31 October 2019

Our ref:2126457-84496 (Rev 4)
Your ref:

Hornsby Shire Council
Craig Clendinning
Project Manager Major Projects
296 Peats Ferry Road
Hornsby NSW 2077

Dear Craig

Hornsby Quarry Rehabilitation EIS
Traffic Impact Statement

1 Background

GHD was engaged by Hornsby Shire Council to undertake a Traffic Impact Assessment (TIA) to support a development application for approval of the Hornsby Quarry Rehabilitation project under Part 4 of the New South Wales (NSW) *Environmental Planning and Assessment Act 1979* (the EP&A Act). The Environmental Impact Statement (EIS) was prepared in accordance with the provisions of the EP&A Act.

1.1 Purpose of this letter

Following exhibition of the EIS, Hornsby Shire Council's Planning Assessor requested that the traffic impacts be reassessed with updated traffic count volumes obtained in August 2019 as well as consider the potential impacts associated with the delivery of construction materials with respect to traffic flows and intersection operations within proximity of the quarry.

In order to address the request from Hornsby Shire Council, GHD considered that a Traffic Impact Statement was required to provide an updated traffic assessment of the operation of the surrounding road network for the base case (year 2019) with comparison to the potential construction period scenario. The assessment would use SIDRA 8 intersection modelling to investigate the intersection operations associated with adjoining roads including Bridge Road, Peats Ferry Road, Jersey Street and George Street.

This Traffic Impact Statement therefore supplements the TIA report produced by GHD in 2018 to support the Hornsby Quarry Rehabilitation EIS (refer to *Hornsby Quarry Rehabilitation EIS: Traffic Impact Assessment, Novemeber 2018*).

This Traffic Impact Statement has been undertaken in accordance with Roads and Maritime Services *Guide to Traffic Generating Developments (2002).*

1.2 Assumptions/Limitations

This letter is subject to the following assumptions:

- Data collectedfrom traffic count surveys completed by Matrix on Thursday, 8 August 2019 is representative of tycpial current conditions.
- Traffic distribution estimates that are based on high level assumptions on light and heavy vehicle routes are representative of conditions during the proposed project.

This study has been limited by the following:

- The analysis is a desktop study with no site visits undertaken.
- The conditions of the surrounding network are based on information either supplied by the traffic surveys mentioned above and Google Maps / Google Street View.

1.3 Site Location

The project is located in the Hornsby Local Government Area (LGA), approximately 21 kilometres (km) north-west of the Sydney Central Business District. The site is currently accessible from Bridge Road (off the Peats Ferry Road).

The location of the site is shown in Figure 1.1.

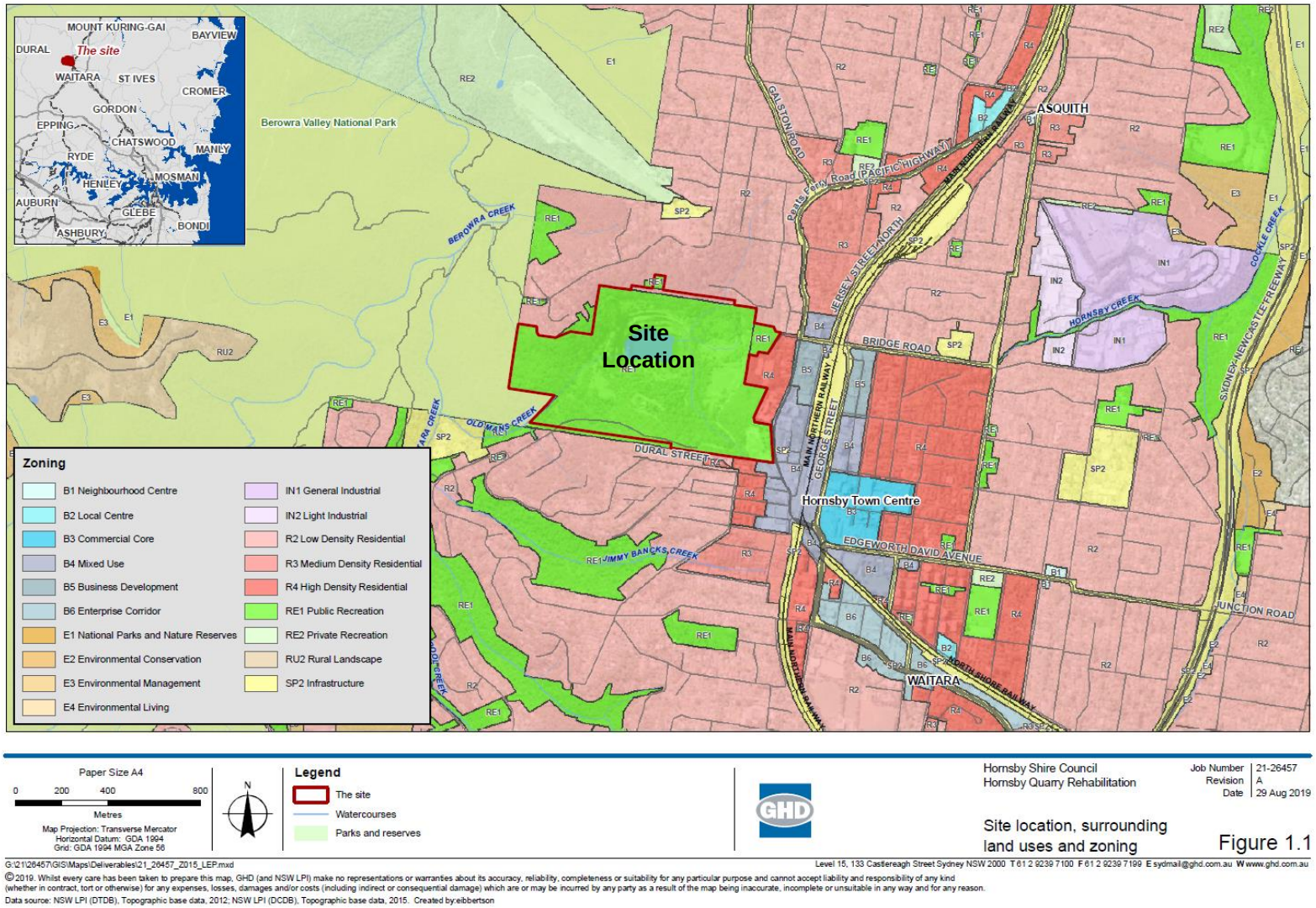

Figure 1.1 Site location and surrounding land uses

2 Existing conditions

2.1 Peats Ferry Road / Bridge Road intersection

Peats Ferry Road / Bridge Road intersection is a traffic signal controlled intersection, with the Peats Ferry Road forming the major approaches.

