32 70/	0.00 FF 90/	0.00 FF 90/	55 Po.U	22.0	2.0	50,0	0.0	2.0
30 30 30 30 30 30 30 30 30 30 30 30 30 3	Maximim Green (s)	25.8	25.8	25.8	25.8	47.0	47.0	47.0	47.0	0 0	0 6	0 6	200
32 32 32 32 27 27 27 27 0.0 0.0 0.0 0.0 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2	Yellow Time (s)	3.0	3.0	3.0	3.0	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	All-Red Time (s)	3.2	3.2	3.2	3.2	2.7	2.7	2.7	2.7	0.0	0.0	0.0	0.0
6.2 6.2 6.2 6.2 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Lag	Total Lost Time (s)	6.2	6.2	6.2	6.2	0.9	0.9	0.9	0.9				
Yes Yes <td>Lead/Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lead</td> <td>Lead</td> <td>Lead</td> <td>Lead</td>	Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
30 30 30 30 30 30 30 30 30 30 30 30 30 3	Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Max Max Max Max G-Max G-Max G-Max G-Max Max Max Max N Max	Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 3.0 3.0 3.0 10.0 10.0 10.0 10.0 10.0	Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	ਹੋ	Max	Max	Max	Max
10.0 10.0 10.0 7.0 7.0 7.0 7.0 0.0 0.0 0.0 0.0 0.0	Walk Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		3.0	3.0	3.0	3.0
25.8 25.8 25.8 25.8 4.7 47.0 47.0 47.0 47.0 47.0 47.0 47.0	Flash Dont Walk (s)	10.0	10.0	10.0	10.0	7.0	7.0	D. 5	O: 6	0.0	0.0	0.0	0.0
0.27 0.27 0.27 0.27 0.40 0.49 0.49 0.49 0.49 0.49 0.49 0.49	Act Effet Green (s)	25 25.8	25 25 8	75.8	75 g	17	17	92 04	30	17	25	30	17
0.16 0.70 0.38 0.40 0.20 0.48 0.05 0.05 0.04 0.05 0.05 0.04 0.05 0.05	Actuated a/C Ratio	0.27	0.27	0.27	0.27	0.49	0.49	0.49	0.49				
28.4 41.3 35.6 31.5 15.7 17.2 13.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	v/c Ratio	0.16	0.70	0.38	0.40	0.20	0.48	0.05	0.36				
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Control Delay	28.4	41.3	35.6	31.5	15.7	17.2	13.3	15.6				
28.4 41.3 35.6 31.5 15.7 17.2 13.3 C	Queue Delay	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
C D D C B B B B C C C C C C C C C C C C	Total Delay	28.4	41.3	35.6	31.5	15.7	17.2	13.3	15.6				
39.7 32.6 17.1 6.0 49.6 10.3 26.9 6.0 45.0 1.1 145. 78.6 23.2 45.7 14.1 60.1 4.1 139.3 203.3 207.2 200 200 35.0 45.0 1.1 200 0	SOT	O	۵	٥	O	В	В	В	В				
6.0 49.6 10.3 26.9 6.0 45.0 1.1 14.5 78.6 23.2 45.7 14.1 60.1 4.1 139.3 20.0 20.0 3.6 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Approach Delay		39.7		32.6		17.1		15.5				
14.5 78.6 23.2 45.7 14.1 60.1 4.1 1.1 20.0 2.3 2.03 2.03 2.07 2.00 2.00 3.50 45.0 246.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Approach LOS	G	40,6	10.3	ی و	ď	45 D	+	33.3 12.3				
200 200 350 201 201 201 201 201 201 201 201 201 20	Oriene Length 95th (m)	14.5	78.6	23.2	45.7	141	6.5	41	0.20				
200 350 450 450 200 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Internal Link Dist (m)	Ē	139.3	7.07	203.3	Ē	207.2	F	176.5				
266 429 181 451 303 1540 246 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Turn Bay Length (m)	20.0	2	20.0	5	35.0	į	45.0	2				
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Base Capacity (vph)	266	429	181	451	303	1540	246	1583				
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Starvation Cap Reductn	0	0	0	0	0	0	0	0				
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Spillback Cap Reductn	0	0	0	0	0	0	0	0				
0.16 0.70 0.38 0.40 0.20 0.48 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.0	Storage Cap Reductn	0	0	0	0	0	0	0	0				
Intersection Summary Cycle Length: 95 Actuated Cycle Length: 95 Offset 26 (27%), Referenced to phase 2.NBTL and 6.SBTL, Start of Green	Reduced v/c Ratio	0.16	0.70	0.38	0.40	0.20	0.48	0.02	0.36				
Cycle Length: 95 Actuated Cycle Length: 95 Offset 26 (27%), Referenced to phase 2.NBTL and 6.SBTL, Start of Green	Intersection Summary												
Actuated Cyde Length: 95 Offset 26 (27%), Referenced to phase 2.NBTL and 6.SBTL, Start of Green	Cycle Length: 95												
Offset. 26 (27%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	Actuated Cycle Length: 95												
	Offset 26 (27%), Reference	ed to phase	2:NBTL	and 6:SB	rL, Start	of Green							

CGH Transportation Page 5 03-27-2024 JK

Existing AM Peak Hour 384 Arlington Ave Lanes, Volumes, Timings 3: Bronson & Gladstone

Intersection LOS: C ICU Level of Service D Control Type: Actuated-Coordinated Maximum Wc Ratio: 0.70 Intersection Signal Delay: 22.5 Intersection Capacity Utilization 73.3% Analysis Period (min) 15

Splits and Phases: 3: Bronson & Gladstone

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Lanes, Volumes, Timings 4: Booth & Gladstone

Existing AM Peak Hour 384 Arlington Ave

Charlest	## NBI NBI NBI SBI SBI 001 4		1	†	-	ţ	•	←	۶	→				
10	1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	iroup	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø2	Ø7
66 247 35 164 13 282 31 173 73 308 39 216 14 386 34 222 73 308 39 216 14 386 34 252 2 6 4 4 8 8 1 3 5 2 6 4 4 8 8 8 1 3 5 100 100 100 100 100 100 10	66 247 35 164 13 282 31 173 73 308 39 216 14 386 34 232 73 308 39 164 14 386 34 232 73 308 39 212 4 8 34 232 2 6 6 4 8 8 4 8 1 3 2 6 6 4 8 8 8 1 3 2 6 6 4 8 8 8 1 3 2 2 6 6 4 8 8 1 3 100	onfigurations	<i>y</i> -	+	<u></u>	æ	F	æ	je-	æ				
66 247 35 164 13 282 31 173 Perm NA NA Perm NA Perm NA Perm NA NA Perm NA	66 247 35 164 13 282 31 173 Perm NA NA Perm NA Perm NA	Volume (vph)	99	247	32	164	13	282	3	173				
Name	Perm NA Perm N	Volume (vph)	3 89	247	8 8	164 5	5 4	7,87	ي م	1/3				
2	100 100 100 100 100 100 100 100 100 100	loup riow (vpii)	Perm	NA N	Perm	Z Z V	Perm	000 AN	Perm 4	ZSZ AN				
2	2 6 6 4 4 4 8 8 8	ed Phases	5	2	5	9	5	4	5	00	-	က	2	7
100 100 100 100 100 100 100 100 100 100	100 100 100 100 100 100 100 100 100 100	ed Phases	2		9		4		∞					
100 100 100 100 100 100 100 100 100 100	100 100 100 100 100 100 100 100 100 100	r Phase	2	2	9	9	4	4	00	∞				
100 100 100 100 100 100 100 100 100 100	100 100 100 100 100 100 100 100 100 100	Phase												
221 221 221 221 239 239 239 50 50 50 50 80 80 80 80 80 80 80 80 80 80 80 80 80	221 221 221 221 221 239 239 239 50 50 60 60 60 60 60 60 60 60 60 60 60 60 60	m Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
360 360 360 360 290 290 290 590 50 50 50 400 400% 400% 400% 380.7% 387.% 387.% 7% 7% 7% 400% 200 300 300 200 200 200 200 50 50 50 60 50 300 300 300 300 300 300 300 300 300	1860 3860 3860 3860 2990	m Split (s)	22.1	22.1	22.1	22.1	23.9	23.9	23.9	23.9	2.0	2.0	2.0	5.0
48 0% 48 0% 48 0% 38 7% 38 7% 38 7% 7% 7% 7% 7% 299 299 299 299 299 299 299 299 299 29	48 0	olit (s)	36.0	36.0	36.0	36.0	29.0	29.0	29.0	29.0	2.0	2.0	2.0	5.0
299 299 299 221 22.1 22.1 30 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	299 299 299 221 221 221 32 30 30 30 30 30 30 30 30 30 30 30 30 30	olit (%)	48.0%	48.0%	48.0%	48.0%	38.7%	38.7%	38.7%	38.7%	%/	%/	%/	%/
30 30 30 30 30 30 30 30 30 30 30 30 30 3	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	m Green (s)	29.9	29.9	29.9	29.9	22.1	22.1	22.1	22.1	3.0	3.0	3.0	3.0
3.1 3.1 3.1 3.1 3.9 3.9 3.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	3.1 3.1 3.1 3.1 3.9 3.9 3.9 0.0 0.0 6.1 6.1 6.1 6.1 6.9 6.9 6.9 6.9 6.9 6.1 6.1 6.1 6.1 6.1 6.0 0.0 0.0 0.0 6.1 6.1 6.1 6.1 6.1 6.9 6.9 6.9 6.9 6.3 6.9 6.9 6.9 6.9 6.9 6.4 6.1 6.1 6.1 6.1 6.0 0.0 0.0 6.5 768 768 768 768 768 768 768 768 768 768	Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
6.1 6.1 6.1 6.1 6.1 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9	C-Max C-Max C-Max None	Time (s)	3.1	3.1	3.1	3.1	3.9	3.9	3.9	3.9	0.0	0.0	0.0	0.0
6.1 6.1 6.1 6.1 6.9 6.9 6.9 6.9 6.9 6.9 7 6.9 7 6.9 7 6.9 7 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9	6.1 6.1 6.1 6.1 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9	ne Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Lag	Lag	ost Time (s)	6.1	6.1	6.1	6.1	6.9	6.9	6.9	6.9				
Ves Ves <td>Ves Ves On On</td> <td>b</td> <td>Lag</td> <td>Lad</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lead</td> <td>Lead</td> <td>Lead</td> <td>Lead</td>	Ves On	b	Lag	Lad	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
3.0 3.0 <td>C-Max C-Max C-Max None None None None None None None None</td> <td>ag Optimize?</td> <td>Yes</td>	C-Max C-Max C-Max None None None None None None None None	ag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C-Max C-Max C-Max None None None None Max None	C-Max C-Max C-Max None	Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20 20 20 20 20 20 30 30 30 30 30 30 30 30 30 30 30 30 30	20 20 20 20 20 20 20 30 30 30 30 30 30 30 30 30 30 30 30 30	Mode	C-Max	С-Мах	C-Max	C-Max	None	None	None	None	Max	None	Max	None
39 90 90 90 100 100 00 00 00 00 00 00 00 00 00 00	90 90 90 90 100 100 000 000 000 000 000	me (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
34.9 34.9 34.9 34.9 20.1 20.1 20.1 38 34.9 34.9 34.9 20.1 20.1 20.1 20.1 36.1 38 34.9 34.9 34.9 20.1 20.1 20.1 20.1 30.1 30.1 30.1 30.1 30.1 30.1 30.1 3	3.3 3.3 3.8 3.8 3.1 31 22 32 31 31 31 22 32 31 31 31 31 31 31 31 31 31 31 31 31 31	ont Walk (s)	9.0	9.0	9.0	9.0	10.0	10.0	10.0	10.0	0.0	0.0	0.0	0.0
047 9 449 449 201 201 201 201 01 01 01 01 01 01 01 01 01 01 01 01 0	14.9 14.9 44.9 20.1 20.1 20.1 20.1 20.1 20.1 20.1 20.1	ian Calls (#/hr)	33	32	8	8	3	3	8	22	32	3	38	22
0.47 0.47 0.47 0.27 0.27 0.27 0.27 0.27 0.27 0.27 0.2	0.47 0.47 0.47 0.47 0.27 0.27 0.27 0.27 0.27 0.27 0.27 0.2	t Green (s)	34.9	34.9	34.9	94.9	20.1	20.1	20.1	20.1				
0.16 0.41 0.10 0.28 0.05 0.84 0.24 19.9 16.3 14.4 14.3 19.8 42.8 25.3 19.9 16.3 14.4 14.3 19.8 42.8 25.3 19.8 16.3 14.4 14.3 19.8 42.8 25.3 19.8 16.3 14.4 14.3 19.8 42.8 25.3 19.8 14.5 15.7 26.6 3.0 16.5 14.4 47.3 36.1 15.0 16.0 16.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.16 0.41 0.10 0.28 0.05 0.84 0.24 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	d g/C Ratio	0.47	0.47	0.47	0.47	0.27	0.27	0.27	0.27				
14.9 16.3 14.4 14.3 19.8 42.8 25.3 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	14.9 16.3 14.4 14.3 19.8 42.8 25.3 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	0	0.16	0.41	0.10	0.28	0.05	0.84	0.24	0.51				
1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Delay	14.9	16.3	4.4	4.3	19.8	45.8	25.3	25.4				
14.9 16.3 14.4 14.3 19.8 42.8 25.3 16.0 16.0 14.3 19.8 42.8 25.3 16.0 16.0 14.3 42.0 16.0 16.5 14.4 42.0 16.0 16.5 14.4 42.0 16.0 16.5 14.4 42.3 16.5 16.5 14.4 42.3 16.5 16.5 14.4 42.3 16.5 16.5 16.5 14.4 42.3 16.5 16.5 16.5 16.5 16.5 16.5 16.5 16.5	14.9 16.3 14.4 14.3 19.8 42.8 25.3 16.0 16.0 14.3 19.8 42.8 25.3 16.0 16.5 14.4 42.0 16.5 17.2 26.6 3.0 16.5 14.4 47.3 3.6 15.0 51.3 9.2 24.0 5.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
160 H H H H H H H D C H H H H H H H H H H H	160 H H H H H H H D C C C C C C C C C C C C	elay	14.9	16.3	14.4	14.3	19.8	45.8	25.3	25.4				
160 143 420 B B D D 15.7 266 3.0 165 14 473 36 15.0 51.3 9.2 34.1 5.3 #88.3 10.8 79.0 246.0 8.0 8.0 40.0 25.0 8.0 8.0 0	160 143 420 B B D D 15.7 266 3.0 165 14 473 36 15.0 51.3 9.2 34.1 5.3 #88.3 10.8 79.0 246.0 8.0 8.0 40.0 25.0 8.0 8.0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		a	ш	m	m	മ		ပ	ပ				
B B D D D D D D D D D D D D D D D D D D	27. 266 3.0 16.5 1.4 47.3 3.6 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	ch Delay		16.0		14.3		45.0		25.4				
57 266 3.0 165 14 473 3.6 15. 14 473 3.6 15. 14 473 3.6 15. 14 473 3.6 15. 14 473 3.6 15. 14 473 3.6 15. 14 473 3.6 15. 14 473 3.6 15. 15. 15. 15. 15. 15. 15. 15. 15. 15.	5.7 266 3.0 165 14 473 3.6 15 14 473 3.6 15 15 14 473 3.6 15 15 15 15 15 15 15 15 15 15 15 15 15	ch LOS		m		m				ပ				
15.0 51.3 92 34.1 5.3 #88.3 10.8 10.9 10.0 10.0 10.0 10.0 10.0 10.0 10.0	15.0 51.3 92 34.1 5.3 #88.3 10.8 10.9 10.0 10.0 10.0 10.0 10.0 10.0 10.0	Length 50th (m)	2.7	26.6	3.0	16.5	4.	47.3	3.6	24.8				
79.0 246.0 206.0 8.0 8.0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	79.0 246.0 206.0 8.0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	Length 95th (m)	12.0	51.3	9.5	¥.	5.3	#88.3	10.8	44.2				
400 25.0 80 80 8.0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	400 25.0 80 80 80 1 453 753 401 756 283 501 156 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Link Dist (m)		79.0		246.0		206.0		98.4				
453 753 401 756 283 501 156 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.16 0.41 0.10 0.28 0.05 0.77 0.22 0.4 renced to phase 2:EBTL and 6:WBTL, Start of Green	453 753 401 756 283 501 156 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.16 0.41 0.10 0.28 0.05 0.77 0.22 0.4 renced to phase 2:EBTL and 6:WBTL, Start of Green	ay Length (m)	40.0		25.0		8.0		8.0					
n 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	n 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	apacity (vph)	453	753	401	156	283	201	156	203				
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on Cap Reductn	0	0	0	0	0	0	0	0				
0.16 0.41 0.10 0.28 0.05 0.77 0.22 0.4 1.75 1.75 1.75	0.16 0.41 0.10 0.28 0.05 0.77 0.22 0.4 1.75 siranced to phase 2.EBTL and 6:WBTL, Start of Green	k Cap Reductn	0	0	0	0	0	0	0	0				
0.16 0.41 0.10 0.28 0.05 0.77 0.22 0.	0.16 0.41 0.10 0.28 0.05 0.77 0.22 0.	Cap Reductn	0	0	0	0	0	0	0	0				
ation Summany ength: 75 d Cyde Length: 75 16 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	ition Summany ength: 75 d Cyde Length: 75 16 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	d v/c Ratio	0.16		0.10	0.28	0.05	0.77		0.46				
ength: 75 d Cyde Length: 75 16 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	ength: 75 d Cyde Length: 75 16 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	tion Summary												
organ: of d Cyde tength: 75 16 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	d Cycle Length: 75 16 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	enoth: 75												
16 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	16 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	Crigar: 1 Sporth: 75												
To (21%), Referenced to phase 2:EB IL and 0:WB1L, Start of Green	to (21%), Referenced to phase 2:Eb IL and 0:WbTL; Start of Green	d Cyde Lengin. 73	d to a bear	Ē	0.44	i i								
		Io (Z1%), Reference	a to pnase	7.EB IL	and o.we	IL, Start	or Green							

CGH Transportation Page 7

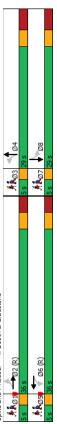
03-27-2024 JK

Lanes, Volumes, Timings 4: Booth & Gladstone

Existing AM Peak Hour 384 Arlington Ave

Intersection LOS: C ICU Level of Service C Control Type: Actuated-Coordinated
Maximum v0c Ratio: 0.84
Intersection Signal Delay. 2.5.6
Intersection Capacity Utilization 67.5%
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Booth & Gladstone



