

January 26th, 2018

City of Ottawa Planning and Growth Management Department 110 Laurier Ave. W., 4th Floor Ottawa, Ontario K1P1J1

Attention: Ms. Rosanna Baggs Project Manager, Infrastructure Approvals

Dear Rosanna:

Reference: Burnett Lands – 3370 Greenbank Road Community Transportation Study/Transportation Impact Study – Addendum Our File No. 111117 Ref: R-216-008

A Community Transportation Study/Transportation Impact Study (CTS/TIS) was prepared in December 2016 in support of a Draft Plan of Subdivision application for the Burnett Lands located at 3370 Greenbank Road. Following the initial submission, comments were received from the City of Ottawa in July 2017. The proposed Draft Plan of Subdivision has since been revised to address comments received from the City. This addendum has been prepared to provide a description of the revised Draft Plan of Subdivision, update the intersection capacity analysis based on the revised plan, and review the street network design.

1.0 REVISED DRAFT PLAN

Following the initial submission, the proposed Draft Plan of Subdivision was revised to address City comments. A revised concept plan is included in **Figure 1**. The previously proposed public laneways have been removed from the revised Draft Plan of Subdivision, and the internal roadway network has been revised. New residential blocks have been introduced in the southwest corner of the Greenbank Road/Street B intersection (Block 11) and in the northwest corner of the Greenbank Road/Jockvale Road intersection (Block 16). The proposed density of the block in the southwest corner of the Slock in the southwest corner of this intersection (Block 20) is now anticipated to be a retirement home. The townhouse block in the northeast corner of this intersection (Block 19) is now anticipated to contain a condominium building.

Based on the revised draft plan, the proposed development will now consist of the following:

East of Greenbank Road Realignment

- 225 retirement home units (Block 20)
- 60 condominium units (Block 19)





West of Greenbank Road Realignment

- 195 townhouse units (169 Two-storey Townhouse Units and 26 Three-Storey Townhouse Units at Block 11)
- 175 condominium units (Block 16 and 25)

The proposed Draft Plan of Subdivision will be constructed in two phases. Phase 1 of the proposed development will include the two-storey townhouse units west of the Greenbank Road realignment (169 townhouse units) and the three-storey residential block in the southwest corner of the Greenbank Road/Street B intersection (26 townhouse units). Phase 2 of the proposed development includes the residential blocks in all four corners of the future Greenbank Road/Jockvale Road intersection (175 condominium units west of Greenbank Road, and 60 condominium units and 225 retirement home units east of Greenbank Road). The phasing of the development is shown on **Figure 1**.

It is acknowledged that funding for the Greenbank Road realignment has been delayed, and is not anticipated to proceed within the timeframe identified in the City of Ottawa's Transportation Master Plan (TMP). The proponent would like to proceed with Phase 1 of development, while Phase 2 is not anticipated to proceed until post Greenbank Road realignment. Separate Transportation Impact Assessments (TIA) can be prepared in support of the Phase 2 blocks as they proceed to Site Plan Control, if required.

Phase 1 of the proposed development is anticipated to be constructed by 2022. Phase 1 of the development will be served through a new connection to the existing Greenbank Road at Street B. For the purposes of this analysis, it has been assumed that the funding for the Greenbank Road realignment will be obtained and Phase 2 of the development will be constructed by 2027 (five years beyond build-out of Phase 1).

2.0 TRAVEL DEMAND FORECASTING

2.1 Existing Traffic Volumes

The existing traffic volumes at the Greenbank Road/Jockvale Road intersection in the original report were based on a traffic count conducted by the City of Ottawa in 2012. Following the submission, a traffic count dated August 16, 2016 was obtained from the City of Ottawa. For the purposes of this analysis, the existing traffic volumes along the study area roadways have been updated to reflect the 2016 traffic count. Existing traffic volumes at the Greenbank Road/Jockvale Road are shown in **Figure 2**. Peak hour summary sheets of the 2016 traffic count are included in **Appendix A**.

2.2 Background Growth

The background growth rate used in the original report was derived based on traffic projections presented in the Barrhaven South CTS. A review of the 2016 and 2012 traffic counts suggest traffic along Greenbank Road south of Jockvale Road has grown at a rate of 5% per year. This is consistent with the background growth rate utilized in the original report. Based on the foregoing, a 5% per annum growth rate was maintained and applied to the new through traffic volumes along Greenbank Road.





2.3 Other Area Developments

The original CTS/TIS projected traffic volumes generated by other developments within the South Nepean Town Centre Community Design Plan (SNTC CDP) at the future Greenbank Road/Street B and Greenbank Road/Jockvale Road intersections. Since the original submission, a Transportation Impact Study (TIS) was prepared by Parsons in June 2017 for the development at 3311 Greenbank Road will connect to the future Jockvale Road east of Greenbank Road, and was included in the other development traffic projections identified above.

The 3311 Greenbank Road development is assumed to be in place by 2022, consistent with the Parsons TIS, and is accounted for in the 2022 Phase 1 build-out year background traffic projections. For the 2027 background traffic projections, the traffic generated by other developments on the east leg of the future Jockvale Road/Greenbank Road intersection are now based the traffic projections in the 3311 Greenbank Road TIS. The traffic generated by other developments within the SNTC CDP (excluding the 3311 Greenbank Road site) at the Greenbank Road/Street B intersection have been derived based on a similar methodology used in the original CTS/TIS.

Background traffic at the study area intersections for the 2022 and 2027 build-out years are shown in **Figure 3** and **4**.

2.4 Revised Trip Generation

Trips generated by the revised Draft Plan of Subdivision have been estimated using the relevant peak hour rates identified in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition.* ITE trips generated by the revised plan during the weekday AM and PM peak hours are summarized in the following table.

	ITE	Unito		AM Peak			PM Peak	
	Code	Units	In	Out	Total	In	Out	Total
Phase 1	-	-	-	-	-	-	-	-
Condo/Townhouse (West of Greenbank)	230	195	15	73	88	70	34	104
Ultimate Build-out								
Condo/Townhouse (West of Greenbank)	230	370	25	122	147	118	58	176
Condo/Townhouse (East of Greenbank)	230	60	6	28	34	27	13	40
Congregate Care (East of Greenbank)	253	225	8	6	14	21	17	38

Table 1: ITE Trip Generation

Trips generated by the proposed development have been converted to person trips using a 1.42 ITE trip to person trip adjustment factor, consistent with the original CTS/TIS. The person trips generated by the proposed development are summarized in the following table.







Table 2: Person Trips

	ITE	Unito		AM Peak			PM Peak	
	Code	Units	In	Out	Total	In	Out	Total
Phase 1	_	_		_	_		_	_
Condo/Townhouse (West of Greenbank)	230	195	21	104	125	99	49	148
Ultimate Build-out	-	-	_	-	-	_	-	-
Condo/Townhouse (West of Greenbank)	230	370	36	173	209	168	83	251
Condo/Townhouse (East of Greenbank)	230	60	8	40	48	38	19	57
Congregate Care (East of Greenbank)	253	225	12	8	20	30	24	54
		TOTAL	56	221	277	236	126	362

The observed modal shares within the South Nepean district from City's TRANS O-D survey report were reviewed as part of the original CTS/TIS. Based on all trips within the district, all trips departing the district during the AM peak hour and all trips arriving to the district during the PM peak hour, the TRANS O-D survey suggests the following modal shares:

- 55% Auto Driver
- 15% Auto Passenger
- 20% Transit
- 10% Non-motorized

The aforementioned modal shares reflect the existing condition within the South Nepean District and are reflective of the modal shares following build-out of Phase 1 of the subdivision.

The above modal shares have been adjusted to reflect the effect of the future transit facilities along Greenbank Road and Chapman Mills Drive at full build-out of the development. To account for future transit availability in the vicinity of the subject subdivision when the Greenbank Road realignment proceeds, the transit modal share has been increased by 5%, reducing the auto modal share by 5%. It is noteworthy that the proposed modal shares are generally consistent with the City of Ottawa modal share targets identified in the City's 2013 TMP.

A full breakdown of the projected person trips by modal share and arrival/departure is shown in the following table for Phase 1 and full build-out.



	Modal		AM Peak			PM Peak	
Traver Mode	Share	In	Out	Total	In	Out	Total
Phase 1 Person	Trips	21	104	125	99	49	148
Auto Driver	55%	12	57	69	54	27	81
Auto Passenger	15%	3	16	19	15	7	22
Transit	20%	4	21	25	20	10	30
Non-Motorized	10%	2	10	12	10	5	15
Ultimate Person	Trips	56	221	277	236	126	362
Auto Driver	50%	31	122	153	130	69	199
Auto Passenger	15%	8	33	41	35	19	54
Transit	25%	11	44	55	47	25	72
Non-Motorized	10%	6	22	28	24	13	37

Table 3: Site Generated Person Trips by Modal Share

2.5 Trip Distribution

Trips generated by the proposed development have been distributed to the study area based on the distribution presented in the original CTS/TIS. For consistency and ease of read, the distribution is summarized as follows:

- 85% to/from the north via Greenbank Road
- 5% to/from the south via Greenbank Road
- 5% to/from the west via Jockvale Road/Strandherd Drive

As identified above, Phase 1 of the development is anticipated to be built-out prior to the Greenbank Road realignment and will be accessed through the Greenbank Road/Street B intersection. Traffic volumes generated by Phase 1 of the development are shown in **Figure 5**. Total traffic volumes for the 2022 Phase 1 build-out are shown in **Figure 6**.

Phase 2 of the proposed development is not anticipated to proceed until post Greenbank Road realignment. For the purposes of this analysis, it has been assumed that the funding for the Greenbank Road realignment will be obtained and Phase 2 of the development will be constructed by 2027. Traffic volumes generated by the ultimate development are shown in **Figure 7**. Total traffic volumes for the 2027 build-out are shown in **Figure 8**.











3.0 INTERSECTION CAPACITY ANALYSIS

3.1 2022 Total Traffic

Intersection capacity analysis has been completed for the 2022 total traffic conditions during the weekday AM and PM peak hours. A review of turn lane requirements at the proposed Greenbank Road/Street B intersection was conducted based on the projected traffic volumes.

Southbound Right Turn Lane

Right turn lanes should be considered for 60 vehicles per hour turning right or 10% of the approaching volumes making the right turn movement. Approximately 50 vehicles or 6% of the adjacent through traffic volumes are anticipated to make the southbound right turn movement at Street B during the PM peak hour. Based on the foregoing, a southbound right turn lane at Street B is not recommended for Phase 1 of the proposed development.

Northbound Left Turn Lane

Left turn lane warrants have been considered using MTO left turn lane storage graphs and advancing and opposing volumes along Greenbank Road. Based on the AM and PM peak hour advancing and opposing traffic volumes, the MTO graphs identify a requirement for a northbound left turn lane with a storage length of 15m at Street B. A copy of the MTO left turn lane storage graph is provided in **Appendix B**. A functional design of the northbound left turn lane was provided in Figure 17 of the original CTS/TIS.

The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix C**.

