MCDONALD'S AUSTRALIA LIMITED

TRAFFIC REPORT FOR PROPOSED MODIFICATIONS TO BEXLEY McDONALD'S, 543 FOREST ROAD

DECEMBER 2024

COLSTON BUDD ROGERS & KAFES PTY LTD
ACN 002 334 296
Level 18 Tower A
Zenith Centre
821 Pacific Highway
CHATSWOOD NSW 2067

Email: cbrk@cbrk.com.au

REF: 12499/2

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Colston Budd Rogers and Kafes Pty Ltd has been commissioned by McDonald's Australia Limited to prepare a report examining the traffic and parking implications of the proposed modifications to Bexley McDonald's. The subject site is located on the northwestern corner of the intersection of Forest Road and Highworth Street , Bexley as shown in Figure 1.

1.2 The proposed modifications would allow expansion of McDonald's into the residential lot located west and adjacent to the site. The existing building would remain in its current location. Therefore, the expansion of the site would allow for:

- provision of a dual drive through;
- increased parking provision (from 28 to 38 spaces);
- relocation of the access further away from the intersection of Highworth Avenue and Forest Road; and
- removal of a number of conflict areas within the car park.

1.3 This report assesses the traffic and parking implications of the proposed modifications through the following chapters:

- Chapter 2 - describing the existing conditions; and
- Chapter 3 - assessing the traffic effects of the proposed modifications.

2. EXISTING CONDITIONS

Site Location

2.1 The subject site is located on the southwestern corner of the intersection of Forest Road and Highworth Street, Bexley, as shown in Figure 1. The existing McDonald's has access off Highworth Avenue, providing 28 on-site parking spaces with a single drive through lane. The layout of the car park is poor with dead end parking aisles and conflicts between the drive through entry and car parking located in the southeast corner of the site. Surrounding land use is generally residential with a vehicle repairer located on the western boundary of the site.

Road Network

2.2 The road network in the vicinity of the site includes Highworth Avenue and Forest Road. Forest Road is located south of the site and is classified road, connecting the Princes Highway at Arncliff and King Georges Road at Hurstville. Adjacent to the site, Forest Road is a four lane undivided road with clearway conditions in the peak direction of travel during peak periods. The intersection of Forest Road and Highworth Avenue is traffic signal controlled (with Queen Victoria Street off set to the east of Highworth Avenue). The right turn into Highworth Avenue from Forest Road is banned.

2.3 Highworth Avenue is located east of the site and connects Forest Road with Stoney Creek Road to the north. It is a collector road providing one traffic lane with kerb side parking clear of intersections. At the traffic signal controlled intersection with Forest Road, Highworth Avenue provides two southbound lanes (separate right turn bay some 25 metres long and shared through/left turn lane). Observations

noted that the kerbside lane (shared left turn/through lane) can queue back past the McDonald's site access on occasions in the weekday morning and afternoon peak periods, with the queue generally clearing each cycle of the traffic signals.

2.4 The existing McDonald's access on Highworth Avenue is located some 25 metres north of Forest Road. It provides for all turn movements via separate entry and exit lanes.

Traffic Flows

2.5 Traffic generated by the proposed McDonald's will have its greatest effects during weekday morning and afternoon peak periods, when it combines with other traffic on the surrounding road network. In order to gauge traffic conditions, counts were undertaken on Wednesday (6 November 2024) and Thursday (8 November 2024) during the weekday afternoon and morning peak periods at the following intersections:

- Forest Road/Highworth Avenue (traffic signals); and
- Highworth Avenue/McDonald's access (unsignalized t-intersection).

2.6 The results of the surveys are shown in Figures 2 and 3 and summarised in Table 2.1.

Table 2.1:	**Existing Weekday Morning and Afternoon Two Way Peak Hour Traffic Flows (vph)**	
Location	**Weekday Morning**	**Weekday Afternoon**
Forest Road – east of Queen Victoria Street – west of Highworth Avenue	 1090 1403	 1264 1388
Queen Victoria Street – south of Forest Road	 932	 784
Highworth Avenue – north of Forest Road – north of McDonald's Access	 491 471	 404 391
McDonald's Access – west of Highworth Avenue	 124	 125

2.7 Examination of Table 2.1 reveals that:

- Forest Road carried some 1,100 to 1,400 vehicles per hour (two-way) during the weekday morning and afternoon peak hours;
- Queen Victoria Street carried some 800 to 950 vehicles per hour (two way) during the weekday morning and afternoon peak hours;
- Highworth Avenue carried some 400 to 500 vehicles per hour (two-way) during the weekday morning and afternoon peak hours peak periods; and
- McDonald's generated some 125 vehicles per hour (two-way) during the weekday morning and afternoon peak hours.

Intersection Operation

2.8 The capacity of the road network is largely determined by the capacity of its intersections to cater for peak period traffic flows. The surveyed intersections have been analysed using the SIDRA 9 Network program for the traffic flows shown in Figures 2 and 3.

2.9 SIDRA simulates the operations of intersections to provide a number of performance measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle. Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS):

- For traffic signals, the average delay per vehicle in seconds is calculated as delay/ (all vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity
29 to 42	=	"C"	Satisfactory with spare capacity
43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays. Roundabouts require other control mode.
>70	=	"F"	Unsatisfactory and requires additional capacity

- For give way and stop signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:

0 to 14	=	“A”	Good
15 to 28	=	“B”	Acceptable delays and spare capacity
29 to 42	=	“C”	Satisfactory but accident study required
43 to 56	=	“D”	Near capacity and accident study required
57 to 70	=	“E”	At capacity and requires other control mode
>70	=	"F"	Unsatisfactory and requires other control mode

2.10 It should be noted that for roundabouts, give way and stop signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.