CGH Transportation Page 8 03-27-2024 JK

Lanes, Volumes, Timings 5: Arthur & Gladstone

Existing AM Peak Hour

5: Arthur & Gladstone	. ЭL				384 Arlington Ave
	1	†	ţ	→	
Lane Group	EBL	EBT	WBT	SBT	
Lane Configurations		4	4	4	
Traffic Volume (vph)	တ	276	366	0	
Future Volume (vpn)	on C	317	300	0 1	
Turn Type	Perm	Ϋ́	N A	Ą	
Protected Phases		2	9	00	
Permitted Phases	2				
Detector Phase	2	2	9	∞	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	
Minimum Split (s)	29.5	29.5	29.5	23.2	
Total Split (s)	45.0	45.0	45.0	23.0	
Total Split (%)	64.6%	64.6%	64.6%	35.4%	
Maximum Green (s)	36.5	36.5	36.5	17.8	
Yellow Time (s)	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.5	2.5	2.5	2.2	
Lost Time Adjust (s)		0.0	0.0	0.0	
Total Lost Time (s)		5.5	5.5	5.2	
Lead/Lag					
Lead-Lag Optimize?					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	
Walk Time (s)	19.0	19.0	19.0	10.0	
Flash Dont Walk (s)	2.0	2.0	2.0	8.0	
Pedestrian Calls (#/hr)	84	84	37	4	
Act Effct Green (s)		55.2	55.2	11.6	
Actuated g/C Ratio		0.85	0.85	0.18	
v/c Ratio		0.22	0.29	90:0	
Control Delay		4.1	4.5	2.7	
Queue Delay		0.0	0.0	0.0	
Total Delay		4.	4.5	2.7	
SOT		V	V	⋖	
Approach Delay		4.1	4.5	2.7	
Approach LOS		∢	∢	⋖	
Queue Length 50th (m)		0.0	0.0	0.0	
Queue Length 95th (m)		32.0	44.6	1.6	
Internal Link Dist (m)		246.0	139.3	183.9	
Turn Bay Length (m)					
Base Capacity (vph)		1433	1440	418	
Starvation Cap Reductn		0	0	0	
Spillback Cap Reductn		0	0	0	
Storage Cap Reductn		0	0	0	
Reduced v/c Ratio		0.22	0.29	0.04	
Intersection Summary					
Cycle Length: 65					

Cycle Length: 65
Actuated Cycle Length: 65
Orfset 15 (23%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 55
03-27-2024
JK

Lanes, Volumes, Timings 5: Arthur & Gladstone

Existing AM Peak Hour 384 Adington Ave

Control Type: Actuated-Coordinated
Maximum Vo Ratio: 0.29
Intersection Signal Delay: 4.3
Intersection Capacity Utilization 42.3%
Analysis Period (min) 15

Splits and Phases: 5: Arthur & Gladstone

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03-27-2024 CGH Transportation JK

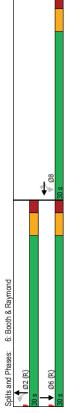
Existing AM Peak Hour Lanes, Volumes, Timings

Lanes, Volumes, IImings 6: Booth & Raymond	mings d					EXISTING AIM PEAK HOUR 384 Arlington Ave
	ļ.	✓	•	-	→	
Lane Group	WBT	WBR	NBL	NBT	SBT	
Lane Configurations	4	*-	F	*	£\$	
Traffic Volume (vph)	101	29	21	327	181	
Future Volume (vph)	104	29	21	327	181	
Lane Group Flow (vph)	183	74	23	363	261	
Turn Type	¥	Perm	Perm	ΑΝ	NA	
Protected Phases	∞	,		2	9	
Permitted Phases		∞ (2			
Detector Phase	∞	∞	2	2	9	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.5	25.5	25.2	25.2	25.2	
Total Split (s)	30.0	30.0	30.0	30.0	30.0	
Total Split (%)	20.0%	20.0%	20.0%	20.0%	50.0%	
Maximum Green (s)	24.5	24.5	24.8	24.8	24.8	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.2	2.2	- 6:	1.9	1.9	
Lost Time Adjust (s)	0.0	0.0	0:0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.2	5.2	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	С-Мах	C-Max	C-Max	
Walk Time (s)	11.0	11.0	15.0	15.0	15.0	
Flash Dont Walk (s)	9.0	9.0	2.0	2.0	5.0	
Pedestrian Calls (#/hr)	23	23	63	63	26	
Act Effct Green (s)	24.5	24.5	24.8	24.8	24.8	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	
v/c Ratio	0.27	0.12	90:0	0.50	0.37	
Control Delay	13.2	3.9	11.2	16.1	12.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.2	3.9	11.2	16.1	12.5	
ROS	Ω	⋖	ш	ш	В	
Approach Delay	10.5			15.8	12.5	
Approach LOS	В			В	В	
Queue Length 50th (m)	12.9	0.0	1.5	28.3	16.5	
Queue Length 95th (m)	24.8	6.1	5.1	48.8	31.6	
Internal Link Dist (m)	302.1			65.0	206.0	
Turn Bay Length (m)		75.0	25.0			
Base Capacity (vph)	674	611	406	721	705	
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	0.27	0.12	90:0	0.50	0.37	
Intersection Summary						
Cycle Lenath: 60						
A-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1						

CGH Transportation Page 11 Actuated Cycle Length: 60
Offset: 35 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 55
03-27-2024
JK

Existing AM Peak Hour 384 Adington Ave Lanes, Volumes, Timings 6: Booth & Raymond

Intersection LOS: B ICU Level of Service A Control Type: Actuated-Coordinated Maximum We Ratio: 0.50 Intersection Signal Delay: 13.4 Intersection Capacity Utilization 44.0% Analysis Period (min) 15



CGH Transportation Page 12 03-27-2024 JK

Existing AM Peak Hour 384 Arlington Ave Lanes, Volumes, Timings 8: Hwy 417 EB Ramp & Bronson