Peats Ferry Road forms part of the the local road network south of Bridge Street and state road network north of Bridge Street. Peats Ferry Road is oriented generally a north-south direction within the vicinity of the site and provides connection through the Hornsby sub Town Centre. Peats Ferry Road comprises of two lanes in each direction separated by double continuous lines.

Bridge Road, between Peats Ferry Road and George Street, is a state road which runs in an east-west direction. Bridge Road also provides direct access to the site, west of Peats Ferry Road, as a local road,and commercial developments along the length of the road to the east. Bridge Road comprises of two lanes in each direction separated by double continuous lines east of Bridge Road. West of Peats Ferry Road, it contains one lane in each direction.

2.2 Jersey Street (South) / Bridge Road intersection

The Jersey Street (South) / Bridge Road intersection is a three leg priority-controlled intersection, with Bridge Road forming the major approaches. A “Left Turn Only” restriction is in place for vehicles from Jersey Street (South) onto Bridge Road. A short gap in the central median permits right turn movement from Bridge Road (eastbound) into Jersey Road (South)

Jersey Street (South) is a local road which runs in a north-south direction and provides access to the commercial developments in the Hornsby Town Centre. Jersey Street (South) contains one lane in each direction.

2.3 Jersey Street (North) / Bridge Road intersection

The Jersey Street (North) / Bridge Road intersection is a traffic signal controlled intersection, with Bridge Road forming the major approaches. A “Left Turn Only” restriction is in place for vehicles from Jersey Street (North) onto Bridge Road.

Jersey Street (North) is a state road that runs in a north-south direction parallel to the railway line serving Hornsby Station. Jersey Street (North) comprises of two lanes in each direction separated by double continuous lines.

2.4 Railway Parade / Bridge Road / George Street intersection

The Railway Parade / Bridge Road / George Street intersection is a traffic signal controlled intersection, with Bridge Road and George Street forming the major approaches. A “Left Turn Only” restriction is in place for vehicles from George Street onto Bridge Road.

Railway Parade formerly a two-way road, has been converted to a one-way road northbound and forms the north approach to the intersection.

George Street is a state road within the Hornsby Town Centre. George Street comprises of two lanes in each direction separated by double continuous lines.

2.5 Existing road network performance

2.5.1 Traffic counts

Hornsby Shire Council engaged Matrix Traffic and Transport Data Pty Ltd to undertake intersection traffic turning counts at the following intersections on Thursday 8 August 2019:

- Peats Ferry Road / Bridge Road (signalised intersection)
- Jersey Street (South) / Bridge Road (priority controlled intersection)
- Jersey Street (North) / Bridge Road intersection (signalised intersection)
- Railway Parade / Bridge Road / George Street (signalised intersection)

The surveys were undertaken during the following time periods:

- Weekday AM peak (2 hours): 7 am to 9 am
- Weekday PM peak (2 hours): 4 pm to 6 pm

Analysis of the survey data identified the following peak hour periods:

- Weekday AM peak hour = 7:30 am to 8:30 am
- Weekday PM peak hour = 5:00 pm to 6:00 pm

2.5.2 Existing intersection performance

The performance of the existing road network is largely dependent on the operating performance of key intersections, which are critical capacity control points on the road network. SIDRA 8 intersection modelling software was used to assess the proposed peak hour operating performance of intersections operating as a network. The layout of the intersection network model, as produced in SIDRA 8 is shown in Figure 2.1.

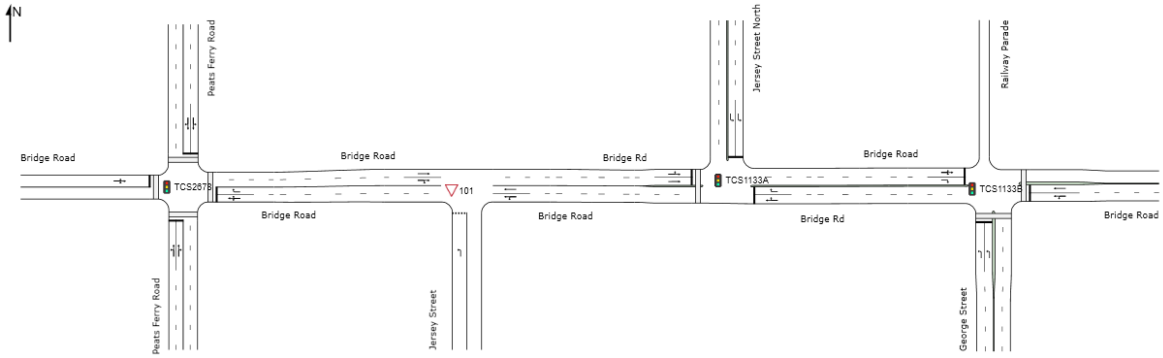

Figure 2.1 SIDRA 8 intersection network

The criteria for evaluating the operational performance of intersections is provided by the *Guide to Traffic Generating Developments (Roads and Maritime Services, 2002)* and reproduced in Table 2.1. The criteria for evaluating the operational performance of intersections is based on a qualitative measure (i.e. Level of Service), which is applied to each band of average vehicle delay.

Table 2.1 Level of service criteria for intersections

Level of service	Average delay per vehicle (secs/veh)	Traffic signals, roundabouts	Give way & stop signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & **spare capacity**
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require **other control modes**	At capacity, requires **other control mode**
F	> 70	Over Capacity Unstable operation	Over Capacity Unstable operation

Source: Guide to Traffic Generating Developments (Roads and Maritime 2002)

Notes:

- *The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay.*
- *The level of service for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.*
- *The degree of saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.*

The existing (base 2019) traffic models were developed using the AM and PM weekday peak hour surveyed data results. Existing traffic flows at key intersections were analysed using SIDRA 8 to obtain the current operating performance. A summary of the results is outlined in Table 2.2.