2.11 The analysis found that:

- the signalised intersection of Forest Road, Highworth Avenue and Queen Victoria Street is operating with average delays of less than 45 seconds per vehicle during weekday morning and afternoon peak hours. This represents level of service C/D, a satisfactory level of service; and

- the unsignalized t-intersection of Highworth Avenue and the McDonald's access is operating with average delays for the highest delayed movement (right turn out of McDonald’s) of less than 15 seconds per vehicle during weekday afternoon and Saturday midday peak hours. This represents level of service A/B, a good level of service.

2.12 SIDRA movements summaries are provided in Attachment A.

Public Transport

2.13 The site is well serviced by public transport. A number of bus services operate along Forest Road past the site with bus stops located on Forest Road adjacent to the site. Pedestrian access to the bus stop on the opposite side of Forest Road is provided at the traffic signals. These services operate regularly, 7 days a week, with more frequent services during commuter peak periods.

3. IMPLICATIONS OF PROPOSED MODIFICATIONS TO MCDONALD'S

3.1 The proposed modifications would allow expansion of McDonald's into the residential lot located west and adjacent to the site. The existing building would remain in its current location. Thus the expansion of the site would allow for:

- parking on the western and southern parts of the site, separate to the drive through;
- additional parking (from 28 spaces to 38 spaces);
- provision of two wait bays;
- accessible parking that complies with 2890.6-2009;
- provision of dual drive through lanes;
- relocation of the access on Highworth Avenue further north; and
- increase queuing capacity in the drive through from 9 to 17 cars.

3.2 McDonald's has advised that the provision of additional parking and a dual drive through is likely to increase turnover by some 15%.

3.3 This chapter assesses the implications of the proposed McDonald's through the following sections:

- public transport;
- active transport;
- parking provision;
- access, servicing and internal layout;
- traffic effects;
- response to Council matters; and
- summary.

Public Transport

3.4 As previously discussed in Chapter 2, the site is well serviced by buses with bus stops located on Forest Road adjacent to the site. Pedestrian access across Forest Road is provided at the traffic signal controlled intersection.

Active Transport

3.5 The site is located adjacent to a well-established footpath network throughout the adjacent area including footpaths along both sides of Forest Road and Highworth Avenue. Signalized pedestrian crossings are provided on all legs at the intersection of Forest Road, Highworth Avenue and Queen Victoria Street. The existing pedestrian access from Highworth Avenue will be maintained.

Parking Provision

3.6 The proposed modifications increase parking provision from 28 spaces to 38 spaces with no change in seating numbers. The new dual lane drive-through facility increases queuing capacity of the drive through with the following changes:

- dual order points (currently a single order point);
- queuing for 17 vehicles from the order point (currently 9 vehicles);
- queuing for 6 vehicles from the order point (currently 3 vehicles);
- provision of 2 wait bays (currently no wait bay).

3.7 The new dual drive through facility satisfies TfNSW Guideline requirements for a minimum queuing capacity of 10 to 12 cars from the order point and queuing for

four cars from the order point. In addition, a bicycle rack for four bicycles and two motorcycle spaces are provided.

Access, Servicing and Internal Layout

3.8 The proposed modifications relocate the vehicular access on Highworth Avenue to the west (some 30 metres from Forest Road). The new driveway will be some 12 metres wide, with separate entry and exit lanes, and be designed in accordance with the Australian Standard for Parking Facilities (Part 1: Off-street car parking and Part 2: Off-street commercial vehicle facilities), AS 2890.1:2004 and AS 2890.2:2018,

3.9 Within the site, the drive through and parking areas will be separate, resulting in improved circulation and removal of conflict points in the car park. New parking spaces will be typically 2.6 metres wide by 5.4 metres long. The disabled space will be 2.4 metres wide, with a 2.4 metre wide adjacent area for wheelchairs. The two-way circulation aisles will be a minimum of 6.6 metres wide. These dimensions satisfy the requirements of the Australian Standard for Parking Facilities (Part 1: Off-street car parking and Part 6: Off-street parking for people with disabilities), AS 2890.1:2004 and AS 2890.6:2009.

3.10 The modifications to the drive through will be designed in accordance with AS2890.1:2004 with the circulation lanes to be a minimum 3.0 metres wide and accommodate vehicle swept paths.

3.11 Service vehicles will include garbage collection and deliveries. Currently deliveries occur twice a week between 8.00am and 10.00am on Monday and Thursday by a 16 pallet truck. The truck enters and departs the site in a forward direction, parking

in the southern part of the car park, with the goods taken into the building by pallets. This is undertaken under traffic management by two team members, with the southern section of the car park closed for customer use. These arrangements will continue with the proposed modifications, noting that when the truck is unloading, parking provision will increase from 7 to 17 spaces and be separate to the drive through.

3.12 Vehicle swept paths are provided in Attachment B.

3.13 Following DA approval, access arrangements, parking layouts, servicing and vehicle swept paths should be reviewed and confirmed for compliance certification.

Traffic Effects

3.14 Traffic generated by the modified McDonald's will have its greatest effects during weekday morning and afternoon peak periods when it combines with other traffic on the surrounding road network.

