

ROSP0101 SD **A1-03**

SCALE 1 : 500 @ A1 CLIENT NO. PROJECT NO

DRAWN BY Author CHECKED BY Checker APPROVED BY Approver DRAWING NO

D

SITE DEMO

TITLE

DATE

17/08/23

PROJECT

ROCKHAMPTON STADIUM

ROCKY SPORTS CLUB

QBCC 63889 ABN 32 060 951 162 paynters.com.au









CLIENT

DA ISSUE

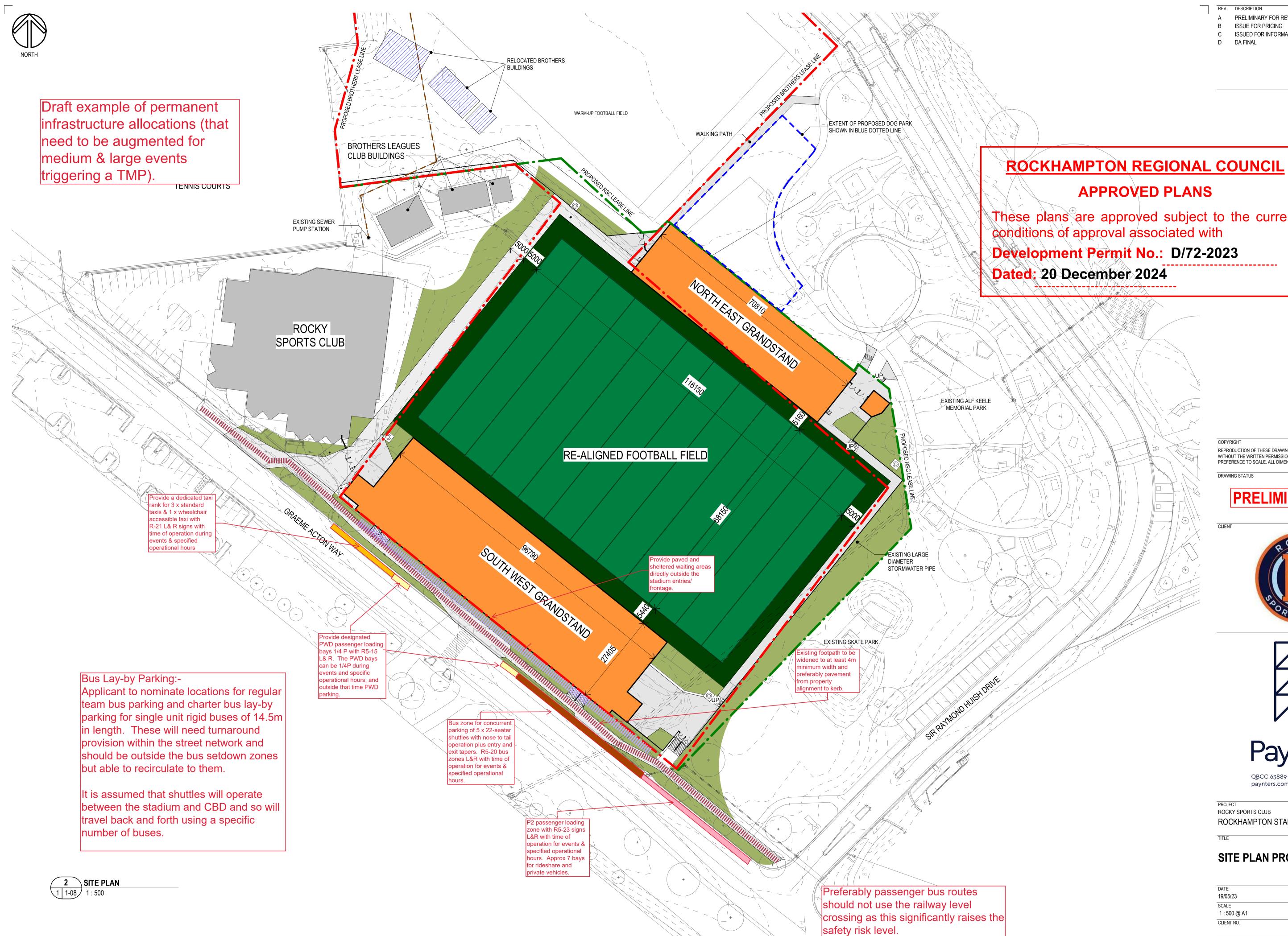
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REV. DESCRIPTION A ISSUE FOR PRICING B ISSUED FOR INFORMATION PURPOSES C DA FINAL D DA RFI RESPONSE

BY DATE SS 02/12/22 WSL 16/03/23 IP 19/05/23 17/08/23



PRELIMINARY FOR REVIEW

D

ISSUED FOR INFORMATION PURPOSES

ISSUE FOR PRICING

DA FINAL

DI	DATE
SS	11/11/22
SS	02/12/22
WSL	16/03/23
IP	19/05/23

These plans are approved subject to the current

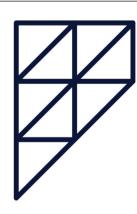
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PRELIMINARY ISSUE