Figure Group	ame Group EBI EBR NBT SBT and Configurations 7	FBL EBR NBT 134 152 780 134 152 780 134 169 867 149 169 867 140 100 100 286 286 31.9 40 400 70.0 286 31.9 40.0 0.0 0.0 38.4 34.4 64.1 33 33 33 33 36 11.6 10.0 0.0 0.0 2.8 5.9 2.3 2.3 2.6 0.0 0.0 0.0 2.4 34.4 64.1 4.0 0.0 0.0 5.6 5.6 5.9 2.3 2.3 2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	### Continuation		١	>	—	→	
rain Configurations	and Configurations	and Configurations	Tartic volume (vph) 134 152 780 813 412 780 813 412 780 813 412 780 813 412 780 813 412 780 813 412 780 813 412 780 813 412 780 813 412 780 813 412 780 813 412 780 813 412 780 813 412 780 813 412 780 813 413 412 780 813 413 412 780 813 413 412 780 813 413 412 780 813 413 413 412 780 813 413 413 413 413 413 413 413 413 413 4	ane Group	EBL	EBR	NBT	SBT	
ratin (vph) 134 122 780 813 and Group Flow (vph) 134 122 780 813 and Group Flow (vph) 134 122 780 813 and Group Flow (vph) 149 169 867 903 and Charles	uture (volume (turne (yoh) 134 152 789 813 are Group Flow (yoh) 134 152 789 813 are Group Flow (yoh) 149 169 867 903 are Group Flow (yoh) 149 162 86 139 319 are Group Flow (yoh) 149 162 86 139 319 are Group Flow (yoh) 149 162 86 139 319 are Group Flow (yoh) 149 162 86 139 319 are Group Flow (yoh) 149 162 86 139 319 are Group Flow (yoh) 149 162 86 139 319 are Group Flow (yoh) 149 163 86 139 are Group Flow (yoh) 149 163 86 140 are Group Flow (yoh) 149 163 86 140 are Group Flow (yoh) 149 164 84 164 164 164 164 164 164 164 164 164 16	uture Volume (vph) 134 152 780 813 uture Volume (vph) 149 169 867 903 uture Noulme (vph) 149 169 867 903 reme Coup Places 4 4 2 6 eminified Phases 4 4 2 6 aminified Phases 4 4 2 6 witch Phases 4 4 2 6 data Spati (%) 36 36 88 66 86 data Spati (%) 33 33 33 33 33 33 33 data Spati (%) 36 56 56 56 56	ane Configurations	<i>y-</i>	¥C	₩	44	
and Stouch (vph) 134 152 780 813 and Stouch (vph) 149 162 780 813 and Stouch Flow (vph) 149 162 780 813 and Stouch Flow (vph) 149 162 867 903 and Stouch Flowses 4 4 2 6 witch Plases 5 100 100 100 100 100 100 and Spull (s) 28 6 28 6 28 6 28 and Spull (s) 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	and Group Places and A	tutre Volume (vph) 134 152 789 813 and Group Flow (vph) 149 162 867 913 and Solut (s) 286 286 219 319 and Solut (s) 286 287 319 319 and Solut (s) 34 34 34 34 34 34 34 34 34 34 34 34 34	and Scotland (vph) 134 152 780 813 and Scotland (vph) 136 123 2 6 and Scotland (vph) 136 139 139 and Delay 136 136 136 136 and Delay 136 136 136 and Delay 136 136 136 136 and Delay 13	raffic Volume (vph)	134	152	780	813	
and circup Flow (right) 149 169 867 903 and circup Flow (right) 149 169 160 and circup Flow (right) 140 100 100 100 and circup Flow (right) 140 100 100 100 and circup Flow (right) 140 140 140 140 and circup Flow (right) 140 140 140 140 and circup Flow (right)	ane Group Flow (riph)	and circup Flow (right) 149 169 867 903 and circup Flow (right) 149 169 169 and circup Flow (right) 160 100 100 and circup Flow (right) 160 100 and circup Flow (right) 160 100 100	and Circup Flow (riph) 149 169 867 903 and Circup Flow (riph) 149 169 867 903 and Circup Flows 4 4 2 6 and Circup Flows 5 6 319 319 and Spirit (s) 28 6 319 319 and Spirit (s) 36 4% 65 6% 65 6% 63 6% and Spirit (s) 36 4% 65 6% 65 6% and Spirit (s) 36 4% 65 6% 65 6% and Spirit (s) 36 4% 65 6% 65 6% and Spirit (s) 36 4% 65 6% 65 6% and Spirit (s) 36 4% 65 6% 65 6% and Spirit (s) 36 4% 65 6% 65 6% and Spirit (s) 36 4% 65 6% 65 6% and End Spirit (s) 36 4% 65 6% 65 6% and Lost Time (s) 37 3 30 30 30 and Lost Time (s) 56 56 59 59 and Lost Time (s) 56 56 59 59 and Lost Time (s) 56 56 69 59 and Lost Time (s) 56 56 69 59 and Lost Time (s) 56 56 69 59 and Lost Time (s) 37 30 30 30 and Lost Time (s) 36 32 34 and Circup Flows 50 60 150 and Lost Time (s) 56 66 69 69 and Lost Time (s) 56 66 and Lost Time (s) 56 6	uture Volume (vph)	134	152	780	813	
Name	un Type emitted Phases	amitted Phases	unifyed Phases 2 6 emitted Phases 4 4 2 6 emitted Phases 100 100 100 100 100 ilinium Solit (s) 286 286 319 319 data Split (s) 384% 364% 656% 6369 319 319 data Split (s) 384% 364% 656% 636% 636% 636% 636% 636% 636% 636	ane Group Flow (vph)	149	169	867	903	
Activity	Activities Act	refused Phases 4 4 2 6 emitted Phases 4 4 2 6 dai Spift (s) 286 286 319 319 and Spift (s) 400 100 100 100 and Spift (s) 36.4% 33.6% 63.6% and Leaf Time (s) 36 30 30 30 and Leaf Time (s) 5 6 5 6 5 9 5 9 and Leaf Time (s) 5 6 5 6 5 9 5 9 and Leaf Time (s) 70 150 100 and Leaf Time (s) 70 150 150 and Leaf Time (s) 70 150 and	Internal Phases 2 6	urn Type	Perm	Perm	¥	Α̈́	
March Phases	A	and Spirit Spiri	annited Phases 4 4 2 6 6 4 4 2 6 6 4 4 4 4 2 6 6 4 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 4 4 2 6 6 6 31.9 31.9 31.9 31.9 31.9 31.9 31.9 31.9	rotected Phases			2	9	
witch Phase 4 4 2 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	electro Phase 4 4 2 6 6	electro Phase electro Phase innum initial (s) 100 100 100 100 innum Soli (s) 28 28 28 19 319 400 400 7	electror Phase Inimum Initial (s) Inimum Ini	ermitted Phases	4	4			
infurum Initials (s) 100 100 100 100 100 100 100 100 100 10	witch Phase Phase Phase Phase Phase witch Phase	witch Phase witch	witch Phase Witch	etector Phase	4	4	2	9	
infimum hintel (s) 100 100 100 100 100 100 100 100 100 10	infirmum hidial (s) 100 100 100 100 100 100 100 100 100 10	Infirmum hintial (s) 100 100 100 100 100 100 100 100 100 10	Inimum Initial (s)	witch Phase					
inimum Spit (s) 286 286 319 319 340 and Spit (s) 400 400 700 700 700 700 700 700 700 700	and Split (s) 286 286 319 319 319 319 319 319 319 319 319 319	ada Spit (s) 286 286 319 319 319 319 319 319 319 319 319 319	rainmun Split (s) 286 286 319 319 319 319 319 319 319 319 319 319	inimum Initial (s)	10.0	10.0	10.0	10.0	
ada Spiti (s)	atal Splift (s) 40,0 40,0 70,0 70,0 70,0 70,0 70,0 70,0	and spirit (s) 400 400 700 700 700 700 700 700 700 700	aximum Speel (s)	inimum Split (s)	28.6	28.6	31.9	31.9	
adium (reen (s) 36,4% 36,4% 63,6% adium (reen (s) 34,4 36,4% 63,6% adium (reen (s) 34,4 34,4 64,1 64,1 adium (reen (s) 33,3 33,3 33,3 33,3 33,3 33,3 33,3 33	adiuny Time (s) 38.4% 36.4% 63.6% 63.6% asking minimal cene (s) 34.4 64.1 64.1 for the common cene (s) 34.4 64.1 64.1 for the common cene (s) 34.8 64.1 64.1 for the common cene (s) 3.3 3.3 3.3 3.3 4.3 4 for the common cene (s) 2.3 2.8 2.6 2.6 2.6 2.6 2.6 5.9 5.9 and Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	aximum Gene (s) 364% 356% 636% aximum Gene (s) 344 64.1 64.1 64.1 fe.1 fe.1 fe.1 fe.1 fe.1 fe.1 fe.1 fe	Jack Spill (%) 36.4%	otal Split (s)	40.0	40.0	70.0	70.0	
aximum Green (s) 344 344 641 641 aximum Green (s) 33 33 33 33 33 33 34 34 344 641 641 batal Lost Time (s) 2.3 2.8 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	astimum Green (s) 34.4 34.4 64.1 64.1 64.1 limiter (s) 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	astrum Green (s) 344 344 641 641 allow Time (s) 3.3 3.3 3.3 st Time (s) 3.3 3.3 3.3 st Time (s) 2.6 5.9 5.9 adult cast Time (s) 5.6 5.6 5.9 5.9 adult cast Time (s) 5.6 5.6 5.9 5.9 adult cast Time (s) 5.6 5.6 5.9 5.9 adult cast Time (s) 6.6 5.6 5.9 5.9 adult cast Time (s) 7.0 0.0 0.0 Max Max C-Max	askimun Green (s) 344 344 641 641 allow Time (s) 33 33 33 33 ast 33 33 33 33 beta filter (s) 23 2 2 2 6 beta filter (s) 26 59 59 and Lost Time (s) 56 56 59 59 and Lost Time (s) 6 56 59 59 and Lost Time (s) 6 56 59 59 and Lost Time (s) 7 7 0 20 and Lost Time (s) 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	otal Split (%)	36.4%	36.4%	63.6%	63.6%	
Section Sect	lefue Time (s) 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Section Street Color	Section Sect	aximum Green (s)	34.4	34.4	64.1	<u>4</u> .	
FRed Time (s) 2.3 2.6	Hed Time (s) 2.3	Hed Time (s) 2.3 2.3 2.6 2.6 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	Hed Time (s) 2.3 2.6 2.6 2.6 strained (strained) 2.3 2.5 2.6 2.6 strained Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	ellow Time (s)	3.3	3.3	3.3	3.3	
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addil-ag ad	and Lag Optimize? and Lag Optimize. and Lag Optim	aedLag Optimize? aed-Lag Optimize? aed-Lag Optimize? aed Bod Definize? aed Bod Definize Expensive and Bod Bod Bod Bod Bod Bod Bod Bod Bod Bo	ared-Lag Optimize? ared-Lag Optimize? ared-Lag Optimize? ared-Body ared-B	otal Lost Time (s)	9.9	9.9	5.9	5.9	
ard-Lag Optimize? and Time (s) To 15.0 15.0 And X C-Max C-Max All Time (s) To 15.0 15.0 To 10.0 10.0 To 10.0 10.0 10.0 10.0 To 10.0 10.0 10.0 10.0 To 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	and Lag Optimize? and Time (s) And C-Max Alk C-Max Alk Time (s) And C-Max Alk C	aed-Lag Optimize? abilide Extension (s) abilide Capacity	and Lag Optimize? 30 30 30 30 shicle Extension(s) Max Max C-Max C-Max Assall Time (s) 70 70 150 150 ssh Dont Walk (s) 160 160 100 ssh Dont Walk (s) 170 70 150 150 ssh Dont Walk (s) 170 70 150 150 ssh Dont Walk (s) 170 70 150 150 38 60511 61 100 38 57 10 31 0.38 58 10 0.31 0.31 0.58 0.58 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 395 58 10 0 0 0 0 0 395 58 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ad/Lag					
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sus bondwalk (s) 160 160 100 destrian Calls (##Y) 8 9 38 t Effect Green (s) 34, 4 64, 1 64, 1 64, 1 t t Effect Green (s) 0.31 0.32 0.48 t t Effect Green (s) 0.33 0.46 t t t Effect Green (s) 0.33 0.46 t t t t t t t t t t t t t t t t t t t	ash Dont Walk (s) 160 160 100 odestrian Calls (#frt) 34,4 34,4 64,1 64,1 64,1 tutated g/C Ratio 0.31 0.31 0.38 0.38 shall belay 0.29 0.32 0.46 ala Delay 0.00 0.00 39,5 ala Delay 0.00 0.00 39,6 by coach Delay 0.00 0.00 39,6 by coach Delay 0.00 0.00 39,6 ala Delay 0.00 0.00 39,6 by coach Delay 0.00 0.00 39,6 coach Delay 0.00 0.00 0.00 coach Delay 0.00 coach 0.00 coa	ash Dont Walk (s) 160 160 100 100 400 400 400 400 400 400 400 40	ash Dont Walk (s) 160 160 100 seb Dont Walk (s) 160 160 100 sebestive calls (#frt) 3.4.4 3.4.6 64.1 64.1 trusted g/C Ratio 0.31 0.31 0.58 0.58 Shatio 0.29 0.32 0.48 ontrol Delay 0.00 0.0 3.96 shatio 0.00 0.00 3.96 and Delay 0.00 0.00 3.96 by 0.00 0.00 3.96 and Delay 0.00 0.00 3.96 by 0.00 0.00 3.96 and Delay 0.00 0.00 3.96 by 0.00 0.00 3.96 and Delay 0.00 0.00 3.96 by 0.00 0.00 3.96 and Delay 0.00 0.00 3.96 by 0.00 0.00 3.96 and Delay 0.00 0.00 3.96 by 0.00 0.00 3.96 and Delay 0.00 0.00 3.96 and Delay 0.00 0.00 and 0.00	alk Time (s)	7.0	7.0	15.0	15.0	
bedestrian Calls (#hr) 8 8 0 38 clearly 34, 43, 44, 64, 1 clear (s) 34, 34, 44, 64, 1 clear (s) 34, 34, 64, 1 clear (s) 36, 1 clear	bestrian Calls (#fth) 8 8 0 38 1 Effect Green (s) 34.4 34.4 64.1 64.1 1 Effect Green (s) 34.4 34.4 64.1 64.1 2 Ratio 0.29 0.32 0.45 0.48 2 Ratio 0.29 0.32 0.45 0.48 2 Ratio 0.39 0.39 0.39 0.39 0.39 0.39 0.39 0.39	At Effect Green (s) 3.8 8 6 0 38 8 8 6 0 38 8 8 9 0 38 8 8 9 0 38 8 8 9 0 38 9 8 9 0 38 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	At Effect Green (s) 34.4 64.1 64.1 At Effect Green (s) 34.4 64.1 64.1 At Effect Green (s) 34.4 64.1 At Green (s) 36.8	ash Dont Walk (s)	16.0	16.0	10.0	10.0	
Herit Green (s) 34.4 34.4 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.1 34.2 34.8 34.1 34.	Heffet Green (s) 344 344 641 641 441 441 441 441 441 441 441 4	Heffet Green (s) 344 344 64.1 64.1 Hutared g/C Ratio 0.31 0.38 0.58 Nation Delay 0.31 0.36 0.48 Nation Delay 0.00 0.32 0.48 Nation Delay 0.00 0.00 0.00 0.00 0.00 Norward LOS 0.00 0.00 0.00 0.00 Norward LOS 0.00 0.00 0.00 Norward LOS	Heffot Green (s) 344 344 64.1 64.1 Hatter gine (s) 344 344 64.1 64.1 Hatter gine (s) 0.31 0.38 0.58 0.31 0.38 0.48 0.48 0.48 Interesting (s) 0.40 In	destrian Calls (#/hr)	∞	∞	0	89	
trusted g/C Ratio 0.31 0.31 0.58 0.58 0.58 0.58 0.29 0.32 0.45 0.48 0.48 0.48 0.29 0.32 0.45 0.48 0.48 0.49 0.29 0.32 0.45 0.48 0.48 0.48 0.48 0.29 0.32 0.45 0.48 0.48 0.48 0.48 0.48 0.48 0.48 0.48	trusted g/C Ratio 0.31 0.31 0.88 0.88 0.89 0.29 0.32 0.48 0.48 0.48 0.29 0.32 0.46 0.48 0.48 0.29 0.32 0.45 0.48 0.48 0.29 0.32 0.45 0.48 0.48 0.00 0.00 0.00 0.00 0.00 0.00	Litated g/C Ratio 0.31 0.31 0.58 0.58 Fatio 0.29 0.32 0.45 0.48 Leue Delay 30.6 116 14.0 9.6 Leue Delay 30.6 116 14.0 9.6 Leue Delay 30.6 116 14.0 9.1 SS 70 14.0 14.0 9.6 Leue Length SOH (m) 24.1 7.8 52.2 22.4 Leue Length SOH (m) 24.1 7.8 52.2 22.4 Leue Length SOH (m) 24.0 6.5 m62.1 Lead Each SOH (m) 24.0 0 0 0.052 Lead Each SOH (m) 25.0 0.052 Lead Each SOH (m) 25.0 0.35 0.052 Lead Each SOH (m) 25.0 0.053 Lead Each SOH (m) 25.0 0.35 0.053 Lead Each SOH (m) 25.0 0.053 Lead Each SOH (m)	Liturated g/C Ratio 0.31 0.31 0.58 0.58 Page 10 0.32 0.48 0.48 Related belay 0.02 0.32 0.48 Related belay 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	t Effct Green (s)	34.4	34.4	64.1	4.	
Statio 0.29 0.32 0.48 0.32 0.48 0.32 0.48 0.32 0.45 0.48 0.32 0.45 0.48 0.32 0.45 0.48 0.00 0.0 0.00	Ratio 0.29 0.32 0.48 0.48 antel Delay 30.6 1.6 4.0 9.6 atal Delay 0.0 0.0 39.5 1.0	Ratio 0.29 0.32 0.45 0.48 ontrol Delay 30.6 1.6 14.0 9.6 usue Delay 0.0 0.0 0.0 39.5 stal Delay 0.0 1.6 14.0 49.1 sproach Delay 20.6 1.6 14.0 49.1 sproach Delay 20.5 2.2.4 B bear Learth SSh (m) 24.1 7.8 52.2 22.4 seue Learth SSh (m) 24.1 66.5 MB2.1 AB.2.1 ne Learth SSh (m) 42.0 56.2 60.4 AB.2.1 nese Capacity (vph) 50.8 52.9 19.3 1885 anvation Cap Reduction 0 0 0 0 0 outge Cap Reduction 0 0 0 0 0 0	Ratio 0.29 0.32 0.48 ontrol Delay 30.6 11.6 14.0 9.6 usue Delay 0.0 0.0 39.5 1.6 14.0 9.6 Ala Delay 0.0 0.0 0.0 39.5 1.6 14.0 99.1 Ala Delay 0.0 0.0 0.0 39.5 1.6 14.0 49.1 1.0	stuated g/C Ratio	0.31	0.31	0.58	0.58	
aueu Delay 306 116 140 96 and aueu Delay 306 116 140 96 and aueu Delay 306 116 140 99.1 and Delay 306 116 140 49.1 by 30.1 and 30	aueu Delay 306 116 140 96 and belay 306 116 140 491 35 and belay 20.5 14.0 491 and belay 20.5 14.0 241 7.8 52.2 22.4 and belay 20.5 14.0 24.1 7.8 52.2 22.4 and belay 20.5 14.0 24.1 665 m62.1 and belay 20.5 14.0 24.1 665 m62.1 and belay 20.5 20.4 belay	aue Delay 306 116 140 96 39.5 4 4 4 4 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4	aue Delay 306 116 140 96 and all belay 306 116 140 96 and all belay 306 116 140 99.1 and a belay 306 116 140 49.1 and a belay 306 116 140 49.1 and a belay 30.5	c Ratio	0.29	0.32	0.45	0.48	
Late Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Leub Delay 0.0 0.0 39.5 Ala Delay 3.0 1.6 14.0 49.1 Ala Delay 3.0 1.6 14.0 49.1 Ala B B B B B B B B B B B B B B B B B B B	tal Delay 0.0 0.0 395 tal Delay 3.0 1.6 14.0 49.1 bytoach Delay 20.5 14.0 49.1 bytoach Delay 20.5 14.0 49.1 bytoach LOS C B B D C C B B D C C C C C C C C C C C	late Delay 0.0 0.0 39.5 and belay 0.0 0.0 39.5 and belay 0.0 0.0 39.5 and belay 0.0 0.0 0.0 39.5 and belay 0.0 0.0 0.0 39.5 and belay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	ontrol Delay	30.6	11.6	14.0	9.6	
big 306 116 140 491 proach Delay C B D proach LOS C B D ceue Length Soft (m) 24.1 7.8 5.2.4 beneal Link Dist (m) 24.1 24.1 6.2 60.4 benal Link Dist (m) 24.0 5.2 20.4 60.4 nr Bay Length (m) 24.0 5.2 60.4 60.4 nr Bay Length (m) 508 5.2 1913 1895 60.4 nradion Cap Reduction 0 0 1052 0 </td <td>Asia Delay 306 116 140 491 So C B B D Defended Delay 202 B D Defended Carbon C B D Defended Carbon C C C B D Defended Carbon C C C C C C C C C C C C C C C C C C C</td> <td>Also Delay 306 116 140 491 505 505 505 505 505 505 505 505 505 50</td> <td> Mail Delay 306 116 140 491 </td> <td>neue Delay</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>39.5</td> <td></td>	Asia Delay 306 116 140 491 So C B B D Defended Delay 202 B D Defended Carbon C B D Defended Carbon C C C B D Defended Carbon C C C C C C C C C C C C C C C C C C C	Also Delay 306 116 140 491 505 505 505 505 505 505 505 505 505 50	Mail Delay 306 116 140 491	neue Delay	0.0	0.0	0.0	39.5	
S	SS	SS	State Stat	otal Delay	30.6	11.6	14.0	49.1	
proach Delay 20.5 14.0 49.1 20.5 14.0 49.1 20.5 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2	proach Delay 20.5 14.0 49.1 proach Delay 20.5 14.0 49.1 proach Delay 20.5 14.0 49.1 proach LOS C D D D D D D D D D D D D D D D D D D	proach Delay 20.5 14.0 49.1 porach Delay 20.5 14.0 49.1 porach Delay 20.5 14.0 49.1 porach LOS C 2.2 2.2 2.2 2.2 E. D.	proach Delay 205 14 0 49.1 proach Delay 205 14 0 49.1 proach Delay 205 14 0 49.1 proach LOS C C C C C C C C C C C C C C C C C C C	SC	ပ	ш	ш		
by product 10.05	product U.S. C. B. D.	bene Length 105 (m) 24.1 7.8 5.2 2.24 Jeue Length 50th (m) 4.10 24.1 66.5 m62.1 Jeneal Link Dist (m) 24.0 24.1 66.5 m62.1 Jeneal Link Dist (m) 24.0 24.1 66.5 m62.1 Jeneal Link Dist (m) 24.0 24.0 6.2 60.4 Jeneal Link Dist (m) 42.0 Jeneal Link Dist (m) 42.0 Jeneal Link Dist (m) 6.0 6.2 60.4 Jeneal Link Dist (m) 6.2 6.2 6.4 Jeneal Link Dist (m) 6.2 6.2 Jeneal Link Dist (m) 6.2 Jeneal Link Dist	Deprovation U.S. C. B. D. D. C. B. D. D. C. B. D.	proach Delay	20.5		14.0	49.1	
Leube Length Stith (m) 24-1 7-5 92.2 Leube Length Stith (m) 24-1 7-5 92.4 Leube Length Stith (m) 24-1 7-5 92.4 Lend Link Dist (m) 243 0 56.2 60.4 Inn Bay Length (m) 42.0 Sas Capacity (vph) 508 529 1913 1895 Randton Cap Reducth 0 0 1052 Rouged v/r Ratio 0 0 0 0 Sabuded v/r Ratio 0 0 0 0 Clessedton Summary All 24-1 7-7 8-2 6-4 Cle Length: 1.07 Lessedton Summary Cle Length: 1.07 Lessedton Summary Cle Length: 1.07	Jacob Languis Jount (III) 24.1 7.0 52.2 22.4 Jacob Languis Jount (III) 24.1 66.5 m62.1 Jacob Languis Jount (III) 24.3 66.5 m62.1 Jacob Languis (Viph) 508 529 1913 1895 Javation Cap Reductin 0 0 0 0 0 Javation Cap Reductin 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Jacob Cap Reductin 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Jacob Lagriff volid (m) 24.1 7.0 8.2 22.4 Jacob Lagriff (m) 24.1 7.0 8.2 22.4 Jacob Lagriff (m) 24.1 24.1 6.2 8.2 Jacob Lagriff (m) 24.0 8.2 8.0 Jacob Lagriff (m) 24.0 8.2 8.0 Jacob Lagriff (m) 24.0 8.2 8.0 Jacob Lagriff (m) 24.0 8.2 9.1913 1895 Jacob Lagriff (m) 8.2 9.1913 1895 Jacob Lagriff (m) 9.0 9.0 9.0 9.0 Jacob Lagriff (m) 9.0 9.0 9.0 Jacob Lagriff (m) 9.0 Jacob Lagrif	Jebus Langth 1011 (11) 24,1 24,1 35,2 22,4 4 Leural Link Dist (m) 243,0 56,2 60,4 Irm Bay Length (m) 42,0 56,2 60,4 Se Capacity (vph) 508 529 1913 1895 Se Capacity (vph) 508 529 1913 1895 Se Capacity (vph) 508 529 1913 1895 Orage Cap Reductin 0 0 1052 Silback Cap Reductin 0 0 35 0 Orage Cap Reductin 0 0 35 0 Active Long First (m) 0 0 0 0 0 Section Summary 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	proach LOS	, t	10	ם כ	2 5	
Labor Langth: 101 Table Langth: 110 Table Langth: 110 Labor Langth: 110 Labor Langth: 110 Labor Langth: 110 Labor	Annual Link Disk (m) 24.0 24.1 00.0 11102.1 00.0 11102.1 00.0 11102.1 00.0 11102.1 00.0 11102.1 00.0 11102.1 00.0 11102.1 00.0 11102.1 00.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	And Link Disk (m) 23.0 56.2 60.4 mn And Link Disk (m) 23.0 56.2 60.4 mn Bay Length (m) 23.0 56.2 60.4 mn Bay Length (m) 24.0 56.9 1913 1895 and Link Cap Reduction 0 0 105.2 moration Cap Reduction 0 0 35 0 0 orage Cap Reduction 0 0 35 0 0 orage Cap Reduction 0 0 0 0 0 0 0 crage Cap Reduction 0 0 0 0 0 0 0 crage Cap Reduction 0 0.29 0.32 0.46 1.07 eresection Summary cle Length: 110	And Link Dist (m) 24:0 24:1 05:0 1102.1 1102	rene Length 30th (m)	74.0	0.7	2.20	#.22 #.63	
In Bay Length (m) 42.0	Length (light) 420 See Capacity (vpl) 508 529 1913 1895 see Capacity (vpl) 508 529 1913 1895 anvalion Cap Reductin 0 0 1052 Jillack Cap Reductin 0 0 0 0 0 0 selected reduction 0 0 29 0.32 0.46 1.07 ticle Langth: 110 tataled Cycle Langth: 10 tataled Cycle Langth: 10 tataled Cycle Langth: 10	Interpretation (vph) 42.0	se Capacity (vph) 508 529 1913 1895 se Capacity (vph) 508 529 1913 1895 anvalion Cap Reductin 0 0 1052 orage Cap Reductin 0 0 0 orage Cap Reductin 0 0 0 orage Cap Reductin 0 0 0 thereed to Reduction 0.29 0.32 0.46 1.07 erecection Summary cle Length: 110 tuated Cycle Length: 110 tuated Cycle Length: 110 triated Cycle Length: 110 triated Cycle Length: 110 triated Cycle Length: 110 triated Cycle Length: 110	Jede Length 95th (III)	243.0	7.4.7	56.2	60.4	
In leave legign (III) 42.0 1913 1895 anvation Cap Reductin 0 0 1052 anvation Cap Reductin 0 0 0 35 0 orage Cap Reductin 0 0 0 0 advaced vic Ratio 0 0.29 0.32 0.46 1.07 lessection Summary cel Length: 1.10 the tele Chief Cap	In 1894 February (1977) 42.0 In 1895 Capacity (1977) 50.0 In 1895 Capacity (1978) 50.0 In 189	Are England III) TEAC parently IIII) TEAC parently IIII TEAC parently IIIII TEAC parently IIII TEAC parently IIIII TEAC parently IIII TEAC	anvation Cap Reductin 0 0 1052 anvation Cap Reductin 0 0 1052 anvation Cap Reductin 0 0 1052 anvation Cap Reductin 0 0 35 0 orage Cap Reductin 0 0 0 0 orage Cap Reductin 0 0 0 0 advantage Cap Reductin 0 0 0 0 the second Norman Cap	renial Lilin Dist (III)	42.0		200.2	ŧ:	
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A retail of the Action	An annual representation of the control of the cont	Annuary Preduction 0 35 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	an additionary reactions of the control of the cont	ase Capacity (vpir)	000	670	2 0	1050	
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educed vic Ratio 0.29 0.32 0.46 1.07 tersection Summary yiele Length: 110 trusted Cycle Length: 110 trusted Cycle Length: 110 trusted Cycle Length: 110 trusted Cycle Length: 110	educed vic Ratio 0.29 0.32 0.46 1.07 lessection Summary cle Length: 110 tuated Cycle Length: 10 tuated Cycle Length: 10	educed vic Ratio 0.29 0.32 0.46 1.07 lessection Summary c/oel Length: 110 lessection and construction of Green fishet 46 (42%), Referenced to phase 2:NBT and 6:SBT, Start of Green	educed vic Ratio 0.29 0.32 0.46 1.07 lensedtion Summary vcle Length: 110 stuated Cycle Length: 110 Steated Cycle Length: 110 Steated Cycle Length: 110	orage Cap Reductn	0	0	0	0	
ycle Length: 110 tukied Cycle Length: 110 tukied Cycle Length: 110 tukied Cycle Cycle Length: 110 tukied Cycle Cycle Length: 110	lensection Summary c/cle Length.110 tuated Cycle Length.10 fisch 16 (12%). Referenced in phase 2.NBT and 6.SBT. Shart of Green	lensedion Summary vole Length: 110 tuated Cycle Length: 110 ffset 46 (42%), Referenced to phase 2:NBT and 6:SBT, Start of Green	vole Length: 110 stuated Cycle Length: 110 Strated Cycle Length: Strated	educed v/c Ratio	0.29	0.32	0.46	1.07	
ycle Length: 110 Lutared Cycle Length: 110 Least & Anny Deformand to Thomas ONDT and & COT Clert of Cooper	ycle Length: 110 tutaed 0/gole Length: 110 Ref. 46 (42%). Peterenned to nhase 2:NBT and 6:SBT. Start of Green	ycle Length: 110 ztuated Cycle Length: 110 ffset 46 (42%), Referenced to phase 2:NBT and 6:SBT, Start of Green	ycle Length: 110 ctuated Cycle Length: 110 Thet 46 (42%), Referenced to phase 2:NBT and 6:SBT, Start of Green	tersection Summary					
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that AC (100) Defendant and C. O. and G. C. D. Charles of Cross	fket 46 (42%) Referenced to phase 2:NBT and 6:SBT. Start of Green	ffset. 46 (42%), Referenced to phase 2:NBT and 6:SBT, Start of Green	ffset 46 (42%), Referenced to phase 2:NBT and 6:SBT, Start of Green	ctuated Cycle Length: 110					
ISET 40 (42.%). Referenced to phase 2.No Larg 0.00 L. Orati of Green				ffset: 46 (42%). Referenced	d to phase	2:NBT a	TBS:9 pt	Start of	Green
77		Natural Cycle: 00	Natural Cycle: 00	Natural Oycie, 00					

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03-27-2024 JK

Lanes, Volumes, Timings 8: Hwy 417 EB Ramp & Bronson

Existing AM Peak Hour 384 Adington Ave

Intersection LOS: C ICU Level of Service D Control Type: Actuated-Coordinated
Maximum vic Ratio: 0.48
Intersection Signal Delay: 30.2
Intersection Capacity Utilization 74.4%
Analysis Period (min) 15
m. Volume for 95th percentile queue is metered by upstream signal.