		AM Peak			PM Peak	
Intersection	Max V/C or Delay	LOS	Mvmt	Max V/C or Delay	LOS	Mvmt
Greenbank Road/ Street B	20 sec	С	EB	32 sec	D	EB
Future Jockvale Road/ Street B	8 sec	A	NB	8 sec	A	NB

Table 4: Intersection Analysis – 2022 Total Traffic

The proposed Greenbank Road/Street B intersection is anticipated to operate with a critical delay of 20 seconds (LOS C) during the weekday AM peak hour and 32 seconds (LOS D) during the weekday PM peak hour. The future Jockvale Road/Street B intersection is anticipated to operate with a critical delay of 8 seconds (LOS A) during the weekday AM and PM peak hours.

3.2 2027 Background Traffic

Intersection capacity analysis has been completed for the 2027 background traffic conditions during the weekday AM and PM peak hours. The lane configurations at the study area intersections reflect the full build-out of the Greenbank Road realignment as described in section 5.0 of the original CTS/TIS. Relevant excerpts from the Greenbank Road Environmental Assessment Study are included in **Appendix D**. As requested by the City of Ottawa through comments on the initial



submission, a separate left turn lane has been assumed on the westbound approach to the Greenbank Road/future Jockvale Road intersection. The signal timing plans have been developed using the methodologies in the Ontario Traffic Manual (OTM) *Book 12*, and with consideration to comments received from the City of Ottawa on the initial submission.

The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix C**.

		AM Peak			PM Peak	
Intersection	Max V/C or Delay	LOS	Mvmt	Max V/C or Delay	LOS	Mvmt
Greenbank Road/ Street B	0.32	А	NBT/R	0.51	А	SBL
Greenbank Road/ Future Jockvale Road	0.31	А	NBT/R	0.55	А	SBL
Future Jockvale Road/ Street B	9 sec	A	SB	9 sec	A	SB

Table 5: Intersection Analysis – 2027 Background Traffic

Based on the foregoing, the Greenbank Road/future Jockvale Road, Greenbank Road/Street B and future Jockvale Road/Street B intersections are anticipated to operate with a LOS A during the weekday AM and PM peak hours.

3.3 2027 Total Traffic

Intersection capacity analysis has been completed for the 2027 total traffic conditions during the weekday AM and PM peak hours. The lane configurations at the study area intersections reflect the full build-out of the Greenbank Road realignment as described in section 5.0 of the original CTS/TIS. Relevant excerpts from the Greenbank Road Environmental Assessment Study are included in **Appendix D**. As requested by the City of Ottawa through comments on the initial submission, a separate left turn lane has been assumed on the eastbound and westbound approaches to the Greenbank Road/future Jockvale Road intersection. The signal timing plans have been developed using the methodologies in the Ontario Traffic Manual (OTM) *Book 12*, and with consideration to comments received from the City of Ottawa on the initial submission.

A review of the Ontario Traffic Manual *Book 5* criteria for all-way stop control was conducted for the future Jockvale Road/Street B intersection. Based on the minimum volume criteria, all-way stop control is not warranted at this intersection. Based on the projected traffic volumes, stop control is recommended on future Jockvale Road, maintaining free flow conditions on Street B.

The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix C**.



		AM Peak			PM Peak	
Intersection	Max V/C or Delay	LOS	Mvmt	Max V/C or Delay	LOS	Mvmt
Greenbank Road/ Street B	0.36	А	NBT/R	0.51	А	SBL
Greenbank Road/ Jockvale Road	0.35	А	NBT/R	0.63	В	SBL
Jockvale Road/ Street B	9 sec	А	SB	9 sec	А	SB

Table 6: Intersection Analysis – 2027 Total Traffic

The Greenbank Road/Street B intersection is anticipated to operate with a LOS A during the weekday AM and PM peak hour. The 95th percentile queue length on the eastbound approach to this intersection is anticipated to be 20m during the AM peak hour. This queueing is not anticipated to extend through the Street B/Street 5 intersection.

The Greenbank Road/future Jockvale Road intersection is anticipated to operate with a LOS A during the AM peak hour and a LOS B during the PM peak hour. The 95th percentile queue length on the eastbound and westbound approaches are anticipated to be 15m and 10m respectively during the AM peak hour. This queueing is not anticipated to extend through the Jockvale Road/Street 4/Street 5 and Jockvale Road/existing Greenbank Road intersections.

The future Jockvale Road/Street B intersection is anticipated to operate with a critical delay of 9 seconds (LOS A) during the AM and PM peak hours.

4.0 ON-SITE DESIGN

4.1 Proposed Access

Left turn lane storage requirements at the ultimate signalized access intersections have been developed using the Synchro analysis results and equations identified in Transportation Association of Canada (TAC) *Geometric Design Guidelines* (S = 1.5NL/[3600/CL]). The left turn lane storage lengths identified below are the greater of either the TAC equation or the 95th percentile queue length identified in the Synchro analysis.

Table 7: Left Turn Lane Storage Requirements

Interception		Left Turn Stora	ge Requirement	
InterSection	Northbound	Southbound	Eastbound	Westbound
Greenbank Road/ Street B	5m	30m	20m	10m
Greenbank Road/ Future Jockvale Road	5m	50m	15m	5m



Based on the foregoing, minimum storage (38m) is recommended for all left turn movements at the Greenbank Road/Street B and Greenbank Road/future Jockvale Road intersections, excluding the southbound left turn movement at the Greenbank Road/future Jockvale Road intersection for which 50m of storage is recommended.

4.2 Internal Roadways

The following table identifies the classification and right-of-way (ROW) widths for each roadway within the subject lands.

Roadway	Classification	ROW
Greenbank Road	Arterial	41.5m
Jockvale Road	Collector	
Street B (East of Jockvale Road)	Collector	22111
Street B (West of Jockvale Road)		
Half Moon Bay		
Street 2		20m
Street 4	Local	2011
Street 5		
Street 7		

Table 8: Internal Roadway Classification

TAC guidelines identify a minimum spacing of 60m between adjacent intersections along collector roadways. The distance between all adjacent intersections along future Jockvale Road and Street B exceed the minimum 60m requirement identified in TAC.

TAC guidelines identify a right-in right-out intersection without a median opening may be permitted at least 100m from an adjacent all-directional intersection on divided arterial roads. The curb-to-curb distance between future Jockvale Road and the Street 7 right-in right-out intersection is 100m, meeting the minimum requirements identified in TAC.

Sidewalks will be provided on both sides of future Jockvale Road and Street B and one side of all local roadways.

Curb extensions will be provided at the future Jockvale Road/Street B intersection to reduce the eastwest crossing distance for pedestrians and to provide traffic calming. As identified above, all-way stop control is not warranted at this intersection. A review of the OTM *Book 15* criteria for a northsouth pedestrian crossover (PXO) was conducted at this intersection. Based on the two-way traffic volumes along Street B, a PXO is not warranted. As future Jockvale Road is a pedestrian desire line, although unwarranted, a PXO D is recommended at this intersection to facilitate north-south crossing of pedestrians.



5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the foregoing analysis, the main conclusions and recommendations of this addendum are as follows:

- It is acknowledged that funding for the Greenbank Road realignment has been delayed, and is not anticipated to proceed within the timeframe identified in the City of Ottawa's Transportation Master Plan (TMP). The proponent would like to proceed with Phase 1 of development, while Phase 2 is not anticipated to proceed until post Greenbank Road realignment. Separate Transportation Impact Assessments can be prepared in support of the Phase 2 blocks as they proceed to Site Plan Control, if required.
- Based on the Phase 1 development, approximately 50 vehicles or 6% of the adjacent through traffic volumes are anticipated to make the southbound right turn movement at Street B during the PM peak hour. A southbound right turn lane at Street B is not recommended for Phase 1 of the proposed development.
- Based on the 2022 PM peak hour advancing and opposing traffic volumes along Greenbank Road, the MTO graphs identify a requirement for a northbound left turn lane with a storage length of 15m at Street B for Phase 1 of the development. A functional design of the northbound left turn lane was provided in Figure 17 of the original CTS/TIS.
- Under the 2022 Phase 1 build-out condition, the proposed Greenbank Road/Street B intersection is anticipated to operate with a critical delay of 20 seconds (LOS C) during the weekday AM peak hour and 32 seconds (LOS D) during the weekday PM peak hour.
- Based on the minimum volume criteria, all-way stop control is not warranted at the future Jockvale Road/Street B intersection. Based on the projected traffic volumes, stop control is recommended on future Jockvale Road, maintaining free flow conditions on Street B.
- All study area intersections are anticipated to operate under acceptable conditions during the weekday AM and PM peak hours under the 2027 background and total traffic conditions.
- Minimum storage (38m) is recommended for all left turn movements at the Greenbank Road/Street B and Greenbank Road/future Jockvale Road intersections based on the ultimate signalized configuration, excluding the southbound left turn movement at the Greenbank Road/future Jockvale Road intersection for which 50m of storage is recommended.
- The distance between all adjacent intersections along Jockvale Road and Street B exceed the minimum 60m requirement identified in TAC. The curb-to-curb distance between future Jockvale Road and the Street 7 right-in right-out intersection is 100m, meeting the minimum requirements identified in TAC.
- Sidewalks will be provided on both sides of future Jockvale Road and Street B, and one side of all local roadways.



• Curb extensions will be provided at the future Jockvale Road/Street B intersection to reduce the east-west crossing distance for pedestrians and to provide traffic calming. As future Jockvale Road is a pedestrian desire line, although unwarranted, a PXO D is recommended at this intersection to facilitate north-south crossing of pedestrians.