3.15 McDonald's has advised that the provision of additional parking and a dual drive through is likely to increase turnover by some 15%. Appling this rate, the modified McDonald's would generate some 145 vehicles per hour (two way) in the weekday morning and afternoon peak hours (increase of some 15 to 30 vehicles per hour (two way).

3.16 For the purposes of assessing the traffic effects of the proposed modifications, a conservative future traffic generation has been undertaken adopting a TfNSW Guidelines generation of 180 vehicles per hour (two way) in the weekday morning

and afternoon peak hours (increase of some 55 vehicles per hour, two way) with 50% passing trade.

3.17 Existing peak hour flows plus the additional development traffic are shown in Figures 2 and 3 and summarised in Table 3.1, taking into account 50% passing trade.

Table 3.1:	**Existing + Additional Development Weekday Morning and Afternoon Two Way Peak Hour Traffic Flows (vph)**			
Location	**Weekday Morning**		**Weekday Afternoon**	
	Existing	**+ Dev**	**Existing**	**+ Dev**
Forest Road – east of Queen Victoria Street – west of Highworth Avenue	 1090 1403	 +1 +4	 1264 1388	 +1 +4
Queen Victoria Street – south of Forest Road	 932	 +12	 784	 +10
Highworth Avenue – north of Forest Road – north of McDonald's Access	 491 471	 +17 +10	 404 391	 +15 +10
McDonald's Access – west of Highworth Avenue	 124	 +55	 125	 +55

3.18 Examination of Table 3.1 reveals that:

- traffic flows on Forest Road would increase by less than 10 vehicles per hour (two way) during the weekday morning and afternoon peak hours;
- traffic flows on Queen Victoria Street would increase by some 10 to 15 vehicles per hour (two way) during the weekday morning and afternoon peak hours;
- traffic flows on Highworth Avenue would increase by some 15 to 20 vehicles per hour (two way) during the weekday morning and afternoon peak hours; and

- traffic flows on the McDonald's access would increase by some 55 vehicles per hour (two way) during the weekday morning and afternoon peak hours.

3.19 The intersections assessed in Chapter 2 and the site access have been reanalysed with SIDRA for the additional development traffic flows shown in Figures 2 and 3. The analysis found that:

- the signalised intersection of Forest Road, Highworth Avenue and Queen Victoria Street would continue to operate with average delays of less than 45 seconds per vehicle during weekday morning and afternoon peak hours. This represents level of service C/D, a satisfactory level of service; and

- the unsignalized t-intersection of Highworth Avenue and the McDonald's access would continue to operate with average delays for the highest delayed movement (right turn out of McDonalds's) of less than 15 seconds per vehicle during the weekday morning and afternoon peak hours. This represents level of service A/B, a good level of service.

3.20 As would be expected with the minor increase in traffic flows, the above analysis shows that the adjacent road network could accommodate the additional traffic associated with the proposed modifications to McDonald's. The additional traffic resulted in average queues in the kerb side lane of the Highworth Avenue approach to the traffic signal controlled intersection with Forest Road increasing by less than one vehicle noting that the McDonald's access has moved some five metre further north (away of from Forest Road).

Response to Council Matters

3.21 Council in a letter dated 2 October 2024, requested that an updated traffic report be prepared in accordance with:

- RMS's Guide to Traffic Generating Developments 2002 (noting that TfNSW's Guide to Transport Impact Assessment 2024 does not apply to TIAs commenced before 4 November 2024), and
- Section 3.5.2 of the Bayside Development Control Plan 2022.

3.22 This traffic report has been prepared in accordance with the RMS's Guide to Traffic Generating Developments 2002 and Controls C1 to C5 of DCP 2002:

- Control C1 - The proposed modifications are a Schedule 3 development set out in SEPP (Transport and Infrastructure) 2021;
- Controls C2 and C3 - traffic generation based on RMS guidelines, additional traffic distributed to the adjoining road network, traffic modelling (using SIDRA) to assess the traffic effects and reviewing appropriate parking provision, queuing requirements and car park design to comply with RMS Guidelines and Australian Standards;
- Control C4 – swept paths are provided in Attachment B; and
- Control C5 – the increase in additional traffic is minor, cumulative traffic assessment not required.

Summary

3.23 In summary, the main points relating to the traffic effects of the proposed modifications to McDonald's Bexley are as follows:

i) the proposed modifications would allow for:

- provision of a dual drive through with increased queuing capacity;
- increased parking provision (from 28 to 38 spaces);
- relocation of the access further away from the intersection of Highworth Avenue and Forest Road; and
- removal of a number of conflict areas within the car park.

ii) the proposed parking provision is appropriate;

iii) new vehicular access and parking areas will be provided in accordance with AS 2890.1:2004 and AS 2890.6-2009;

iv) following DA approval, access arrangements, parking layouts, servicing and vehicle swept paths should be reviewed and confirmed for compliance certification;

v) the proposed modifications would result in minor increases in traffic on the adjacent road network in the weekday morning and afternoon peak hours;

vi) the road network will be able to cater for the minor increase in traffic from the proposed modifications to McDonald's; and

vii) the Council traffic matters have been addressed.