CLIENT





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PROJECT

ROCKY SPORTS CLUB

ROCKHAMPTON STADIUM

TITLE

SITE PLAN PROPOSED

DATE DRAWN BY 19/05/23 WSL SCALE CHECKED BY 1 : 500 @ A1 SS CLIENT NO. APPROVED BY SS PROJECT NO. DRAWING NO

50m

ROSP0101 SD **A1-04**

D



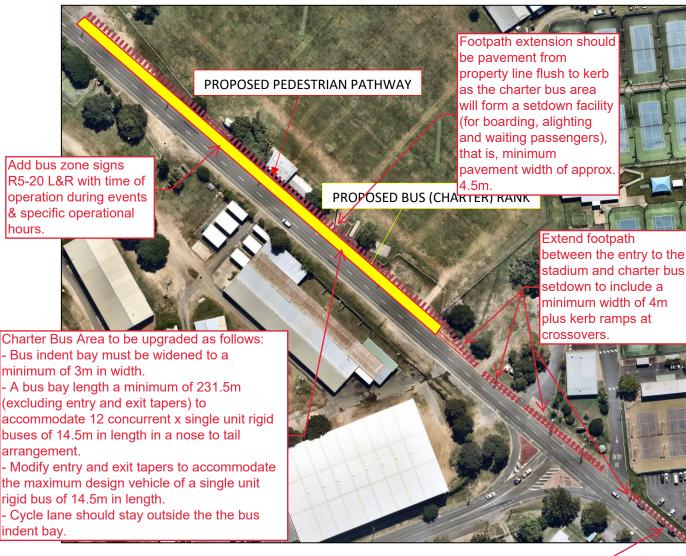


FIGURE 8.1 – PROPOSED PE Widen the existing footpath along the Graeme Acton Way frontage of the development to a minimum of 4m in width.

ND CHARTER RANK

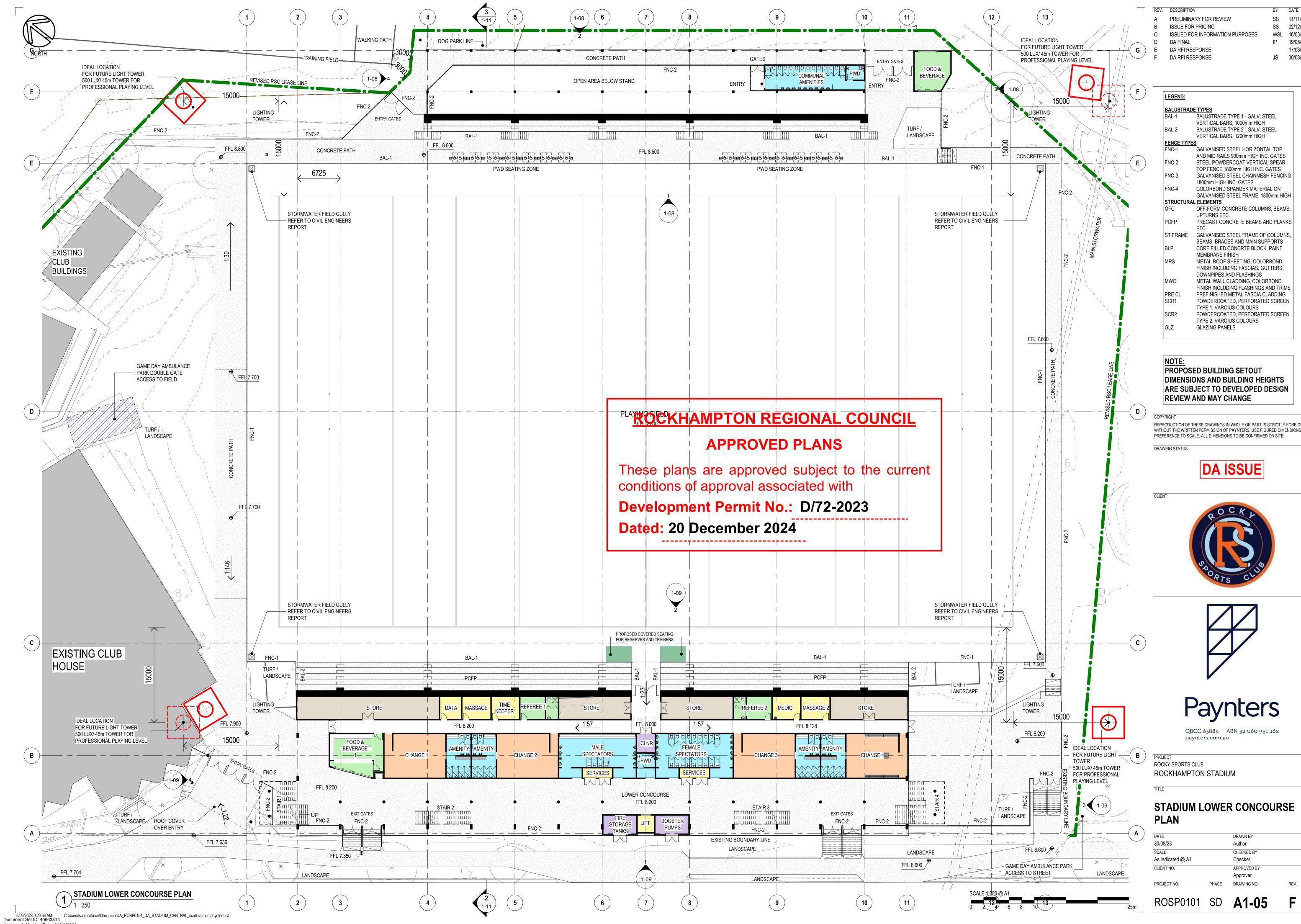
Draft example of permanent infrastructure allocations (that need to be augmented for medium & large scale events triggering a TMP).