Yours truly,

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Brad Byvelds, P. Eng. Project Coordinator | Transportation/Traffic

Appendix A Existing Traffic Data



Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram GREENBANK RD @ JOCKVALE RD



Comments



Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram GREENBANK RD @ JOCKVALE RD



Appendix B MTO Left Turn Lane Storage Graph

GREENBANK/STREETB (2022)

APPENDIX A



Figure EA-10

94-06

EA-11

Appendix C Synchro Analysis Reports

1: Future Jockvale & Street B AM Peak

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	۴.				M.	
Traffic Volume (veh/h)	9	0	2	2	0	9
Future Volume (Veh/h)	9	0	2	2	0	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	2	2	0	10
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX platoon unblocked						
vC conflicting volume			10		16	10
vC1, stage 1 conf vol			10		10	10
vC2 stage 2 conf vol						
vCu, unblocked vol			10		16	10
tC single (s)			4 1		64	62
tC 2 stage (s)			7.1		v.7	0.2
tF (s)			22		3.5	3.3
οθ queue free %			100		100	99
cM capacity (veh/h)			1610		1001	1071
			1010		1001	1071
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	10	4	10			
Volume Left	0	2	0			
Volume Right	0	0	10			
cSH	1700	1610	1071			
Volume to Capacity	0.01	0.00	0.01			
Queue Length 95th (m)	0.0	0.0	0.2			
Control Delay (s)	0.0	3.6	8.4			
Lane LOS		А	А			
Approach Delay (s)	0.0	3.6	8.4			
Approach LOS			А			
Intersection Summany						
Average Delev			4.1			
Average Delay			<i>//</i>			
Intoropotion (Concerts / Litilization			4.1			onico

6: Greenbank & Street B AM Peak

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Movement	FBI	FBR	NBI	NBT	SBT	SBR
Lane Configurations	M		*		<u>.</u>	
Traffic Volume (veh/h)	51	6	1	564	300	10
Future Volume (Veh/h)	51	6	1	564	300	10
Sign Control	Ston	0	I	Eree	Free	10
Grade	0%			0%	0%	
Back Hour Easter	0.02	0.02	0.02	0.00	0.02	0.02
Heurly flow rate (uph)	0.92	0.92	0.92	0.92	0.92	0.92
Dedectrices	55	1	1	013	320	11
vvaiking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	946	332	337			
vC1, stage 1 conf vol						
vC2. stage 2 conf vol						
vCu, unblocked vol	946	332	337			
tC. single (s)	6.4	6.2	4.1			
tC 2 stage (s)	0.1	. _				
tE (s)	35	33	22			
n (c)	81	0.0 QQ	100			
cM canacity (yeh/h)	200	710	1222			
	230	/10	1222			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	62	1	613	337		
Volume Left	55	1	0	0		
Volume Right	7	0	0	11		
cSH	311	1222	1700	1700		
Volume to Capacity	0.20	0.00	0.36	0.20		
Queue Length 95th (m)	5.6	0.0	0.0	0.0		
Control Delay (s)	19.5	7.9	0.0	0.0		
Lane LOS	 C	Δ	0.0	0.0		
Approach Delay (s)	19.5	0.0		0.0		
Approach LOS	10.0 C	0.0		0.0		
	U					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			41.4%	ICI	U Level of Serv	ice
Analysis Period (min)			15			

1: Future Jockvale & Street B PM Peak

	-	\mathbf{r}	1	-	1	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	1.			4	M		
Traffic Volume (veh/h)	4	0	8	8	0	4	
Future Volume (Veh/h)	4	0	8	8	0	4	
Sian Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	4	0	9	9	0	4	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC conflicting volume			4		31	4	
vC1, stage 1 conf vol			· ·		01	(
vC2 stage 2 conf vol							
vCu unblocked vol			4		31	4	
tC single (s)			4 1		64	62	
C_{2} stage (s)			7.1		0.4	0.2	
tE (s)			22		35	33	
n (3)			90		100	100	
cM capacity (yeh/h)			1618		978	1080	
			1010		570	1000	
Direction, Lane #	EB 1	WB 1	NB 1				
Volume Total	4	18	4				
Volume Left	0	9	0				
Volume Right	0	0	4				
cSH	1700	1618	1080				
Volume to Capacity	0.00	0.01	0.00				
Queue Length 95th (m)	0.0	0.1	0.1				
Control Delay (s)	0.0	3.6	8.3				
Lane LOS		А	А				
Approach Delay (s)	0.0	3.6	8.3				
Approach LOS			А				
Intersection Summary							
Average Delay			3.8				
Intersection Capacity Utilization			17.6%	IC	U Level of S	ervice	
Analysis Period (min)			15	10			

6: Greenbank & Street B PM Peak

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Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	M		*	*	1.		
Traffic Volume (veh/h)	25	3	5	457	783	49	
Future Volume (Veh/h)	25	3	5	457	783	49	
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	27	3	5	497	851	53	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None	None		
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	1384	878	904				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1384	878	904				
tC, single (s)	6.4	6.2	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	83	99	99				
cM capacity (veh/h)	157	347	752				
Direction, Lane #	EB <u>1</u>	NB 1	NB 2	SB 1			
Volume Total	30	5	497	904			
Volume Left	27	5	0	0			
Volume Right	3	0	0	53			
cSH	166	752	1700	1700			
Volume to Capacity	0.18	0.01	0.29	0.53			
Queue Length 95th (m)	4.8	0.2	0.0	0.0			
Control Delay (s)	31.4	9.8	0.0	0.0			
Lane LOS	D	А					
Approach Delay (s)	31.4	0.1		0.0			
Approach LOS	D						
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			56.6%	ICI	U Level of Serv	ice	
Analysis Period (min)			15				

3: Greenbank & Street B AM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	↑.		*	↑.		*	Ă۴.		*	Ă۴.	
Traffic Volume (vph)	21	2	3	21	10	62	1	700	4	13	375	4
Future Volume (vph)	21	2	3	21	10	62	1	700	4	13	375	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0	1000	0.0	50.0	1000	0.0	50.0	1000	0.0	50.0	1000	0.0
Storage Lanes	1		0.0	1		0.0	1		0.0	1		0.0
Taper Length (m)	50.0		Ū	50.0		U	50.0		Ū	50.0		U
Lane Litil Factor	1 00	1.00	1.00	1 00	1.00	1.00	1 00	0.05	0.95	1 00	0.95	0.05
Ped Bike Factor	0.08	0.08	1.00	0.08	0.07	1.00	0.08	1.00	0.55	0.00	1.00	0.55
Frt	0.30	0.30		0.30	0.37		0.30	0 000		0.33	0 000	
Elt Protected	0.950	0.010		0.950	0.071		0.950	0.000		0.950	0.000	
Satd Flow (prot)	1676	1574	٥	1676	1/03	٥	1676	3340	٥	1676	33/18	٥
Salu. Flow (plot)	0.706	1574	0	0.754	1495	U	0.050	5549	U	0.050	5540	0
Setd Flow (porm)	1225	1574	٥	1206	1/02	٥	1646	22/0	٥	1650	22/10	٥
Bight Turp on Pod	1220	1574	Voo	1300	1495	Voo	1040	5549	Voo	1000	5540	Vaa
Right Tulli on Red		3	res		67	res		1	res		1	res
Sato. Flow (RTOR)		3			67			1			1	
Link Speed (k/n)		40			40			60			60	
Link Distance (m)		293.6			139.9			285.7			205.1	
I ravel I ime (s)		26.4			12.6	0.1		17.1	4-		12.3	
Confl. Peds. (#/hr)	21		21	21		21	15		15	15		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	2	3	23	11	67	1	761	4	14	408	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	5	0	23	78	0	1	765	0	14	412	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8	Ū		Ŭ	-		,	v	
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase	7	т		0	0		5	L		ļ	U	
Minimum Initial (a)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Calit (a)	10.0	10.0		10.0	10.0		11.0	24.0		0.0 11.0	10.0	
Total Split (s)	47.2	41.2		47.2	41.2		11.0	54.0		11.0	54.0	
	49.0	49.0		49.0	49.0		10.00/	0.00		10.00/	0.00	
	40.8%	40.8%		40.8%	40.8%		10.8%	40.5%		10.8%	40.3%	
Iviaximum Green (s)	42.8	42.8		42.8	42.8		/.0	52.0		/.0	52.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Lime (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.3	2.3	

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Synchro 10 Report

3: Greenbank & Street B AM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	34.0	34.0		34.0	34.0			21.0			21.0	
Pedestrian Calls (#/hr)	14	14		14	14			5			5	
Act Effct Green (s)	22.4	22.4		22.4	22.4		5.6	84.4		6.6	87.4	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.05	0.70		0.06	0.73	
v/c Ratio	0.10	0.02		0.09	0.23		0.01	0.32		0.15	0.17	
Control Delay	34.1	21.2		33.9	10.7		96.0	2.0		57.2	9.8	
Queue Delav	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.1	21.2		33.9	10.7		96.0	2.0		57.2	9.8	
LOS	C	С		С	В		F	A		E	A	
Approach Delay		31.8			16.0			2.1			11.4	
Approach LOS		С			В			A			В	
Queue Length 50th (m)	54	0.5		54	26		0.1	13		34	8.9	
Queue Length 95th (m)	10.1	3.3		10.0	12.8		m1.0	8.4		10.4	44.1	
Internal Link Dist (m)		269.6			115.9			261.7			181.1	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	436	563		465	575		97	2354		101	2439	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.01		0.05	0.14		0.01	0.32		0.14	0.17	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 5 (4%), Referenced to phase	se 2:NBT and 6	5:SBT, Start	of Green									
Natural Cycle: 95												
Control Type: Actuated-Coordinate	ed											
Maximum v/c Ratio: 0.32												
Intersection Signal Delay: 6.8				Int	ersection LC	DS: A						
Intersection Capacity Utilization 54	1.8%			IC	U Level of S	ervice A						
Analysis Period (min) 15												
m Volume for 95th percentile que	eue is metered	by upstrea	n signal.									
Splits and Phases: 3: Greenban	k & Street B											
							104					
13 s 58 s						49	s S					
▲ 05 • • • 06 (R)							608					

49 s

5: Greenbank & Future Jockvale AM Peak

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Lane Group	WBI	WRR	NRT	NRR	SBI	SBT
Lane Configurations	vvDL			NDN		
	1	r 63	T 13	1	1 6	283
Future Volume (vph)	5	63	6/2	1	16	203
Ideal Flow (vphpl)	1800	1900	1800	1800	1800	1900
Storage Length (m)	50.0	000	1000	0.0	50.0	1000
Storage Length (m)	50.0	0.0		0.0	50.0	
Storage Lanes	50.0	1		0	50.0	
Taper Length (m)	50.0	4.00	0.05	0.05	50.0	0.05
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor	0.99	0.97	1.00		0.99	
		0.850				
HIt Protected	0.950		_		0.950	_
Satd. Flow (prot)	1676	1500	3353	0	1676	3353
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1653	1458	3353	0	1656	3353
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		68				
Link Speed (k/h)	40		60			60
Link Distance (m)	303.9		192.6			285.7
Travel Time (s)	27 A		11.6			17 1
Confl Pede (#/hr)	21.4	21	11.0	15	15	17.1
Confl Rikes (#/III)	21	21		10	10	
Curili. Dikes (#/IIf)	0.00	5	0.00	5	0.00	0.00
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	68	698	1	17	416
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	68	699	0	17	416
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6	J -	3.6	J .		3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
	т.0		ч.0			7.0
Leadway Faster	1.07	1.07	1.07	1.07	1.07	1 07
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	CI+Ev	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel	UILA					
	0.0	0.0	0.0		0.0	0.0
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
	Perm	Porm	NΔ		Prot	ND
Protected Phases			<u>۲۱۲</u>		1	E C
Dormitted Phases	0	0	2		I	U
Permitted Phases	8	8	^		4	~
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0
Minimum Split (s)	61.1	61.1	34.0		11.0	34.0
Total Split (s)	61.1	61.1	47.9		11.0	58.9
Total Split (%)	50.9%	50.9%	39.9%		9.2%	49.1%
Maximum Green (s)	54.0	54 0	41.9		5.0	52.9
Yellow Time (s)	3.0	3.0	37		3.7	37
All-Red Time (s)	1 1	/ 1	22		22	0.1
All-Red Hille (S)	4.1	4.1	Z.3		Z.3	∠.3

