VEOLIA

TRAFFIC REPORT FOR PROPOSED SOLID RECOVERED FUEL FACILITY AT WOODLAWN, TARAGO

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

Telephone: (02) 9411 2411
Facsimile: (02) 9411 2422
Email: cbrk@cbrk.com.au

REF: 10426

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1. INTRODUCTION

1.1 Colston Budd Rogers and Kafes Pty Ltd has been commissioned by Veolia to prepare a report assessing the traffic implications of the proposed solid recovered fuel (SRF) facility at its Woodlawn facility near Tarago. The site is at 619 Collector Road, as shown in Figure 1.

1.2 The SRF facility would be constructed east of the existing power station on the Woodlawn site. Material processed at the facility would be transported by road between Woodlawn and the existing Crisps Creek Intermodal Terminal, for transport by rail to Port Botany. The location of the intermodal terminal is also shown in Figure 1.

1.3 This report assesses the traffic implications of the proposed SRF facility in the following chapter.

2. TRAFFIC IMPLICATIONS OF PROPOSED DEVELOPMENT

2.1 The traffic implications of the proposed development are set down through the following sections:

- site location and road network;
- proposed development;
- parking provision;
- access and internal layout;
- traffic generation and effects; and
- summary.

Site Location and Road Network

2.2 The Woodlawn facility is on the southern side of Collector Road, near Tarago, as shown in Figure 1. The facility includes the existing bioreactor, mechanical and biological treatment facility and wind farm, as well as fish farm and agriculture operations. Access to Woodlawn is provided from Collector Road.

2.3 Collector Road connects Collector in the north west with Bungendore Road in the south east. Between the site and Bungendore Road it is a two lane, two-way road with sealed shoulders and a 100 kilometre per hour speed limit.

2.4 Bungendore Road connects Tarago with Bungendore in the west. It provides a two lane, two-way road with sealed shoulders and a 100 kilometre per hour speed limit.

2.5 The intersection of Bungendore Road with Collector Road is a t-intersection with give way controls. There is a right turn bay in Bungendore Road for turns into Collector Road. There are wide splays at the intersection for left turns to and from Collector Road. There is a median in Collector Road at the intersection.

2.6 Bungendore Road also provides access to the Crisps Creek Intermodal Terminal. There is a right turn lane in Bungendore Road for vehicles entering the terminal, and an acceleration lane for vehicles turning left from the facility onto Bungendore Road.

2.7 Bungendore Road and Collector Road, between the terminal and Woodlawn, including the intersection of Bungendore Road with Collector Road, have previously been upgraded to cater for traffic between the two facilities. There is also a levy which is paid for the maintenance of Collector and Bungendore Roads.

Proposed Development

2.8 The proposed solid recovered fuel (SRF) facility would be constructed east of the existing power station on the Woodlawn site. Material processed at the facility would be transport by road between Woodlawn and the Crisps Creek Intermodal Terminal, for transport by rail to Port Botany. Some 37,400 tonnes of material would be transported per year.

2.9 No changes are proposed to existing approvals at the facility to process up to 1.13 million tonnes of putrescible waste per year, or to the MBT facility to process up to 280,000 tonnes per year. The some 37,400 tonnes per year of SRF would be extracted from the material processed in the MBT.

2.10 No changes are proposed to existing access arrangements to either the Woodlawn facility or intermodal terminal.

2.11 Three people would be employed at the facility.

Parking Provision

2.12 Part 3 of the Goulburn Mulwaree Development Control Plan 2009 does not include a specific parking rate for the proposed facility. However, as previously noted, the facility will employ an additional three people.

2.13 There are significant existing parking areas at the facility, which were used by employees at the site when it was previously a mine. These parking areas will readily cater for the small number of additional employees. The proposed provision will cater for the requirements of the proposed facility, and is therefore considered to be appropriate.

Access and Internal Layout

2.14 No changes are proposed to the existing access arrangements to the site from Collector Road. The existing access will cater for cars and trucks entering and exiting the facility.

2.15 Trucks transporting material from the facility will be loaded on the site. Material will be transported in containers. Trucks will generally be semi-trailers which will enter the site, circulate to the SRF facility and have the container mechanically loaded. Empty containers will be returned and stored on the site until required for use.