Table 2.2 Existing intersection performance

Intersection	AM Peak				PM Peak			
	Ave. Delay (s)	LOS	Control Type	Degree of Saturation	Ave. Delay (s)	LOS	Control Type	Degree of Saturation
Peats Ferry Road / Bridge Road	34	C	Signalised	0.952	28	C	Signalised	0.534
Jersey Street (South) / Bridge Road	7	A	Priority controlled	0.254	8	A	Priority controlled	0.130
Jersey Street (North) / Bridge Road	25	C	Signalised	0.829	25	C	Signalised	0.822

Intersection	AM Peak				PM Peak			
	Ave. Delay (s)	LOS	Control Type	Degree of Saturation	Ave. Delay (s)	LOS	Control Type	Degree of Saturation
Railway Parade / Bridge Road / George Street	13	B	Signalised	0.614	149	F	Signalised	1.484

Notes:

- *The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay.*
- *The level of service for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.*
- *The degree of saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.*
- *Average delay is given in seconds per vehicle.*
- *The LOS and Average Delay for priority controlled intersections is based on the worst movement*

The intersection modelling results summarised in Table 2.2 indicates that the intersection at Peats Ferry Road / Bridge Road (east of the site) currently operates with an acceptable Level of Service (i.e. better than Level of Service E) with spare capacity in both the weekday morning and evening peak periods.

The other signalised intersections to operate at Level of Service C during the AM and PM peak periods except for the Railway Parade / Bridge Road / George Street intersection during the PM peak period which is currently operating at Level of Service F. The Degree of Saturation exceeds the desirable 0.9 at 1.448. Queuing is evident along George Street (southern approach) and Bridge Road (eastern approach).

The priority controlled intersection at Jersey Street (South) / Bridge Road is operating with spare capacity as indicated by the Level of Service of each of the approaches (LOS A). The priority control intersection Level of Service is based on the worst delay movement. For both the AM and PM peak period, the worst delay movement is the right turn into Jersey Street (South) from Bridge Road.

3 Traffic Impact Assessment

3.1 Scope of assessment

This section summarises the traffic impact assessment of incorporating assumed construction traffic volumes within the existing road network. To assess the potential impacts on the surrounding road network, traffic modelling has been undertaken for the following intersections during the construction stage:

- Peats Ferry Road / Bridge Road
- Jersey Street (South) / Bridge Road
- Jersey Street (North) / Bridge Road
- Railway Parade / Bridge Road / George Street

3.2 Traffic generation - Construction

The expected traffic generation associated with the construction works at the Hornsby Quarry rehabilitation development is summarised in Table 3.1.

Table 3.1 Hornsby Quarry development construction traffic generation

Type	Daily		AM Peak Hour		PM Peak Hour	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
Light vehicle movements	30	30	30	0	0	30
Heavy vehicle movements	20	20	10	5	5	10
Total	**50**	**50**	**40**	**5**	**5**	**40**

During each of the peak hour periods per day, 30 light vehicle movements and 15 heavy vehicle movements are expected to occur for a worst case scenario assessment. It is noted that most of the movements associated with construction activity will occur outside the road network peak periods (i.e. prior to 7 am and before 5 pm.

The anticipated number of trucks required over the life cycle of the project is outlined in Table 3.2. It is estimated that the life cycle of the project will be 1.5 to 2 years.

Table 3.2 Number of trucks over project life cycle

Vehicle type	Delivery type	Number
Task Specific Trucks		
Agi-trucks	Concrete delivery from local plant	50
Flat bed trucks	Importing steel	50
Flat bed trucks	Geofabric rolls	5
Sub-total		*105*
Other Trucks		
Fuel trucks	Fuel	250
Trucks	Miscellaneous	250
Sub-total		*500*
TOTAL (trucks over project life cycle)		**605**

The expected number of project life cycle truck movements is outlined in Table 3.2. However, it is estimated that the majority of the “Task Specific Trucks” would be accessing the site in the span of the first 6 months of the project life cycle.

For a review assessment of the potential worst case daily traffic generation, it has been assumed that 70 percent of the total project life cycle truck movements for the “Task Specific Trucks” would occur within the 6 month timeframe with an even daily distribution for the project cycle “Other Trucks” movements. The estimated worst case breakdown of the number of trucks averaging each week and in turn per day is outlined in Table 3.3.

Table 3.3 Number of trucks – Daily Estimate

Vehicle type	Number
Task specific trucks	
Number of trucks accessing site in the first 6 months (70% of project cycle Task Specific Trucks)	74
Number of trucks accessing site per week	5
Estimated Worst case scenario adopt 2 trucks / day	*10*
Other trucks	
Number of fuel trucks accessing site over project life cycle	250
Number of miscellaneous trucks accessing site over project life cycle	250
Number of fuel trucks accessing site per week	5
Number of miscellaneous trucks accessing site per week	5
Worst case scenario adopt 1 fuel trucks / day	*1*
Estimated Worst case scenario adopt 2 miscellaneous trucks / day	*9*
TOTAL trucks per day	**20**

3.3 Trip distribution

The light vehicle traffic generation has been distributed and assigned to the external road network based on the assumed local locations of workers residency to align with the previous traffic impact assessment (refer to *GHD report Hornsby Quarry Rehabilitation EIS: Traffic Impact Assessment, November 2018*).

The heavy vehicle traffic generation by the proposed project has been distributed and assigned to the external road network based on the location of the nearby concrete batching plant (Able Concrete - approximately 1.5 km east of project site), and the routes of heavy vehicles during the NorthConnex project.

The traffic distribution to the surrounding road network is outlined in Table 3.4.

Table 3.4 Light and heavy vehicle trip distribution

Description	Light vehicles	Heavy vehicles
AM Peak		
Inbound		
Bridge Road *(Westbound from Railway Parade / Bridge Road / George Street intersection)*	0	10
Peats Ferry Road *(Southbound and into Bridge Road westbound)*	15	0
Peats Ferry Road *(Northbound and into Bridge Road westbound)*	15	0
Outbound		
Jersey Street North *(Northbound from Bridge Road eastbound)*	0	3
Bridge Road *(Eastbound)*	0	2
PM Peak		
Inbound		
Bridge Road *(Westbound from Railway Parade / Bridge Road / George Street intersection)*	0	5
Outbound		
Jersey Street North *(Northbound from Bridge Road eastbound)*	0	6
Bridge Road *(Eastbound)*	0	4
Peats Ferry Road *(Northbound from Peats Ferry Road / Bridge Road intersection)*	15	0
Peats Ferry Road *(Southbound from Peats Ferry Road / Bridge Road intersection)*	15	0

3.4 Intersection performance

A summary of the SIDRA modelling results for the 'construction' scenario is provided in Table 3.5. SIDRA outputs are provided in Appendix A.