♦ 04 Splits and Phases: 8: Hwy 417 EB Ramp & Bronson **A** Ø2 (R) ▼ Ø6 (R)

CGH Transportation Page 14 03-27-2024 JK

Existing PM Peak Hour 384 Arlington Lanes, Volumes, Timings 1: Bronson & Raymond/Catherine

Lane Group Lane Group Flow (vph) Agin 609 By 67 Lane Group Flow (vph) Agin 609 By 687 Churue Volume (vph) Agin 609 By 687 Churue Volume (vph) Agin 609 By 687 By 698 By 762 By 762 By 762 By 763 By	well well well well well well well well	WBL WBT NBL NBT	wBL yurations me (vph) 481 the (vph) 481 the (vph) 481 the (vph) 331 thases 8 se se se se se se se se		NBL 293 2293 326 326 5 5 5 5 11.8 25.0 25.0% 25.0%	NBT 687 687 687 763 NA 2 2 2 2 2 2 4.8 67.0 67.0% 607.0%	SBT 762 7762 7762 7762 7762 7762 7762 7762
yurations	welviph) 481 609 293 687 me (vph) 481 609 293 687 me (vph) 331 1002 326 763 1 me (vph) 331 100 50 100 me (vph) 330 330 250 670 me (vph) 330 330 35 35 me (vph) 330 330 30 30 me (vph) 340 30 me (vph) 350 30 30 me (vph) 350 30 30 me (vph) 100 00 00 me (vph) 100 00 me (vph)	yurations	yurations 1 1 1 1 1 1 1 1 1		293 293 326 pm+pt 5 2 5 5 5.0 11.8 25.0 25.0%	687 687 763 NA 2 2 2 2 10.0 24.8 67.0 60.2 3.3	↑↑↑ ↑↑↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑
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me (vph) 481 609 293 687 hases 8 8 5 763 1 hases 8 8 5 2 see 1 002 326 763 1 hases 8 8 5 2 see 1 00 10 0 5 0 hit (s) 283 283 118 248 split (s) 283 283 118 248 split (s) 283 283 118 248 split (s) 330 330 250 670 670 split (s) 330 330 350 50 670 split (s) 330 330 330 33 33 33 6 split (s) 30 30 30 0 0 hit (s) 30 30 30 0 0 hit (s) 30 30 30 0 0 hit (s) 267 267 182 602 split (s) 30 30 30 0 0 hit (s) 267 267 183 28 split (s) 150 150 100 split (s) 267 267 602 602 split (s) 267 267 602 602 split (s) 267 267 600 600 split (s) 267 267 600 060 split (s) 27 27 27 split (s) 267 267 600 060 split (s) 27 27 27 split (s) 267 267 600 060 split (s) 20 000 000 split (s) 20 0000 split (s) 20	me (vph) 481 609 293 687 Inbases 8 8 5 2 Inbases 8 8 6 5 2 Inbases 8 8 8 6 5 2 Inbases 8 8 8 6 5 2 Inbases 8 8 8 8 5 2 Inbases 8 8 8 5 2 Inbases 8 8 8 8 5 2 Inbases 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 8 8 8 8 8 8 Inbases 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	mae (vph) 481 609 293 687 hases 8 8 5 2 se 6 763 11 hases 8 8 5 2 se 764 hases 8 8 5 2 se 767 hases 8 8 5 2 se 767 hases 8 8 6 5 2 se 7 6 100 hit (s) 28.3 28.3 118 248 hit (s) 33.0 33.0 25.0 67.0 42 hit (s) 33.0 33.0 33.3 33 hit (s) 26.7 26.7 182 602 hit (s) 30 30 30 35 35 hit (s) 26.7 26.7 182 602 hit (s) 30 30 30 30 hit (s) 26.7 26.7 110 hit (s) 26.7 26.7 600 60 hit (s) 20 20 30 hit (s) 20 20 2 hit (hit) 20 20 2 hit (hit) 30 112 69 47.1 31 40 hit (hit) 1100 2 hit (hit) 40 60 0 hit (s) 20 20 30 hit (hit) 41270 #881 #95.5 48.7 #1 hit 100 hit (s) 20 20 30 hit (hit) 1100 hit (s) 20 20 30 hit (s) 380 1178 #85.5 48.7 #1 hit 100 hit (s) 20 20 30 hit (s) 20 20 30 hit (s) 30 110 405.5 hit (s) 2 hit (hit) 380 1126 1062 hit (hit) 20 20 30 hit (s) 20 20 30 hi	me (vph) 481 h Flow (vph) 331 hases Rememessee Bese Rememessee Bese Rememes Rememes Remement (s) 28.3 (s) 33.0		293 326 pm+pt 5 2 5 5.0 11.8 25.0 25.0 25.0%	687 763 NA 2 2 2 10.0 24.8 67.0 67.0%	762 1094 NA AN 6 6 6 72.0% 33.3 35.2 0.0 6.8 6.8 798
Perm NA Perm	Flow (vph) 331 1002 256 768 1	Perm NA pm+pt NA pm+ses	i Flow (vph) 331 hasses 8 hasses 8 ses 8 ses 8 hasse 8 itial (s) 100 hit (s) 28.3 hit (s) 28.3 hit (s) 28.3 s) 33.0 s) 33.0 s) 33.0 e (s) 3.3 e (s) 6.3 implic(s) 6.3		326 326 5 5 5 5 5 11.8 25.0 25.0	763 NA 2 2 2 10.0 24.8 67.0 67.0%	11094 NA 6 6 6 10.0 24.8 42.0 42.0 33.3 3.3 3.3 3.3 0.0 0.0 6.8 6.8 7.8 8.8
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28.3 28.3 11.8 24.8 33.0% 33.0% 25.0 67.0 47.0 47.0 47.0 47.1 48.2 48.2 48.2 48.2 48.2 48.2 48.2 48.2	28.3 28.3 11.8 24.8 33.0 25.0 67.0 42.0 33.0 25.0 67.0 42.0 42.0 42.0 67.0 42.0 67.0 42.0 42.0 42.0 67.0 42.0 67.0 42.0 67.0 42.0 67.0 67.0 67.0 67.0 67.0 67.0 67.0 67	28.3 28.3 11.8 24.8 33.0 33.0 26.0 67.0 47.0 47.0 47.0 47.0 47.0 47.0 47.0 4	28.3 33.0 33.0% 3 26.7 3.3 3.0 0.0	28.3 33.0% 26.7 3.3 3.0 0.0 6.3	11.8 25.0 25.0%	24.8 67.0 67.0% 60.2 3.3	24.8 42.0 35.2 3.3 3.3 5.8 0.0 6.8 7.8 8
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33.0% 33.0% 57.0% 67.0% 42.26.7 26.7 182 60.2 2.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3	33.0% 33.0% 57.0% 67.0% 42.26.7 26.7 182 60.2 26.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	33.0% 33.0% 67.0% 67.0% 42.26.7 26.7 182 60.2 23.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	33.0% 3 26.7 3.3 3.0 0.0	33.0% 26.7 3.3 3.0 0.0 6.3	25.0%	67.0% 60.2 3.3	42.0% 35.2 3.3 0.0 6.8 Ves
26.7 26.7 18.2 60.2 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3	26.7 26.7 182 602 33 33 33 33 33 33 33 33 33 33 33 33 33	26.7 26.7 182 602 3 3.3 3.3 3.3 3.3 3.3 3.3 3.0 3.0 3.0 3.0 3.0 3.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	26.7 3.3 3.0 0.0 6.3	26.7 3.3 3.0 0.0 6.3		3.3	35.2 3.3 0.0 6.8 Yes
3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	3.3	3.3	18.2	3.3	3.3 3.5 6.8 Lag Yes
30 30 35 35 35 35 35 35 35 35 35 35 35 35 35	3.0 3.0 3.5 3.5 3.5 3.6 3.6 3.8 6.8 6.8 6.8 6.8 6.8 6.8 6.8 6.8 6.8 6	30 30 35 35 35 35 35 35 35 36 36 3 63 63 63 68 68 68 68 68 68 68 68 68 68 68 68 68	9.0	3.0	3.3		3.5 0.0 6.8 Lag Yes
(m) #127.0 #88.1 #85.5 #8.8 (m) #127.0 #88.1 #85.5 #8.8 (m) #127.0 #88.1 #85.5 #8.9 (m) #127.0 #88.1 #85.5 #8.9 (m) #127.0 #88.1 #85.5 #8.7 #1.1 (m) #127.0 #88.1 #85.0 #8.7 #8.7 #1.1 (m) #127.0 #88.1 #85.0 #8.7 #8.7 #1.1 (m) #127.0 #88.1 #8.7 #8.7 #8.7 #1.1 (m) #127.0 #88.1 #8.7 #8.7 #1.1 (m) #127.0 #88.1 #8.7 #8.7 #1.1 (m) #127.0 #8.7 #8.7 #8.7 #1.1 (m) #127.0 #8.7 #8.7 #1.1 #8.7 #1.1 (m) #127.0 #8.7 #8.7 #8.7 #1.1 (m) #127.0 #8.7 #8.7 #1.1 #1.1 #1.1 #1.1 #1.1 #1.1 #1.1 #1	(m) #1270 #881 #965	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0	0.0	3.5	3.5	0.0 6.8 Lag Yes
6.3 6.3 6.8 6.8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6.3 6.3 6.8 6.8 6.8 Max Max None C-Max C-1 None None C-Max C-1 None None None None None None None None None None None None None None None None None None None None None None None None None None None None None None	6.3 6.3 6.8 6.8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	63	6.3	0.0	0.0	6.8 Lag Yes
Nax Nax None C-Max C-Max Nax	Nax Nax None C-Max Nax	Nax Nax None C-Max C-Max None C-Max None C-Max None			8.9	8.9	Lag Yes
) 3.0 3.0 Yes 3.0) 30 36 7 95 30 37 37 37 37 37 37 37 37 37 37 37 37 37	(m) 71.2 69.9 47.1 71.2 69.9 47.1 71.2 69.9 47.1 71.2 69.0 47.2 71.2 69.0 47.2 71.2 69.0 47.2 71.2 69.0 47.2 71.2 69.0 47.2 71			Lead		Yes
(m) #1270 #82 #87 #171 3.0 #8.0 3.0 #8.0 3	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	ad-Lag Optimize?		Yes		
Max Max None C-Max C-Max C-Max Max	Max Max None C-Max C-Max Max M	Max Max None C-Max C-Max C-Max Max		3.0	3.0	3.0	3.0
Second S	1,0 1,0	Security 1.00 1.0		Max			-Max
Section 15.0	Section 15.0	Section 15.0		7.0			7.0
alls (#frh) 27 27 27 602 602 Ratio 0.27 0.67 0.60 0.60 Ratio 0.27 0.67 0.60 0.60 0.87 0.85 0.92 0.38 0.94 42.2 576 11.0 0.00 0.0 2.2 2.3 59.4 42.2 576 11.0 0.00 0.0 2.2 2.3 59.4 42.2 59.8 13.3 E D E B S A B D E B S	alls (#fr) 27 27 602 602 Ratio 0.27 0.27 0.60 0.60 0.27 0.60 0.60 0.27 0.60 0.60 0.29 0.38 0.92 0.38 0.00 0.0 0.2 2.3 59.4 4.22 576 110 0.0 0.0 2.2 2.3 59.4 4.22 576 110 1.0 E	alls (#frh) 27 27 27 602 602 31 and (s) 26.7 26.7 60.2 60.2 60.2 Retire 0 .027 0.00 0.00 0.00 0.00 0.00 0.00 0.		15.0		10.0	10.0
Ratio 0.567 267 602 602 Ratio 0.27 0.27 0.60 0.60 0.87 0.85 0.92 0.38 0.94 4.2. 57.6 11.0 0.0 0.0 2.2 2.3 5.94 4.2. 57.6 11.0 0.0 0.0 2.2 2.3 5.94 4.2. 57.6 11.0 0.0 0.2 2.3 5.94 4.2. 57.6 11.3 1.35 E D E B 1.37 46.5 27.2 S Doth (m) 71.2 69.9 47.1 37.1 1.95th (m) 71.2 69.9 47.1 1.95th	Ratio 0.26.7 26.7 60.2 60.2 Ratio 0.27 0.27 0.60 0.60 0.60 0.60 0.60 0.80 0.80 0.80	Ratio 0.27 0.27 0.06 0.06 0.06 0.08 0.08 0.08 0.08 0.08		27		33	40
Ratio 0.27 0.27 0.60 0.60 0.87 0.88 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	Ratio 0.27 0.27 0.60 0.60 0.60 0.60 0.60 0.60 0.38 0.39 0.38 0.39 0.38 0.39 0.38 0.39 0.38 0.39 0.38 0.39 0.38 0.39 0.38 0.39 0.39 0.39 0.39 0.39 0.39 0.39 0.39	Ratio 0.27 0.27 0.60 0.60 0.60 0.87 0.88 0.92 0.38 0.39 0.38 0.39 0.38 0.39 0.38 0.39 0.38 0.39 0.38 0.39 0.38 0.39 0.39 0.39 0.39 0.39 0.39 0.39 0.39		26.7	60.2	60.2	36.1
987 0.88 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.93 0.93 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.87 0.88 0.92 0.38 0.99 0.38 0.90 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.87 0.88 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.92 0.38 0.93 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0		0.27	0.60	0.60	0.36
894 422 576 110 0 00 22 2.3 994 422 598 133 E D E B B 88 89 455 272 80 71.2 699 47.1 37.1 1 95th (m) 71.2 699 77.1 1 95th (m) 70.0 0 0 0 0 10.0 0 0 0 0 0 10.0 0 0 0 10.0	894 422 876 110 90 00 22 2.3 904 422 998 133 E D E B A6.5 272 S Doth (m) 712 699 47.1 37.1 1 99th (m) 110.0 488.1 #95.5 48.7 #1 99th (m) 110.0 488.1 #95.6 48.7 #1 90th (m) 380 1178 369 1996 7 90th (m) 380 1178 369 1996 7 90th (m) 0 0 0 0 90th (m) 0 0 90th (m	894 422 576 110 90 00 22 2.3 994 422 598 133 E D E B 89 465 272 C C 50th (m) 71.2 69 47.1 37.1 1 95th (m) 4127.0 #88.1 #95.5 48.7 #1 95th (m) 110.0 45.0 63.3 9th (m) 380 1178 369 1996 7 9th (m) 380 1178 369 1996 7 9th (m) 0 0 0 0 9th (m) 0 0 0 0 Reductin 0 0 0 0 0 0 Reductin 0 0 0 0 0 0 Reductin 0 0 0 0 0 0 0 Reductin 0 0 0 0 0 0 0 0 Reductin 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.85	0.92	0.38	0.94
89 4 422 598 13.3 89 4 422 598 13.3 8	89 4 422 59.8 13.3 59.4 422 59.8 13.3 59.4 422 59.8 13.3 5.9 6.5 5.7 5.9 5.9 6.5 5.9 5.9 6.5 5.9 5.9 6.5 5.9 5.9 6.5 5.9 5.9 6.5 5.9 5.9 6.5 5.9 5.9 6.5 5.9 5.9 5.9 5.9 5.9 5.9 5.9 5.9 5.9 5	89 4 422 598 13.3 194 422 598 13.3 195 4 422 598 13.3 195 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		42.2	9.73	11.0	31.0
894 422 598 13.3 lay	894 422 598 133 P	894 422 598 13.3 et p E B E B E B E B E S S S S S S S S S S S		0.0	2.2	2.3	15.0
Holo E B B 46.5 27.2 27.2 D C C C C C C C C C C C C C C C C C C	Proach Delay 46.5 27.2 46.1 proach Delay 46.5 27.2 46.1 proach LOS D C D D C D D D D D D D D D D D D D D	Proceducing		42.2	29.8	13.3	46.1
46.5 27.2 C 5.2 C	proach Delay 46.5 27.2 46.1 proach LOS D C D C D C D C D C D C D C D	proach Delay 46.5 27.2 46.1 proach LOS		Ω	ш	В	Ω
712 69.9 47.1 37.1 1 #127.0 #88.1 #95.5 48.7 #1 247.5 63.3 110.0 45.0 63.3 0 0 10 1062 0 0 0 0 0 0 0 0 0 0 0 87 0.85 0.91 0.82	proach LOS D C D sieu Length 50H (m) 71.2 69.9 47.1 109.1 sieu Length 95H (m) #127.0 #88.1 #85.5 48.7 #45.7 emal Link Dist (m) #127.0 #85.5 48.3 56.5 56.5 nn Bay Length (m) 110.0 45.0 36.9 1162 58.9 se Capacity (vph) 380 1178 369 1162 92 illback Cap Reducth 0 0 0 0 0 0 nage Cap Reducth 0 0 0 0 0 0 nage Cap Reducth 0 0 0 0 0 0 nage Cap Reducth 0 0 0 0 0 0 nage Cap Reducth 0 0 0 0 0 0 ductor Numary 0 0 0 0 0 0 actor Lange Lingth: 100 0 0 0 0	proach LOS C D C D C D C D C D C D C D C D C D C	proach Delay	46.5		27.2	46.1
71.2 69.9 47.1 37.1 1 110.0 45.0 63.3 110.0 45.0 63.3 110.0 0 10.02 0 0 0 0 0.87 0.85 0.91 0.82	seue Length 50th (m) 71.2 69.9 47.1 37.1 109.1 seue Length 95th (m) #127.0 #88.1 #95.5 48.7 #145.7 emal Link Dist (m) 110.0 247.5 63.3 56.5 emal Link Dist (m) 110.0 45.0 65.5 se Capacity (vph) 380 1178 369 196. 116.2 se Capacity (vph) 380 1178 369 199. 116.2 92 avvalion Cap Reductin 0 0 0 0 0 0 advage Cap Reductin 0 0 0 0 0 0 advage Cap Reductin 0 0 0 0 0 0 advage Cap Reductin 0 0 0 0 0 0 advage Cap Reductin 0 0 0 0 0 0 advage Cap Reductin 0 0 0 0 0 0 advage Cap Reductin 0	seue Length 50th (m) 71.2 69.9 47.1 37.1 109.1 seue Length 95th (m) #127.0 #88.1 #95.5 48.7 #145.7 emal Link Dist (m) 110.0 247.5 63.3 56.5 remal Link Dist (m) 110.0 45.0 63.3 56.5 se Capacity (vph) 380 1178 369 1996 1162 se Capacity (vph) 380 1178 369 1996 1162 anvalion Cap Reducth 0 0 0 0 0 olducad Vic Ratio 0.87 0.85 0.91 0.82 1.02 ensection Summany 0.87 0.85 0.91 0.82 1.02	proach LOS	۵		ပ	۵
#127.0 #88.1 #95.5 48.7 #1 247.5 65.3 110.0 380 1178 369 1996 0 0 0 0 0 0 0 0 0 0 87 0.85 0.91 0.82	seue Length 95th (m) #127.0 #88.1 #95.5 48.7 #145.7 emal Link Dist (m) 247.5 63.3 #6.5 nn Bay Length (m) 110.0 45.0 162 sec Capacity (vph) 380 1178 369 1162 anvation Cap Reductn 0 10 10 0 0 anvation Cap Reductn 0 0 0 0 0 0 ansection Stummary 0 0 0 0 0 0 0 cle Length: 100 10 0 0 0 0 0 0 Lusted Cycle Length: 100 10 10.2 2 1.02 0 0 0 0 0	leue Length 95th (m) #127.0 #88.1 #95.5 48.7 #145.7 earla Luik Dist (m) #127.0 #88.1 #95.5 6.5 earla Luik Dist (m) 10.0 247.5 63.3 86.5 earla Luik Dist (m) 110.0 45.0 earla Luik Dist (m) 110.0 10.0 earla Capacity (ph) 380 1178 369 1996 1162 92 earla Capacity (ph) 380 1178 369 1996 1162 92 earla Capacity (ph) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	71.2	6.69	47.1	37.1	109.1
110.0 247.5 63.3 110.0 45.0 63.3 380 1178 369 1996 0 0 0 10 1062 0 0 0 0 0 0 0 0 0 0 0.87 0.85 0.91 0.82	emal Link Dist (m) 247.5 63.3 56.5 m Tay Learght (m) 10.0 45.0 63.3 56.5 m Set Capacity (vph) 389 1996 1162 anvation Cap Reductn 0 10 1062 92 millback Cap Reductn 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 mage Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	enal Link Dist (m) 247.5 63.3 56.5 rn Bay Length (m) 100 45.0 45	#127.0	#88.1	#95.5		145.7
110.0 45.0 380 1178 389 1996 1 0 0 10 102 0 0 0 0 0 0 0 0 0 87 0.85 0.91 0.82	nr Bay Length (m) 1100 450 se Capacity (vph) 380 1178 369 1996 1162 se Capacity (vph) 380 1178 369 1996 1162 illiback Cap Reductin 0 0 10 0 0 nage Cap Reductin 0 0 0 0 0 0 nage Cap Reductin 0 0 0 0 0 0 nage Cap Reductin 0 0 0 0 0 0 nage Cap Reductin 0 0 0 0 0 0 nage Cap Reductin 0 0 0 0 0 0 0 nage Cap Reductin 0 0 0 0 0 0 0 0 nage Cap Reductin 0 0 0 0 0 0 0 0 0 nage Cap Reductin 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	rn Bay Length (m) 110.0 45.0 se Capacity (vph) 380 1178 369 1996 1162 anation Cap Reductin 0 0 10 00 nige Cap Reductin 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 0 0 0 0 0 0 nige Cap Reductin 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		247.5		63.3	56.5
380 1178 369 1996 1 0 0 10 1082 0 0 0 0 0 0 0 0 0.87 0.85 0.91 0.82	se Capacity (vph) 380 1178 369 1996 1162 anvalion Cap Reductin 0 10 1062 92 illiback Cap Reductin 0 0 0 0 cduced v/c Ratio 0.87 0.85 0.91 0.82 1.02 ersection Summary cle Length: 100	se Capacity (vph) 380 1178 369 1996 1162 anvalion Cap Reductin 0 0 10 1082 92 illiack Cap Reductin 0 0 0 0 0 induced Vic Ratio 0.87 0.85 0.91 0.82 1.02 cle Length: 100 tutale Cyple Length: 100	-		45.0		
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0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	illback Cap Reducth 0 0 0 0 0 0 0 1 anged Cap Reducth 0 0 0 0 0 0 0 1 anged Cap Reducth 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Illback Cap Reductn 0 0 0 Orage Cap Reductn 0 0 0 Induced Vic Ratio 0.87 0.85 0.91 Induced Vic Ratio 0.87 0.85 0.91 Instanced Cycle Length: 100 0.87 0.85 0.91 Lusted Cycle Length: 100 0.87 0.85 0.81 Lusted Cycle Length: 100 0.87 0.87 0.87		0	9	1062	92
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	nrage Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Anage Cap Reducth 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0	0	0	0
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ersection Summary cle Length: 100-11	ersection Summary cle Length: 100 tualed Cycle Length: 100	cle Length: 100 tueled Cydle Length: 100 clest Roll (Rolls, Dedicanopal his phase PAIRT) and RIGHT (Start of Green		0.85	0.91	0.82	1.02
cle Langui 100	rice Length: 100 Litated Cycle Length: 100	cale Length: 100 triated Cycle Length: 100 feet on 1600s. Deferenced in others of 2NRT1 and R-SRT. Start of Green	ersection Summary				
role Length: 100	icke Langin: 100 tutated Cover Langin: 100 The Cover Langin: 100	role Length. 100 tutated Cycle Length; 100 Face for IGNOV, Deferanced in others SART1 and R-SBT. Start of Green	elsection outlinery				
- T	tuated Cycle Length: 100	tuated Cydle Length: 100 feat 80 (80%). Dafarancad in nhass 2-NRTI and R-SRT. Start of Green	rcie Length: 100				
tuated Cycle Length: 100	Control Foldon	feat 80 (80%) Deferenced to phase 9-NRTI and 6-SRT Start of Green	tuated Cyde Length: 100				
Offset. 60 (60%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	tset: 60 (60%), Referenced to phase 2:NB1L and 6:SB1, Start of Green	ואבר מו (מו /מ), מבופו בווסס וה אומסס דוואם וד מות היסם ו למנו הו סיסטי	fset 60 (60%), Referenced to phase 2:	2:NBTL a	nd 6:SBT	, Start of	Green
1%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	Offset, 60 (60%), Referenced to phase 2:NB1L and 6:SB1, Start of Green	2/8), Nelectical to prisase 2.110 it aird 0.00 1, orantol oroni	1%), Referenced to phase 2:	2:NBTL a	nd 6:SBT	, Start of	Sreen