2.16 The design will provide for trucks to circulate in a forward direction, as shown in plans for the proposed facility prepared by Davidson Architects.

Traffic Generation and Effects

2.17 The facility will store the SRF material on the site, in containers, until it is transported to the intermodal terminal. Transport of the material will occur approximately once per fortnight.

2.18 Some 55 containers will be transported over approximately half a day between the SRF facility and the intermodal terminal. Once full containers are delivered to the intermodal terminal, empty containers will be transport back to Woodlawn by the same vehicles.

2.19 Over a four hour period, some 15 trucks per hour would therefore take material from the facility and bring empty containers back.

2.20 In order to gauge traffic conditions, counts were undertaken over a day at the intersection of Bungendore Road with Collector Road, as well as the existing access points to Woodlawn and the intermodal terminal on Collector Road and Bungendore Road respectively. The results of the surveys are shown in Figures 2 to 4, and summarized in Table 2.1.

2.21 Bungendore Road typically carried some 100 to 150 vehicles per hour two-way. Collector Road carried lower flows of less than 100 vehicles per hour two-way. The Woodlawn facility and intermodal terminal generated up to 60 vehicles per hour two-way.

Table 2.1: Existing two-way (sum of both directions) hourly traffic flows				
Road	**Location**	**Hourly traffic flow**		
		AM	**Midday**	**PM**
Bungendore Road	At intermodal terminal	120	105	150
	At Collector Road	110	115	140
Collector Road	At Woodlawn	55	65	25
Intermodal terminal	South of Bungendore Road	40	35	-
Woodlawn	Access at Collector Road	50	60	15

2.22 The capacity of the road network is generally determined by the ability of its intersections to cater for peak period traffic flows. The intersection of Bungendore Road with Collector Road, as well as the Woodlawn and intermodal terminal site access points, have been analysed using the SIDRA program for the traffic flows shown in Figure 2.

2.23 SIDRA produces a number of measures of intersection operations. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle.

2.24 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

2.25 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.

2.26 The SIDRA analysis found that the intersection of Bungendore Road with Collector Road, as well as the access points to Woodlawn and the intermodal terminal, are operating with average delays for all movements of less than 15 seconds per vehicle. This represents level of service A/B, a good level of service.

2.27 As noted above, approximately once per fortnight, an additional 15 trucks per hour would take material from Woodlawn to the intermodal terminal, and bring empty containers back to Woodlawn.

2.28 This additional traffic has been assigned to the road network. Existing traffic flows plus the additional development traffic are shown in Figures 2 to 4, and summarized in Table 2.2.

2.29 It should be noted that while the assessment in Table 2.2 shows traffic increases during the morning, lunchtime and afternoon peak hours, in practice, these increases would occur in only two of these hours on a given day. This is because the operation would occur over a four hour period.

Table 2.2: Existing two-way hourly traffic flows plus development traffic

Road	Location	AM		Midday		PM	
		Existing	Plus development	Existing	Plus development	Existing	Plus development
Bungendore Road	At intermodal terminal	120	+30	105	+30	150	+30
	At Collector Road	110	+30	115	+30	140	+30
Collector Road	At Woodlawn	55	+30	65	+30	25	+30
Intermodal terminal	South of Bungendore Road	40	+30	35	+30	-	+30
Woodlawn	South of Collector Road	50	+30	60	+30	15	+30

2.30 Table 2.2 shows that once per fortnight, traffic flows on Collector Road and Bungendore Road would increase by some 30 vehicles per hour two-way, for the approximately four hour period that material and containers are being transported. These are low flows which would not have noticeable effects on the operation of Bungendore Road or Collector Road.

2.31 The intersections previously analysed have been reanalysed with SIDRA for the additional development traffic flows shown in Figure 2. The analysis found that the intersection of Bungendore Road with Collector Road, as well as the access points to Woodlawn and the intermodal terminal, would continue to operate with average delays for all movements of less than 15 seconds per vehicle. This represents level of service A/B, a good level of service.