12499 - Bexley McDonald's

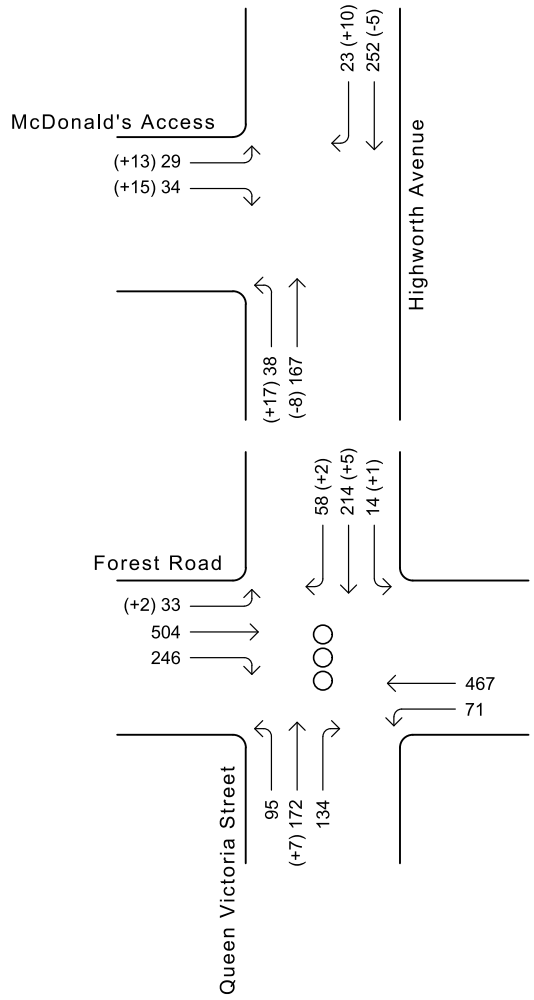
Location Plan

Colston Budd Rogers & Kafes Pty Ltd

DRAWN BY CBRK Pty Ltd_mc Ref: 12499 11.12.2024

Figure 1

12499 - Bexley McDonald's



LEGEND

100 - Existing Peak Hour Traffic Flows
(+10) - Additional Development Traffic
- Traffic Signals

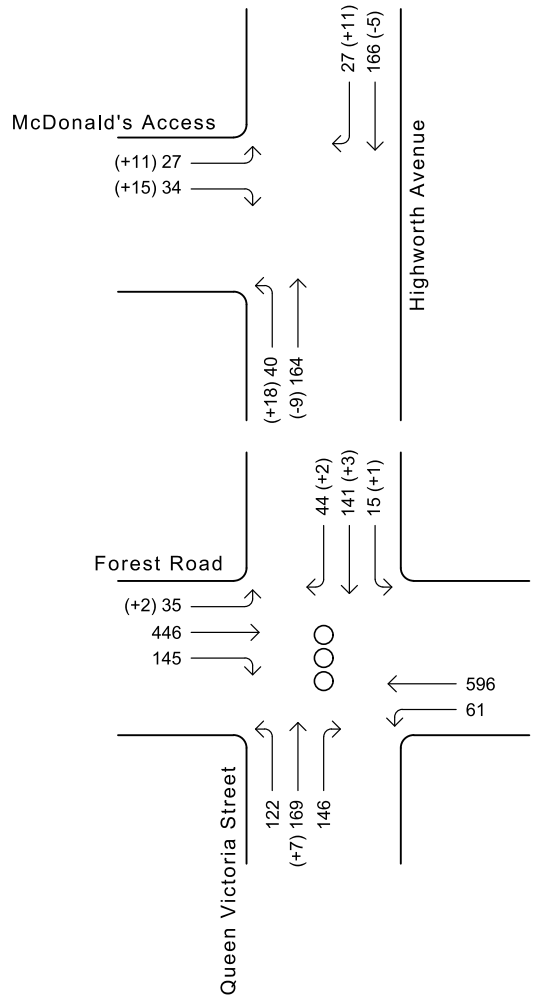
Existing weekday morning peak hour traffic flows

Colston Budd Rogers & Kafes Pty Ltd

DRAWN BY CBRK Pty Ltd_mc Ref: 12499 11.12.2024

Figure 2

12499 - Bexley McDonald's



LEGEND

100 - Existing Peak Hour Traffic Flows
(+10) - Additional Development Traffic
- Traffic Signals

Existing weekday afteroon peak hour traffic flows

Colston Budd Rogers & Kafes Pty Ltd

DRAWN BY CBRK Pty Ltd_mc Ref: 12499 11.12.2024

Figure 3

ATTACHMENT A

SIDRA MOVEMENT SUMMARIES

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: 12499 Bexley McDonald's

Template: Movement Summaries

Site: 101 [AM EX - Forest Road - Highworth Avenue - Queen Victoria Street (Site Folder: AM Existing)]