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Synchro 10 Report

5: Greenbank & Future Jockvale AM Peak

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.1	7.1	6.0		6.0	6.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	47.0	47.0	21.0			21.0
Pedestrian Calls (#/hr)	14	14	5			5
Act Effct Green (s)	25.0	25.0	81.3		5.6	85.7
Actuated g/C Ratio	0.21	0.21	0.68		0.05	0.71
v/c Ratio	0.01	0.19	0.31		0.22	0.17
Control Delay	23.2	5.7	17.1		77.1	8.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	23.2	5.7	17.1		77.1	8.5
LOS	C	А	В		Е	A
Approach Delay	6.9		17.1			11.2
Approach LOS	А		В			В
Queue Length 50th (m)	1.2	0.0	13.3		4.1	6.7
Queue Length 95th (m)	3.1	8.4	95.0		13.0	24.3
Internal Link Dist (m)	279.9		168.6			261.7
Turn Bay Length (m)	50.0				50.0	
Base Capacity (vph)	743	693	2270		77	2393
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	0.01	0.10	0.31		0.22	0.17
Intersection Summary						
Area Type:	Other					
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 118 (98%), Referenced to p	ohase 2:NBT a	nd 6:SBT, S	Start of Gree	n		
Natural Cycle: 110						
Control Type: Actuated-Coordinate	ed					
Maximum v/c Ratio: 0.31						
Intersection Signal Delay: 14.4				Int	ersection L	OS: B
Intersection Capacity Utilization 59	9.9%			ICI	U Level of S	Service B
Analysis Period (min) 15						
Solits and Phases: 5: Greenhan	k & Future loc	kvalo				
01 02 (K)					-	

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1s 47.9s

7: Street B & Future Jockvale AM Peak

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		<u>.</u>	۰.		14	
Traffic Volume (veh/h)	1	24	5	10	2	0
Future Volume (Veh/h)	1	24	5	10	2	0
Sign Control		Free	Free	10	Ston	Ű
Grade		0%	0%		0%	
Peak Hour Factor	0 02	0 02	0 02	0 02	0.02	0.02
Hourty flow rate (uph)	0.52	0.52	0.52	11	0.52	0.52
Rouny now rate (vpn)	1	20	5	11	2	U
					20	
Lane width (m)					3.0	
vvaiking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			294			
pX, platoon unblocked						
vC, conflicting volume	41				64	36
vC1. stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	41				64	36
tC single (s)	<u> </u>				64	6.2
tC_2 stage (s)	7.1				U. 7	0.2
tF (e)	2.2				3.5	33
n (3)	2.2				100	100
oM connective (veh/h)	100				100	1016
civi capacity (ven/n)	1230				922	1010
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	27	16	2			
Volume Left	1	0	2			
Volume Right	0	11	0			
cSH	1536	1700	922			
Volume to Canacity	0.00	0.01	0.00			
Oueue Length 95th (m)	0.00	0.01	0.00			
Control Dolou (a)	0.0	0.0	0.1			
Long LOS	0.5	0.0	0.9			
Lane LOS	A 0.2	0.0	A 0.0			
Approach Delay (S)	0.5	0.0	0.9			
Approach LOS			A			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			13.3%	ICI	U Level of S	Service
Analysis Period (min)			15			

3: Greenbank & Street B PM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	1.		×	1⊾		×.	≜t⊾		8	≜ ↑⊾	
Traffic Volume (vph)	10	10	1	10	5	30	2	568	20	61	978	21
Future Volume (vph)	10	10	1	10	5	30	2	568	20	61	978	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0	1000	0.0	50.0	1000	0.0	50.0	1000	0.0	50.0	1000	0.0
Storage Lanes	1		0.0	1		0.0	1		0.0	1		0.0
Taper Length (m)	50.0		Ū	50.0		U	50.0		U	50.0		U
Lane Litil Factor	1 00	1.00	1 00	1 00	1.00	1.00	1 00	0.05	0.95	1 00	0.95	0.05
Ped Bike Factor	0.08	1.00	1.00	0.08	0.07	1.00	0.00	1.00	0.55	0.00	1.00	0.55
Frt	0.30	0.087		0.30	0.37		0.33	0 005		0.33	0 007	
Elt Protoctod	0.050	0.301		0.050	0.070		0.050	0.335		0.050	0.331	
Setd Elow (prot)	0.930	1726	٥	1676	1101	٥	1676	2220	٥	1676	2220	٥
Salu. Flow (plot)	0 722	1730	0	0.750	1404	U	0.050	3330	U	0.050	2228	0
	0.732	1700	0	0.750	1404	0	0.950	2220	0	0.950	2220	0
Sato. Flow (perm)	1203	1730	U	1293	1484	U	1000	3330	U	1054	3339	U
			res		00	res			res		0	res
Satd. Flow (RTOR)		1			33			4			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		293.6			139.9			285.7			205.1	
Travel Time (s)		26.4			12.6			17.1			12.3	
Confl. Peds. (#/hr)	27		27	27		27	15		15	15		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	11	1	11	5	33	2	617	22	66	1063	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	12	0	11	38	0	2	639	0	66	1086	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6	J -		3.6	J .		3.6	J -		3.6	J -
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1 07	1 07	1 07	1 07	1 07	1 07	1 07	1 07	1 07	1 07	1 07	1 07
Turning Speed (k/h)	25	1.01	15	25	1.07	15	25	1.07	15	25	1.07	15
Number of Detectors	1	2	10	1	2	10	1	2	10	1	2	10
Detector Template	Left	Thru		l eft	Thru		l eft	Thru		l eft	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	2.0	0.0		2.0	0.0		2.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Sizo(m)	0.0	0.0		2.0	0.0		2.0	0.0		2.0	0.0	
Detector 1 Type	Z.U CluEx											
Detector 1 Channel	CI+EX	OI+EX			CI+EX		OI+EX	OI+EX				
Detector 1 Channel	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	47.2	47.2		47.2	47.2		11.0	34.0		11.0	34.0	
Total Split (s)	47.2	47.2		47.2	47.2		11.0	55.8		17.0	61.8	
Total Split (%)	39.3%	39.3%		39.3%	39.3%		9.2%	46.5%		14.2%	51.5%	
Maximum Green (s)	41 0	41.0		41 0	41.0		5.0	49.8		11.0	55.8	
Yellow Time (s)	30	3.0		3.0	3.0		3.7	3.7		37	37	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
	0.2	0.2		0.2	J.L							

Brad Byvelds, Novatech

Synchro 10 Report

3: Greenbank & Street B PM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	34.0	34.0		34.0	34.0			21.0			21.0	
Pedestrian Calls (#/hr)	18	18		18	18			5			5	
Act Effct Green (s)	22.4	22.4		22.4	22.4		5.3	76.9		9.3	87.6	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.04	0.64		0.08	0.73	
v/c Ratio	0.05	0.04		0.05	0.13		0.03	0.30		0.51	0.45	
Control Delay	31.3	29.2		31.3	11.9		87.0	2.3		66.3	12.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.3	29.2		31.3	11.9		87.0	2.3		66.3	12.5	
LOS	С	C		С	В		F	A		E	В	
Approach Delay		30.2			16.2			2.6			15.6	
Approach LOS	0.0	C		• •	B		0.5	A		45.0	В	
Queue Length 50th (m)	2.6	2.6		2.6	1.2		0.5	1.6		15.9	30.3	
Queue Length 95th (m)	6.2	0.3		6.2	8.7		m1.5	0.0		30.9	135.0	
Internal Link Dist (m)	50.0	269.6		50.0	115.9		50.0	261.7		50.0	181.1	
Turn Bay Length (m)	50.0	502		50.0	E00		50.0	0106		20.0	2420	
Storyotion Con Doducto	431	293		441	020		74	2130		100	2439	
Starvation Cap Reductin	0	0		0	0		0	0		0	0	
Storage Cap Reductin	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0 03	0 02		0.02	0.07		0.03	0 30		0.43	0.45	
	0.05	0.02		0.02	0.07		0.03	0.30		0.43	0.45	
Intersection Summary	Other											
Area Type:	Other											
Cycle Length: 120												
Offect: 6 (5%) Referenced to ph	and 2:NPT and (COT Chart	of Croop									
Netural Cycle: 05	ase 2.11D1 and 0	0.001, Start	of Green									
Control Type: Actuated Coordina	ated											
Maximum v/c Ratio: 0.51	aleu											
Intersection Signal Delay: 11.3				Int	ersection I (S. B						
Intersection Capacity Litilization 7	72.3%					ervice C						
Analysis Period (min) 15	12.070			10								
m Volume for 95th percentile q	ueue is metered	by upstrea	m signal.									
Splits and Phases: 3: Greenba	ank & Street B											
•ø1 🕴 🕇 ø	02 (R)											
17 s 55.8 s						4	47.2 s					

Ø8

7.2s

Ø5

\$6 (R)