ROCKHAMPTON REGIONAL COUNCIL APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/72-2023

Dated: 20 December 2024



Version: 1, Version Date: 01/12/2023

DESCRIPTION	BY	DATE
PRELIMINARY FOR REVIEW	SS	11/11/22
ISSUE FOR PRICING	SS	02/12/22
ISSUED FOR INFORMATION PURPOSES	WSL	16/03/23
DA FINAL	IP	19/05/23
DA RFI RESPONSE		17/08/23
DA RFI RESPONSE	JS	30/08/23

LEGEND:					
BALUSTRAD	DE TYPES				
BAL-1 BALUSTRADE TYPE 1 - GALV. STEEL					
	VERTICAL BARS, 1000mm HIGH				
BAL-2	BALUSTRADE TYPE 2 - GALV. STEEL				
	VERTICAL BARS, 1200mm HIGH				
FENCE TYPE	ES				
FNC-1	GALVANISED STEEL HORIZONTAL TOP				
	AND MID RAILS 900mm HIGH INC. GATES				
FNC-2	STEEL POWDERCOAT VERTICAL SPEAR				
	TOP FENCE 1800mm HIGH INC. GATES				
FNC-3	GALVANISED STEEL CHAINMESH FENCING				
	1800mm HIGH INC. GATES				
FNC-4	COLORBOND SPANDEK MATERIAL ON				
	GALVANISED STEEL FRAME, 1800mm HIGH				
STRUCTURA	AL ELEMENTS				
OFC	OFF-FORM CONCRETE COLUMNS, BEAMS,				
	UPTURNS ETC.				
PCFP	PRECAST CONCRETE BEAMS AND PLANKS				
	ETC.				
ST FRAME					
	BEAMS, BRACES AND MAIN SUPPORTS				
BLP	CORE FILLED CONCRTE BLOCK, PAINT				
	MEMBRANE FINISH				
MRS	METAL ROOF SHEETING, COLORBOND				
	FINISH INCLUDING FASCIAS, GUTTERS,				
	DOWNPIPES AND FLASHINGS				
MWC	METAL WALL CLADDING, COLORBOND				
	FINISH INCLUDING FLASHINGS AND TRIMS				
PRE CL	PREFINISHED METAL FASCIA CLADDING				
SCR1	POWDERCOATED, PERFORATED SCREEN				
	TYPE 1, VAROIUS COLOURS				
SCR2	POWDERCOATED, PERFORATED SCREEN				
	TYPE 2, VAROIUS COLOURS				
GLZ	GLAZING PANELS				

NOTE:

PROPOSED BUILDING SETOUT **DIMENSIONS AND BUILDING HEIGHTS** ARE SUBJECT TO DEVELOPED DESIGN **REVIEW AND MAY CHANGE**

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DA ISSUE

CLIENT





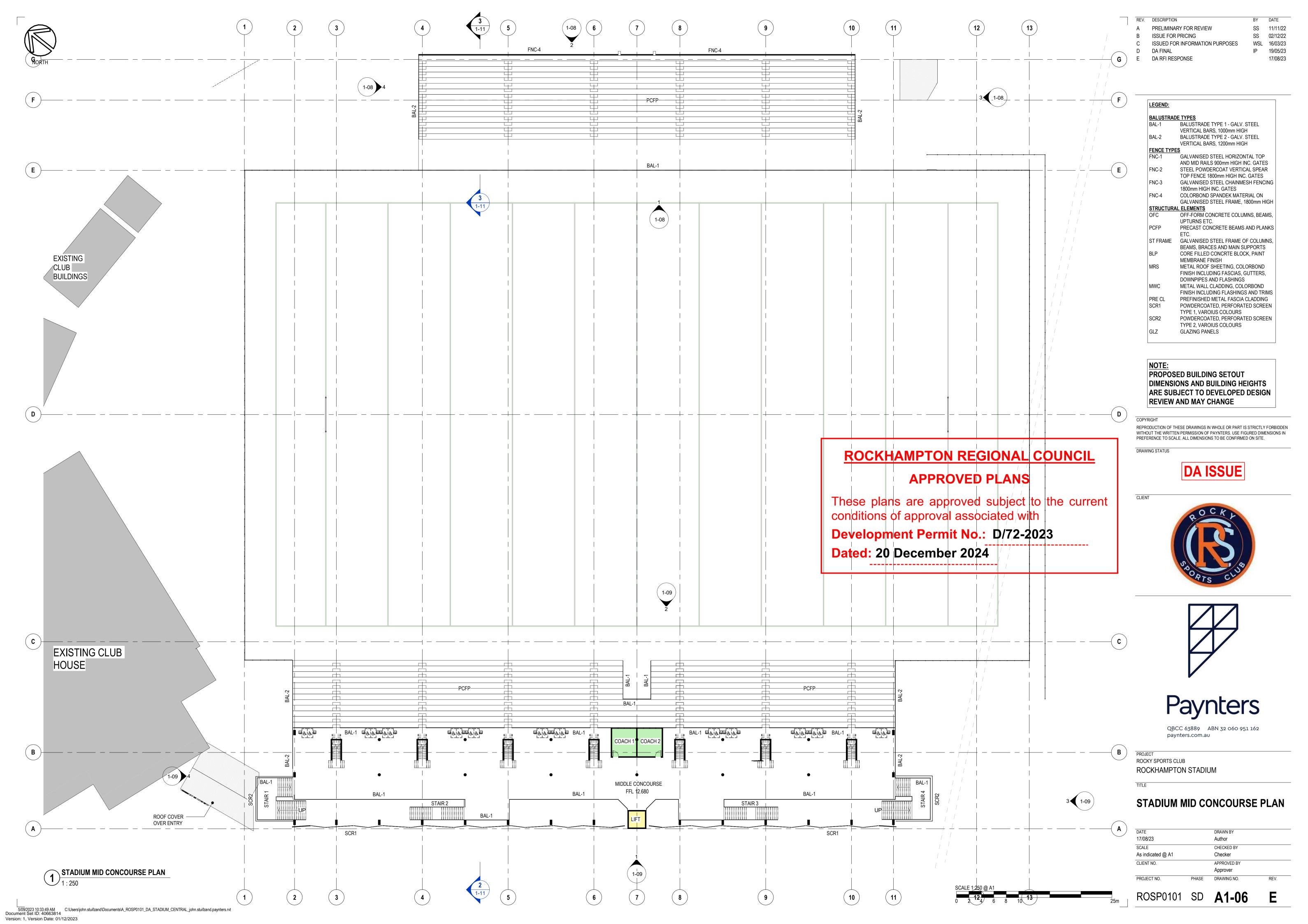
Paynters

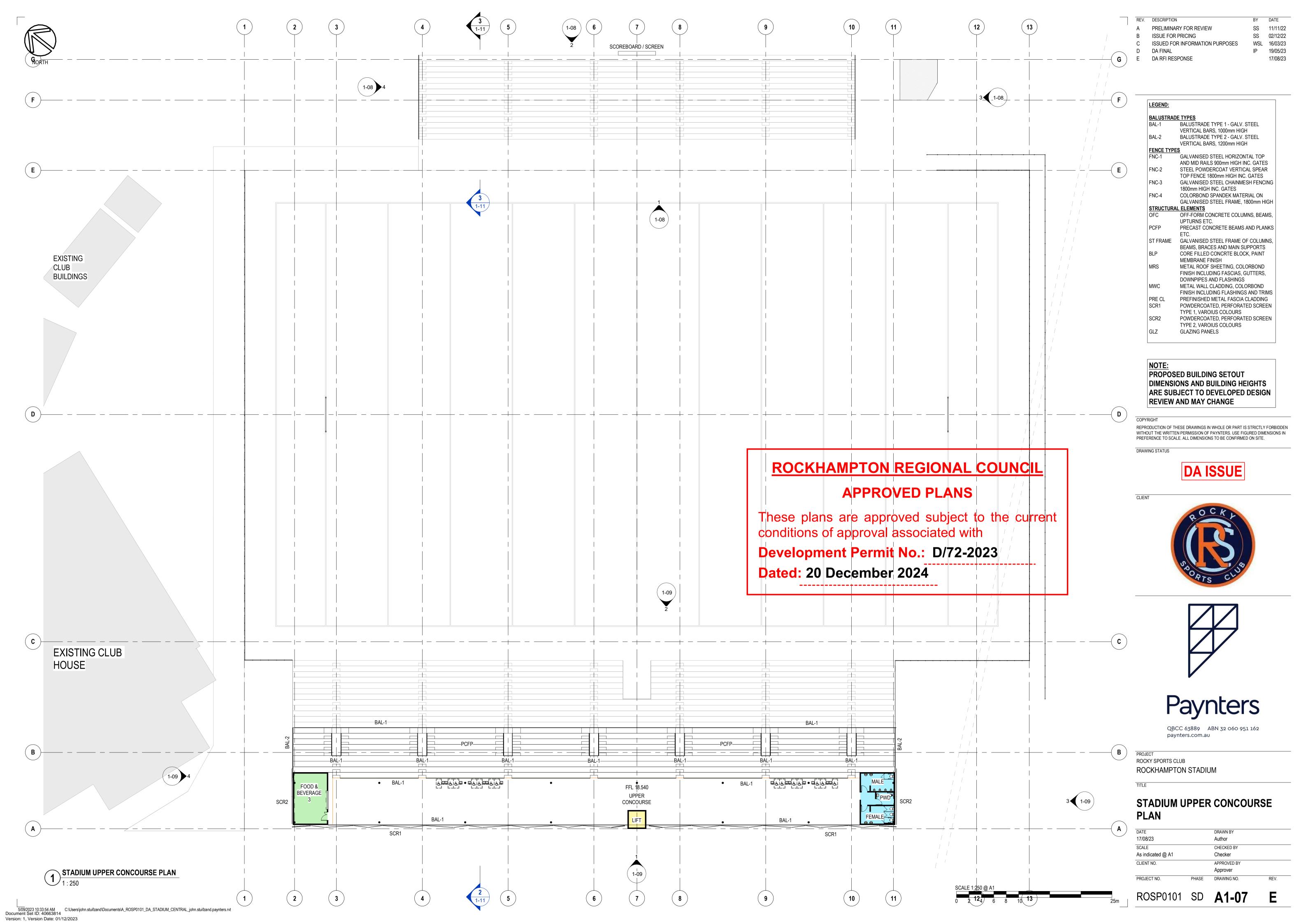
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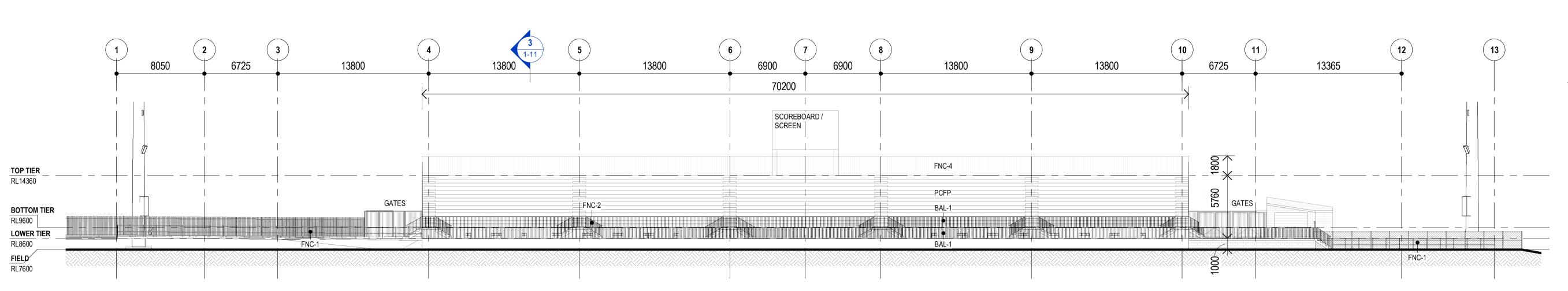
PROJECT ROCKY SPORTS CLUB ROCKHAMPTON STADIUM