Network: 1 [AM Existing (Network Folder: Existing)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B*, C, D, E*
Output Phase Sequence: A, C, D, E*
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Queen Victoria Street														
1	L2	100	3.2	100	3.2	0.795	55.4	LOS D	9.9	70.6	0.96	0.91	1.09	31.9
2	T1	181	2.3	181	2.3	* 0.795	49.8	LOS D	9.9	70.6	0.96	0.91	1.09	22.5
3	R2	141	3.7	141	3.7	0.468	55.2	LOS D	4.7	33.7	0.95	0.80	0.95	31.0
Approach		422	3.0	422	3.0	0.795	52.9	LOS D	9.9	70.6	0.96	0.87	1.05	28.3
East: Forest Road														
4	L2	75	5.6	75	5.6	0.799	61.2	LOS E	10.5	75.2	1.00	0.93	1.13	31.3
5	T1	492	2.1	492	2.1	* 0.799	54.8	LOS D	10.5	75.2	1.00	0.93	1.13	31.5
Approach		566	2.6	566	2.6	0.799	55.7	LOS D	10.5	75.2	1.00	0.93	1.13	31.4
North: Highworth Avenue														
7	L2	15	0.0	15	0.0	0.780	59.1	LOS E	3.3	23.0	1.00	0.91	1.12	21.4
8	T1	225	0.0	225	0.0	* 0.780	56.3	LOS D	3.3	23.0	1.00	0.91	1.12	21.9
9	R2	61	1.7	61	1.7	0.307	57.5	LOS E	2.1	14.8	0.96	0.75	0.96	21.0
Approach		301	0.3	301	0.3	0.780	56.7	LOS E	3.3	23.0	0.99	0.88	1.09	21.7
West: Forest Road														
10	L2	35	3.0	35	3.0	0.691	28.1	LOS B	10.9	79.0	0.73	0.66	0.73	34.5
11	T1	531	3.8	531	3.8	0.691	23.5	LOS B	10.9	79.0	0.78	0.70	0.78	42.7
12	R2	259	1.6	259	1.6	* 0.691	32.8	LOS C	9.2	65.6	0.94	0.84	0.94	39.0
Approach		824	3.1	824	3.1	0.691	26.6	LOS B	10.9	79.0	0.83	0.74	0.83	41.2
All Vehicles		2114	2.5	2114	2.5	0.799	43.9	LOS D	10.9	79.0	0.92	0.84	0.99	32.9

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 101 [AM EX - Highworth Avenue - McDonald's Access (Site Folder: AM Existing)]

Network: 1 [AM Existing (Network Folder: Existing)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Highworth Avenue														
1	L2	40	2.6	40	2.6	0.113	2.8	LOS A	0.0	0.0	0.00	0.10	0.00	55.8
2	T1	176	2.4	176	2.4	0.113	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	59.0
Approach		216	2.4	216	2.4	0.113	0.5	NA	0.0	0.0	0.00	0.10	0.00	58.4
North: Highworth Avenue														
8	T1	265	0.4	265	0.4	0.080	0.1	LOS A	5.5	38.8	0.06	0.04	0.06	58.7
9	R2	24	0.0	24	0.0	0.080	6.2	LOS A	0.1	0.6	0.14	0.11	0.14	56.3
Approach		289	0.4	289	0.4	0.080	0.6	NA	5.5	38.8	0.07	0.05	0.07	58.3
West: McDonald's Access														
10	L2	31	0.0	31	0.0	0.075	6.1	LOS A	0.1	0.8	0.33	0.61	0.33	52.3
12	R2	36	0.0	36	0.0	0.075	8.3	LOS A	0.1	0.8	0.33	0.61	0.33	48.5
Approach		66	0.0	66	0.0	0.075	7.3	LOS A	0.1	0.8	0.33	0.61	0.33	50.8
All Vehicles		572	1.1	572	1.1	0.113	1.4	NA	5.5	38.8	0.07	0.13	0.07	57.1

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Organisation: COLSTON BUDD ROGERS & KAFES PTY LTD | Licence: NETWORK / 1PC | Created: Thursday, 12 December 2024 9:36:31 AM
Project: C:\Users\mcorban.WSHP800TK9-MC\Colston Budd Rogers & Kafes Pty Ltd\CBRKData - Documents\DATA\GROUPS\Jobs\12400 - 12499\12499\SIDRA\12499 Bexley McDonald's.sip9

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: 12499 Bexley McDonald's

Template: Movement Summaries

Site: 101 [PM EX - Forest Road - Highworth Avenue - Queen Victoria Street (Site Folder: PM Existing)]

Network: 2 [PM Existing (Network Folder: Existing)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B*, C, D, E*
Output Phase Sequence: A, C, D
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Queen Victoria Street														
1	L2	128	1.6	128	1.6	0.686	40.6	LOS C	8.1	57.5	0.93	0.82	0.94	36.6
2	T1	178	0.6	178	0.6	* 0.686	35.0	LOS C	8.1	57.5	0.93	0.82	0.94	27.2
3	R2	154	0.7	154	0.7	0.396	42.8	LOS D	4.0	28.4	0.91	0.79	0.91	34.7
Approach		460	0.9	460	0.9	0.686	39.2	LOS C	8.1	57.5	0.92	0.81	0.93	33.1
East: Forest Road														
4	L2	64	1.6	64	1.6	0.427	27.5	LOS B	7.2	51.1	0.75	0.67	0.75	43.9
5	T1	627	1.8	627	1.8	0.427	21.7	LOS B	7.3	51.7	0.75	0.66	0.75	44.0
Approach		692	1.8	692	1.8	0.427	22.2	LOS B	7.3	51.7	0.75	0.66	0.75	44.0
North: Highworth Avenue														
7	L2	16	0.0	16	0.0	0.656	49.7	LOS D	3.2	23.0	1.00	0.83	1.05	23.9
8	T1	148	1.4	148	1.4	* 0.656	46.8	LOS D	3.2	23.0	1.00	0.83	1.05	24.4
9	R2	46	0.0	46	0.0	0.356	53.5	LOS D	1.4	9.8	0.99	0.74	0.99	22.0
Approach		211	1.0	211	1.0	0.656	48.5	LOS D	3.2	23.0	1.00	0.81	1.04	23.8
West: Forest Road														
10	L2	37	0.0	37	0.0	0.672	28.7	LOS C	10.2	72.1	0.81	0.72	0.81	34.1
11	T1	469	1.1	469	1.1	* 0.672	24.4	LOS B	10.2	72.1	0.82	0.73	0.83	42.4
12	R2	153	2.1	153	2.1	0.672	40.3	LOS C	5.7	40.5	0.93	0.85	0.98	36.0
Approach		659	1.3	659	1.3	0.672	28.4	LOS B	10.2	72.1	0.85	0.76	0.86	40.4
All Vehicles		2021	1.4	2021	1.4	0.686	30.8	LOS C	10.2	72.1	0.85	0.74	0.86	38.2