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Existing PM Peak Hour 384 Arlington Lanes, Volumes, Timings 1: Bronson & Raymond/Catherine

Control Type: Actuated-Coordinated
Maximum v0c Ratio: 0.94
Intersection Signal Delay. 4.0.4
Intersection Capacity Utilization 104.2%
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection LOS: D ICU Level of Service G

Splits and Phases: 1: Bronson & Raymond/Catherine

\$08 * Ø6 (R) **■** Ø2 (R) **√** Ø5

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Lanes, Volumes, Timings 2: Bronson & Arlington

Existing PM Peak Hour 384 Arlington

(s) 15	## FBI FBI WBI WBI NBI SBI SBI 15		^	†	>	ţ	•	—	•	→	
15	15 8 14 5 26 792 5 5 792	e Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
15 8 14 5 26 792 5 6 792	15 8 14 5 26 792 5 5 0 0 97 0 34 0 932 0 0 97 0 34 0 932 0 0 97 0 34 0 932 0 0 97 0 34 0 932 0 0 97 0 34 8 2 2 2 6 6 4 4 8 8 2 2 2 6 6 10.0 10.0 10.0 10.0 10.0 10.0 10.0	e Configurations		4		4		₽		(
15 8 14 5 26 7792 5 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	15 8 14 5 26 792 5 0 97 0 34 0932 0 Perm NA	fic Volume (vph)	15	∞	4	2	56	792	2	910	
Perm NA	Perm NA NA Perm NA NA Perm NA	rre Volume (vph)	15	∞	4	2	56	792	2	910	
Perm NA Perm NA Perm NA Perm NA Perm A B B 2 2 6 6 6 6 100 100 100 100 100 100 100 100	Perm NA Perm NA Perm NA Perm NA Perm A 8 8 2 6 6 6 4 4 8 8 2 2 6 6 6 6 4 4 8 8 2 2 2 6 6 6 100 100 100 100 100 100 100 100 1	e Group Flow (vph)	0	97	0	怒	0	932	0	1050	
10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	4 8 8 2 2 6 6 4 4 8 8 2 2 2 6 4 4 8 8 8 2 2 2 6 100 100 100 100 100 100 100 100 226 226 226 226 172 172 172 230 230 230 230 230 770 770 770 230% 230% 230% 230% 770% 770% 770% 174 174 174 174 174 718 718 718 33 33 33 33 33 33 33 33 33 23 23 23 23 23 19 19 19 19 30 30 30 30 30 30 30 30 30 None None One Callax Callax Callax 70 70 70 70 70 70 70 70 100 100 100 100 50 50 50 23 23 11 11 27 27 4 101 101 101 101 102 1039 103 294 20 104 019 294 20 105 294 20 107 010 107 010 101 101 101 108 294 20 109 294 20 109 294 20 109 294 20 100 00 00 00 00 100 00 00 00 00 100 00 00 00 00 100	n Type	Perm	Å	Perm	Ν	Perm	¥	Perm	NA	
100 100 100 100 100 100 100 100 100 100	4 8 8 2 2 6 6 100 100 100 100 100 100 100 226 226 226 127 172 172 172 230 230 230 230 770 770 770 230% 230% 230% 230% 770% 770% 770% 17.4 17.4 17.4 17.4 17.4 71.8 71.8 71.8 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 2.3 2.3 2.3 2.3 2.3 1.9 1.9 1.9 2.0 0.0 0.0 0.0 0.0 2.0 100 100 100 100 0.0 2.0 100 100 100 0.0 2.0 100 100 100 0.0 2.0 100 100 0.0 2.0 100 0.0 2.0 0.0	tected Phases		4		∞		2		9	
100 100 100 100 100 100 100 100 100 100	100 100 100 100 100 100 100 100 100 100	mitted Phases	4		∞		2		9		
100 100 100 100 100 100 100 100 100 100	100 100 100 100 100 100 100 100 100 226 226 226 226 172 172 172 172 172 230% 230% 230% 77.	ector Phase	4	4	∞	∞	2	2	9	9	
10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	100 100 100 100 100 100 100 100 100 100	tch Phase									
22.6 22.6 22.6 17.2 17.2 17.2 17.2 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3.0 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3	226 226 226 170 770 770 770 770 770 770 770 770 770	imum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
23.0% 23.0% 23.0% 77.0 77.0 77.0% 77	230% 230% 230% 770% 770% 770% 770% 770% 770% 770% 7	imum Split (s)	22.6	22.6	22.6	22.6	17.2	17.2	17.2	17.2	
23.0% 23.0% 23.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 77.0% 70.0%	23.0% 23.0% 23.0% 77.0%	al Split (s)	23.0	23.0	23.0	23.0	0.77	0.77	0.77	0.77	
17.4 17.4 17.4 17.4 17.8 71.8 71.8 71.8 17.8 17.8 17.8 17.8	17.4 17.4 17.4 17.4 17.8 718 718 718 718 718 718 718 718 718 71	al Split (%)	23.0%	23.0%	23.0%	23.0%	%0.77	%0'.22	%0.77	77.0%	
3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	kimum Green (s)	17.4	17.4	17.4	17.4	71.8	71.8	71.8	71.8	
2.3 2.3 2.3 1.9 1.9 1.9 1.9 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	2.3 2.3 2.3 1.9 1.9 1.9 1.0 2.0 0.0 0.0 0.0 5.6 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5	ow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Red Time (s)	2.3	2.3	2.3	2.3	0.1	1.9	1.9	1.9	
3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 None None None None Collax Co	t Time Adjust (s)		0.0		0.0		0.0		0.0	
3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	30 30 30 30 30 30 30 30 30 30 30 30 30 3	al Lost Time (s)		9.9		9.6		5.2		5.2	
3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 None None None C _M ax	d/Lag									
3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	None None None C-Max C-Max C-Max T-M	d-Lag Optimize?									
None None None None C-Max C-Ma	None None None Rone C-Max C-Ma	icle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	all Mode	None	None	None	None	С-Мах	С-Мах	C-Max	C-Max	
10.0 10.0 10.0 10.0 5.0 5.0 5.0 10.0 10.	100 100 100 100 50 50 50 100 100 100 100	k Time (s)	7.0	2.0	7.0	7.0	7.0	7.0	7.0	7.0	
23 23 11 27 27 4 12.8 80.6 0.13 0.13 0.81 19.3 0.94 2.0 0.0 0.0 0.1 19.3 29.4 2.0 19.4 0.0 10.0 0.0 1	23 23 11 11 27 27 12.8 12.8 0.66 0.13 0.13 0.81 0.40 0.19 0.03 19.3 29.4 2.0 19.3 29.4 2.0 19.3 29.4 2.0 B C A A 4.7 4.0 6.8 18.3 12.2 m12.8 80.9 230.9 56.5 301 243 2372 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	sh Dont Walk (s)	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0	
12.8 80.6 0.13 0.81 0.40 0.19 0.39 19.3 2.94 2.0 0.0 0.0 0.1 19.3 2.94 2.0 19.3 2.94 2.0 19.3 2.94 2.0 19.3 2.94 2.0 19.3 2.94 2.0 19.3 2.94 2.0 19.3 2.94 2.0 19.3 2.94 2.0 19.3 2.04 2.0 19.3 2.05 6.5 2.0 10.0 0	128 128 128 0.13 0.40 0.13 0.14 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19	estrian Calls (#/hr)	23	23	=	= !	27	27	4	4	
0.13 0.81 0.40 0.19 0.39 19.3 29.4 2.0 0.0 0.0 0.1 19.3 29.4 2.0 19.3 29.4 2.0 19.3 29.4 2.0 19.3 29.4 2.0 19.3 29.4 2.0 19.3 29.4 2.0 10.0 0.1 10.0 0.256 10.0 0.256 10.0 0.256 10.0 0.256 10.0 0.256 10.0 0.256 10.0 0.256 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.13 0.13 0.13 0.13 0.14 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19	Effet Green (s)		12.8		12.8		90.6		9.08	
100 100 100 100 100 100 101 102 103 103 103 103 103 103 103 103	10.40 10.40 10.33 10.41 10.33 10.41 10.33 10.14 10.00 10.01	uated g/C Ratio		0.13		0.13		0.84		0.81	
19.3 28.4 2.0 19.3 28.4 2.0 19.3 28.4 2.0 19.3 28.4 2.0 19.3 28.4 2.0 19.3 28.4 2.0 19.3 28.4 2.0 19.3 28.4 2.0 10.3 11.2 m12.8 18.3 11.2 m12.8 18.3 12.2 m12.8 18.3 12.2 m12.8 19.9 230.9 56.5 10.0 0	19.3 29.4 0.0 0.0 19.3 29.4 19.3 29.4 19.3 29.4 17. 4.0 18.3 230.9 18.3 230.9 0	Ratio		0.40		0.19		0.39		0.42	
10.0 0.0 0.1 0.1 1.1 1.1 1.1 1.1 1.1 1.1	19.3 29.4 B C C 19.3 29.4 T P C C C C C C C C C C C C C C C C C C	trol Delay		19.3		29.4		2.0		2.2	
19.3 28.4 2.0 B C A 19.3 28.4 2.0 19.3 28.4 2.0 A 19.3 28.4 2.0 A 4.7 4.0 6.8 B C A A 2.0 A 4.0 6.8 B C A A 2.0 A 4.0 6.8 B C A A 2.0 A 7.1 4.0 6.8 B C A O 0 0 C C A A C O 0 C C A A C O 0 C C A A C O 0 C C A A C O 0 C C A A C O 0 C C A A C O 0 C C A A C O 0 C C C A A C O 0 C C C C C C C C C C C C C C C C C C C	19.3 29.4 19.3 29.4 19.3 29.4 18.3 29.4 4.7 4.0 6.9 230.9 6.9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ue Delay		0.0		0.0		0.1		0.1	
19.8 C A 19.3 29.4 2.0 B C A 4.7 4.0 6.8 18.3 14.2 m12.8 80.9 230.9 56.5 301 243 237.2 0 0 0 0 0 0 0 33 0.14 0.44	19.3 C C C C C C C C C C C C C C C C C C C	al Delay		19.3		29.4		2.0		2.3	
19.3 29.4 2.0 B C A A 4.7 4.0 6.8 18.3 12.2 m12.8 80.9 2.30.9 56.5 301 2.43 2372 0 0 0 0 0 0 0 0 0 0 0 0 0.33 0.14 0.44 100 Inced to phase 2.NBTL and 6.SBTL, Start of Green	19.3 29.4 B C A 10 18.3 12.2 80.9 230.9 80.9 230.9 0 0 0 0			ш		ပ		∢		∢	
4 7 40 68 18.3 12.2 m12.8 18.3 12.2 m12.8 80.9 230.9 56.5 301 243 237.2 0 0 256 4 0 0 0 0 0 0 0 0.33 0.14 0.44 nnced to phase 2:NBTL and 6:SBTL, Slart of Green	4.7 4.0 18.3 12.2 80.9 230.9 80.9 230.9 90.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	roach Delay		19.3		29.4		2.0		2.3	
18.3 12.2 m.12.8 18.3 12.2 m.12.8 80.9 2.30.9 56.5 30.1 24.3 237.2 0 0 256 4 0 0 0 0 0 0.33 0.14 0.44 100 nnced to phase 2.NBTL and 6.SBTL, Slart of Green	18.3 12.2 80.9 230.9 80.9 230.9 0 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 33 0.14	roach LOS		2 1		ې د		€ 0		4 c at	
80.9 230.9 56.5 80.9 230.9 56.5 301 243 2372 0 0 256 4 0 0 0 0.33 0.14 0.44 100 nnced to phase 2.NBTL and 6.SBTL, Slart of Green	301 243 301 243 0 0 4 0 0 0 0 0 0 0 0 33 0.14	ue Length John (m)		. d		10.5		m 20.0		2.5	
301 243 2372 30.3 301 244 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	301 243 301 243 0 0 0 0 0 0 0.33 0.14	the Length 30th (III)		000		2200		0.21		0.12	
301 243 2372 0 0 256 4 0 0 0 0 0 0 0 0 0 0 33 0.14 0.44 100 100 100	301 243 0 0 0 4 0 0 0 0 0 0.33 0.14	mai clink Dist (m)		90.3		230.3		0000		7.107	
00 256 4 0 256 4 0 0 0 0 0 0.33 0.14 0.44 100 100 100 100	000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Canacity (vnh)		301		243		2372		2523	
100 100 100 100 100 100 100 100	0.33 0.14	vation Can Reductn		0		0		256		0	
0.44	0.4	hack Can Reductin		ν 4		0		2		248	
0.44	7:0	age Can Reducth		· c		0		0		0	
ssection Summary let Length; 100 anted Cycle Length; 100 et 29 (29%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	is Length: 100 to 2000 Defends to New 2000 and 6.0001 Chair of Cons	luced v/c Ratio		0.33		0.14		0.44		0.46	
ie Length; 100 aated Cyde Length; 100 et 29 (29%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	le Length: 100 Hard Cycle Length: 100 An 2012/200e Length: 100 An 2012/200e Length: 100	rsection Summary									
or congression of the second o	ated Cycle Length: 100 At 30,700%, Defendance to about 71 and 6:00T1 Chair of Cross	la Lanoth: 100									
et 29 (29%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	1 30 (2007) Deforming to whose 3:NDTI and 6:CDTI Chat of Groom	lated Cycle Length: 100									
		et 29 (29%) Referenced t	to phase	2-NBTI	TAS:9 pue	Start	of Green				
Cycle: 50	datural Cycle: 50	ral Cycle: 50				í					

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Lanes, Volumes, Timings Existing PM Peak Hour 2: Bronson & Arlington 384 Arlington

Control Type: Actuated-Coordinated
Maximum vic Ratio: 0.42
Intersection Signal Delay; 3.4
Intersection Signal Delay; 3.4
Intersection Capacity Utilization 64.3%
Analysis Period (min) 15
m Volume for 95th percentite queue is metered by upstream signal.