5: Greenbank & Future Jockvale PM Peak

ane Group WBL WBR NBT NBR SBL SBT raffic Volume (vph) 3 43 547 4 71 918 read File Volume (vph) 3 43 547 4 71 918 read File Volume (vph) 100 1800		✓	•	1	1	1	Ŧ
bits Dock Dock <thdock< th=""> Dock Dock <thd< th=""><th>Lane Group</th><th>WBI</th><th>WBR</th><th>NRT</th><th>NBR</th><th>SBI</th><th>SBT</th></thd<></thdock<>	Lane Group	WBI	WBR	NRT	NBR	SBI	SBT
And Company Line Values Provide	Lane Configurations						
tame volume (rpr) 3 43 547 4 71 918 teal Flow (vphp) 1800 180 180	Traffic Volume (uph)	n	r 43	T 13	1	71	019
under Verante (pm) 5 4 5 647 4 7 910 torage Length (m) 50.0 1800 1800 1800 1800 1800 torage Length (m) 50.0 0.0 0.0 50.0 ane Ulii, Factor 1.00 1.00 0.95 0.95 1.00 0.95 and Ellis Factor 0.96 0.97 1.00 0.950 0.950 0.950 atd. Flow (port) 1676 1500 3348 0 1676 3353 til Perinited 0.950 0.950 0.950 0.950 0.950 atd. Flow (port) 1676 147 1 ink Speed (kh) 40 60 60 60 nik Distance (m) 303.9 192.6 285.7 7 27	Future Volume (vph)	2	43	547	4	71	018
Deck in Supply Todo Todo <thtodo< th=""> Todo Todo</thtodo<>	Ideal Flow (vphpl)	1800	1800	1800	4 1800	1800	1800
Interget Length (m) 50.0 0.0 0.0 0.0 aper Length (m) 50.0	Storage Length (m)	50.0	1000	1000	0.0	50.0	1000
uorage Lantes 1 0 1 0 1 ane Utili Factor 1.00 1.00 0.95 0.95 1.00 0.95 ed Bike Factor 0.98 0.97 1.00 0.95 0.97 1.00 0.97 It Protected 0.950 0.999 0.950 0.950 0.950 atd. Flow (port) 1676 1500 3348 0 1674 3353 it Permitted 0.950 0.950 0.950 0.950 0.950 atd. Flow (port) 1646 1452 3348 0 1634 3353 ith Speed (kfh) 40 60<	Storage Length (III)	50.0	0.0		0.0	0.00	
ape Lengin (iii) b0.0	Storage Lanes				U	E0.0	
arte un, ractor 1.00 1.00 0.95 1.00 0.95 rt 0.850 0.999 0.97 1.00 0.950 it Protected 0.950 0.950 0.950 0.950 itd. Flow (port) 1676 1500 3348 0 1676 33353 itd. Flow (perm) 16646 1452 3348 0 1676 3353 ight Turn on Red Yes Yes Yes Yes Yes ink Speed (kh) 40 60 60 60 ink Speed (kh) 40 60 285.7 7 27 <td< td=""><td>Laper Length (m)</td><td>50.0</td><td>4.00</td><td>0.05</td><td>0.05</td><td>50.0</td><td>0.05</td></td<>	Laper Length (m)	50.0	4.00	0.05	0.05	50.0	0.05
Best Pactor 0.99 1.00 0.97 1.00 0.97 It 0.850 0.990 0.950 0.950 It Portected 0.950 0.950 0.950 atd. Flow (prot) 1676 1500 3348 0 1634 3353 tight Turn on Red Yes Yes Yes Yes Yes Yes atd. Flow (RTOR) 47 1 </td <td>Lane Util. Factor</td> <td>1.00</td> <td>1.00</td> <td>0.95</td> <td>0.95</td> <td>1.00</td> <td>0.95</td>	Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
rt mot 10,850 0,999 0,550 0,55	Ped Bike Factor	0.98	0.97	1.00		0.97	
nt rrotected 0.950 0.550 0.95			0.850	0.999		0.055	
atd. How (prot) 1676 1500 3348 0 1676 0.950 atd. Flow (perm) 1646 1452 3348 0 1634 3353 tight Turn on Red Yes Yes Yes Yes Yes Yes tight Turn on Red 47 1 60 60 60 ink Distance (m) 303.9 192.6 285.7 71 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 29 0.92 <td>Fit Protected</td> <td>0.950</td> <td></td> <td></td> <td></td> <td>0.950</td> <td></td>	Fit Protected	0.950				0.950	
It Permitted 0.950 0.550	Satd. Flow (prot)	1676	1500	3348	0	1676	3353
iaid, Flow (perm) 1646 1452 3348 0 1634 3353 tight Turn on Red Yes Yes Yes Yes Yes aidt, Flow (ROR) 47 1 60 60 60 ink Distance (m) 303.9 192.6 285.7 7 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 29 0.92	FIt Permitted	0.950				0.950	
tight Turn on Red Yes Yes atd. Flow (RTOR) 47 1 ink Speed (kh) 40 60 60 ink Speed (kh) 303.9 192.6 285.7 ravel Time (s) 27.4 11.6 17.1 confl. Peds. (#hr) 27 27 27 confl. Bikes (#hr) 5 5 5 ceak Hour Factor 0.92 0.92 0.92 0.92 0.92 and Coup Flow (vph) 3 47 599 0 77 998 hered Lane Traffic (%) 7998 1 Left Right Left No	Satd. Flow (perm)	1646	1452	3348	0	1634	3353
iaid, Flow (RTOR) 47 1 ink Speed (kh) 40 60 60 ink Distance (m) 303.9 192.6 285.7 ravel Time (s) 27.4 11.6 17.1 frike (khr) 27 27 27 onfl. Bikes (khr) 5 5 5 teak Hour Factor 0.92 <td>Right Turn on Red</td> <td></td> <td>Yes</td> <td></td> <td>Yes</td> <td></td> <td></td>	Right Turn on Red		Yes		Yes		
ink Speed (k/h) 40 60 60 ink Distance (m) 303.9 192.6 285.7 ink Distance (m) 27.4 11.6 17.1 tarvel Time (s) 27.4 11.6 17.1 tarvel Time (s) 27.9 27 27 27 tarvel Time (s) 0.92 0.92 0.92 0.92 0.92 di, Flow (vph) 3 47 599 0 77 998 hared Lane Traffic (%)	Satd. Flow (RTOR)		47	1			
ink Distance (m) 303.9 192.6 285.7 ravel Time (s) 27.4 11.6 17.1 confl. Peds. (#hr) 27 27 27 27 confl. Bkes (#hr) 5 5 5 5 ceak Hour Factor 0.92 0.93 0.93	Link Speed (k/h)	40		60			60
ravel Time (s) 27.4 11.6 17.1 confl. Bikes (#/hr) 27	Link Distance (m)	303.9		192.6			285.7
bonfl. Peds. (#hr) 27 27 27 27 27 confl. Bikes (#hr) 5 5 teak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 ihared Lane Traffic (%) 3 47 599 4 77 998 ihared Lane Traffic (%) 3 47 599 0 77 998 inter Blocked Intersection No No No No No No ane Alignment Left Right Left Right Left Right Left Right Left Left Right Left Right Left Thru Left <t< td=""><td>Travel Time (s)</td><td>27.4</td><td></td><td>11.6</td><td></td><td></td><td>17.1</td></t<>	Travel Time (s)	27.4		11.6			17.1
Sonf. Bikes (#hr) 5 5 teak Hour Factor 0.92 0.93 minter Bitore Minter Marking Ma	Confl. Peds. (#/hr)	27	27		27	27	
International (unity) 0.92 0.93	Confl Bikes (#/br)	_,					
Construction Cost	Peak Hour Factor	0 92	0 92	0 92	0 92	0 92	0 92
Construction Construction<		0.02	17	505	0.52	77	0.02
Non-section Flow (vph) 3 47 599 0 77 998 inter Blocked Intersection No No No No No No No No ane Argingment Left Right Left Right Left No	Auj. 1 10W (VPII) Sharod Lano Troffic (9/)	3	47	595	4	11	330
and end group now (vpr) 3 47 599 0 77 998 inter Blocked Intersection No No No No No No No ane Alignment Left Right Left Right Left Thru Left Left Cl+Ex Cl+Ex Cl+Ex Cl+Ex Left No <td< td=""><td></td><td>^</td><td>47</td><td>E00</td><td>0</td><td>77</td><td>000</td></td<>		^	47	E00	0	77	000
Inter blocked mite/section NO NO NO NO NO NO NO ane Alignment Left Right Left Right Left Right Left Right Left Right Left Left Left Left Right Left Left Left Right Left Left Left Left Right January Jan	Earle Group Flow (VpII)	- S	4/	099	U	11 No	990
Left Right Left Right Left Right Left Right Left Left Left Right Left Left Right Left Left <thleft< th=""> <thleft< th=""> <thleft< th=""></thleft<></thleft<></thleft<>		INO	INO Dialet	INO	INO Dialet	INO	INO L + O
leadian viruti(m) 3.6	Lane Alignment	Left	Right	Left	Right	Left	Left
Ink Ottset(m) 0.0 0.0 0.0 brosswalk Width(m) 4.8 4.8 4.8 wo way Left Tum Lane leadway Factor 1.07 1.07 1.07 1.07 juming Speed (k/h) 25 15 15 25 lumber of Detectors 1 1 2 1 2 letector Template Left Right Thru Left Thru eading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 railing Detector (m) 0.0 <td>Median Width(m)</td> <td>3.6</td> <td></td> <td>3.6</td> <td></td> <td></td> <td>3.6</td>	Median Width(m)	3.6		3.6			3.6
Bits 4.8 4.8 4.8 wo way Left Turn Lane 1.07 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Link Offset(m)	0.0		0.0			0.0
wo way Left Turn Lane leadway Factor 1.07 1.07 1.07 1.07 1.07 1.07 turning Speed (k/h) 25 15 15 25 lumber of Detectors 1 1 2 1 2 lumber of Detectors 1 1 2 1 2 leetector Template Left Right Thru Left Thru eading Detector (m) 0.0 0.0 0.0 0.0 0.0 railing Detector 1 Size(m) 2.0 2.0 0.6 2.0 0.6 letector 1 Size(m) 2.0 2.0 0.6 2.0 0.6 letector 1 Size(m) 2.0 0.0 0.0 0.0 0.0 letector 1 Extend (s) 0.0 0.0 0.0 0.0 0.0 letector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 letector 2 Position(m) 9.4 9.4 9.4 9.4 9.4 9.4 9.4 9.4	Crosswalk Width(m)	4.8		4.8			4.8
leadway Factor 1.07 1.00 10.0 100 100	Two way Left Turn Lane						
uning Speed (k/h) 25 15 15 25 lumber of Detectors 1 1 2 1 2 letector Template Left Right Thru Left Thru eading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 railing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 retector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 retector 1 Size(m) 2.0 2.0 0.6 2.0 0.6 retector 1 Channel retector 1 Channel <t< td=""><td>Headway Factor</td><td>1.07</td><td>1.07</td><td>1.07</td><td>1.07</td><td>1.07</td><td>1.07</td></t<>	Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
humber of Detectors 1 1 2 1 2 betector Template Left Right Thru Left Thru eading Detector (m) 2.0 2.0 10.0 2.0 10.0 railing Detector (m) 0.0 0.0 0.0 0.0 0.0 reading Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 reading Detector 1 Size(m) 2.0 2.0 0.6 2.0 0.6 retector 1 Size(m) 2.0 2.0 0.6 2.0 0.6 retector 1 Channel retector 1 Extend (s) 0.0 0.0 0.0 0.0 retector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 retector 2 Position(m) 9.4 9.4 9.4 9.4 9.4 9.4 retector 2 Size(m) 0.6 0.6 0.6 0.6 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <td>Turning Speed (k/h)</td> <td>25</td> <td>15</td> <td></td> <td>15</td> <td>25</td> <td></td>	Turning Speed (k/h)	25	15		15	25	
Detector Template Left Right Thru Left Thru eading Detector (m) 2.0 2.0 10.0 2.0 10.0 railing Detector (m) 0.0 0.0 0.0 0.0 0.0 vetector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 vetector 1 Size(m) 2.0 2.0 0.6 2.0 0.6 vetector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex vetector 1 Extend (s) 0.0 0.0 0.0 0.0 0.0 vetector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 vetector 2 Position(m) 9.4 9.4 9.4 9.4 9.4 vetector 2 Size(m) 0.6 0.6 0.6 0.6 0.6 0.6 vetector 2 Size(m) 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Number of Detectors	1	1	2		1	2
eading Detector (m) 2.0 2.0 10.0 2.0 10.0 railing Detector (m) 0.0 0.0 0.0 0.0 0.0 betector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 betector 1 Size(m) 2.0 2.0 0.6 2.0 0.6 betector 1 Size(m) 2.0 2.0 0.6 2.0 0.6 betector 1 Channel	Detector Template	Left	Right	Thru		Left	Thru
Initialing Detector (m) Initiality Initiality <thinitiality< th=""> Initiality</thinitiality<>	Leading Detector (m)	2.0	2.0	10.0		2.0	10.0
Items 2 Detector 1 Position(m) 0.0 0	Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m) 2.0 2.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 2.0 2.0 0.6 2.0 0.6 Detector 1 Type CI+Ex	Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Type CI+Ex	Detector 1 Sizo(m)	0.0	2.0	0.0		0.0	0.0
Detector 1 rype CI+EX	Detector 1 June		2.0			2.0	
Detector 1 Channel Detector 1 Extend (s) 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0 0.0 Detector 1 Delay (s) 0.0 0.0 0.0 0.0 Detector 2 Position(m) 9.4 9.4 Detector 2 Size(m) 0.6 0.6 Detector 2 Size(m) 0.6 0.6 Detector 2 Channel 0.0 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 0.0 urn Type Perm Perm NA Prot NA rotected Phases 2 1 6 6 6 ermitted Phases 8 8 2 1 6 mitch Phase 5.0 5.0 10.0 5.0 10.0 linimum Initial (s) 50.9% 50.9% 34.1% 15.0% 49.1% laximum Green (s) 61.1 61.1 41.4 41 23 23 23	Detector 1 Type	UI+EX	UI+EX	UI+EX		UI+EX	UI+EX
vetector 1 Extend (s) 0.0	Detector 1 Channel			0.0			<u> </u>
Detector 1 Queue (s) 0.0	Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s) 0.0	Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Petector 2 Position(m) 9.4 9.4 Petector 2 Size(m) 0.6 0.6 Petector 2 Type CI+Ex CI+Ex Petector 2 Channel 0.0 0.0 Petector 2 Extend (s) 0.0 0.0 um Type Perm Perm NA Protector Phases 2 1 6 remeted Phases 8 8 2 1 6 remeted Phases 8 8 2 1 6 remeted Phases 8 8 2 1 6 writch Phase 5.0 5.0 10.0 5.0 10.0 linimum Initial (s) 5.0 5.0 10.0 58.9 0tal Split (s) 61.1 61.1 40.9 18.0 58.9 0tal Split (%) 50.9% 34.1% 15.0% 49.1% laximum Green (s) 54.0 54.0 34.9 12.0 52.9 610 52.9 610 52.9 23 23 23 23 <td< td=""><td>Detector 1 Delay (s)</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td><td>0.0</td><td>0.0</td></td<>	Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Size(m) 0.6 0.6 Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 vetector 2 Extend (s) 0.0 0.0 um Type Perm Perm NA rotected Phases 2 1 6 vermitted Phases 8 8 2 1 6 vermitted Phase 5.0 5.0 10.0 5.0 10.0 linimum Initial (s) 5.0 5.0 10.0 58.9 0tal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (%) 50.9% 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.0 3.7 3.7 3.7	Detector 2 Position(m)			9.4			9.4
Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 um Type Perm Perm NA Protected Phases 2 1 6 ermitted Phases 8 8 2 1 6 ermitted Phases 8 8 2 1 6 witch Phase 11.0 5.0 10.0 5.0 10.0 linimum Initial (s) 5.0 5.0 10.0 58.9 58.9 otal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (%) 50.9% 34.1% 15.0% 49.1% laximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.0 3.7 3.7 3.7	Detector 2 Size(m)			0.6			0.6
Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 urn Type Perm Perm NA Protected Phases 2 1 6 remitted Phases 8 8 2 1 6 remitted Phases 8 8 2 1 6 witch Phase 5.0 5.0 10.0 5.0 10.0 linimum Initial (s) 5.0 5.0 10.0 5.0 10.0 linimum Split (s) 61.1 61.1 34.0 11.0 34.0 otal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (%) 50.9% 34.1% 15.0% 49.1% laximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.0 3.7 3.7 3.7 3.7	Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Extend (s) 0.0 0.0 furn Type Perm Perm NA Prot NA trotected Phases 2 1 6 6 6 6 6 6 6 6 6 1 6 6 6 1 6 6 1 6 6 1 6 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 0 1 1 6 1 6 1 6 1 0 1	Detector 2 Channel						
Virn Type Perm Perm NA Prot NA vrotected Phases 2 1 6 'ermitted Phases 8 8 2 1 6 'ermitted Phases 8 8 2 1 6 'ermitted Phases 8 8 2 1 6 witch Phase 8 8 2 1 6 inimum Initial (s) 5.0 5.0 10.0 5.0 10.0 linimum Split (s) 61.1 61.1 34.0 11.0 34.0 otal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (s) 50.9% 34.1% 15.0% 49.1% laximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.0 3.7 3.7 3.7	Detector 2 Extend (s)			0.0			0.0
Interface Interface <thinterface< th=""> Interface <thinterface< th=""> Interface <thinterface< th=""> <thinterface< th=""> <thint< td=""><td>Turn Type</td><td>Perm</td><td>Perm</td><td>NΔ</td><td></td><td>Prot</td><td>NA</td></thint<></thinterface<></thinterface<></thinterface<></thinterface<>	Turn Type	Perm	Perm	NΔ		Prot	NA
Detected r hases 8 2 1 0 bernitted Phases 8 8 2 1 6 witch Phase 8 8 2 1 6 witch Phase 5.0 5.0 10.0 5.0 10.0 linimum Initial (s) 5.0 5.0 10.0 5.0 10.0 linimum Split (s) 61.1 61.1 34.0 11.0 34.0 otal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (%) 50.9% 34.1% 15.0% 49.1% laximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.0 3.7 3.7 3.7 3.7	Protected Phases		CIIII	<u>۲۱۲</u>		1	E C
eminuted Plases o o o Detector Phase 8 8 2 1 6 witch Phase 5.0 5.0 10.0 5.0 10.0 linimum Initial (s) 5.0 5.0 10.0 5.0 10.0 tinimum Split (s) 61.1 61.1 34.0 11.0 34.0 otal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (%) 50.9% 34.1% 15.0% 49.1% laximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.0 3.7 3.7 3.7	Dermitted Desce	0	0	2		I	0
betwick Phase b b b wintch Phase 5 6 2 1 6 wintch Phase 5 5.0 10.0 5.0 10.0 linimum Initial (s) 5.0 5.0 10.0 5.0 10.0 tinimum Split (s) 61.1 61.1 34.0 11.0 34.0 otal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (%) 50.9% 34.1% 15.0% 49.1% laximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.7 3.7 3.7 3.7	Petrotor Dhage	ð	Ŏ	0		4	<u>^</u>
Writch Phase 5.0 5.0 10.0 5.0 10.0 linimum Initial (s) 5.0 5.0 10.0 5.0 10.0 linimum Split (s) 61.1 61.1 34.0 11.0 34.0 otal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (%) 50.9% 34.1% 15.0% 49.1% laximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.7 3.7 3.7 3.7	Detector Phase	8	8	2		1	6
Innum Initial (s) 5.0 5.0 10.0 5.0 10.0 Inimum Split (s) 61.1 61.1 34.0 11.0 34.0 otal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (%) 50.9% 50.9% 34.1% 15.0% 49.1% laximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.7 3.7 3.7	Switch Phase			,			
Inimum Split (s) 61.1 61.1 34.0 11.0 34.0 otal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (%) 50.9% 50.9% 34.1% 15.0% 49.1% laximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.0 3.7 3.7 3.7 Il-Red Time (s) 41 41 23 23 23	Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0
otal Split (s) 61.1 61.1 40.9 18.0 58.9 otal Split (%) 50.9% 50.9% 34.1% 15.0% 49.1% taximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.0 3.7 3.7 3.7 Il-Red Time (s) 41 41 23 23 23	Minimum Split (s)	61.1	61.1	34.0		11.0	34.0
total Split (%) 50.9% 50.9% 34.1% 15.0% 49.1% faximum Green (s) 54.0 54.0 34.9 12.0 52.9 ellow Time (s) 3.0 3.0 3.7 3.7 3.7 Il-Red Time (s) 4.1 4.1 2.3 2.3 2.3	Total Split (s)	61.1	61.1	40.9		18.0	58.9
Maximum Green (s) 54.0 54.0 34.9 12.0 52.9 fellow Time (s) 3.0 3.0 3.7 3.7 3.7 Il-Red Time (s) 4.1 4.1 2.3 2.3 2.3	Total Split (%)	50.9%	50.9%	34.1%		15.0%	49.1%
fellow Time (s) 3.0 3.0 3.7 3.7 3.7 II-Red Time (s) 41 41 23 23 23	Maximum Green (s)	54.0	54.0	34.9		12.0	52.9
II-Red Time (s) 41 41 23 23 23	Yellow Time (s)	3.0	3.0	3.7		3.7	3.7
	All-Red Time (s)	4.1	4.1	2.3		2.3	2.3