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 101 [PM EX - Highworth Avenue - McDonald's Access (Site Folder: PM Existing)]

Network: 2 [PM Existing (Network Folder: Existing)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Highworth Avenue														
1	L2	42	0.0	42	0.0	0.112	2.8	LOS A	0.0	0.0	0.00	0.11	0.00	56.0
2	T1	173	0.6	173	0.6	0.112	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	58.9
Approach		215	0.5	215	0.5	0.112	0.6	NA	0.0	0.0	0.00	0.11	0.00	58.3
North: Highworth Avenue														
8	T1	175	1.2	175	1.2	0.055	0.1	LOS A	1.7	11.7	0.08	0.07	0.08	58.1
9	R2	28	0.0	28	0.0	0.055	6.2	LOS A	0.1	0.7	0.21	0.17	0.21	55.5
Approach		203	1.0	203	1.0	0.055	1.0	NA	1.7	11.7	0.10	0.08	0.10	57.5
West: McDonald's Access														
10	L2	28	0.0	28	0.0	0.064	6.1	LOS A	0.1	0.8	0.32	0.59	0.32	52.5
12	R2	36	0.0	36	0.0	0.064	7.6	LOS A	0.1	0.8	0.32	0.59	0.32	48.9
Approach		64	0.0	64	0.0	0.064	6.9	LOS A	0.1	0.8	0.32	0.59	0.32	51.1
All Vehicles		482	0.7	482	0.7	0.112	1.6	NA	1.7	11.7	0.08	0.16	0.08	56.6

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Organisation: COLSTON BUDD ROGERS & KAFES PTY LTD | Licence: NETWORK / 1PC | Created: Thursday, 12 December 2024 9:36:48 AM
Project: C:\Users\mcorban.WSHP800TK9-MC\Colston Budd Rogers & Kafes Pty Ltd\CBRKData - Documents\DATA\GROUPS\Jobs\12400 - 12499\12499\SIDRA\12499 Bexley McDonald's.sip9

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: 12499 Bexley McDonald's

Template: Movement Summaries

Site: 101 [AM EX + Dev - Forest Road - Highworth Avenue - Queen Victoria Street (Site Folder: AM Existing + Development)]

Network: 3 [AM Existing + Development (Network Folder: Existing + Development)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B*, C, D, E*
Output Phase Sequence: A, C, D, E*
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Queen Victoria Street														
1	L2	100	3.2	100	3.2	0.788	54.1	LOS D	10.0	71.5	0.96	0.90	1.07	32.3
2	T1	188	2.2	188	2.2	* 0.788	48.5	LOS D	10.0	71.5	0.96	0.90	1.07	22.8
3	R2	141	3.7	141	3.7	0.446	54.1	LOS D	4.6	33.3	0.94	0.80	0.94	31.3
Approach		429	2.9	429	2.9	0.788	51.7	LOS D	10.0	71.5	0.95	0.86	1.03	28.5
East: Forest Road														
4	L2	75	5.6	75	5.6	0.799	61.2	LOS E	10.5	75.2	1.00	0.93	1.13	31.3
5	T1	492	2.1	492	2.1	* 0.799	54.8	LOS D	10.5	75.2	1.00	0.93	1.13	31.5
Approach		566	2.6	566	2.6	0.799	55.7	LOS D	10.5	75.2	1.00	0.93	1.13	31.4
North: Highworth Avenue														
7	L2	16	0.0	16	0.0	0.800	60.2	LOS E	3.3	23.0	1.00	0.92	1.15	21.2
8	T1	231	0.0	231	0.0	* 0.800	57.4	LOS E	3.3	23.0	1.00	0.92	1.15	21.6
9	R2	63	1.7	63	1.7	0.318	57.6	LOS E	2.2	15.3	0.96	0.75	0.96	21.0
Approach		309	0.3	309	0.3	0.800	57.5	LOS E	3.3	23.0	0.99	0.89	1.11	21.5
West: Forest Road														
10	L2	37	2.9	37	2.9	0.716	28.8	LOS C	11.1	80.3	0.74	0.67	0.74	34.0
11	T1	531	3.8	531	3.8	0.716	24.3	LOS B	11.1	80.3	0.79	0.71	0.79	42.3
12	R2	259	1.6	259	1.6	* 0.716	33.9	LOS C	9.5	67.6	0.96	0.85	0.96	38.5
Approach		826	3.1	826	3.1	0.716	27.5	LOS B	11.1	80.3	0.84	0.75	0.84	40.8
All Vehicles		2132	2.5	2132	2.5	0.800	44.2	LOS D	11.1	80.3	0.93	0.84	1.00	32.7

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 101 [AM EX + Dev - Highworth Avenue - McDonald's Access (Site Folder: AM Existing + Development)]