2.32 The surrounding road network will therefore readily cater for the low additional traffic generation of the proposed SRF facility.

Summary

2.33 In summary, the main points relating to the traffic and parking implications of the proposed SRF facility are as follows:

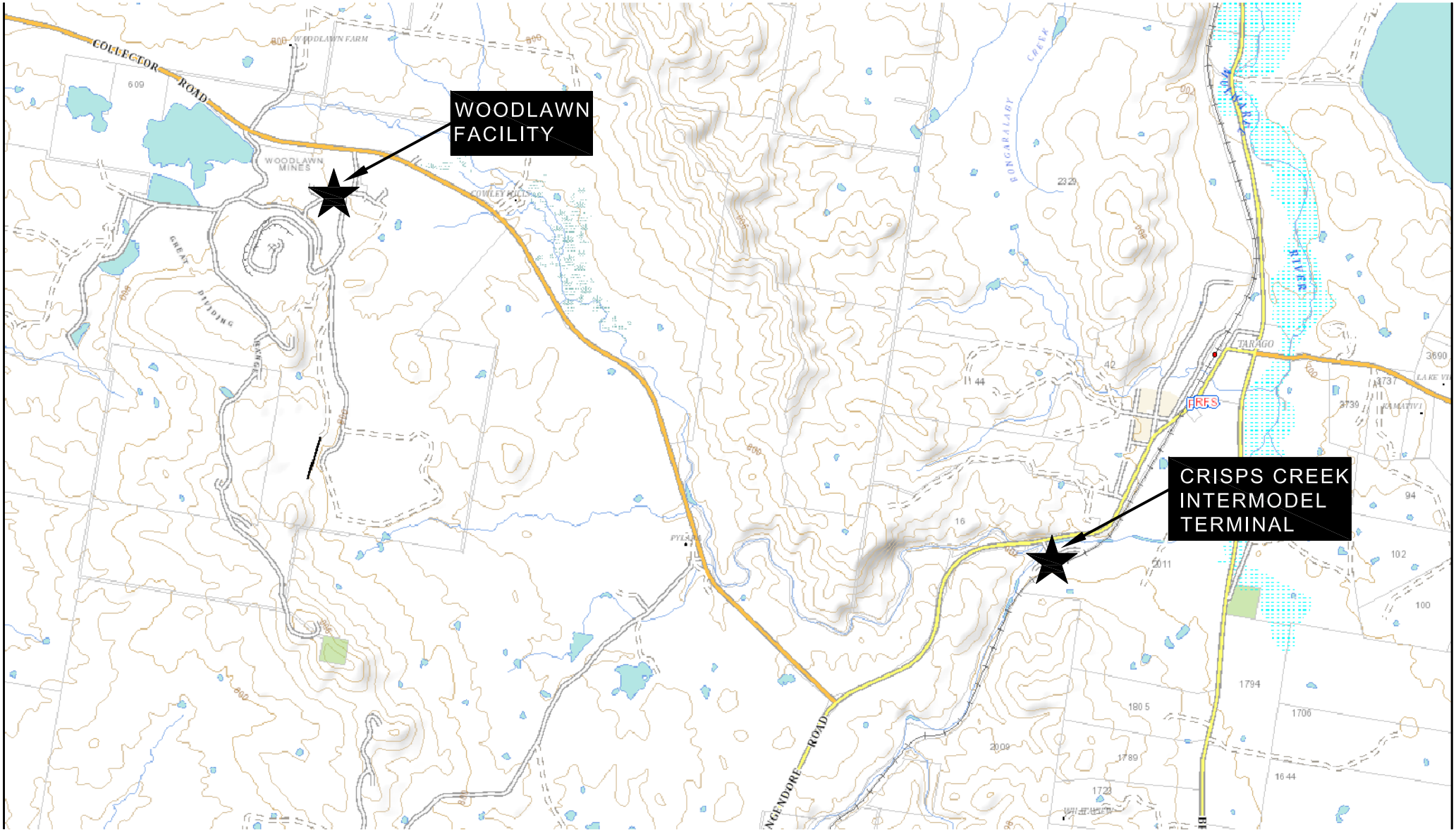
i) parking provision at the facility is appropriate;

ii) access arrangements are not proposed to change;

iii) internal layout will be appropriately provided;

iv) the development will have a low additional traffic generation of some 15 trucks per hour taking material from the facility and bringing empty containers back to Woodlawn, over approximately a four hour period, once per fortnight; and

v) the road network will be able to cater for this low traffic generation.