Table 3.5 Construction phase intersection performance

Intersection	AM Peak				PM Peak			
	Ave. Delay (s)	LOS	Control Type	Degree of Saturation	Ave. Delay (s)	LOS	Control Type	Degree of Saturation
Peats Ferry Road / Bridge Road	52	D	Signalised	1.028	29	C	Signalised	0.606
Jersey Street (South) / Bridge Road	7	A	Priority controlled	0.255	8	A	Priority controlled	0.134
Jersey Street (North) / Bridge Road	27	C	Signalised	0.859	28	C	Signalised	0.837
Railway Parade / Bridge Road / George Street	13	B	Signalised	0.645	149	F	Signalised	1.503

The analysis undertaken for the construction period indicates that the intersections are anticipated to operate similarly to how they currently operate – the additional vehicles will have negligible impact.

4 Conclusions

This Traffic Impact Statement report has been prepared to address the request from Hornsby Shire Council's Planning Assessors, to outline potential traffic impacts associated with the proposed construction activity of the Hornsby Quarry development on the existing adjoining intersections.

It provides an assessment of the existing operation of the Peats Ferry Road / Bridge Road, Jersey Street (South) / Bridge Road, Jersey Street (North) / Bridge Road and Railway Parade / Bridge Road / George Street intersections for a baseline and an assessment of the construction phase of the Hornsby Quarry in order to identify intersection operational impacts to the adjoining road network around the Quarry.

SIDRA 8 intersection modelling has been undertaken for the network of intersections adjacent to the site. The modelling identified that the intersections perform with an acceptable Level of Service (i.e. better than Level of Service E) and spare capacity during the weekday AM and PM peak periods. The exception being the Railway Parade / Bridge Road / George Street intersection, which currently operates at Level of Service F in the PM peak period.

Additionally, the expected increase in construction traffic associated with the proposed Hornsby Quarry construction activity would have negligible impacts to the operation of the Peats Ferry Road / Bridge Road, Jersey Street (South) / Bridge Road, Jersey Street (North) / Bridge Road and Railway Parade / Bridge Road / George Street intersections compared to the existing scenario.

Sincerely
GHD

Michael Tran
Traffic and Transport Engineer
+61 2 9239 7356

Appendix A – SIDRA Results

MOVEMENT SUMMARY

Site: TCS2678 [2019_AM_Peats Ferry Road & Bridge Road] — **Network: N101 [2019_AM_BASE]**

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 101 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Peats Ferry Road														
1	L2	41	0.0	41	0.0	0.336	14.6	LOS B	5.3	39.7	0.51	0.49	0.51	37.2
2	T1	333	8.1	333	8.1	0.336	10.0	LOS B	5.3	39.7	0.51	0.49	0.51	42.1
3	R2	51	5.9	51	5.9	0.816	66.2	LOS E	2.1	15.6	0.95	1.07	1.64	17.9
Approach		425	7.1	425	7.1	0.816	17.2	LOS B	5.3	39.7	0.57	0.56	0.65	36.6
East: Bridge Road														
4	L2	71	2.8	71	2.8	0.613	49.7	LOS D	4.6	32.8	0.97	0.81	0.98	24.4
5	T1	12	0.0	12	0.0	0.613	45.1	LOS D	4.6	32.8	0.97	0.81	0.98	9.0
6	R2	239	1.7	239	1.7	0.613	45.3	LOS D	4.6	32.8	0.94	0.80	0.94	11.6
Approach		322	1.9	322	1.9	0.613	46.3	LOS D	4.6	32.8	0.95	0.80	0.95	15.3
North: Peats Ferry Road														
7	L2	874	0.3	874	0.3	0.952	52.9	LOS D	35.6	250.0	0.91	1.06	1.26	6.7
8	T1	673	4.5	673	4.5	0.612	13.9	LOS B	12.6	91.9	0.67	0.68	0.67	38.8
9	R2	12	0.0	12	0.0	0.612	18.4	LOS B	12.6	91.9	0.67	0.68	0.67	9.4
Approach		1559	2.1	1559	2.1	0.952	35.8	LOS D	35.6	250.0	0.81	0.89	1.00	20.2
West: Bridge Road														
10	L2	1	0.0	1	0.0	0.154	55.6	LOS E	0.5	3.4	0.98	0.68	0.98	8.7
11	T1	13	0.0	13	0.0	0.154	51.7	LOS D	0.5	3.4	0.98	0.68	0.98	4.2
12	R2	2	0.0	2	0.0	0.154	55.6	LOS E	0.5	3.4	0.98	0.68	0.98	21.7
Approach		16	0.0	16	0.0	0.154	52.4	LOS D	0.5	3.4	0.98	0.68	0.98	7.8
All Vehicles		2322	3.0	2322	3.0	0.952	34.0	LOS C	35.6	250.0	0.78	0.82	0.93	22.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2019_AM_Bridge Road & Jersey Street] — **Network: N101 [2019_AM_BASE]**

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Jersey Street														
1	L2	115	2.6	115	2.6	0.093	5.9	LOS A	0.1	1.1	0.16	0.55	0.16	50.0
Approach		115	2.6	115	2.6	0.093	5.9	LOS A	0.1	1.1	0.16	0.55	0.16	50.0
East: Bridge Road														
4	L2	72	1.4	72	1.4	0.076	2.4	LOS A	0.0	0.0	0.00	0.27	0.00	54.8
5	T1	218	1.8	218	1.8	0.076	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	48.8
Approach		290	1.7	290	1.7	0.076	0.6	NA	0.0	0.0	0.00	0.13	0.00	53.9
West: Bridge Road														
11	T1	844	0.6	844	0.6	0.254	0.2	LOS A	11.9	84.0	0.06	0.05	0.06	53.7
12	R2	81	1.2	81	1.2	0.254	6.8	LOS A	11.9	84.0	0.15	0.11	0.15	55.0
Approach		925	0.6	925	0.6	0.254	0.8	NA	11.9	84.0	0.07	0.05	0.07	54.2
All Vehicles		1330	1.1	1330	1.1	0.254	1.2	NA	11.9	84.0	0.06	0.11	0.06	53.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