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Synchro 10 Report

5: Greenbank & Future Jockvale PM Peak

	4	•	1	1	1	+
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.1	7.1	6.0		6.0	6.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	47.0	47.0	21.0			21.0
Pedestrian Calls (#/hr)	18	18	5			5
Act Effct Green (s)	34.6	34.6	62.4		10.1	76.0
Actuated q/C Ratio	0.29	0.29	0.52		0.08	0.63
v/c Ratio	0.01	0.10	0.34		0.55	0.47
Control Delay	18.3	5.8	27.1		74.4	20.9
Queue Delav	0.0	0.0	0.0		0.0	0.0
Total Delay	18.3	5.8	27.1		74.4	20.9
LOS	В	A	С		Е	С
Approach Delay	6.6		27.1			24.7
Approach LOS	A		C			C
Queue Length 50th (m)	0.4	0.0	66.3		15.8	102.2
Queue Length 95th (m)	2.3	7.0	87.4		37.0	108.5
Internal Link Dist (m)	279.9		168.6			261.7
Turn Bay Length (m)	50.0				50.0	
Base Capacity (vph)	740	679	1742		167	2124
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	Ő		0	0
Storage Can Reductn	0	0	0		0	0
Reduced v/c Ratio	0.00	0.07	0.34		0.46	0 47
Intersection Summany	0.00	0.01	0.01		0.10	0.11
	Other					
Cycle Longth: 120	Other					
Actuated Cycle Length: 120						
Offect: 118 (08%) Deferenced to	o phaso 2·NPT a	nd 6.CDT	Start of Groo	'n		
Notural Cycle: 110	o priase z.mor a	IIIU 0.3D1,	Start of Gree	11		
Control Type: Actuated Coording	atad					
Maximum v/a Datia: 0.55	aleu					
Interpretion Signal Delay 25.0				Int	oro option 1	00.0
Intersection Signal Delay. 25.0	74 00/					05.0
Intersection Capacity Utilization	/ 1.8%			IC.	U Level of a	Service C
Analysis Period (min) 15						
Splits and Dhasas: 5: Creanby	onk 9 Euturo los	lavolo				
Spiils and Phases. 5. Greenba		Kvale				



7: Street B & Future Jockvale PM Peak

	≯	-	-	•	1	1
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑.		M	
Traffic Volume (veh/h)	1	11	23	5	10	1
Future Volume (Veh/h)	1	11	23	5	10	1
Sian Control		Free	Free	-	Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (yph)	1	12	25	5	11	1
Pedestrians		12	20	5	25	i.
Lano Width (m)					20	
Walking Speed (m/s)					1.0	
Percent Plackage					1.2	
					2	
Right turn flare (ven)		Maria	News			
iviedian type		None	None			
Median storage veh)			00.4			
Upstream signal (m)			294			
pX, platoon unblocked						
vC, conflicting volume	55				66	52
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	55				66	52
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1518				919	994
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	13	30	12			
Volume Left	1	0	11			
Volume Right	0	5	1			
cSH	1518	1700	924			
Volume to Capacity	0.00	0.02	0.01			
Queue Length 95th (m)	0.0	0.0	0.3			
Control Delay (s)	0.6	0.0	8.9			
Lane LOS	A	0.0	A			
Approach Delay (s)	0.6	0.0	8.9			
Approach LOS	0.0	0.0	A			
Interportion Cummon						
		_	0.4	_	_	
Average Delay			2.1			
Intersection Capacity Utilization			13.3%	ICI	J Level of S	Service
Analysis Period (min)			15			