Location Plan

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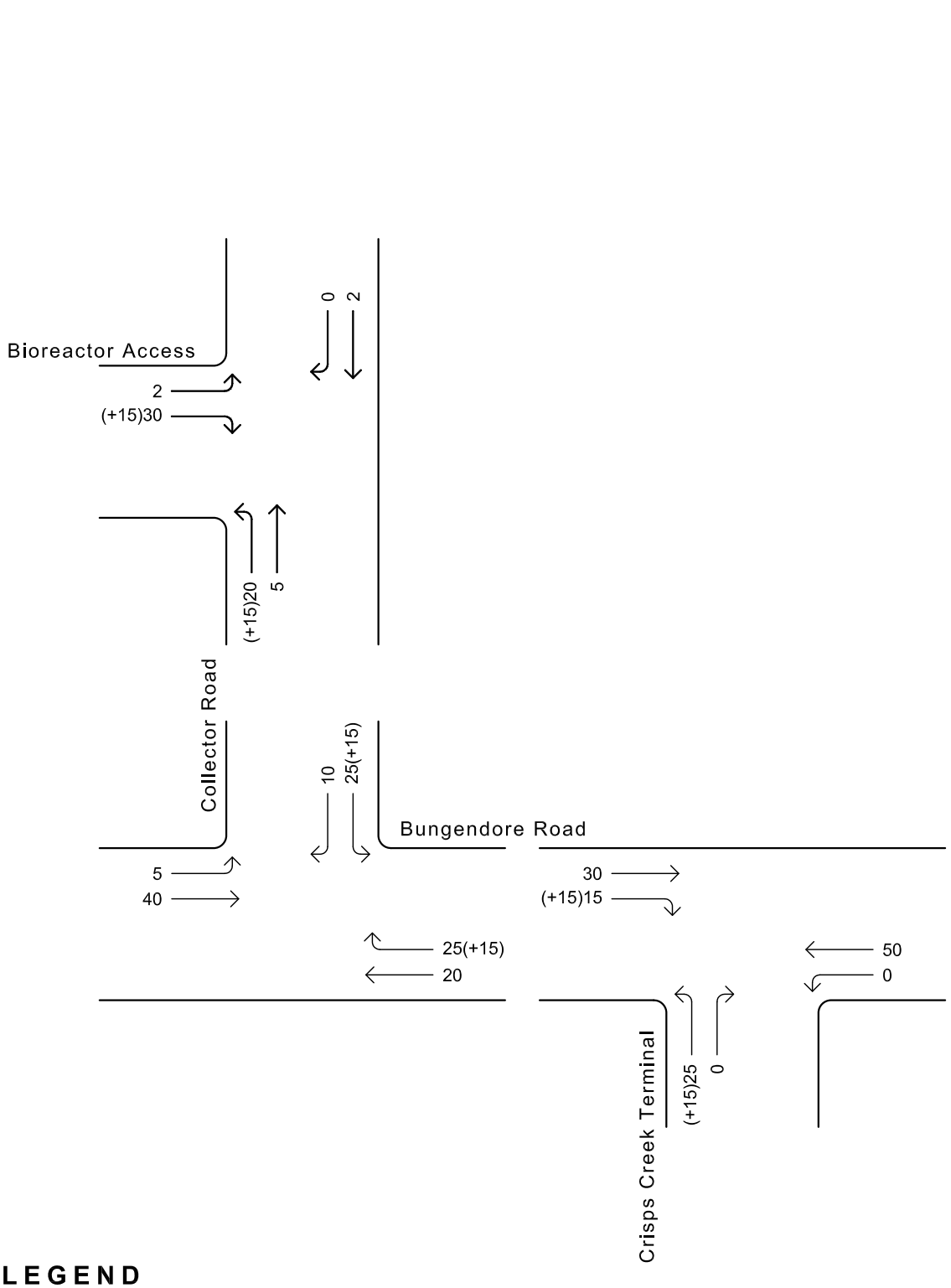
Figure 1