MOVEMENT SUMMARY

Site: TCS1133A [2019_AM_Bridge Road & Jersey Street North] — **Network: N101 [2019_AM_BASE]**

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 101 seconds (Network User-Given Cycle Time)
Common Control Group: CCG1 [CCGName]

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Bridge Rd														
5	T1	287	1.7	287	1.7	0.263	4.4	LOS A	2.1	15.2	0.29	0.27	0.29	25.3
6	R2	299	4.7	299	4.7	0.263	9.0	LOS A	2.8	20.1	0.43	0.64	0.43	42.8
Approach		586	3.2	586	3.2	0.263	6.8	LOS A	2.8	20.1	0.36	0.46	0.36	39.6
North: Jersey Street North														
7	L2	614	3.1	614	3.1	0.420	21.3	LOS C	7.1	50.7	0.65	0.77	0.65	32.7
Approach		614	3.1	614	3.1	0.420	21.3	LOS C	7.1	50.7	0.65	0.77	0.65	32.7
West: Bridge Rd														
10	L2	9	0.0	9	0.0	0.829	46.1	LOS D	2.0	14.0	0.99	1.02	1.21	21.9
11	T1	857	0.6	857	0.6	0.829	39.2	LOS D	2.0	14.0	0.98	0.97	1.13	2.6
Approach		866	0.6	866	0.6	0.829	39.3	LOS D	2.0	14.0	0.98	0.97	1.13	3.0
All Vehicles		2066	2.1	2066	2.1	0.829	24.7	LOS C	7.1	50.7	0.71	0.77	0.77	20.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: TCS1133B [2019_AM_Bridge Road & Railway Parade & George Street] — **Network: N101 [2019_AM_BASE]**

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 101 seconds (Network User-Given Cycle Time)
Common Control Group: CCG1 [CCGName]

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: George Street														
1	L2	326	2.8	326	2.8	0.123	7.5	LOS A	1.4	9.8	0.30	0.63	0.30	19.3
Approach		326	2.8	326	2.8	0.123	7.5	LOS A	1.4	9.8	0.30	0.63	0.30	19.3
East: Bridge Road														
4	L2	43	14.0	43	14.0	0.614	52.5	LOS D	4.3	32.0	0.99	0.81	1.02	9.9
5	T1	263	3.8	263	3.8	0.614	46.2	LOS D	4.8	34.5	0.99	0.81	1.01	8.2
Approach		306	5.2	306	5.2	0.614	47.1	LOS D	4.8	34.5	0.99	0.81	1.01	8.5
West: Bridge Road														
10	L2	21	19.0	21	19.0	0.575	9.5	LOS A	6.5	45.9	0.52	0.59	0.52	34.0
11	T1	350	0.9	350	0.9	0.575	5.6	LOS A	6.5	45.9	0.52	0.59	0.52	35.1
12	R2	1080	1.7	1080	1.7	0.575	6.6	LOS A	6.5	45.9	0.32	0.63	0.32	26.7
Approach		1451	1.7	1451	1.7	0.575	6.4	LOS A	6.5	45.9	0.37	0.62	0.37	29.2
All Vehicles		2083	2.4	2083	2.4	0.614	12.5	LOS B	6.5	45.9	0.45	0.65	0.45	20.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: TCS2678 [2019_PM_Peats Ferry Road & Bridge Road] — **Network: N101 [2019_PM_BASE]**

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 114 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Peats Ferry Road														
1	L2	3	0.0	3	0.0	0.532	26.9	LOS C	11.2	79.9	0.75	0.67	0.75	30.3
2	T1	646	2.5	646	2.5	0.532	24.7	LOS C	11.2	79.9	0.77	0.69	0.77	32.7
3	R2	70	5.7	70	5.7	0.532	35.4	LOS D	6.6	47.9	0.84	0.75	0.84	26.8
Approach		719	2.8	719	2.8	0.532	25.7	LOS C	11.2	79.9	0.78	0.69	0.78	32.1
East: Bridge Road														
4	L2	70	0.0	66	0.0	0.534	39.2	LOS D	8.7	60.7	0.89	0.82	0.89	27.6
5	T1	4	0.0	4	0.0	0.534	34.6	LOS C	8.7	60.7	0.89	0.82	0.89	10.8
6	R2	569	0.2	538	0.2	0.534	39.2	LOS D	8.7	61.2	0.89	0.82	0.89	12.9
Approach		643	0.2	608[N1]	0.2	0.534	39.2	LOS D	8.7	61.2	0.89	0.82	0.89	15.1
North: Peats Ferry Road														
7	L2	385	0.3	385	0.3	0.418	19.7	LOS B	8.1	57.3	0.60	0.75	0.60	15.4
8	T1	421	2.6	421	2.6	0.418	21.2	LOS C	8.2	58.6	0.69	0.68	0.69	34.2
9	R2	1	0.0	1	0.0	0.418	26.5	LOS C	8.2	58.6	0.70	0.67	0.70	8.3
Approach		807	1.5	807	1.5	0.418	20.5	LOS C	8.2	58.6	0.65	0.71	0.65	29.1
West: Bridge Road														
10	L2	2	0.0	2	0.0	0.136	62.4	LOS E	0.5	3.4	0.98	0.68	0.98	7.7
11	T1	7	0.0	7	0.0	0.136	58.5	LOS E	0.5	3.4	0.98	0.68	0.98	3.7
12	R2	5	0.0	5	0.0	0.136	62.4	LOS E	0.5	3.4	0.98	0.68	0.98	20.0
Approach		14	0.0	14	0.0	0.136	60.4	LOS E	0.5	3.4	0.98	0.68	0.98	11.7
All Vehicles		2183	1.5	2148[N1]	1.5	0.534	27.8	LOS C	11.2	79.9	0.76	0.74	0.76	26.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 101 [2019_PM_Bridge Road & Jersey Street] — **Network: N101 [2019_PM_BASE]**