STADIUM LOWER CONCOURSE PLAN

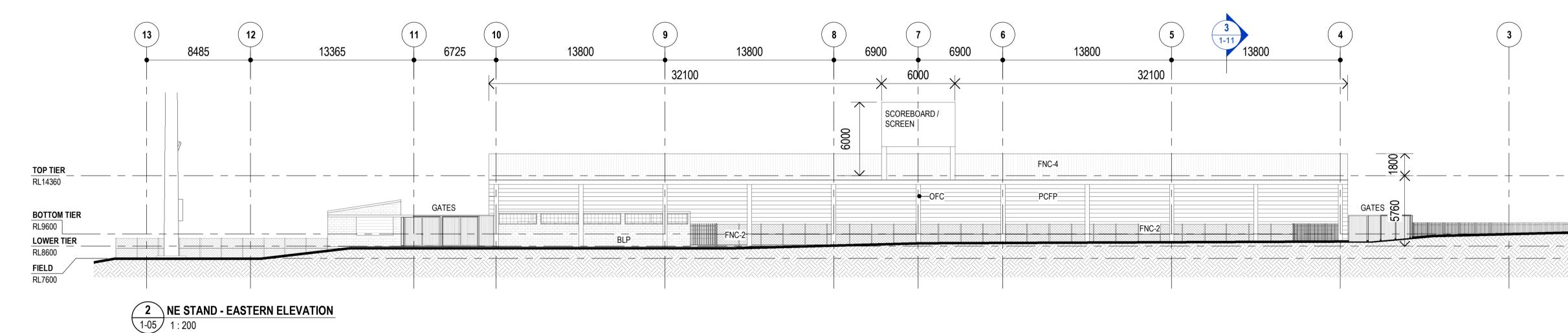
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30/08/23		Author	
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CLIENT NO.		APPROVED BY	
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PROJECT NO.	PHASE	DRAWING NO.	REV.

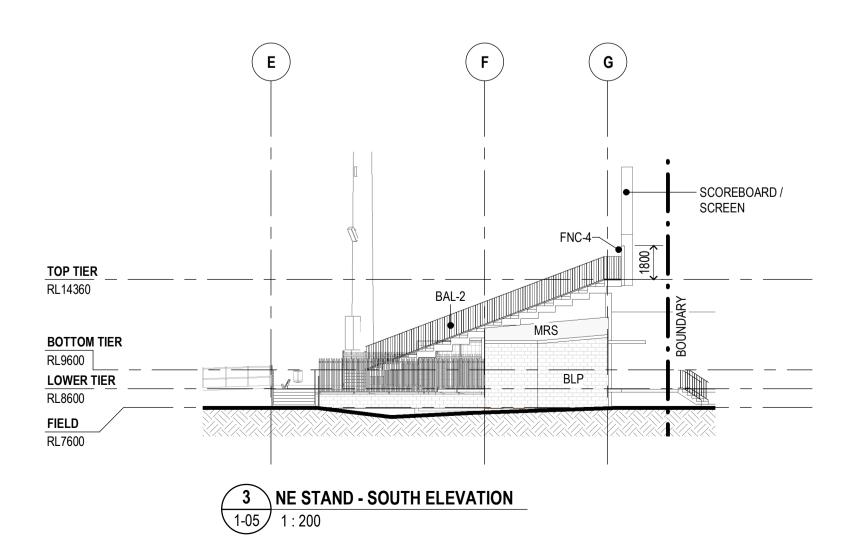




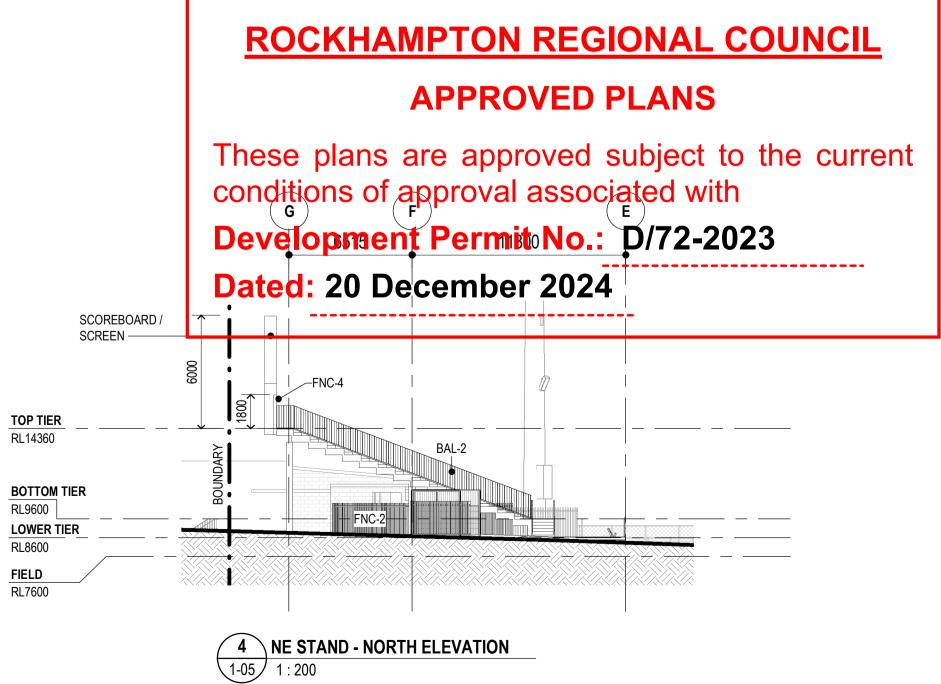








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REV.	DESCRIPTION	BY	DATE
4	PRELIMINARY FOR REVIEW	SS	11/11/22
3	ISSUE FOR PRICING	SS	02/12/22
С	ISSUED FOR INFORMATION PURPOSES	WSL	16/03/23
C	DA FINAL	IP	19/05/23
Ξ	DA RFI RESPONSE		17/08/23
=	DA RFI RESPONSE	JS	30/08/23