3: Greenbank & Street B AM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	î.		5	î.		5	A 1.		N	≜1 ⊾	
Traffic Volume (vph)	50	2	7	21	10	62	2	765	4	13	393	10
Future Volume (vph)	50	2	7	21	10	62	2	765	4	13	393	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	50.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			50.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98	0.97		0.98	0.97		0.98	1.00		0.99	1.00	
Frt		0.880			0.871			0.999			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1676	1512	0	1676	1493	0	1676	3349	0	1676	3335	0
Flt Permitted	0.706			0.751			0.950			0.950		
Satd. Flow (perm)	1225	1512	0	1301	1493	0	1647	3349	0	1660	3335	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			67						3	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		293.6			139.9			285.7			205.1	
Travel Time (s)		26.4			12.6			17.1			12.3	
Confl. Peds. (#/hr)	21		21	21		21	15		15	15		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	2	8	23	11	67	2	832	4	14	427	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	10	0	23	78	0	2	836	0	14	438	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
I wo way Left Turn Lane	4.07	4.07	4.07	4.07	4.07	4 07	4.07	4.07	4 07	4.07	4.07	4.07
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/n)	25	0	15	25	0	15	25	0	15	25	0	15
Number of Detectors	1	Z		1	Z		1-4	Z		1	Z	
Detector Template	Len			Len			Len	10.0		Len		
Leading Detector (III)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)							Z.U			CLIEX		
Detector 1 Channel	CI+EX											
Detector 1 Extend (c)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	9.0		0.0	9.0		0.0	9.4		0.0	9.0	
Detector 2 Size(m)		0.6			0.6			0.4			0.6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		OIL			OFLX			OILX			OFLX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4	•		8	, , , , , , , , , , , , , , , , , , ,		Ŭ	-		•	Ŭ	
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase				Ť			-	_			•	
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	47.2	47.2		47.2	47.2		11.0	34.0		11.0	34.0	
Total Split (s)	49.0	49.0		49.0	49.0		13.0	58.0		13.0	58.0	
Total Split (%)	40.8%	40.8%		40.8%	40.8%		10.8%	48.3%		10.8%	48.3%	
Maximum Green (s)	42.8	42.8		42.8	42.8		7.0	52.0		7.0	52.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.3	2.3	

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Synchro 10 Report

3: Greenbank & Street B AM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	34.0	34.0		34.0	34.0			21.0			21.0	
Pedestrian Calls (#/hr)	14	14		14	14			5			5	
Act Effct Green (s)	22.5	22.5		22.5	22.5		5.8	84.2		6.6	87.3	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.05	0.70		0.06	0.73	
v/c Ratio	0.23	0.03		0.09	0.23		0.03	0.36		0.15	0.18	
Control Delay	38.4	16.7		33.8	10.6		81.5	3.8		57.2	9.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.4	16.7		33.8	10.6		81.5	3.8		57.2	9.9	
LOS	D	В		С	В		F	А		E	Α	
Approach Delay		35.0			15.9			4.0			11.4	
Approach LOS	(0.0	C			В			A			В	
Queue Length 50th (m)	13.0	0.5		5.4	2.6		0.5	8.8		3.4	9.8	
Queue Length 95th (m)	19.2	4.3		10.0	12.8		m2.1	19.2		10.4	46.9	
Internal Link Dist (m)	50.0	269.6		50.0	115.9		50.0	261.7		50.0	181.1	
Turn Bay Length (m)	50.0	F 4 4		50.0	-7-		50.0	0050		50.0	0405	
Base Capacity (vpn)	436	544		464	5/5		97	2350		101	2425	
Starvation Cap Reductin	0	0		0	0		0	0		0	0	
Spillback Cap Reductin	0	0		0	0		0	0		0	0	
Storage Cap Reductin	0 10	0 02		0.05	0 14		0 00	0.26		0 14	0 19	
Reduced V/C Ratio	0.12	0.02		0.05	0.14		0.02	0.30		0.14	0.18	
	Other											
Cycle Length: 120	Outer											
Actuated Cycle Length: 120												
Offset: 5 (4%) Referenced to phase	se 2·NRT and 6	SSBT Start	of Green									
Natural Cycle: 95		5.001, Otart										
Control Type: Actuated-Coordinate	ed											
Maximum v/c Ratio: 0.36												
Intersection Signal Delay: 8.5				Inte	ersection LC	S: A						
Intersection Capacity Utilization 55	5.5%			ICI	J Level of S	ervice B						
Analysis Period (min) 15				-								
m Volume for 95th percentile que	eue is metered	by upstream	n signal.									
Splits and Phases: 3: Greenban	nk & Street B											
							*					
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13 s 58 s						49	s					
)					. ₹	Ø8					

5: Greenbank & Future Jockvale AM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	5	۴.		× 1	۵.		X	≜1 ⊾		X	≜1 ⊾	
Traffic Volume (vph)	44	0	5	7	1	84	1	643	2	25	387	9
Future Volume (vph)	44	0	5	7	1	84	1	643	2	25	387	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	50.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			50.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor				0.99	0.97			1.00		0.99		
Frt		0.850			0.852						0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd Flow (prot)	1676	1500	0	1676	1462	0	1676	3352	0	1676	3343	0
Flt Permitted	0 697		•	0 754		•	0.950	0001	•	0.950		•
Satd Flow (perm)	1230	1500	0	1312	1462	0	1676	3352	0	1656	3343	0
Right Turn on Red	1200	1000	Yes	1012	1102	Yes	1010	0002	Yes	1000	0010	Yes
Satd Flow (RTOR)		318			91						2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		307.2			303.9			192.6			285.7	
Travel Time (s)		27.6			27.4			11.6			17.1	
Confl Peds (#/br)		21.0		21	21.7	21		11.0	15	15	17.1	
Confl. Bikes (#/hr)				21		5			5	10		
Poak Hour Easter	0.02	0 02	0.02	0 02	0.02	0.02	0 02	0.02	0.02	0.02	0.02	0.02
Adi Elow (yph)	0.92	0.92	0.92	0.9Z	0.52	0.92	0.52	600	0.52	0.92	10.92	0.92
Sharad Lana Traffia (%)	40	0	J	0	1	31	1	099	2	21	421	10
	10	5	0	0	02	0	1	701	٥	97	121	0
Eater Blocked Interpettion	40	- J No	U No	0 No	92	No	No	701 No	No	Zi	431 No	U No
Enter Blocked Intersection	INU	INU	Diaht	INU	INU	Diaht	INO Loff	INU	Diaht	INO Loff	INU	Diaht
Lane Alignment	Leit	Leit	Right	Leit	Leit	Right	Leit	Leit	Right	Leit	Leit	Right
link Offeet(m)		3.0			3.0			3.0			3.0	
Crosswalk Width(m)		0.0			0.0			0.0			0.0	
		4.0			4.0			4.0			4.0	
Two way Leit Turri Larie	1.07	1.07	1.07	1 07	1.07	1.07	1 07	1.07	1.07	1 07	1 07	1 07
Turning Crood (k/h)	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Number of Detectors	20	0	15	25	0	IJ	20	0	15	20	0	IJ
Number of Detectors	l off	Z		l off	Z		l off	Z		l off	Z	
Leading Detector (m)	Leil	10.0		Leit	10.0		Leit	10.0		Leit	10.0	
Trailing Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Detector 1 Desition(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0 CL: Ex	0.0									0.0	
Detector 1 Channel	CI+EX	UI+EX		UI+EX	UI+EX		UI+EX	UI+EX		UI+EX	UI+EX	
Detector 1 Channel	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector I Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		CI+EX			CI+EX			CI+EX			CI+EX	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	Dama	0.0		D	0.0		Dest	0.0		Deel	0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4		•	8		5	2		1	6	
Permitted Phases	4			8	0		_	0			0	
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase	40.0	10.0						10.0			10.0	
Minimum Initial (s)	10.0	10.0		5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	61.1	61.1		61.1	61.1		11.0	34.0		11.0	34.0	
Total Split (s)	61.1	61.1		61.1	61.1		11.0	47.9		11.0	47.9	
Total Split (%)	50.9%	50.9%		50.9%	50.9%		9.2%	39.9%		9.2%	39.9%	
Maximum Green (s)	54.0	54.0		54.0	54.0		5.0	41.9		5.0	41.9	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	4.1	4.1		4.1	4.1		2.3	2.3		2.3	2.3	

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Synchro 10 Report

5: Greenbank & Future Jockvale AM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1		7.1	7.1		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	47.0	47.0		47.0	47.0			21.0			21.0	
Pedestrian Calls (#/hr)	14	14		14	14			5			5	
Act Effct Green (s)	27.6	27.6		27.6	27.6		5.3	72.2		5.8	77.1	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.04	0.60		0.05	0.64	
v/c Ratio	0.17	0.01		0.03	0.23		0.01	0.35		0.34	0.20	
Control Delay	31.1	0.0		23.6	5.4		56.0	18.8		80.2	10.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.1	0.0		23.6	5.4		56.0	18.8		80.2	10.1	
LOS	С	А		С	А		E	В		F	В	
Approach Delay		28.1			6.9			18.9			14.3	
Approach LOS		С			А			В			В	
Queue Length 50th (m)	11.6	0.0		1.9	0.2		0.3	31.5		6.4	9.3	
Queue Length 95th (m)	14.4	0.0		4.1	9.7		2.2	95.4		17.5	25.8	
Internal Link Dist (m)		283.2			279.9			168.6			261.7	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	553	849		590	707		73	2017		80	2148	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.01		0.01	0.13		0.01	0.35		0.34	0.20	
Intersection Summany												
Area Type:	Other											
Cycle Length: 120	outor											
Actuated Cycle Length: 120												
Offset: 118 (98%) Referenced t	o phase 2.NBT a	nd 6:SBT_S	Start of Green									
Natural Cycle: 110	o p											
Control Type: Actuated-Coordin	ated											
Maximum v/c Ratio: 0.35												
Intersection Signal Delay: 16.7				Int	ersection LOS	S' B						
Intersection Capacity Utilization	60.6%			IC	U Level of Se	rvice B						
Analysis Period (min) 15	00.070			10								
Splits and Phases: 5: Greenb	ank & Future Joc	kvale										
🕨 🙀 🕇 Ø2 (R)												