Splits and Phases: 2: Bronson & Arlington

To a contract the contract

03-27-2024 CGH Transportation JK

Lanes, Volumes, Timings 3: Bronson & Gladstone

### Serial Comp. EBI	NBT SBL SBT O1		1	†	-	Ļ	•	—	۶	→				
Fig. 19	Name Property Property <th< th=""><th>ane Group</th><th>EBL</th><th>H</th><th>WBL</th><th>WBT</th><th>R</th><th>NBT</th><th>SBL</th><th>SBT</th><th>M 1</th><th>Ø3</th><th>Ø2</th><th>Ø7</th></th<>	ane Group	EBL	H	WBL	WBT	R	NBT	SBL	SBT	M 1	Ø3	Ø2	Ø7
52 233 97 268 66 639 17 732 58 285 19 R74 732 732 58 36 10 100 <th< td=""><td>52 233 97 266 66 69 17 732 58 336 19 22 66 693 17 732 58 356 108 32 65 639 17 732 58 356 108 32 66 6 6 6 4 4 8 8 2 6 6 6 6 100</td><td>ane Configurations</td><td>*</td><td>2</td><td><u>, </u></td><td>2</td><td><i>F</i></td><td>₩</td><td>*</td><td>₩</td><td></td><td></td><td></td><td></td></th<>	52 233 97 266 66 69 17 732 58 336 19 22 66 693 17 732 58 356 108 32 65 639 17 732 58 356 108 32 66 6 6 6 4 4 8 8 2 6 6 6 6 100	ane Configurations	*	2	<u>, </u>	2	<i>F</i>	₩	*	₩				
52 233 97 268 659 17 732 Perm A B 32 6 639 17 732 Perm A B 2 C 6 6 1 3 5 4 A B 2 2 6 <td>52 233 97 266 56 63 17 732 58 356 359 17 732 4 4 4 8 5 6 6 1 4 4 8 8 2 2 6 6 6 1 100 100 100 100 100 100 100 10 10 10 100 100 100 100 100 100 10<td>raffic Volume (vph)</td><td>25</td><td>233</td><td>26</td><td>268</td><td>26</td><td>639</td><td>17</td><td>732</td><td></td><td></td><td></td><td></td></td>	52 233 97 266 56 63 17 732 58 356 359 17 732 4 4 4 8 5 6 6 1 4 4 8 8 2 2 6 6 6 1 100 100 100 100 100 100 100 10 10 10 100 100 100 100 100 100 10 <td>raffic Volume (vph)</td> <td>25</td> <td>233</td> <td>26</td> <td>268</td> <td>26</td> <td>639</td> <td>17</td> <td>732</td> <td></td> <td></td> <td></td> <td></td>	raffic Volume (vph)	25	233	26	268	26	639	17	732				
58 356 108 321 62 839 19 874 4 4 8 8 2 6 6 1 3 5 4 4 8 8 2 6 6 6 10 <t< td=""><td>58 356 108 321 62 839 19 874 4 4 4 8 8 2 6 6 6 1 4 4 4 8 8 2 2 6 6 6 1 100</td><td>uture Volume (vph)</td><td>25</td><td>233</td><td>26</td><td>268</td><td>20</td><td>639</td><td>17</td><td>732</td><td></td><td></td><td></td><td></td></t<>	58 356 108 321 62 839 19 874 4 4 4 8 8 2 6 6 6 1 4 4 4 8 8 2 2 6 6 6 1 100	uture Volume (vph)	25	233	26	268	20	639	17	732				
100	Perm NA Perm Perm NA Perm	ane Group Flow (vph)	28	356	108	321	62	839	19	874				
100 100	100 100	urn lype	Perm	Š,	Perm	¥°	Perm	Y Y	Perm	¥°		c		•
100 100	100 100	rotected Phases	-	4	•	_∞	•	2	•	9	_	က	2	7
100 100 100 100 100 100 100 100 100 100	100 100 100 100 100 100 100 100 100 100	ermitted Phases	4		∞ (2		9					
100 100 100 100 100 100 100 100 100 100	100 100 100 100 100 100 100 100 100 100	etector Phase	4	4	∞	∞	2	2	9	9				
100 100 100 100 100 100 100 100 100 100	100 100 100 100 100 100 100 100 100 100	witch Phase												
282 282 282 282 250 250 250 550 50 50 450 450 450 450 450 450 450	282 282 282 250 250 250 250 50 450 450 450 450 450 450 450 450 45	linimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
450 450 450 450 450 450 450 450 50 50 50 60 60 88 88 88 88 88 88 88 88 88 88 88 88 88	450 450 450 450 450 450 450 450 450 450	inimum Split (s)	28.2	28.2	28.2	28.2	25.0	25.0	25.0	25.0	2.0	2.0	2.0	5.0
45.0% 45.0% 45.0% 45.0% 45.0% 45.0% 45.0% 56.0% 45.0%	450% 450% 450% 450% 450% 450% 450% 55% 38.8 38.8 38.8 39.0 39.0 39.0 39.0 30.0 31.3 3.0 3.0 3.3 3.3 3.3 3.3 3.2 0.0 32.3 3.2 3.2 3.2 2.7 2.7 2.7 2.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	otal Split (s)	42.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	2.0	2.0	2.0	5.0
38 38 38 38 38 39 39 39 39 39 39 39 30 39 30 30 30 30 30 30 30 30 30 30 30 30 30	38 38 38 38 38 39 39 39 39 39 39 30 30 30 30 30 30 30 30 30 30 30 30 30	otal Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	2%	2%	2%	2%
30 30 30 30 30 30 30 30 30 30 30 30 30 3	3.0 3.0 3.0 3.3 3.3 3.3 3.3 3.3 3.3 3.3	aximum Green (s)	38.8	38.8	38.8	38.8	39.0	39.0	39.0	39.0	3.0	3.0	3.0	3.0
32 32 32 32 27 27 27 27 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	32 32 32 32 27 27 27 27 27 0.0 6.2 6.2 6.2 6.0 6.0 6.0 6.0 6.2 6.2 6.2 6.0 6.0 6.0 6.0 6.3 6.2 6.2 6.2 6.0 6.0 6.0 6.3 6.2 6.2 6.2 6.0 6.0 6.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ellow Time (s)	3.0	3.0	3.0	3.0	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
Color Colo	Color Colo	I-Red Time (s)	3.2	3.2	3.2	3.2	2.7	2.7	2.7	2.7	0.0	0.0	0.0	0.0
Color Colo	6.2 6.2 6.2 6.0	ost Time Adjust (s)	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Lag	Lag Lag	otal Lost Time (s)	6.2	6.2	6.2	6.2	0.9	0.9	0.9	0.9				
Ves Ves <td>Ves Ves Ves<td>sad/Lag</td><td>Lag</td><td>Lag</td><td>Lag</td><td>Lag</td><td>Lag</td><td>Lag</td><td>Lag</td><td>Lag</td><td>Lead</td><td>Lead</td><td>Lead</td><td>Lead</td></td>	Ves Ves <td>sad/Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lag</td> <td>Lead</td> <td>Lead</td> <td>Lead</td> <td>Lead</td>	sad/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	30 30 30 30 30 30 30 30	ead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Max Max Max C-Max C-Max C-Max C-Max Max Max Max 2.0 2.0 2.0 2.0 2.0 2.0 2.0 3	Max Max Max Char Char Char Char Char Day 2.0 2.0 2.0 2.0 2.0 2.0 2.0 3.0 15.0 15.0 15.0 12.0 12.0 12.0 12.0 3.0 38.8 38.8 38.8 38.8 38.9 39.0 <td< td=""><td>ehicle Extension (s)</td><td>3.0</td><td>3.0</td><td>3.0</td><td>3.0</td><td>3.0</td><td>3.0</td><td>3.0</td><td>3.0</td><td>3.0</td><td>3.0</td><td>3.0</td><td>3.0</td></td<>	ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2.0 2.0 2.0 2.0 2.0 3.0 <td>2.0 2.0 2.0 2.0 2.0 2.0 3.0 15.0</td> <td>ecall Mode</td> <td>Max</td> <td>Max</td> <td>Max</td> <td>Max</td> <td>C-Max</td> <td>C-Max</td> <td>C-Max</td> <td>C-Max</td> <td>Max</td> <td>Max</td> <td>Max</td> <td>Max</td>	2.0 2.0 2.0 2.0 2.0 2.0 3.0 15.0	ecall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max
150 150 150 150 120 120 00 00 00 00 00	150 150 150 120 120 120 00 171 77 75 75 55 55 65 65 55 388 388 388 390 390 390 390 0.39 0.39 0.39 0.39 0.39 0.39 0.39 0.20 0.57 0.40 0.48 0.69 0.13 0.69 227 286 278 26.1 284 20.1 228 29.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 227 286 278 26.1 284 20.1 228 29.1 0.20 2.7 26.5 278 26.1 284 20.1 228 29.1 0.20 2.7 26.5 278 26.1 284 20.1 228 29.1 0.20 2.7 26.5 278 26.1 284 20.1 228 29.1 0.20 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	alk Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0
71 71 75 75 55 65 65 71 65 388 388 388 380 390 <	71 71 75 55 55 65 65 65 55 65 65 65 65 65 65 65	ash Dont Walk (s)	15.0	15.0	15.0	15.0	12.0	12.0	12.0	12.0	0.0	0.0	0.0	0.0
388 388 388 390 390 390 390 390 0.20 0.20 0.39 0.39 0.39 0.39 0.39 0.39 0.39 0.3	188 388 388 390	edestrian Calls (#/hr)	71	71	75	75	22	22	92	92	22	71	65	75
0.39 0.39 0.39 0.39 0.39 0.39 0.39 0.39	0.39 0.39 0.39 0.39 0.39 0.39 0.39 0.39	ot Effet Green (s)	38.8	38.8	38.8	38.8	39.0	39.0	39.0	39.0				
0.20 0.57 0.40 0.48 0.48 0.69 0.13 22.7 28.6 27.8 26.1 28.4 20.1 22.8 0.0 0.0 0.0 0.0 0.0 0.0 22.7 28.6 27.8 26.1 28.4 20.1 22.8 0.0 0.0 0.0 0.0 0.0 0.0 27.7 26.6 0.7 26.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.20 0.57 0.40 0.48 0.48 0.69 0.13 22.7 28.6 27.8 26.1 28.4 20.1 22.8 22.7 28.6 27.8 26.1 28.4 20.1 22.8 22.7 28.6 27.8 26.1 28.4 20.1 22.8 22.7 28.6 27.8 26.1 28.4 20.1 22.8 22.7 28.6 27.8 26.1 28.4 20.1 22.8 22.7 28.6 27.8 26.1 28.4 20.1 22.8 22.7 28.6 27.8 26.1 28.4 20.1 22.8 22.0 2.0 2 20.0 20.0 20.0 0 0 0 0 0 0 0	ctuated g/C Ratio	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39				
227 286 278 861 284 20.1 228 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	227 28.6 27.8 26.1 28.4 20.1 22.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	c Ratio	0.20	0.57	0.40	0.48	0.48	0.69	0.13	0.69				
00 00 00 00 00 00 00 00 00 00 00 00 00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	ontrol Delay	22.7	28.6	27.8	26.1	28.4	20.1	22.8	29.1				
227 286 278 26.1 284 20.1 22.8 C C C C C C C C C C C C C C C C C C C	227 286 278 261 284 20:1 228 C C C C C C C C C C C C C C C C C C C	ueue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
27.7 26.6 20.6 C C C C C C C C C C C C C C C C C C C	C	otal Delay	22.7	28.6	27.8	26.1	28.4	20.1	22.8	29.1				
27.7 26.6 20.6 7.3 5.3 14.9 46.1 6.1 45.4 2.3 16.6 81.9 30.5 70.8 13.3 44.3 7.7 19.3 20.0 20.0 35.0 20.3 35.0 27.2 20.0 20.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	27.7 26.6 20.6 7.3 5.33 14.9 46.1 6.1 45.4 2.3 16.6 81.9 30.5 70.8 13.3 44.3 7.7 139.3 20.0 35.0 12.2 14.3 20.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SC	O	ပ	ပ	O	ပ	O	O	ပ				
7.3 5.3 14.9 46.1 6.1 45.4 2.3 16.6 81.9 30.5 70.8 13.3 44.3 7.7 139.3 20.0 35.0 20.0 35.0 122 14.9 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7.3 6.3.3 14.9 6.7 C C C C C C C C C C C C C C C C C C C	oproach Delay		27.7		26.6		20.6		29.0				
7.3 53.3 14.9 46.1 6.1 45.4 2.3 16.6 81.9 30.5 70.8 13.3 44.3 7.7 20.0 20.0 20.3 20.3 3.5 7.7 20.3 3.5 0.0 20.0 20.0 0 0 0 0 0 0 0 0 0 0 0 0 0	7.3 55.3 14.9 46.1 6.1 45.4 2.3 16.6 81.9 30.5 70.8 13.3 44.3 7.7 20.0 20.0 20.3 20.3 35.0 20.2 20.3 20.3 35.0 20.2 20.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	oproach LOS		ပ		ပ		O		ပ				
16.6 819 30.5 70.8 13.3 44.3 7.7 139.3 200.3 20.3 20.7 2 20.0 292 62.1 270 662 129 1222 143 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	16.6 81.9 30.5 70.8 13.3 44.3 7.7 139.3 20.0 3.5 0.0 3.5 0.0 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	nene Length 50th (m)	7.3	53.3	14.9	46.1	6.1	45.4	2.3	73.2				
290, 621 270 662 122 143 292 621 270 662 122 143 0	200 203 2072 450 2072 200 200 200 200 200 200 200 200 2	ueue Length 95th (m)	16.6	81.9	30.5	70.8	13.3	44.3	7.7	95.0				
20.0 20.0 35.0 45.0 22.0 2.0 35.0 45.0 2.0 2.0 35.0 45.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2	200 350 450 292 621 270 662 129 1222 143 0 10 0 0 0	temal Link Dist (m)		139.3		203.3		207.2		176.5				
292 621 270 662 129 1222 143	292 621 270 662 129 1222 143	urn Bay Length (m)	20.0		20.0		35.0		45.0					
0.20 0.57 0.40 0.48 0.48 0.69 0.13 0.6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ase Capacity (vph)	292	621	270	662	129	1222	143	1258				
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tarvation Cap Reductn	0	0	0	0	0	0	0	0				
0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1	0.20 0.57 0.40 0.48 0.48 0.69 0.13 0.6	pillback Cap Reductn	0	0	0	0	0	0	0	0				
0.20 0.57 0.40 0.48 0.48 0.69 0.13 0. 1.100	0.20 0.57 0.40 0.48 0.48 0.69 0.13 0.	torage Cap Reductn	0	0	0	0	0	0	0	0				
vole Length: 100 Vole Length: 100 Kacard An Anny Datassand In whom OMETT and CEDIT Charles Organia	letsection Summary yole Length; 100	educed v/c Ratio	0.20		0.40	0.48	0.48	0.69	0.13	69:0				
respondent politically your learness of the control	inspection counting y yole length: 100 ctuated Cyde Length: 100	toroodion Cummony												
YOR LENGTH: 100 ctusted Cycle Length: 100 d.c. + a / John P. Dans P. Den A f. Cross	yde Length: 100 ctuated Cyde Length: 100	itelsection suffillially												
Sudance Oyde Lengui. The control of	Studied Oyde Length: 100	ycie Lengui: 100 ctuatod Cyclo Lonath: 10	_											
	ffect 40 (40%). Deferenced to whose DiNDTI and G.COTI. Other of Cross	Affect 40 (40%) Deference	od to phono	TOING	0.9 600	Ctot	J. C. C.							
		Natiral Cycle: 65												

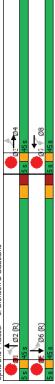
CGH Transportation Page 5

03-27-2024 JK

Existing PM Peak Hour 384 Arlington Lanes, Volumes, Timings 3: Bronson & Gladstone

Intersection LOS: C ICU Level of Service D Control Type: Actuated-Coordinated Maximum We Ratio: 0.69 Intersection Signal Delay: 25.5 Intersection Capacity Utilization 80.4% Analysis Period (min) 15