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Jersey Street														
1	L2	132	0.0	132	0.0	0.146	6.4	LOS A	0.2	1.6	0.31	0.57	0.31	49.2
Approach		132	0.0	132	0.0	0.146	6.4	LOS A	0.2	1.6	0.31	0.57	0.31	49.2
East: Bridge Road														
4	L2	75	2.7	69	2.6	0.170	2.4	LOS A	0.0	0.0	0.00	0.14	0.00	55.7
5	T1	508	0.2	468	0.2	0.170	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	52.1
Approach		583	0.5	538[N1]	0.5	0.170	0.3	NA	0.0	0.0	0.00	0.07	0.00	54.7
West: Bridge Road														
11	T1	446	0.2	446	0.2	0.130	0.3	LOS A	5.7	40.1	0.06	0.03	0.06	54.5
12	R2	25	16.0	25	16.0	0.130	7.9	LOS A	2.8	20.1	0.13	0.07	0.13	54.3
Approach		471	1.1	471	1.1	0.130	0.7	NA	5.7	40.1	0.06	0.03	0.06	54.5
All Vehicles		1186	0.7	1141[N1]	0.7	0.170	1.2	NA	5.7	40.1	0.06	0.11	0.06	52.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: TCS1133A [2019_PM_Bridge Road & Jersey Street North] — **Network: N101 [2019_PM_BASE]**

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 114 seconds (CCG User-Given Phase Times)
Common Control Group: CCG1 [CCGName]

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Bridge Rd														
5	T1	586	0.5	536	0.5	0.822	19.4	LOS B	7.1	50.0	0.92	0.86	0.95	9.4
6	R2	1069	0.8	978	0.8	0.822	23.6	LOS C	7.1	50.0	0.89	0.92	1.01	31.6
Approach		1655	0.7	1514[N1]	0.7	0.822	22.1	LOS C	7.1	50.0	0.90	0.90	0.99	27.1
North: Jersey Street North														
7	L2	344	0.6	344	0.6	0.271	26.2	LOS C	4.7	32.9	0.66	0.75	0.66	29.6
Approach		344	0.6	344	0.6	0.271	26.2	LOS C	4.7	32.9	0.66	0.75	0.66	29.6
West: Bridge Rd														
10	L2	19	0.0	19	0.0	0.419	47.6	LOS D	2.0	14.0	1.00	0.85	1.00	21.4
11	T1	422	0.2	422	0.2	0.419	35.6	LOS D	2.0	14.0	0.88	0.75	0.88	2.9
Approach		441	0.2	441	0.2	0.419	36.1	LOS D	2.0	14.0	0.88	0.75	0.88	4.4
All Vehicles		2440	0.6	2299[N1]	0.7	0.822	25.4	LOS C	7.1	50.0	0.86	0.85	0.92	23.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: TCS1133B [2019_PM_Bridge Road & Railway Parade & George Street] — **Network: N101 [2019_PM_BASE]**

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 114 seconds (CCG User-Given Phase Times)
Common Control Group: CCG1 [CCGName]

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: George Street														
1	L2	1061	0.6	1061	0.6	0.869	36.4	LOS D	18.6	130.9	0.85	0.94	1.03	5.4
Approach		1061	0.6	1061	0.6	0.869	36.4	LOS D	18.6	130.9	0.85	0.94	1.03	5.4
East: Bridge Road														
4	L2	66	1.5	66	1.5	1.484	494.0	LOS F	41.2	290.6	1.00	2.30	3.82	1.2
5	T1	590	0.8	590	0.8	1.484	490.1	LOS F	41.2	290.6	1.00	2.32	3.82	0.9
Approach		656	0.9	656	0.9	1.484	490.5	LOS F	41.2	290.6	1.00	2.32	3.82	0.9
West: Bridge Road														
10	L2	9	0.0	9	0.0	0.390	12.2	LOS B	3.9	27.6	0.61	0.64	0.61	32.4
11	T1	168	1.2	168	1.2	0.390	8.3	LOS A	3.9	27.6	0.61	0.64	0.61	30.0
12	R2	583	0.2	583	0.2	0.390	12.5	LOS B	6.8	47.8	0.61	0.71	0.61	19.0
Approach		760	0.4	760	0.4	0.390	11.6	LOS B	6.8	47.8	0.61	0.70	0.61	21.7
All Vehicles		2477	0.6	2477	0.6	1.484	149.1	LOS F	41.2	290.6	0.82	1.23	1.64	2.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: TCS2678 [2019_AM_Peats Ferry Road & Bridge Road - Construction]

Network: N101 [2019_AM_BASE - CONSTRUCTION]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 101 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Peats Ferry Road														
1	L2	56	0.0	56	0.0	0.349	15.6	LOS B	5.6	41.6	0.52	0.50	0.52	37.1
2	T1	333	8.1	333	8.1	0.349	10.0	LOS B	5.6	41.6	0.52	0.50	0.52	42.0
3	R2	51	5.9	51	5.9	0.824	68.0	LOS E	2.2	15.8	0.95	1.08	1.67	17.6
Approach		440	6.8	440	6.8	0.824	17.4	LOS B	5.6	41.6	0.57	0.57	0.65	36.4
East: Bridge Road														
4	L2	71	2.8	71	2.8	0.643	50.2	LOS D	4.7	34.9	0.96	0.81	0.99	24.3
5	T1	22	45.5	22	45.5	0.643	45.6	LOS D	4.7	34.9	0.96	0.81	0.99	9.0
6	R2	239	1.7	239	1.7	0.643	44.1	LOS D	4.7	34.9	0.93	0.80	0.95	11.8
Approach		332	4.8	332	4.8	0.643	45.5	LOS D	4.7	34.9	0.94	0.80	0.96	15.3
North: Peats Ferry Road														
7	L2	874	0.3	874	0.3	1.028	101.3	LOS F	51.1	358.8	1.00	1.25	1.75	3.7
8	T1	673	4.5	673	4.5	0.642	14.3	LOS B	13.3	96.9	0.69	0.70	0.69	38.4
9	R2	27	0.0	27	0.0	0.642	18.8	LOS B	13.3	96.9	0.69	0.70	0.69	9.3
Approach		1574	2.1	1574	2.1	1.028	62.7	LOS E	51.1	358.8	0.86	1.00	1.28	13.7
West: Bridge Road														
10	L2	1	0.0	1	0.0	0.278	57.7	LOS E	0.7	5.6	0.99	0.71	0.99	8.4
11	T1	18	27.8	18	27.8	0.278	53.7	LOS D	0.7	5.6	0.99	0.71	0.99	4.1
12	R2	2	0.0	2	0.0	0.278	57.7	LOS E	0.7	5.6	0.99	0.71	0.99	21.2
Approach		21	23.8	21	23.8	0.278	54.3	LOS D	0.7	5.6	0.99	0.71	0.99	6.8
All Vehicles		2367	3.5	2367	3.5	1.028	51.8	LOS D	51.1	358.8	0.82	0.89	1.11	17.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2019_AM_Bridge Road & Jersey Street - Construction]