Ø1	Ø2 (R)	-04
11 s	47.9 s	61.1s
▲ Ø5	Ø6 (R)	↓ Ø8
11 s	47.9 s	61.1 s

7: Future Jockvale & Street B AM Peak

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (veh/h)	1	29	0	1	6	10	0	5	5	2	1	0
Future Volume (Veh/h)	1	29	0	1	6	10	0	5	5	2	1	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	32	0	1	7	11	0	5	5	2	1	0
Pedestrians											25	
Lane Width (m)											3.6	
Walking Speed (m/s)											1.2	
Percent Blockage											2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					294							
pX, platoon unblocked												
vC, conflicting volume	43			32			49	79	32	81	74	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	43			32			49	79	32	81	74	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	99	100	100	100	100
cM capacity (veh/h)	1533			1580			934	793	1042	865	799	1013
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	33	19	10	3								
Volume Left	1	1	0	2								
Volume Right	0	11	5	0								
cSH	1533	1580	901	842								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (m)	0.0	0.0	0.3	0.1								
Control Delay (s)	0.2	0.4	9.0	9.3								
Lane LOS	A	А	A	A								
Approach Delay (s)	0.2	0.4	9.0	9.3								
Approach LOS			А	А								
Intersection Summary												
Average Delay			2.0									
Intersection Capacity Utilization			13.3%	IC	U Level of Ser	vice			А			
Analysis Period (min)			15									

3: Greenbank & Street B PM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	5	ĥ		1	ĥ		1	A 16		1	4 1.	
Traffic Volume (vph)	24	10	3	10	5	30	5	607	20	61	1049	50
Future Volume (vph)	24	10	3	10	5	30	5	607	20	61	1049	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	50.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			50.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98	0.99		0.98	0.97		0.99	1.00		0.99	1.00	
Frt		0.968			0.870			0.995			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1676	1694	0	1676	1484	0	1676	3330	0	1676	3321	0
Flt Permitted	0.732			0.748			0.950			0.950		
Satd. Flow (perm)	1263	1694	0	1289	1484	0	1666	3330	0	1656	3321	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			33			3			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		293.6			139.9			285.7			205.1	
Travel Time (s)		26.4			12.6			17.1			12.3	
Confl. Peds. (#/hr)	27		27	27		27	15		15	15		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	11	3	11	5	33	5	660	22	66	1140	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	14	0	11	38	0	5	682	0	66	1194	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6	Ē		3.6			3.6	•		3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	_	0.0		_	0.0		_	0.0		_	0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	47.2	47.2		47.2	47.2		11.0	34.0		11.0	34.0	
Total Split (s)	47.2	47.2		47.2	47.2		11.0	55.8		17.0	61.8	
Total Split (%)	39.3%	39.3%		39.3%	39.3%		9.2%	46.5%		14.2%	51.5%	
Maximum Green (s)	41.0	41.0		41.0	41.0		5.0	49.8		11.0	55.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.3	2.3	

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Synchro 10 Report

3: Greenbank & Street B PM Peak

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Lane Group	EBL	EBT	EBR W	BL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	No	ne	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	34.0	34.0	3	4.0	34.0			21.0			21.0	
Pedestrian Calls (#/hr)	18	18		18	18			5			5	
Act Effct Green (s)	22.4	22.4	2	2.4	22.4		5.4	76.9		9.3	87.6	
Actuated g/C Ratio	0.19	0.19	0	.19	0.19		0.04	0.64		0.08	0.73	
v/c Ratio	0.11	0.04	0	.05	0.13		0.07	0.32		0.51	0.49	
Control Delay	34.5	26.1	3	1.3	11.9		78.6	2.3		66.3	13.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.5	26.1	3	1.3	11.9		78.6	2.3		66.3	13.3	
LOS	С	С		С	В		E	А		E	В	
Approach Delay		31.5			16.2			2.9			16.1	
Approach LOS		С			В			А			В	
Queue Length 50th (m)	6.2	2.6		2.6	1.2		1.2	3.4		15.9	35.2	
Queue Length 95th (m)	11.1	6.7		6.2	8.7		m3.7	7.3		30.9	155.1	
Internal Link Dist (m)		269.6			115.9			261.7			181.1	
Turn Bay Length (m)	50.0		5	0.0			50.0			50.0		
Base Capacity (vph)	431	580	4	40	528		74	2135		153	2426	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.02	0	.03	0.07		0.07	0.32		0.43	0.49	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 6 (5%), Referenced to pha	se 2:NBT and 6	6:SBT, Start	of Green									
Natural Cycle: 95												
Control Type: Actuated-Coordinat	ed											
Maximum v/c Ratio: 0.51												
Intersection Signal Delay: 11.9				Inte	ersection LO	S: B						
Intersection Capacity Utilization 7	5.4%			ICU	J Level of Se	rvice D						
Analysis Period (min) 15												
m Volume for 95th percentile qu	eue is metered	by upstrear	n signal.									
Splits and Phases: 3: Greenbar	nk & Street B											
🖌 🎍 🕇 🖉	2 (R)						404					
17 s 55.8 s							47.2 s					

Ø1	Ø2 (R)	- b Ø4
17 s	55.8 s	47.2 s
▲ ø5	🖡 📭 (R)	₩ Ø8
11 s	61.8 s	47.2 s

5: Greenbank & Future Jockvale PM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1.		٦ ۲	1.		N	≜1 ⊾		5	41	
Traffic Volume (vph)	21	2	2	5	1	61	5	550	8	99	920	43
Future Volume (vph)	21	2	2	5	1	61	5	550	8	99	920	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	50.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			50.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98	0.98		0.98	0.97			1.00		0.99		
Frt		0.925			0.852			0.998			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1676	1608	0	1676	1456	0	1676	3343	0	1676	3329	0
Flt Permitted	0.713			0.755			0.950			0.950		
Satd. Flow (perm)	1238	1608	0	1308	1456	0	1676	3343	0	1653	3329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			66			1			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		303.8			303.9			192.6			285.7	
Travel Time (s)		27.3			27.4			11.6			17.1	
Confl. Peds. (#/hr)	27		27	27		27			15	15		
Confl. Bikes (#/hr)						5			5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	2	2	5	1	66	5	598	9	108	1000	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	4	0	5	67	0	5	607	0	108	1047	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (k/h)	25		15	25		15	25	-	15	25		15
Number of Detectors	1	- 2		1	- 2		1	- 2		1	- 2	
Detector I emplate	Left	I hru		Left	l hru		Left	l hru		Left	l hru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	CI+EX	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+EX	
Detector 1 Channel		0.0		0.0	0.0		0.0	• •		0.0	0.0	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector I Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.0			0.0			0.0			0.0	
Detector 2 Type		CI+EX			CI+EX			CI+EX			CI+EX	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Delector 2 Extend (S)	Dorm	0.0		Dorm	0.0		Drot	0.0		Drot	0.0	
Protected Decos	Feim	INA A		Feilii	0		FIOL	1N/A 0		1	INA 6	
Protected Phases	4	4		0	0		C	2		I	0	
Permilled Phases	4	4		0	0		5	C		1	6	
Switch Phase	4	4		0	0		J	2		I	O	
Switch Phase	10.0	10.0		ΕO	E 0		ΕO	10.0		ΕO	10.0	
Minimum Calit (s)	10.0	10.0 F0.4		0.U	0.C		0.C	10.0		0.0	10.0	
Total Split (s)	09.1 64.4	09.1		01.1	01.1		11.0	27.0		01.0	34.U	
Total Split (S)	01.1 50.0%	01.1		01.1	01.1		0.20/	31.9		21.U 17.E0/	47.9	
Novimum Croon (a)	50.9%	50.9%		50.9%	50.9%		9.2%	01.0% 24.0		17.3%	39.9%	
Vollow Time (s)	04.U 2.0	04.U 2 0		04.U 2 0	04.U 2 0		0.U 2 7	31.9 27		10.0	41.9	
	3.0	5.0		3.0	5.0		3.7	3.7		3.7	3.7	
	4.1	4.1		4.1	4.1		2.3	Z.3		2.3	2.3	

Brad Byvelds, Novatech

Synchro 10 Report

5: Greenbank & Future Jockvale PM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1		7.1	7.1		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	5.0	5.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	47.0	47.0		47.0	47.0			21.0			21.0	
Pedestrian Calls (#/hr)	18	18		18	18			5			5	
Act Effct Green (s)	36.4	36.4		35.5	35.5		5.2	55.6		12.4	72.9	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.04	0.46		0.10	0.61	
v/c Ratio	0.06	0.01		0.01	0.14		0.07	0.39		0.63	0.52	
Control Delay	20.7	15.2		18.4	5.3		57.4	29.8		72.7	26.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.7	15.2		18.4	5.3		57.4	29.8		72.7	26.3	
LOS	С	В		В	А		Е	С		E	С	
Approach Delay		19.9			6.2			30.0			30.6	
Approach LOS		В			А			С			С	
Queue Length 50th (m)	3.2	0.3		0.7	0.1		1.2	69.3		21.0	108.9	
Queue Length 95th (m)	m7.3	m1.9		3.1	8.5		5.7	92.1		48.5	#133.0	
Internal Link Dist (m)		279.8			279.9			168.6			261.7	
Turn Bay Length (m)	50.0			50.0			50.0			50.0		
Base Capacity (vph)	557	724		588	691		72	1548		209	2024	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.01		0.01	0.10		0.07	0.39		0.52	0.52	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 118 (98%), Referenced to	phase 2:NBT a	nd 6:SBT, S	start of Greer	n								
Natural Cycle: 110												
Control Type: Actuated-Coordina	ted											
Maximum v/c Ratio: 0.63												
Intersection Signal Delay: 29.3				Int	ersection LC	S: C						
Intersection Capacity Utilization 7	7.7%			ICI	J Level of S	ervice D						
Analysis Period (min) 15												
# 95th percentile volume excee	ds capacity, que	eue may be	longer.									
Queue shown is maximum aft	er two cycles.		,									
m Volume for 95th percentile qu	ueue is metered	by upstrear	n signal.									
Splits and Phases: 5: Greenha	ink & Futuro, loc	hvalo										
		NVAIC										
•Ø1	Ø2 (R)					<u> </u>						
21 s 37	7.9 s				61.1s							
▲ Ø5 ↓ Ø6 (R)					₹ø8							

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7: Future Jockvale & Street B PM Peak

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (veh/h)	1	13	0	5	28	5	0	3	2	10	6	1
Future Volume (Veh/h)	1	13	0	5	28	5	0	3	2	10	6	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	14	0	5	30	5	0	3	2	11	7	1
Pedestrians											25	
Lane Width (m)											3.6	
Walking Speed (m/s)											1.2	
Percent Blockage											2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					294							
pX, platoon unblocked												
vC, conflicting volume	60			14			63	86	14	87	84	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	60			14			63	86	14	87	84	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	99	99	100
cM capacity (veh/h)	1511			1604			907	784	1066	859	787	988
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	15	40	5	19								
Volume Left	1	5	0	11								
Volume Right	0	5	2	1								
cSH	1511	1604	877	837								
Volume to Capacity	0.00	0.00	0.01	0.02								
Queue Length 95th (m)	0.0	0.1	0.1	0.6								
Control Delay (s)	0.5	0.9	9.1	9.4								
Lane LOS	А	А	А	A								
Approach Delay (s)	0.5	0.9	9.1	9.4								
Approach LOS			А	А								
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			17.8%	IC	U Level of Ser	vice			А			
Analysis Period (min)			15									

Appendix D

Relevant Excerpts from Greenbank Road Environmental Assessment Study