Splits and Phases: 3: Bronson & Gladstone



CGH Transportation Page 6 03-27-2024 JK

Lanes, Volumes, Timings 4: Booth & Gladstone

Existing PM Peak Hour 384 Arlington

Feb. Febr Welt Welt Welt Nelt Sept	FBI	•	
1	164	r wbl wbt nbl nbt sbl sbt Ø1	Ø5 Ø7
164 264 63 272 42 298 31 714 182 322	164 264 63 272 42 298 164 284 63 272 42 298 182 325 70 342 74 382 382 323	* 4 4 4	
164 264 63 272 42 298 31 714 168 322 70 342 47 389 34 711 169 282 70 342 47 389 34 211 2	164 264 63 272 42 298 182 322 70 342 47 382 2	264 63 272 42 298 31	
182 322 70 342 47 382 34 211 1 2 2 6 6 4 8 8 8 1 3 5 5 5 5 5 5 5 5 5	182 322 70 342 47 382 47 382 2 2 6 6 4 4 4 4 4 4 4 4	264 63 272 42 298 31	
Perm NA Perm N	Perm NA Perm N	322 70 342 47 382 34	
2 6 6 4 8 8 1 3 5 5 6 1 4 8 8 1 3 5 5 6 6 1 4 8 8 8 1 3 5 5 6 5 6 1 4 8 8 8 1 3 5 5 6 5 6 5 6 1 4 8 8 8 8 1 3 5 5 6 5 6 5 6 5 6 6 4 8 8 8 8 1 3 5 5 6 5 6 5 6 5 6 5 6 5 6 5 6 5 6 5 6	2 6 6 4 4 4 2 2 2 6 6 6 4 4 4 2 2 2 6 6 6 4 4 4 100 100 100 100 100 100 100 100 22.1 22.1 22.1 23.9 23.9 48.0 48.0 48.0 32.0 32.0 32.0 48.0 48.0 48.0 38.0 32.0 32.0 32.0 3.1 3.1 3.1 3.1 3.1 3.1 3.0 41.9 1.9 1.9 1.9 1.0 1.0 1.0 6.1 6.1 6.1 6.1 6.9 6.9 1.ag 1.ag 1.ag 1.ag 1.ag 1.ag 1.ag 1.ag	NA Perm NA Perm NA Perm	
2 6 6 4 4 8 8 8 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	2 6 6 4 4 4 4 4 100 100 100 100 100 100 100 1	2 6 4	5 7
2 2 6 6 4 4 4 8 8 8 100 100 100 100 100 100 100 100 100 10	22. 2 6 6 4 4 4 4 100 100 100 100 100 100 100 100 100 10	6 4 8	
100 100 100 100 100 100 100 100 100 100	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	2 6 6 4 4 8	
100 100 100 100 100 100 100 100 100 100	100 100 100 100 100 100 100 100 100 100		
22.1 22.1 22.1 22.1 22.3 23.9 5.0 5.0 5.0 5.0 5.0 5.3 8.3 8.3 8.5 8.3 8.5 8.3 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5	22.1 22.1 22.1 23.9 23.9 23.9 48.0 48.0 48.0 32.0 32.0 32.0 33.3% 53.3% 53.3% 56.% 35.6% 35.6% 35.6% 35.6% 35.6% 35.6% 35.6% 35.3% 53.3% 56.3% 36.6% 35.6% 35.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	10.0 10.0 10.0 10.0 10.0 10.0 10.0 1.0	
A80	18.0	22.1 22.1 22.1 23.9 23.9 23.9 5.0	
53.3% 53.3% 53.3% 55.6% 35.6% 35.6% 56.% 56.% 56.% 56.% 56.% 56.% 56.%	53.3% 53.3% 53.3% 53.3% 56.8% 35.6%	48.0 48.0 48.0 32.0 32.0 32.0 5.0	
419 419 419 419 251 251 251 351 30 30 30 30 31 30 30 31 30 30 30 30 30 30 30 30 30 30 30 30 30	419 419 419 419 251 251 251 33 31 31 31 31 31 31 31 31 31 31 31 31	53.3% 53.3% 53.3% 35.6% 35.6% 35.6% 35.6% 6%	
30 30 30 30 30 30 30 30 30 30 30 30 30 3	30 30 30 30 30 30 30 30 30 30 30 30 30 3	41.9 41.9 41.9 25.1 25.1 25.1 25.1 3.0	
3.1 3.1 3.1 3.1 3.1 3.9 3.9 3.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	31 31 31 31 31 39 39 60 60 61 61 61 61 61 61 61 61 61 61 61 61 61	3.0 3.0 3.0 3.0 3.0 3.0 3.0 2.0	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	3.1 3.1 3.9 3.9 3.9 3.9 0.0	
6.1 6.1 6.1 6.1 6.9 6.9 6.9 6.9 6.9 1 Lag	6.1 6.1 6.1 6.1 6.9 6.9 6.9 Lag	0.0 0.0 0.0 0.0 0.0 0.0	
Lag	Lag Lag Lag Lag Lag Lag Lag Lag S Yes	6.1 6.1 6.9 6.9 6.9	
Yes Yes <td>Yes Yes Yes<td>Lag Lag Lag Lag Lag Lag Lead</td><td>_</td></td>	Yes Yes <td>Lag Lag Lag Lag Lag Lag Lead</td> <td>_</td>	Lag Lag Lag Lag Lag Lag Lead	_
30 30 30 30 30 30 30 30 30 30 30 30 30 3	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Yes Yes Yes Yes Yes Yes Yes	
C-Max C-Max C-Max Max Max Max None None None S.0 2.0 2.0 2.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	C-Max C-Max C-Max C-Max Max Max Nax 20 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	3.0 3.0 3.0 3.0 3.0 3.0 3.0	
2.0 2.0 2.0 2.0 2.0 2.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 4.1 4.1 4.1 4.3 4.3 28 28 28 4.3 9 4.3 0.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	C-Max C-Max Max Max Max None	Z
90 90 90 90 100 100 100 00 00 00 00 00 00 00 00 00	90 90 90 90 100 100 100 100 100 100 100	2.0 2.0 2.0 2.0 2.0 2.0 2.0 3.0	
43. 44. 44. 43 48. 28 28 29 29 41 28 43 43. 43. 43. 43. 43. 43. 43. 43. 43.	43.9 43.9 43.9 28.28 43.9 43.9 43.9 28.1 28.1 28.0 49.0 0.49 0.49 0.49 0.31 0.31 0.31 0.48 0.39 0.18 0.49 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	9.0 9.0 10.0 10.0 10.0 10.0 0.0	
43.9 43.9 43.9 43.9 281 281 271 0.49 0.49 0.49 0.43 0.31 0.30 0.48 0.39 0.48 0.42 0.46 0.21 0.30 0.48 0.39 0.18 0.42 0.46 0.22 0.49 21.5 16.6 15.4 16.8 25.6 36.9 28.0 21.5 16.6 15.4 16.8 25.6 36.9 28.0 21.6 16.5 15.4 16.8 25.6 36.9 28.0 21.1 34.5 16.6 18.8 25.6 36.9 28.0 21.1 34.5 16.8 25.6 36.9 28.0 21.1 34.5 16.8 36.9 5.6 34.8 45 41.1 55.0 15.2 88.6 14.9 #104.3 12.5 79.0 246.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	43.9 43.9 43.9 28.1 28.1 28.1 28.1 28.1 28.1 28.1 28.1	41 43 43 28 28 29 41	
0.49 0.49 0.49 0.49 0.31 0.31 0.30 0.49 0.49 0.49 0.49 0.49 0.31 0.30 0.49 0.49 0.49 0.49 0.49 0.49 0.49 0.4	0.49 0.49 0.49 0.31 0.31 0.31 0.48 0.48 0.39 0.18 0.42 0.16 0.72 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	43.9 43.9 43.9 28.1 28.1 27.1	
0.48 0.39 0.18 0.42 0.16 0.72 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19	0.48 0.39 0.18 0.42 0.16 0.72 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.49 0.49 0.49 0.31 0.31 0.30	
215 16.6 15.4 16.8 25.6 36.9 28.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	21.5 16.6 15.4 16.8 25.6 36.9 2 21.5 16.6 15.4 16.8 25.6 36.9 2 C B B B C D C B C D 21.1 34.5 6.8 36.9 5.6 54.8 41.1 55.0 15.2 58.6 14.9 #104.3 1 79.0 25.0 80 206.0 0 0 0 0 0 0 0 0 0 48 0.39 0.18 0.42 0.16 0.72 C moded to phase 2:EBTL and 6:WBTL, Start of Green	0.39 0.18 0.42 0.16 0.72 0.19	
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0.72 0.19 0.	0.72	0 0 0 0 0	
ntersection Summary Sycle Length: 90 Actuated Cycle Length: 90 Jifset S1 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Altitud Cycle: 60	ntersection Summary Sycle Length: 90 Actuated Cyde Length: 90 Differ 51 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Alatural Cycle: 60	48 0.39 0.18 0.42 0.16 0.72 0.19 0.	
Jycle Length: 90 Actuated Cycle Length: 90 Difset S1 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Natural Cycle: 60	Sycle Length: 90 Actuated Cycle Length: 90 Difset 51 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Natural Cycle 60		
Actuated Cycle Length; 90 Diffset 51 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Vatural Cycle: 60	Actuated Cycle Length; 90 Diffset 51 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Matural Cycle; 60		
Offset 51 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Valural Cvole: 60	Offset 51 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Natural Cycle: 60		
Natural Cycle: 60	Vatural Cycle: 60	phase 2:EBTL and 6:WBTL, Start of Green	

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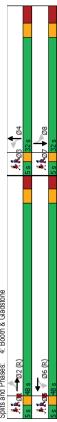
03-27-2024 JK

Lanes, Volumes, Timings 4: Booth & Gladstone

Existing PM Peak Hour 384 Arlington

Intersection LOS: C ICU Level of Service D Control Type: Actuated-Coordinated Maximum v0 Ratio: 0.72 Intersection Signal Delay. 2.4.1 Intersection Signal Delay. 2.4.1 ICU Leve Analysis Period (min) 15 # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Splits and Phases: 4: Booth & Gladstone



CGH Transportation Page 8 03-27-2024 JK

Lanes, Volumes, Timings 5: Arthur & Gladstone

Existing PM Peak Hour 384 Arlington

EBL EBI WBI SBI 20	## WBT	## WBT WBT ## ## WBT ## ## WBT ## ## WBT ## ## ## ## ## ## ## ## ## ## ## ## ##	## WBT	## WBT WBT ## ## ## ## ## ## ## ## ## ## ## ## ##
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388 502 454 679 NA NA NA 2 6 2 6 10.0 10.0 29.5 29.5 29.5 57.0 57.0 2.5 2.5 3.0 3.0 2.5 2.5 5.0 6.3 3.0 3.0 6.4.5 64.5 6.4.5 64.5 6.4.5 64.5 6.5 6.3 A A A A S 5.5 2.46.0 139.3 1	388 502 454 679 NA NA NA 2 6 2 5 57.0 10.0 29.5 29.5 59.5 57.0 57.0 2.5 2.5 5.0 0.0 5.5 5.5 5.0 5.0 5.0 6.1 6.4.5 64.5 6.4.5 6.3 6.4.6 64.5 6.4.6 64.5 6.4.6 64.5 6.4.6 6.3 6.4.6 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3	388 502 454 672 NA NA NA 2 6 10.0 10.0 29.5 29.5 29.5 57.0 57.0 25 25.5 3.0 3.0 25 25.5 5.5 5.5 6.4 64.5 6	388 502 454 602 454 602 454 602 454 602 25 695 695 25 296 995 25 296 995 25 296 995 25 296 995 25 695 25 695 25 695 25 695 26 995 26	388 502 454 579 NA NA NA 2 6 2 6 10.0 10.0 29.5 29.5 29.5 57.0 57.0 2.5 2.5 5.0 0.0 5.5 64.6 63.4 64.
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19.5 26.7 47.3 64.2 246.0 139.3 18	19.5 26.7 47.3 64.2 246.0 139.3 16 1325 1392 0 0	19.5 26.7 47.3 64.2 246.0 139.3 18 1325 1392 0 0 0 0 0	19.5 26.7 47.3 64.2 246.0 139.3 18 1325 1392 0 0 0 0 0 0.34 0.51 0	19.5 26.7 47.3 64.2 246.0 139.3 18 1325 1392 0 0 0 0 0 0.34 0.51 (
47.3 64.2 246.0 139.3 18	47.3 64.2 246.0 139.3 18 1325 1392 3 0 0	47.3 64.2 246.0 139.3 18 1325 1392 3 0 0 0	47.3 64.2 246.0 139.3 18 1325 1392 3 0 263 0 0 0.34 0.51 C	47.3 64.2 246.0 139.3 18 1325 1392 3 0 263 0 0 0 0 0 0 0 0
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03-27-2024 JK

Lanes, Volumes, Timings Existing PM Peak Hour 5: Arthur & Gladstone 384 Adlington

Control Type: Actualed-Coordinated
Maximum v/c Ratio: 0.42
Intersection 0.42
Intersection Capacity Utilization 61.0%
Analysis Period (min) 15

Splits and Phases: 5: Arthur & Gladstone

1 02(R)	
78	
4	
₩ Ø6 (R)	80 ♣
7.8	23 s

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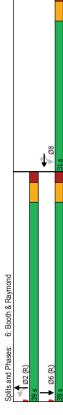
Existing PM Peak Hour Lanes, Volumes, Timings 6: Booth & Raymond

				•	-	
	Ļ	4	•	—	→	
-ane Group	WBT	WBR	NBL	NBT	SBT	
-ane Configurations	4	¥C	F	*	,2 ,	
raffic Volume (vph)	138	6	31	302	217	
-uture Volume (vph)	138	6	31	302	217	
-ane Group Flow (vph)	239	100	怒	339	285	
Turn Type	N	Perm	Perm	Ϋ́	NA	
Protected Phases	∞			2	9	
Permitted Phases		∞	2			
Detector Phase	∞	∞	2	2	9	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.5	25.5	25.2	25.2	25.2	
Fotal Split (s)	31.0	31.0	39.0	39.0	39.0	
otal Split (%)	44.3%	44.3%	25.7%	25.7%	55.7%	
Maximum Green (s)	25.5	25.5	33.8	33.8	33.8	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.2	2.2	1.9	1.9	1.9	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
otal Lost Time (s)	5.5	5.5	5.2	5.2	5.2	
Lead/Lag						
-ead-Lag Optimize?						
/ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	С-Мах	C-Max	C-Max	
Nalk Time (s)	11.0	11.0	15.0	15.0	15.0	
Flash Dont Walk (s)	9.0	9.0	2.0	2.0	5.0	
Pedestrian Calls (#/hr)	12	12	9	09	35	
Act Effct Green (s)	25.5	25.5	33.8	33.8	33.8	
Actuated g/C Ratio	0.36	0.36	0.48	0.48	0.48	
//c Ratio	0.39	0.17	0.08	0.40	0.35	
Control Delay	18.8	4.5	10.4	13.4	12.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
otal Delay	18.8	4.5	10.4	13.4	12.0	
TOS	മ	∢	ш	ш	В	
Approach Delay	14.6			13.2	12.0	
Approach LOS	മ			ш	ш	
Queue Length 50th (m)	22.6	0.0	2.3	26.9	20.2	
Queue Length 95th (m)	39.7	8.4	9.9	44.7	35.6	
ntemal Link Dist (m)	302.1			65.0	206.0	
urn Bay Length (m)		75.0	25.0			
Base Capacity (vph)	619	281	420	842	823	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0 !	0	0	0	
≺educed v/c Katio	0.39	0.1/	0.08	0.40	0.35	

CGH Transportation Page 11 Cycle Length: 70
Actuated Cycle Length: 70
Offset 39 (56%), Referenced to phase 2.NBTL and 6.SBT, Start of Green Natural Cycle: 55
03-27-2024

Existing PM Peak Hour 384 Adington Lanes, Volumes, Timings 6: Booth & Raymond

Intersection LOS: B ICU Level of Service A Control Type: Actuated-Coordinated Maximum We Ratio: 0.40 Intersection Signal Delay: 13.3 Intersection Capacity Utilization 54.9% Analysis Period (min) 15



CGH Transportation Page 12 03-27-2024 JK

Lanes, Volumes, Timings 8: Hwy 417 EB Ramp & Bronson 384 Arlington

ane Group EBI EBR NBT SBT ane Croup ane Cologuations (yel) 166 319 785 1256 ane Cologuations (yel) 166 319 785 1256 ane Cologuations (yel) 166 319 785 1256 ane Circular (yel) 168 319 785 1356 ane Circular (yel) 168 319 785 1356 ane Circular (yel) 169 319 31 31 31 31 31 31 31 31 31 31 31 31 31
166 319 785 166 319 785 166 319 785 167 167 167 167 167 167 167 167 167 167
166 319 786 169 169 1785 184 354 872 8872 8872 8872 8872 8872 8872 8872
166 319 766 164 354 872 Perm Perm NA 2 4 4 2 4 4 4 2 100 100 286 286 286 30.9 40.0 40.0 70.0 36.4% 36.4% 63.6% 6.3 34.4 64.1 33.4 34.4 64.1 33.4 34.4 64.1 33.4 34.4 64.1 33.4 34.4 64.1 33.4 34.4 64.1 33.4 34.4 64.1 33.6 0.0 0.0 0.0 0.0 0.0 0.0 7 7 7 0.0 15.0 16.0 16.0 10.0 7 7 7 0.0 16.0 16.0 10.0 17.1 41.0 13.9 17.2 41.0 13.9 18.3 60.2 66.7 14
Perm Perm NA 4 4 4 2 4 4 4 2 4 4 4 2 4 4 4 2 100 100 100 28.6 28.6 30.9 40.0 40.0 70.0 36.4% 36.4% 66.6 6.9 34.4 34.4 64.1 3.3 3.3 3.3 3.3 3.0 3.0 0.0 5.6 5.6 5.9 5.6 5.6 5.9 5.6 5.6 5.9 5.7 7 7 7 0 5.8 6.7 1 13.9 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0
Perm Perm NA 4 4 4 2 4 4 4 2 100 100 100 28.6 28.6 30.9 40.0 40.0 30.9 36.4% 36.4% 66.1 3.3 2.3 2.6 3.4 34.4 64.1 3.3 3.3 3.3 3.3 3.0 3.0 0.0 5.6 5.6 5.9 5.6 5.6 5.9 3.7 7 0 15.0 10 0 0.0 3.1 41.0 13.9 0.3 0.1 41.0 13.9 0.4 61.3 52.4 13.9 0.5 0.7 0 0.0 0.7 0 0.0 0.7 0 0.0 0.7 0 0.0 0.7 0 0.0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0
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4 4 4 2 4 4 4 2 100 100 100 286 286 30.9 400 400 70.0 34.4 64.1 34.3 34.4 64.1 33.3 2.3 2.3 2.3 2.3 2.3 2.6 5.6 5.6 5.9 5.6 5.6 5.9 7.0 7.0 15.0 7.0 7.0 15.0 7.0 7.0 15.0 7.0 7.0 15.0 7.0 7.0 15.0 7.0 7.0 15.0 7.0 7.0 15.0 7.0 7.0 15.0 7.0 7.0 15.0 7.0 7.0 15.0 7.0 10.0 7.0 10.0 7.0 10.0 7.0 10.0 7.0 10.0 7.0 10.0 7.0 10.0 7.0 10.0 7.0 10.0 7.0 10.0 7.0 10.0 7.0 10.0 8.8 6.2 66.7 4.9 8 96.2 66.7 4.9 8 96.2 66.7 5.0 0 0 7.0 0 0 7.0 0 0 8.0 0 0 9.0 0
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2.3 2.6 5.6 5.9 5.0 5.6 5.9 5.0 5.6 5.9 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0
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OS:27:2024
CGH Transportation
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Lanes, Volumes, Timings
8: Hwy 417 EB Ramp & Bronson
384 Adington

Control Type: Actuated-Coordinated
Maximum vic Patic 0.74
Intersection Signal Delay: 45.4
Intersection Capacity Utilization 104.2%
Analysis Period (min) 15