LEGEND

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

Existing weekday morning peak hour traffic flows plus development traffic

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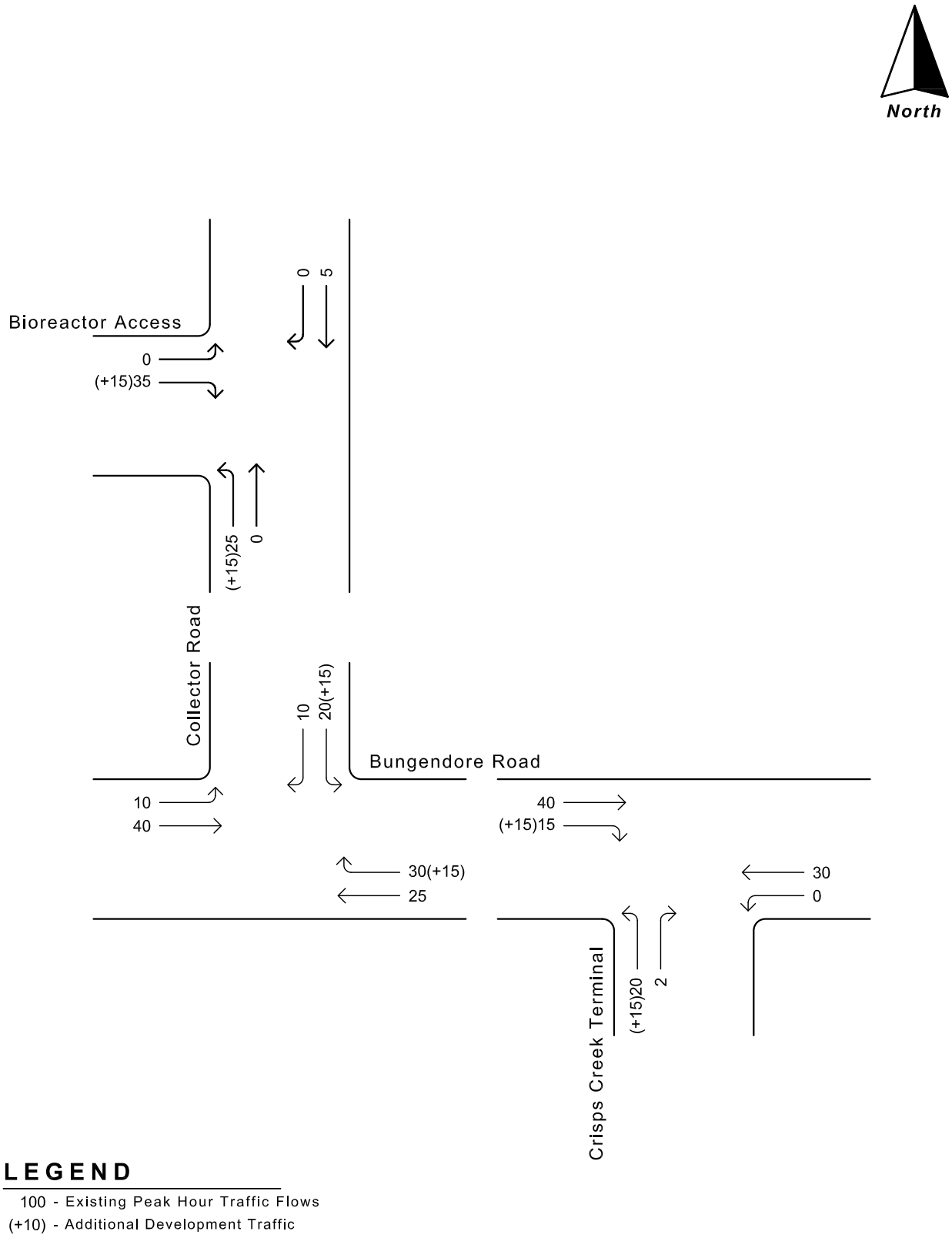
Figure 2