Network: N101 [2019_AM_BASE - CONSTRUCTION]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Jersey Street														
1	L2	115	2.6	115	2.6	0.094	5.9	LOS A	0.2	1.1	0.17	0.55	0.17	49.9
Approach		115	2.6	115	2.6	0.094	5.9	LOS A	0.2	1.1	0.17	0.55	0.17	49.9
East: Bridge Road														
4	L2	72	1.4	72	1.4	0.080	2.4	LOS A	0.0	0.0	0.00	0.26	0.00	54.8
5	T1	228	6.1	228	6.1	0.080	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	48.6
Approach		300	5.0	300	5.0	0.080	0.6	NA	0.0	0.0	0.00	0.13	0.00	53.8
West: Bridge Road														
11	T1	844	0.6	844	0.6	0.255	0.2	LOS A	11.9	84.0	0.06	0.05	0.06	53.6
12	R2	81	1.2	81	1.2	0.255	6.9	LOS A	11.9	84.0	0.15	0.12	0.15	54.9
Approach		925	0.6	925	0.6	0.255	0.8	NA	11.9	84.0	0.07	0.05	0.07	54.1
All Vehicles		1340	1.8	1340	1.8	0.255	1.2	NA	11.9	84.0	0.06	0.11	0.06	52.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: TCS1133A [2019_AM_Bridge Road & Jersey Street North - Construction]

Network: N101 [2019_AM_BASE - CONSTRUCTION]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 101 seconds (Network User-Given Cycle Time)
Common Control Group: CCG1 [CCGName]

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Bridge Rd														
5	T1	297	5.1	297	5.1	0.271	4.3	LOS A	2.2	15.8	0.29	0.27	0.29	25.5
6	R2	299	4.7	299	4.7	0.271	9.4	LOS A	2.9	21.1	0.45	0.65	0.45	42.4
Approach		596	4.9	596	4.9	0.271	6.9	LOS A	2.9	21.1	0.37	0.46	0.37	39.2
North: Jersey Street North														
7	L2	614	3.1	614	3.1	0.447	22.2	LOS C	6.6	47.4	0.67	0.78	0.67	32.1
Approach		614	3.1	614	3.1	0.447	22.2	LOS C	6.6	47.4	0.67	0.78	0.67	32.1
West: Bridge Rd														
10	L2	12	25.0	12	25.0	0.859	48.5	LOS D	2.0	14.0	1.00	1.07	1.25	20.9
11	T1	859	0.8	859	0.8	0.859	43.1	LOS D	2.0	14.0	0.99	1.04	1.20	2.4
Approach		871	1.1	871	1.1	0.859	43.1	LOS D	2.0	14.0	1.00	1.04	1.20	2.8
All Vehicles		2081	2.8	2081	2.8	0.859	26.6	LOS C	6.6	47.4	0.72	0.80	0.81	19.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: TCS1133B [2019_AM_Bridge Road & Railway Parade & George Street - Construction]

Network: N101 [2019_AM_BASE - CONSTRUCTION]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 101 seconds (Network User-Given Cycle Time)
Common Control Group: CCG1 [CCGName]

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: George Street														
1	L2	326	2.8	326	2.8	0.123	7.5	LOS A	1.4	9.8	0.30	0.63	0.30	19.3
Approach		326	2.8	326	2.8	0.123	7.5	LOS A	1.4	9.8	0.30	0.63	0.30	19.3
East: Bridge Road														
4	L2	43	14.0	43	14.0	0.645	53.0	LOS D	4.5	34.2	1.00	0.83	1.05	9.8
5	T1	273	7.3	273	7.3	0.645	46.8	LOS D	5.0	36.9	1.00	0.83	1.04	8.1
Approach		316	8.2	316	8.2	0.645	47.6	LOS D	5.0	36.9	1.00	0.83	1.04	8.4
West: Bridge Road														
10	L2	21	19.0	21	19.0	0.613	9.7	LOS A	6.0	42.5	0.37	0.48	0.37	33.9
11	T1	352	1.4	352	1.4	0.613	5.8	LOS A	6.0	42.5	0.37	0.48	0.37	34.9
12	R2	1080	1.7	1080	1.7	0.613	6.5	LOS A	6.0	42.5	0.29	0.61	0.29	26.7
Approach		1453	1.9	1453	1.9	0.613	6.4	LOS A	6.0	42.5	0.31	0.58	0.31	29.1
All Vehicles		2095	3.0	2095	3.0	0.645	12.8	LOS B	6.0	42.5	0.41	0.62	0.42	20.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: TCS2678 [2019_PM_Peats Ferry Road & Bridge Road - Construction]