LEGEND:				
BALUSTRADE TYPES				
BAL-1	BALUSTRADE TYPE 1 - GALV. STEEL			
	VERTICAL BARS, 1000mm HIGH			
BAL-2	BALUSTRADE TYPE 2 - GALV. STEEL			
	VERTICAL BARS, 1200mm HIGH			
FENCE TYPES	<u>S</u>			
FNC-1	GALVANISED STEEL HORIZONTAL TOP			
	AND MID RAILS 900mm HIGH INC. GATES			
FNC-2	STEEL POWDERCOAT VERTICAL SPEAR			
	TOP FENCE 1800mm HIGH INC. GATES			
FNC-3	GALVANISED STEEL CHAINMESH FENCING			
	1800mm HIGH INC. GATES			
FNC-4	COLORBOND SPANDEK MATERIAL ON			
	GALVANISED STEEL FRAME, 1800mm HIGH			
STRUCTURAL				
OFC	OFF-FORM CONCRETE COLUMNS, BEAMS,			
	UPTURNS ETC.			
PCFP	PRECAST CONCRETE BEAMS AND PLANKS			
ST FRAME	GALVANISED STEEL FRAME OF COLUMNS,			
BLP	BEAMS, BRACES AND MAIN SUPPORTS			
BLP	CORE FILLED CONCRTE BLOCK, PAINT MEMBRANE FINISH			
MRS	MEMBRANE FINISH METAL ROOF SHEETING, COLORBOND			
MINO	FINISH INCLUDING FASCIAS, GUTTERS,			
	DOWNPIPES AND FLASHINGS			
MWC	METAL WALL CLADDING, COLORBOND			
	FINISH INCLUDING FLASHINGS AND TRIMS			
PRE CL	PREFINISHED METAL FASCIA CLADDING			
SCR1	POWDERCOATED, PERFORATED SCREEN			
00111	TYPE 1, VAROIUS COLOURS			
SCR2	POWDERCOATED, PERFORATED SCREEN			
	TYPE 2, VAROIUS COLOURS			
GLZ	GLAZING PANELS			

NOTE:

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DRAWING STATUS

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CLIENT





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PROJECT

ROCKY SPORTS CLUB

ROCKHAMPTON STADIUM

TITLE

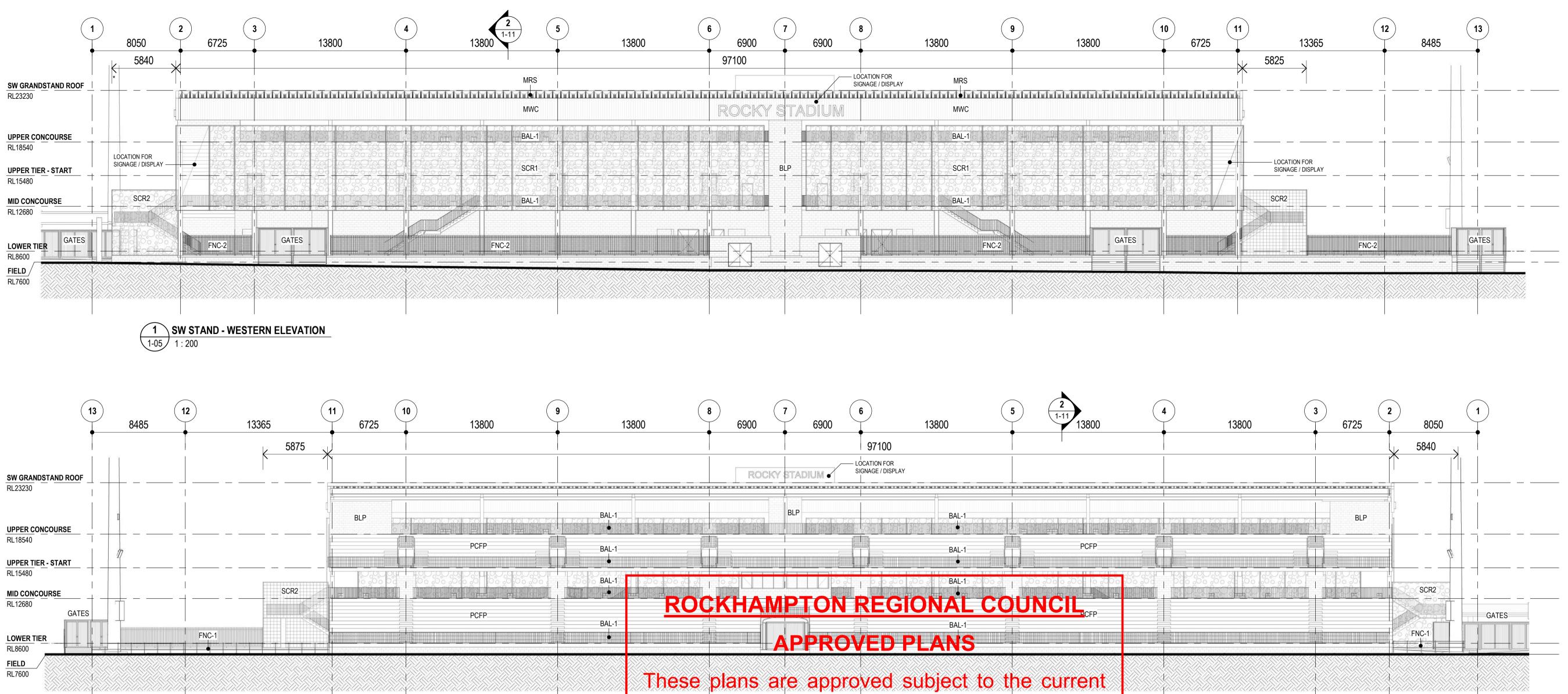
NORTH EAST STADIUM ELEVATION

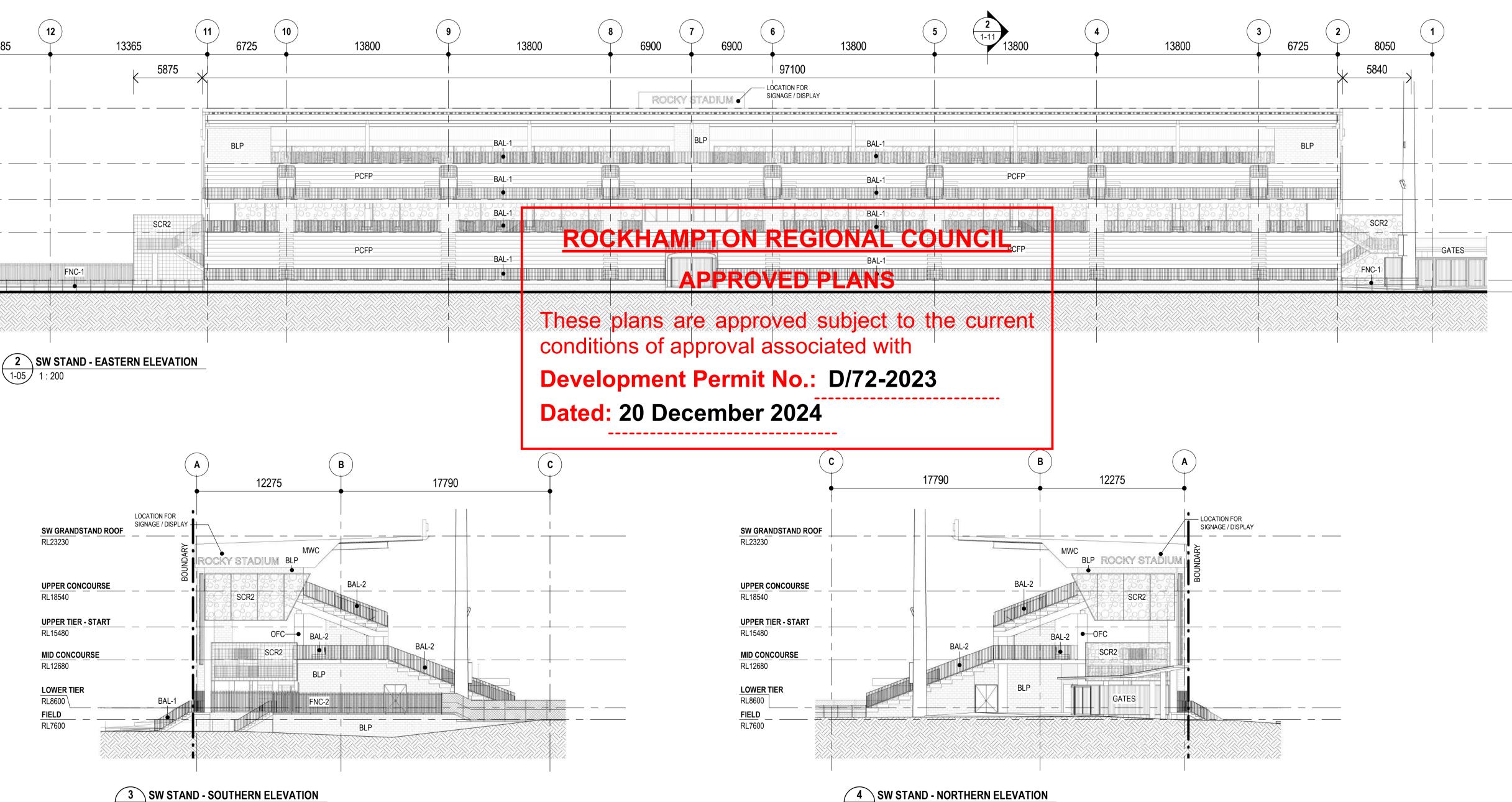
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30/08/23		Author	
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As indicated @ A1		Checker	
CLIENT NO.		APPROVED BY	
		Approver	
PROJECT NO.	PHASE	DRAWING NO.	REV.

(2)

1)

ROSP0101 SD **A1-08**





3 SW STAND - SOUTHERN ELEVATION 1-05 1:200

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1-05 1:200

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	PRELIMINARY FOR REVIEW	SS	11/11/22
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	DA RFI RESPONSE		17/08/23
	DA RFI RESPONSE	JS	30/08/23

LEGEND:	
BALUSTRA	
BALOSTRAL	BALUSTRADE TYPE 1 - GALV. STEEL
	VERTICAL BARS, 1000mm HIGH
BAL-2	BALUSTRADE TYPE 2 - GALV. STEEL
	VERTICAL BARS, 1200mm HIGH
FENCE TYPI	
FNC-1	GALVANISED STEEL HORIZONTAL TOP
	AND MID RAILS 900mm HIGH INC. GATES
FNC-2	STEEL POWDERCOAT VERTICAL SPEAR
1110 2	TOP FENCE 1800mm HIGH INC. GATES
FNC-3	GALVANISED STEEL CHAINMESH FENCING
	1800mm HIGH INC. GATES
FNC-4	COLORBOND SPANDEK MATERIAL ON
	GALVANISED STEEL FRAME, 1800mm HIGH
STRUCTURA	AL ELEMENTS
OFC	OFF-FORM CONCRETE COLUMNS, BEAMS,
	UPTURNS ETC.
PCFP	PRECAST CONCRETE BEAMS AND PLANKS
	ETC.
ST FRAME	GALVANISED STEEL FRAME OF COLUMNS,
	BEAMS, BRACES AND MAIN SUPPORTS
BLP	CORE FILLED CONCRTE BLOCK, PAINT
	MEMBRANE FINISH
MRS	METAL ROOF SHEETING, COLORBOND
	FINISH INCLUDING FASCIAS, GUTTERS,
	DOWNPIPES AND FLASHINGS
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	FINISH INCLUDING FLASHINGS AND TRIMS
PRE CL	PREFINISHED METAL FASCIA CLADDING
SCR1	POWDERCOATED, PERFORATED SCREEN
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GLZ	GLAZING PANELS

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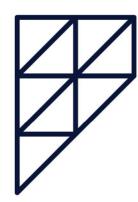
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PROJECT