Splits and Phases: 8: Hwy 417 EB Ramp & Bronson



03-27-2024 CGH Transportation JK

Appendix D

Collision Data



Accident Date	Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Traffic Control Condition	Classification Of Accident	Initial Impact Type	Road Surface Condition	# Vehicles	# Motorcycles	# Bicycles	# Pedestrians
2018-01-24	2018	23:29	ARLINGTON AVE @ BELL ST (0005956)	01 - Clear	07 - Dark	02 - Stop sign	0	02 - Non-fatal injury	07 - SMV other	03 - Loose snow	0	0	0	0
2018-01-07 2020-12-18	2018 2020	Unknown Unknown	ARLINGTON AVE bown ARTHUR LANE N & BELL ST N (3ZAAJI) ARLINGTON AVE bown ARTHUR LANE N & BELL ST N (3ZAAJI)	01 - Clear 01 - Clear	00 - Unknown 00 - Unknown	10 - No control 10 - No control	0	03 - P.D. only 03 - P.D. only	06 - SMV unattended vehicle 06 - SMV unattended vehicle	03 - Loose snow 01 - Dry	0	0	0	0
2018-04-03 2018-02-03	2018 2018	20:00 20:36	ARLINGTON AVE btwn ARTHUR LANE N & CAMBRIDGE ST N (_3ZAZBY) BOOTH ST @ RAYMOND ST (0006498)	01 - Clear 03 - Snow	07 - Dark 07 - Dark	10 - No control 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	06 - SMV unattended vehicle 02 - Angle	01 - Dry 03 - Loose snow	0	0	0	0
2018-08-21	2018	17:58	BOOTH ST @ RAYMOND ST (0006498)	02 - Rain	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	07 - SMV other	02 - Wet	0	0	1	1
2018-09-12 2018-11-20	2018 2018	6:55 8:20	BOOTH ST @ RAYMOND ST (0006498) BOOTH ST @ RAYMOND ST (0006498)	01 - Clear 03 - Snow	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	02 - Angle 03 - Rear end	01 - Dry 04 - Slush	0	0	0	0
2019-03-16	2019	11:51	BOOTH ST @ RAYMOND ST (0006498)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
2019-06-09 2019-09-27	2019 2019	10:50 15:42	BOOTH ST @ RAYMOND ST (0006498) BOOTH ST @ RAYMOND ST (0006498)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	99 - Other 04 - Sideswipe	01 - Dry 01 - Dry	0	0	0	0
2020-01-13	2020	17:08	BOOTH ST @ RAYMOND ST (0006498)	01 - Clear	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
2020-07-03 2020-07-15	2020 2020	7:30 8:29	BOOTH ST @ RAYMOND ST (0006498) BOOTH ST @ RAYMOND ST (0006498)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 02 - Non-fatal injury	07 - SMV other 02 - Angle	01 - Dry 01 - Dry	0	0	0	1
2020-11-10	2020	18:14	BOOTH ST @ RAYMOND ST (0006498)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	ō	0	0
2018-01-09 2018-01-15	2018 2018	17:37 13:11	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	05 - Dusk 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 04 - Sideswipe	04 - Slush 01 - Dry	0	0	0	0
2018-02-19	2018	14:00	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	07 - SMV other	01 - Dry	0	0	0	0
2018-03-05 2018-04-13	2018 2018	16:25 23:12	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 07 - Dark	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	05 - Turning movement	01 - Dry 02 - Wet	0	0	0	0
2018-04-30	2018	16:36	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement 03 - Rear end	01 - Dry	0	0	0	0
2018-05-03 2018-07-30	2018 2018	16:51 15:29	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 04 - Sideswipe	01 - Dry 01 - Dry	0	0	0	1
2018-08-04	2018	6:48	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
2018-09-27 2018-10-08	2018 2018	21:59 18:30	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 02 - Rain	07 - Dark 05 - Dusk	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	05 - Turning movement 04 - Sideswipe	01 - Dry 02 - Wet	0	0	0	0
2018-10-29	2018	21:25	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	02 - Wet	0	0	0	0
2018-12-18 2019-03-20	2018 2019	0:34 11:24	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	07 - Dark 01 - Davlight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	05 - Turning movement 02 - Angle	01 - Dry 01 - Dry	0	0	0	0
2019-04-03	2019	11:24 11:30 14:01	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
2019-04-16 2019-05-03	2019 2019	14:01 5:30	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 02 - Rain	01 - Daylight 03 - Dawn	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 04 - Sideswipe	01 - Dry 02 - Wet	0	0	0	0
2019-06-04	2019	8:45	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
2019-06-22 2019-07-10	2019 2019	8:06 13:52	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 02 - Non-fatal injury	02 - Angle 04 - Sideswipe	01 - Dry 01 - Dry	0	0	0	0
2019-07-10	2019	20:10	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 05 - Dusk	01 - Traffic signal	0	02 - Non-ratai Injury 03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
2019-08-16 2019-08-22	2019 2019	8:11 17:10	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 04 - Sideswipe	01 - Dry 01 - Dry	0	0	0	0
2019-08-22	2019	16:30	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
2019-09-09	2019	16:24 8:20	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
2019-09-16 2019-09-29	2019 2019	13:18	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 03 - Rear end	01 - Dry 01 - Dry	0	0	0	0
2019-10-19	2019 2019	13:18 12:09	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	99 - Other	01 - Dry	0	0	0	0
2019-10-30 2019-11-16	2019 2019	15:05 13:10	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 04 - Sideswipe	01 - Dry 01 - Dry	0	0	0	0
2019-11-27 2019-12-24	2019	14:40	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	02 - Rain 01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 02 - Angle	02 - Wet 01 - Dry	0	0	0	0
2019-12-24 2020-01-15	2019 2020	11:28 10:11	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	02 - Angle 03 - Rear end	01 - Dry 01 - Dry	0	0	0	0
2020-01-21	2020	9:36	BRONSON AVE ⊕ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
2020-01-21 2020-03-09	2020 2020	14:20 15:00	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 02 - Angle	05 - Packed snow 02 - Wet	0	0	0	0
2020-03-14	2020	20:53	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
2020-04-30	2020	13:11 8-59	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	02 - Rain 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only	02 - Angle 03 - Rear end	02 - Wet 01 - Dry	0	0	0	0
2020-09-16	2020	8:59 7:30	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	ō	ō	0	0
2020-09-24 2020-10-20	2020 2020	21:25 6:57	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 02 - Rain	07 - Dark 03 - Dawn	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 03 - Rear end	01 - Dry 02 - Wet	0	0	0	0
2020-10-27	2020	8:50	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	o	o	0	ō
2020-11-01 2020-11-14	2020 2020	17:24 20:37	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	02 - Rain 01 - Clear	07 - Dark 07 - Dark	01 - Traffic signal 01 - Traffic signal	0	02 - Non-fatal injury 02 - Non-fatal injury	07 - SMV other 05 - Turning movement	02 - Wet 01 - Dry	0	0	0	0
2020-12-29	2020	13:15	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	02 - Angle	01 - Dry	0	0	0	0
2021-01-01 2021-01-04	2021 2021	12:00 9:30 10:43	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	05 - Turning movement 04 - Sideswipe	01 - Dry 01 - Dry	0	0	0	0
2021-03-04	2021	10:43	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	o	o	0	ō
2021-04-04 2021-04-24	2021 2021	10:17 8:55	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	02 - Non-fatal injury 03 - P.D. only	02 - Angle 05 - Turning movement	01 - Dry 01 - Dry	0	0	0	0
2021-04-25	2021	16:13	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	02 - Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	02 - Wet	0	ō	0	0
2021-05-09 2021-06-02	2021 2021	21:23 16:39	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	07 - Dark 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	05 - Turning movement 02 - Angle	01 - Dry 01 - Dry	0	0	0	1
2021-07-05	2021		BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
2021-07-11 2021-07-13	2021 2021	16:31 22:11	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 02 - Rain	01 - Daylight 07 - Dark	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 02 - Non-fatal injury	02 - Angle 05 - Turning movement	01 - Dry 02 - Wet	0	0	0	0
2021-07-20	2021	21:00 15:37	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	02 - Wet	o	o	0	0
2021-08-07	2021 2021	15:37	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 07 - Dark	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 02 - Non-fatal injury	03 - Rear end 02 - Angle	01 - Dry 01 - Dry	0	0	0	0
2021-08-10	2021	22:12 7:27	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	05 - Turning movement	01 - Dry	o	o	0	0
2021-08-13 2021-08-16	2021 2021	16:47 11:04	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 02 - Non-fatal injury	02 - Angle 02 - Angle	01 - Dry 01 - Dry	0	0	0	0
2021-08-24	2021	6:40 6:58	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	02 - Non-fatal injury	05 - Turning movement 02 - Angle	01 - Dry	0	0	0	0
2021-08-27 2021-09-05	2021 2021	6:58 11:00	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	02 - Non-fatal injury 03 - P.D. only	02 - Angle 02 - Angle	01 - Dry 01 - Dry	0	0	0	0
2021-09-20	2021	12:25	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
2021-09-22 2021-09-27	2021 2021	0:38 6:55	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	07 - Dark 03 - Dawn	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 02 - Non-fatal injury	02 - Angle 02 - Angle	01 - Dry 01 - Dry	0	0	0	0
2021-10-04	2021	15:38 12:29	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	ō
2021-10-26	2021 2021	12:29 13:48	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	02 - Rain 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 05 - Turning movement	02 - Wet 01 - Dry	0	0	0	0
2021-11-28	2021	13:48 14:57	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	05 - Turning movement 02 - Angle	01 - Dry 01 - Dry	ō	ō	0	ō
2021-12-01 2021-12-21	2021 2021	11:00 15:20	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	02 - Angle 02 - Angle	01 - Dry 02 - Wet	0	0	0	0
2021-12-24	2021	10:48	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	02 - Angle	01 - Dry	0	0	0	0
2021-12-31 2022-01-19	2021 2022	21:30 9:22	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 03 - Snow	07 - Dark 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	05 - Turning movement 03 - Rear end	02 - Wet 06 - Ice	0	0	0	0
2022-01-20	2022	17:32	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	ō
2022-02-05 2022-02-07	2022 2022	23:09 13:16	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	03 - Snow 01 - Clear	07 - Dark 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 02 - Non-fatal injury	02 - Angle 03 - Rear end	04 - Slush 01 - Dry	0	0	0	0
2022-02-13	2022	1:08	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
2022-02-18 2022-02-18	2022 2022	15:28 20:06	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 07 - Dark	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	03 - Rear end 03 - Rear end	06 - Ice 06 - Ice	0	0	0	0
2022-02-18	2022	14:08	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	05 - Packed snow	0	0	0	0
2022-02-18 2022-02-18	2022 2022	14:48 14:30	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	03 - Rear end 03 - Rear end	05 - Packed snow 06 - Ice	0	0	0	0
2022-03-20	2022	0:17	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	07 - Dark	01 - Traffic signal	ō	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
2022-05-29 2022-06-04	2022 2022	19:44 0:10	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 07 - Dark	01 - Traffic signal 01 - Traffic signal	0	02 - Non-fatal injury 03 - P.D. only	02 - Angle 02 - Angle	01 - Dry 01 - Dry	0	0	0	0
2022-06-12	2022	7:02	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear	01 - Daylight	01 - Traffic signal	ō	02 - Non-fatal injury	07 - SMV other	01 - Dry	0	0	0	ō
2022-08-12 2022-09-15	2022 2022	11:30 18:03	BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198) BRONSON AVE @ CATHERINE ST/RAYMOND ST (0007198)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	01 - Traffic signal 01 - Traffic signal	0	03 - P.D. only 03 - P.D. only	04 - Sideswipe 02 - Angle	01 - Dry 01 - Dry	0	0	0	0
2018-10-24	2018	19:26	RAYMOND ST btwn BELL ST N & LEBRETON ST N (3ZAAIL)	01 - Clear	07 - Dark	10 - No control	0	02 - Non-fatal injury	07 - SMV other	01 - Dry	0	0	0	0
2018-08-08 2018-08-29	2018 2018	8:58 12:32	RAYMOND ST blwn BRONSON AVE & HWY417 IC121A RAMP16 (3ZA890) RAYMOND ST blwn BRONSON AVE & HWY417 IC121A RAMP16 (3ZA890)	01 - Clear 01 - Clear	01 - Daylight 01 - Daylight	10 - No control 10 - No control	0	03 - P.D. only 03 - P.D. only	03 - Rear end 03 - Rear end	01 - Dry 01 - Dry	0	0	0	0
2020-02-25 2020-04-30	2020	13:47 23:59	RAYMOND ST btwm BRONSON AVE & HWY417 IC121A RAMP16 (01 - Clear 02 - Rain	01 - Daylight 07 - Dark	10 - No control	0	03 - P.D. only 02 - Non-fatal injury	03 - Rear end 07 - SMV other	02 - Wet	0	0	0	0
2020-04-30 2020-08-25	2020 2020	23:59 15:11	RAYMOND ST btwn BRONSON AVE & HWY417 IC121A RAMP16 (3ZA890)	02 - Rain 01 - Clear	07 - Dark 01 - Daylight	10 - No control 10 - No control	0	02 - Non-fatal injury 02 - Non-fatal injury	07 - SMV other 03 - Rear end	02 - Wet 01 - Dry	0	0	0	0
2020-08-26	2020	17:51	RAYMOND ST btwn BRONSON AVE & HWY417 IC121A RAMP16 (3ZA890) RAYMOND ST btwn BRONSON AVE & HWY417 IC121A RAMP16 (3ZA890)	01 - Clear	01 - Daylight	10 - No control 10 - No control	0	02 - Non-fatal injury	04 - Sideswipe	01 - Dry	0	0	0	0
2021-09-15 2021-12-17	2021 2021	11:20 20:50	RAYMOND ST btwn BRONSON AVE & HWY417 IC121A RAMP16 (_3ZA890) RAYMOND ST btwn BRONSON AVE & HWY417 IC121A RAMP16 (_3ZA890)	01 - Clear 01 - Clear	01 - Daylight 07 - Dark	10 - No control 10 - No control	0	03 - P.D. only 03 - P.D. only	03 - Rear end 04 - Sideswipe	01 - Dry 01 - Dry	0	0	0	0
			- ·											

Appendix E

TDM Checklist



TDM Measures Checklist:

Residential Developments (multi-family, condominium or subdivision)

	Legend
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance
*	The measure is one of the most dependably effective tools to encourage the use of sustainable modes

	TDM	measures: Residential developments	Check if proposed & add descriptions
	1.	TDM PROGRAM MANAGEMENT	
	1.1	Program coordinator	
BASIC #	1.1.1	Designate an internal coordinator, or contract with an external coordinator	
	1.2	Travel surveys	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	\square
	2.	WALKING AND CYCLING	
	2.1	Information on walking/cycling routes & des	tinations
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances (multi-family, condominium)	
	2.2	Bicycle skills training	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	

	TDM	measures: Residential developments	Check if proposed & add descriptions
	3.	TRANSIT	
	3.1	Transit information	
BASIC	3.1.1	Display relevant transit schedules and route maps at entrances (multi-family, condominium)	
BETTER	3.1.2	Provide real-time arrival information display at entrances (multi-family, condominium)	
	3.2	Transit fare incentives	
BASIC	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	
BETTER	3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	
	3.3	Enhanced public transit service	
BETTER •	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels (subdivision)	
	3.4	Private transit service	
BETTER	3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	
	4.	CARSHARING & BIKESHARING	
	4.1	Bikeshare stations & memberships	
BETTER	4.1.1	Contract with provider to install on-site bikeshare station (multi-family)	
BETTER	4.1.2	Provide residents with bikeshare memberships, either free or subsidized (multi-family)	
	4.2	Carshare vehicles & memberships	
BETTER	4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	
BETTER	4.2.2	Provide residents with carshare memberships, either free or subsidized	
	5.	PARKING	
	5.1	Priced parking	
BASIC	5.1.1	Unbundle parking cost from purchase price (condominium)	
BASIC	5.1.2	Unbundle parking cost from monthly rent (multi-family)	abla

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TDM-Supportive Development Design and Infrastructure Checklist:

Residential Developments (multi-family or condominium)

Legend				
REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed			
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users			
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance			

	TDM-supportive design & infrastructure measures: Residential developments		Check if completed & add descriptions, explanations or plan/drawing references
	1.	WALKING & CYCLING: ROUTES	
	1.1	Building location & access points	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	\square
	1.2	Facilities for walking & cycling	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (see Official Plan policy 4.3.3)	
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible (see Official Plan policy 4.3.12)	

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	TDM-s	supportive design & infrastructure measures: Residential developments	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks (see Official Plan policy 4.3.10)	
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps (see Official Plan policy 4.3.10)	
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and onroad cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians (see Official Plan policy 4.3.11)	
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	
	1.3	Amenities for walking & cycling	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	

	TDM-s	supportive design & infrastructure measures: Residential developments	add descriptions, explanations or plan/drawing references
	2.	WALKING & CYCLING: END-OF-TRIP FACILI	TIES
	2.1	Bicycle parking	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see Official Plan policy 4.3.6)	abla
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see Zoning By-law Section 111)	
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see Zoning By-law Section 111)	
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	
	2.2	Secure bicycle parking	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see Zoning By-law Section 111)	\square
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multifamily residential developments	⊻
	2.3	Bicycle repair station	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	
	3.	TRANSIT	
	3.1	Customer amenities	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	

	TDM-s	supportive design & infrastructure measures: Residential developments	Check if completed & add descriptions, explanations or plan/drawing references
	4.	RIDESHARING	
	4.1	Pick-up & drop-off facilities	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	
	5.	CARSHARING & BIKESHARING	
	5.1	Carshare parking spaces	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses (see Zoning By-law Section 94)	
	5.2	Bikeshare station location	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	
	6.	PARKING	
	6.1	Number of parking spaces	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly (see Zoning By-law Section 104)	
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking (see Zoning By-law Section 111)	
	6.2	Separate long-term & short-term parking areas	
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	

Appendix F

MMLOS Analysis



Multi-Modal Level of Service - Segments Form

Consultant	CGH Transportation Inc.	Project	2021-137
Scenario	Existing/Future	Date	2024-07-19
Comments			

SEGMENTS			Bell Street	Arthur Lane	Arlington Avenue	Raymond Street
Pedestrian	Sidewalk Width Boulevard Width		1.8 m < 0.5 m	no sidewalk n/a	1.8 m < 0.5 m	1.8 m < 0.5 m
	Avg Daily Curb Lane Traffic Volume		≤ 3000	≤ 3000	≤ 3000	≤ 3000
	Operating Speed On-Street Parking		> 30 to 50 km/h yes	≤ 30 km/h no	> 30 to 50 km/h yes	> 50 to 60 km/h yes
sst	Exposure to Traffic PLoS		В	С	В	С
ဗ္ဗ	Effective Sidewalk Width					
<u> </u>	Pedestrian Volume					
	Crowding PLoS					
	Level of Service		В	С	В	С
	Type of Cycling Facility		Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Number of Travel Lanes		≤ 2 (no centreline)	≤ 2 (no centreline)	≤ 2 (no centreline)	≤ 2 (no centreline)
	Operating Speed		≤ 40 km/h	≤ 40 km/h	≤ 40 km/h	≥ 50 to 60 km/h
	# of Lanes & Operating Speed LoS		Α	Α	Α	D
Bicycle	Bike Lane (+ Parking Lane) Width					
င်	Bike Lane Width LoS	`	-	-	-	-
Ö	Bike Lane Blockages					
	Blockage LoS		-	-	-	-
	Median Refuge Width (no median = < 1.8 m)					
	No. of Lanes at Unsignalized Crossing Sidestreet Operating Speed					
	Unsignalized Crossing - Lowest LoS		_		_	
	Level of Service			_		
	20101 01 0011100					
<u> </u>	Facility Type					Mixed Traffic
Transit	Friction or Ratio Transit:Posted Speed					Vt/Vp ≥ 0.8
Tra	Level of Service		-	-	-	D
	Truck Lane Width					
Truck	Travel Lanes per Direction					
	Level of Service		-	-	-	-
Auto	Level of Service	Not Applicable				