Network: N101 [2019_PM_BASE - CONSTRUCTION]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 114 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Peats Ferry Road														
1	L2	3	0.0	3	0.0	0.532	27.9	LOS C	11.2	79.9	0.75	0.67	0.75	30.3
2	T1	646	2.5	646	2.5	0.532	24.7	LOS C	11.2	79.9	0.77	0.69	0.77	32.7
3	R2	70	5.7	70	5.7	0.532	35.4	LOS D	6.6	47.9	0.84	0.75	0.84	26.8
Approach		719	2.8	719	2.8	0.532	25.7	LOS C	11.2	79.9	0.78	0.69	0.78	32.1
East: Bridge Road														
4	L2	70	0.0	66	0.0	0.532	39.2	LOS D	8.6	60.5	0.89	0.82	0.89	27.7
5	T1	4	0.0	4	0.0	0.532	34.6	LOS C	8.6	60.5	0.89	0.82	0.89	10.8
6	R2	569	0.2	537	0.2	0.532	39.2	LOS D	8.7	61.0	0.89	0.82	0.89	12.9
Approach		643	0.2	608 N1	0.1	0.532	39.1	LOS D	8.7	61.0	0.89	0.82	0.89	15.1
North: Peats Ferry Road														
7	L2	385	0.3	385	0.3	0.418	19.7	LOS B	8.1	57.3	0.60	0.75	0.60	15.4
8	T1	421	2.6	421	2.6	0.418	21.2	LOS C	8.2	58.6	0.69	0.68	0.69	34.2
9	R2	1	0.0	1	0.0	0.418	26.5	LOS C	8.2	58.6	0.70	0.67	0.70	8.3
Approach		807	1.5	807	1.5	0.418	20.5	LOS C	8.2	58.6	0.65	0.71	0.65	29.1
West: Bridge Road														
10	L2	17	0.0	17	0.0	0.606	66.1	LOS E	2.0	16.0	1.00	0.79	1.09	7.2
11	T1	17	58.8	17	58.8	0.606	62.2	LOS E	2.0	16.0	1.00	0.79	1.09	3.4
12	R2	20	0.0	20	0.0	0.606	66.2	LOS E	2.0	16.0	1.00	0.79	1.09	19.0
Approach		54	18.5	54	18.5	0.606	64.9	LOS E	2.0	16.0	1.00	0.79	1.09	11.6
All Vehicles		2223	1.9	2186 N1	2.0	0.606	28.5	LOS C	11.2	79.9	0.77	0.74	0.77	25.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 101 [2019_PM_Bridge Road & Jersey Street - Construction]

Network: N101 [2019_PM_BASE - CONSTRUCTION]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Jersey Street														
1	L2	132	0.0	132	0.0	0.146	6.5	LOS A	0.2	1.6	0.31	0.57	0.31	49.2
Approach		132	0.0	132	0.0	0.146	6.5	LOS A	0.2	1.6	0.31	0.57	0.31	49.2
East: Bridge Road														
4	L2	75	2.7	69	2.5	0.171	2.4	LOS A	0.0	0.0	0.00	0.13	0.00	55.7
5	T1	513	1.2	471	1.1	0.171	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	52.1
Approach		588	1.4	540 N1	1.3	0.171	0.3	NA	0.0	0.0	0.00	0.07	0.00	54.7
West: Bridge Road														
11	T1	456	2.4	456	2.4	0.134	0.3	LOS A	5.8	41.1	0.06	0.03	0.06	54.6
12	R2	25	16.0	25	16.0	0.134	8.0	LOS A	3.5	25.1	0.13	0.07	0.13	54.3
Approach		481	3.1	481	3.1	0.134	0.7	NA	5.8	41.1	0.06	0.03	0.06	54.5
All Vehicles		1201	1.9	1153 N1	2.0	0.171	1.2	NA	5.8	41.1	0.06	0.11	0.06	52.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: TCS1133A [2019_PM_Bridge Road & Jersey Street North - Construction]

Network: N101 [2019_PM_BASE - CONSTRUCTION]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 114 seconds (CCG User-Given Phase Times)
Common Control Group: CCG1 [CCGName]

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Bridge Rd														
5	T1	591	1.4	538	1.3	0.837	21.2	LOS C	7.1	50.0	0.93	0.89	0.99	8.8
6	R2	1069	0.8	974	0.8	0.837	26.8	LOS C	7.1	50.0	0.91	0.94	1.07	29.9
Approach		1660	1.0	1512 N1	1.0	0.837	24.8	LOS C	7.1	50.0	0.92	0.92	1.04	25.5
North: Jersey Street North														
7	L2	344	0.6	344	0.6	0.276	26.2	LOS C	4.8	33.6	0.66	0.75	0.66	29.6
Approach		344	0.6	344	0.6	0.276	26.2	LOS C	4.8	33.6	0.66	0.75	0.66	29.6
West: Bridge Rd														
10	L2	25	24.0	25	24.0	0.463	49.6	LOS D	1.9	14.0	1.00	0.85	1.00	20.6
11	T1	426	1.2	426	1.2	0.463	36.7	LOS D	2.0	14.0	0.88	0.75	0.88	2.8
Approach		451	2.4	451	2.4	0.463	37.4	LOS D	2.0	14.0	0.89	0.76	0.89	4.6
All Vehicles		2455	1.2	2307 N1	1.3	0.837	27.5	LOS C	7.1	50.0	0.88	0.87	0.95	22.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: TCS1133B [2019_PM_Bridge Road & Railway Parade & George Street - Construction]

Network: N101 [2019_PM_BASE - CONSTRUCTION]

New Site
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 114 seconds (CCG User-Given Phase Times)
Common Control Group: CCG1 [CCGName]

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: George Street														
1	L2	1061	0.6	1061	0.6	0.869	36.4	LOS D	18.6	130.9	0.85	0.94	1.03	5.4
Approach		1061	0.6	1061	0.6	0.869	36.4	LOS D	18.6	130.9	0.85	0.94	1.03	5.4
East: Bridge Road														
4	L2	66	1.5	66	1.5	1.503	510.7	LOS F	42.2	299.6	1.00	2.33	3.88	1.1
5	T1	595	1.7	595	1.7	1.503	506.8	LOS F	42.2	299.6	1.00	2.35	3.89	0.8
Approach		661	1.7	661	1.7	1.503	507.2	LOS F	42.2	299.6	1.00	2.35	3.89	0.9
West: Bridge Road														
10	L2	9	0.0	9	0.0	0.393	12.3	LOS B	3.6	25.3	0.55	0.61	0.55	32.3
11	T1	172	3.5	172	3.5	0.393	8.4	LOS A	3.6	25.3	0.55	0.61	0.55	29.9
12	R2	583	0.2	583	0.2	0.393	12.8	LOS B	7.0	49.4	0.60	0.71	0.60	18.8
Approach		764	0.9	764	0.9	0.393	11.8	LOS B	7.0	49.4	0.59	0.68	0.59	21.5
All Vehicles		2486	1.0	2486	1.0	1.503	154.0	LOS F	42.2	299.6	0.81	1.24	1.66	2.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.