LEGEND

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

Existing weekday midday peak hour traffic flows plus development traffic

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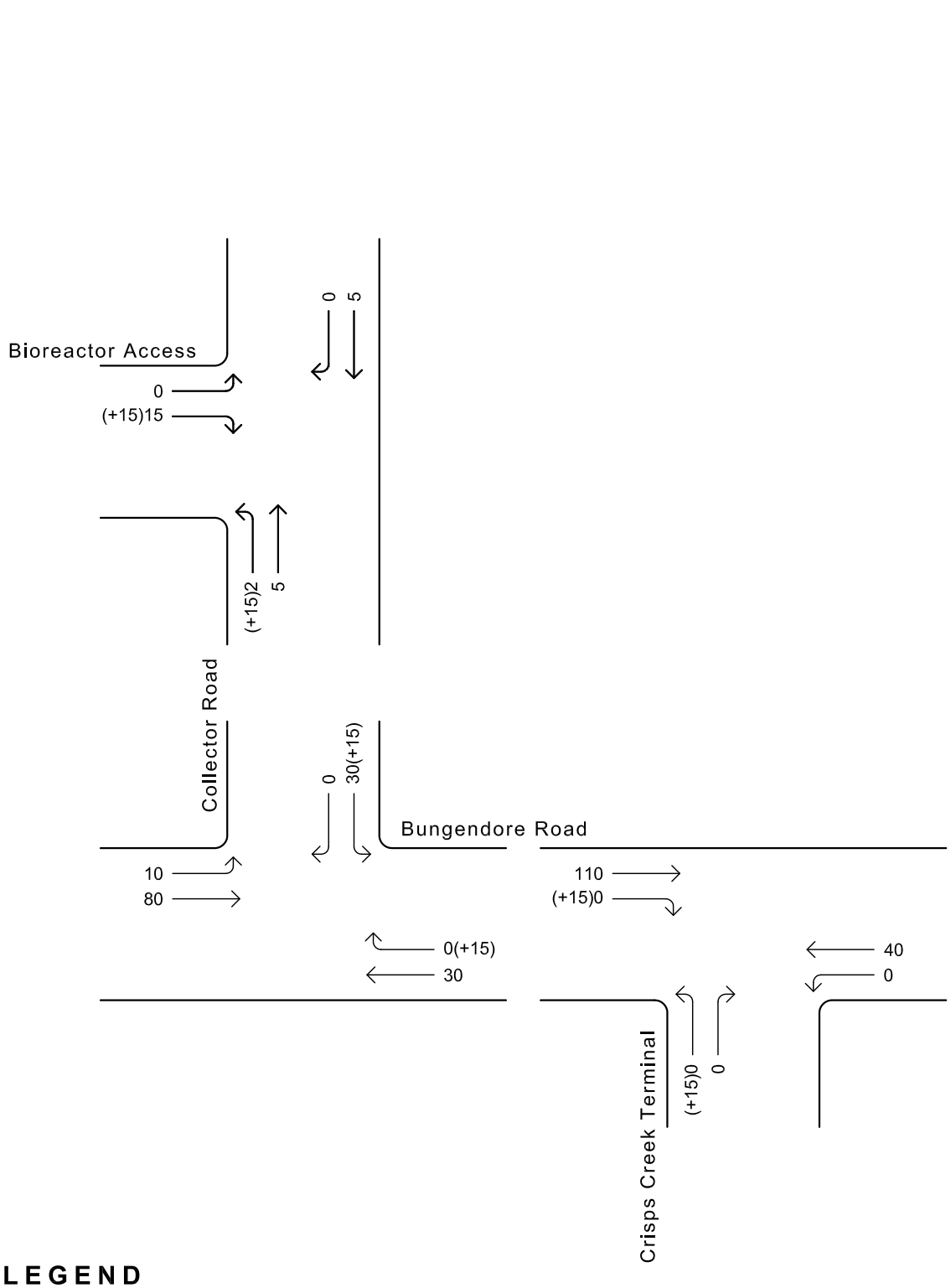
Figure 3



Existing weekday afternoon peak hour traffic flows plus development traffic

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Figure 4