Network: 3 [AM Existing + Development (Network Folder: Existing + Development)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Highworth Avenue														
1	L2	58	1.8	58	1.8	0.119	2.8	LOS A	0.0	0.0	0.00	0.14	0.00	55.6
2	T1	167	2.5	167	2.5	0.119	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	58.6
Approach		225	2.3	225	2.3	0.119	0.7	NA	0.0	0.0	0.00	0.14	0.00	57.8
North: Highworth Avenue														
8	T1	260	0.4	260	0.4	0.083	0.1	LOS A	5.9	41.3	0.08	0.06	0.08	58.3
9	R2	35	0.0	35	0.0	0.083	6.2	LOS A	0.1	0.9	0.20	0.15	0.20	55.7
Approach		295	0.4	295	0.4	0.083	0.9	NA	5.9	41.3	0.09	0.07	0.09	57.8
West: McDonald's Access														
10	L2	44	0.0	44	0.0	0.094	6.1	LOS A	0.2	1.1	0.31	0.60	0.31	52.3
12	R2	41	0.0	41	0.0	0.094	8.4	LOS A	0.2	1.1	0.31	0.60	0.31	48.6
Approach		85	0.0	85	0.0	0.094	7.2	LOS A	0.2	1.1	0.31	0.60	0.31	51.1
All Vehicles		605	1.0	605	1.0	0.119	1.7	NA	5.9	41.3	0.09	0.17	0.09	56.4

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Organisation: COLSTON BUDD ROGERS & KAFES PTY LTD | Licence: NETWORK / 1PC | Created: Thursday, 12 December 2024 9:37:07 AM
Project: C:\Users\mcorban.WSHP800TK9-MC\Colston Budd Rogers & Kafes Pty Ltd\CBRKData - Documents\DATA\GROUPS\Jobs\12400 - 12499\12499\SIDRA\12499 Bexley McDonald's.sip9

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: 12499 Bexley McDonald's

Template: Movement Summaries

Site: 101 [PM EX + Dev - Forest Road - Highworth Avenue - Queen Victoria Street (Site Folder: PM Existing + Development)]

Network: 4 [PM Existing + Development (Network Folder: Existing + Development)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B*, C, D, E*
Output Phase Sequence: A, C, D
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Queen Victoria Street														
1	L2	128	1.6	128	1.6	0.678	39.5	LOS C	8.2	58.0	0.92	0.81	0.93	37.0
2	T1	185	0.6	185	0.6	*0.678	34.0	LOS C	8.2	58.0	0.92	0.81	0.93	27.7
3	R2	154	0.7	154	0.7	0.378	41.8	LOS C	4.0	27.9	0.90	0.79	0.90	35.0
Approach		467	0.9	467	0.9	0.678	38.1	LOS C	8.2	58.0	0.91	0.80	0.92	33.4
East: Forest Road														
4	L2	64	1.6	64	1.6	0.437	28.3	LOS B	7.3	52.0	0.76	0.68	0.76	43.5
5	T1	627	1.8	627	1.8	0.437	22.4	LOS B	7.4	52.6	0.76	0.67	0.76	43.6
Approach		692	1.8	692	1.8	0.437	23.0	LOS B	7.4	52.6	0.76	0.67	0.76	43.6
North: Highworth Avenue														
7	L2	17	0.0	17	0.0	0.673	50.0	LOS D	3.3	23.0	1.00	0.84	1.06	23.8
8	T1	152	1.4	152	1.4	*0.673	47.2	LOS D	3.3	23.0	1.00	0.84	1.06	24.3
9	R2	48	0.0	48	0.0	0.372	53.6	LOS D	1.5	10.3	0.99	0.74	0.99	22.0
Approach		217	1.0	217	1.0	0.673	48.8	LOS D	3.3	23.0	1.00	0.82	1.05	23.7
West: Forest Road														
10	L2	39	0.0	39	0.0	0.702	30.1	LOS C	10.4	73.6	0.83	0.73	0.83	33.2
11	T1	469	1.1	469	1.1	*0.702	26.1	LOS B	10.4	73.6	0.84	0.75	0.85	41.6
12	R2	153	2.1	153	2.1	0.702	42.3	LOS C	6.0	42.9	0.94	0.87	1.02	35.3
Approach		661	1.3	661	1.3	0.702	30.1	LOS C	10.4	73.6	0.87	0.78	0.89	39.6
All Vehicles		2037	1.3	2037	1.3	0.702	31.5	LOS C	10.4	73.6	0.86	0.75	0.87	37.9

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 101 [PM EX + Dev - Highworth Avenue - McDonald's Access (Site Folder: PM Existing + Development)]

Network: 4 [PM Existing + Development (Network Folder: Existing + Development)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Highworth Avenue														
1	L2	61	0.0	61	0.0	0.118	2.8	LOS A	0.0	0.0	0.00	0.15	0.00	55.7
2	T1	165	0.6	165	0.6	0.118	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	58.6
Approach		226	0.5	226	0.5	0.118	0.8	NA	0.0	0.0	0.00	0.15	0.00	57.8
North: Highworth Avenue														
8	T1	169	1.2	169	1.2	0.057	0.2	LOS A	1.8	12.8	0.09	0.08	0.09	57.8
9	R2	40	0.0	40	0.0	0.057	6.2	LOS A	0.1	0.8	0.27	0.23	0.27	54.8
Approach		209	1.0	209	1.0	0.057	1.3	NA	1.8	12.8	0.13	0.11	0.13	56.8
West: McDonald's Access														
10	L2	38	0.0	38	0.0	0.091	6.1	LOS A	0.2	1.1	0.32	0.60	0.32	52.5
12	R2	52	0.0	52	0.0	0.091	7.7	LOS A	0.2	1.1	0.32	0.60	0.32	48.8
Approach		89	0.0	89	0.0	0.091	7.0	LOS A	0.2	1.1	0.32	0.60	0.32	50.9
All Vehicles		525	0.6	525	0.6	0.118	2.1	NA	1.8	12.8	0.11	0.21	0.11	55.8

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

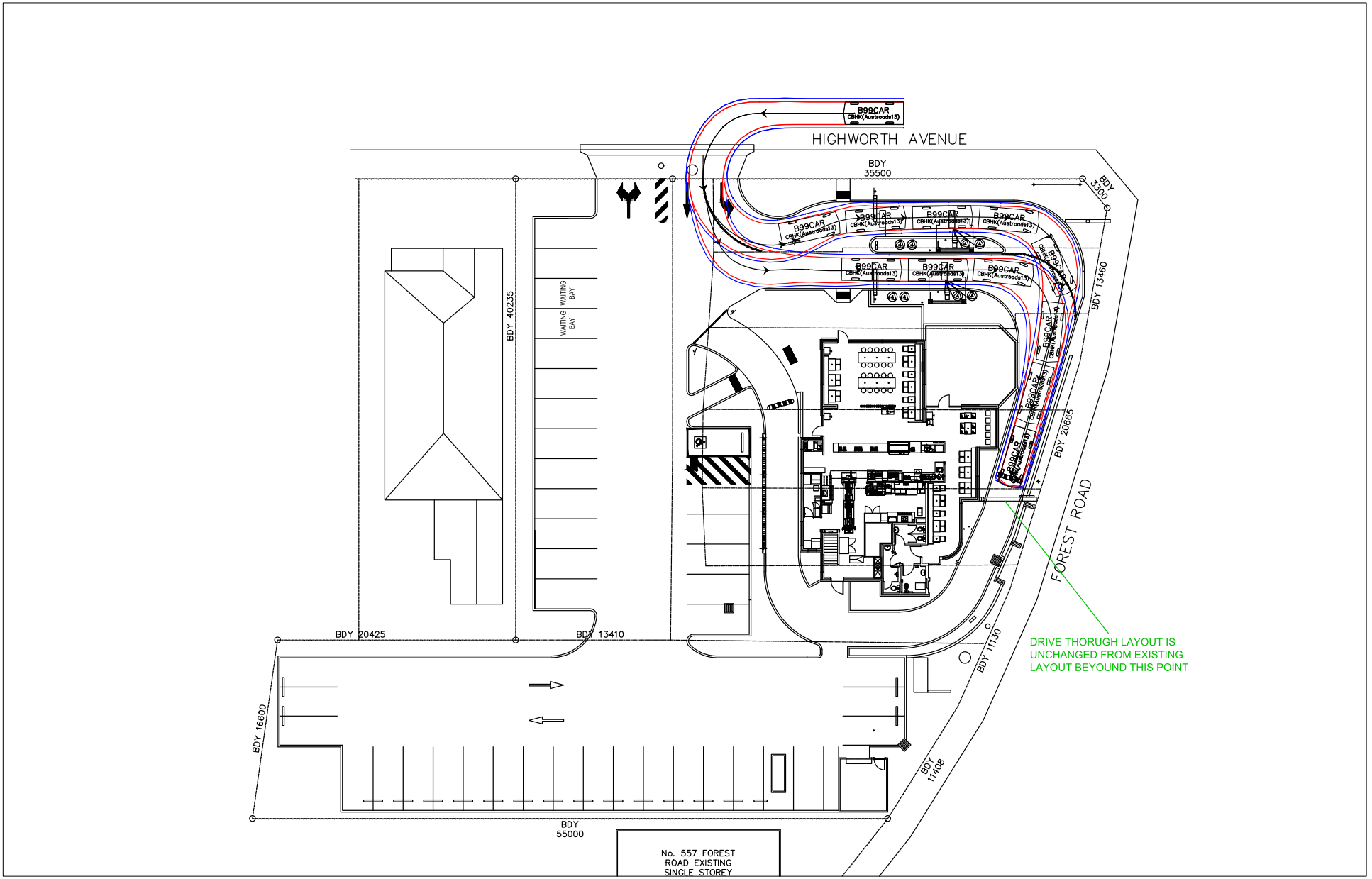
Organisation: COLSTON BUDD ROGERS & KAFES PTY LTD | Licence: NETWORK / 1PC | Created: Thursday, 12 December 2024 9:37:18 AM
Project: C:\Users\mcorban.WSHP800TK9-MC\Colston Budd Rogers & Kafes Pty Ltd\CBRKData - Documents\DATA\GROUPS\Jobs\12400 - 12499\12499\SIDRA\12499 Bexley McDonald's.sip9

ATTACHMENT B

VEHICLE SWEPT PATHS

Colston Budd Rogers & Kafes Pty Ltd

12499 - Bexley McDonald's



NOTE:
SKETCH PLAN ONLY. PROPERTY BOUNDARIES, UTILITIES, KERBLINES & DIMENSIONS ARE SUBJECT TO SURVEY AND FINAL DESIGN. TRAFFIC MEASURES PROPOSED IN THIS PLAN ARE CONCEPT ONLY AND ARE SUBJECT TO FINAL DESIGN BY CIVIL ENGINEERS. THIS PLAN SHOULD NOT BE USED FOR COMPLIANCE CERTIFICATION OR FOR CONSTRUCTION.

Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

B99 VEHICLE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 12499 11.12.2024

1