ROCKY SPORTS CLUB

ROCKHAMPTON STADIUM

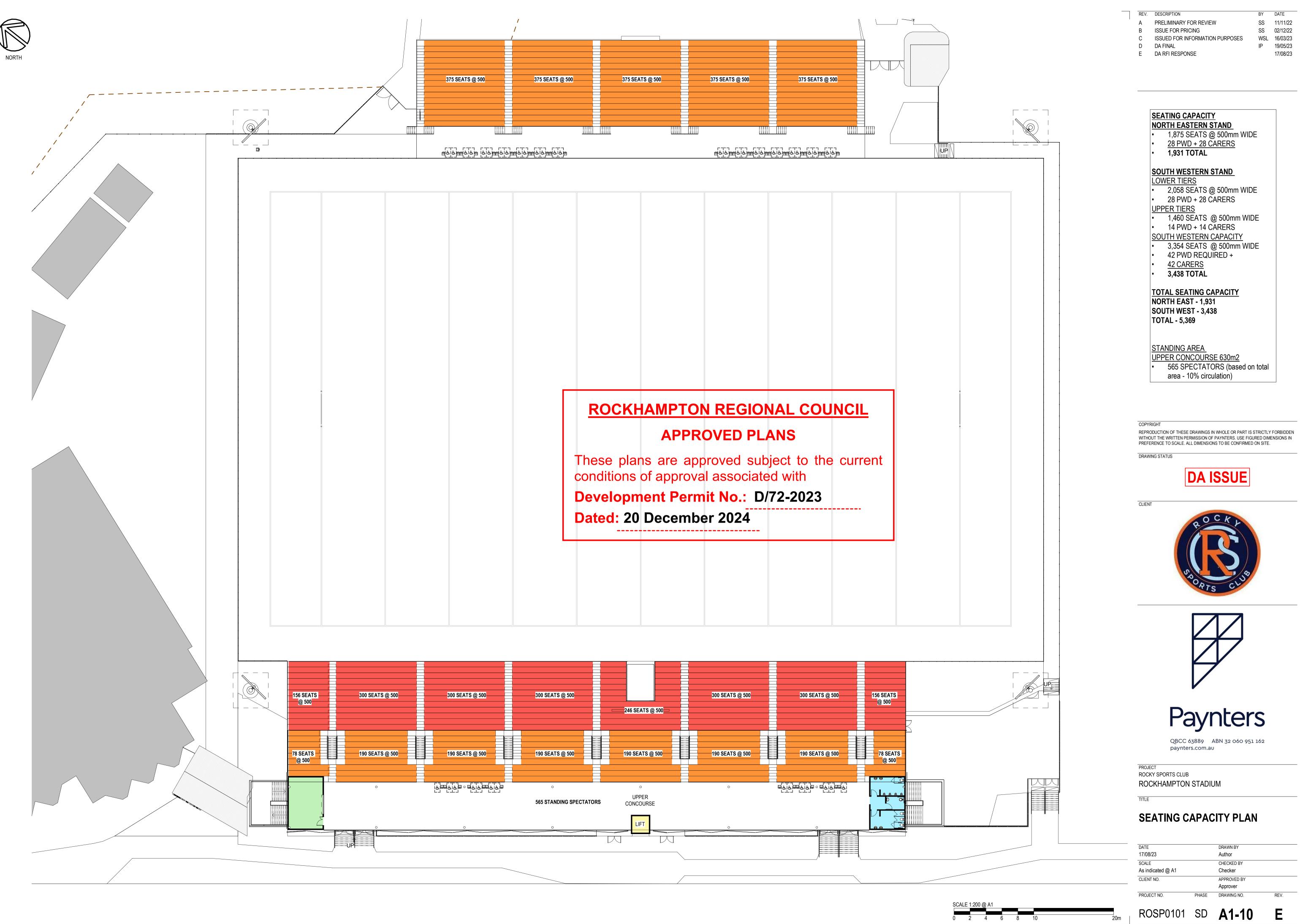
TITLE

SOUTH WEST STADIUM ELEVATION

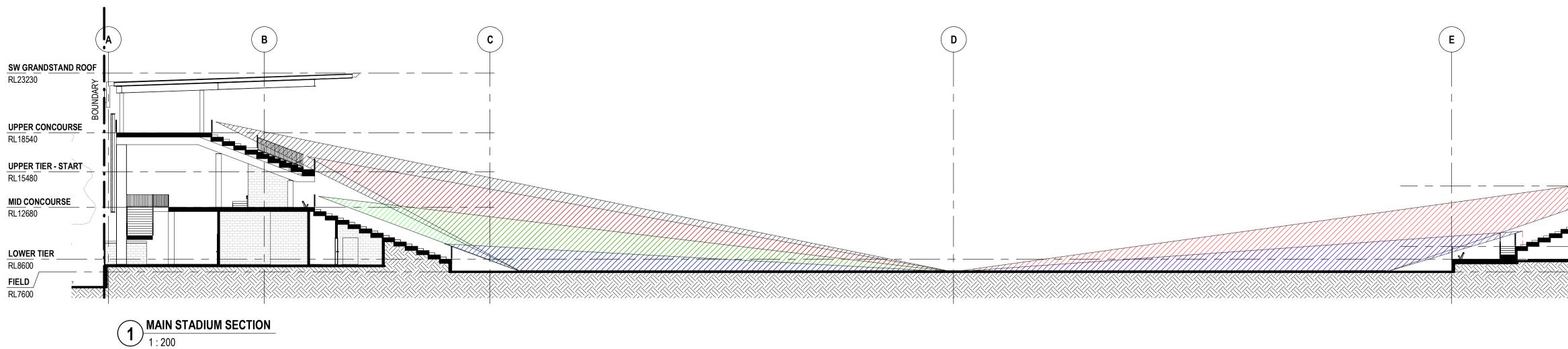
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PROJECT NO.	PHASE	DRAWING NO.	REV.

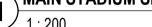
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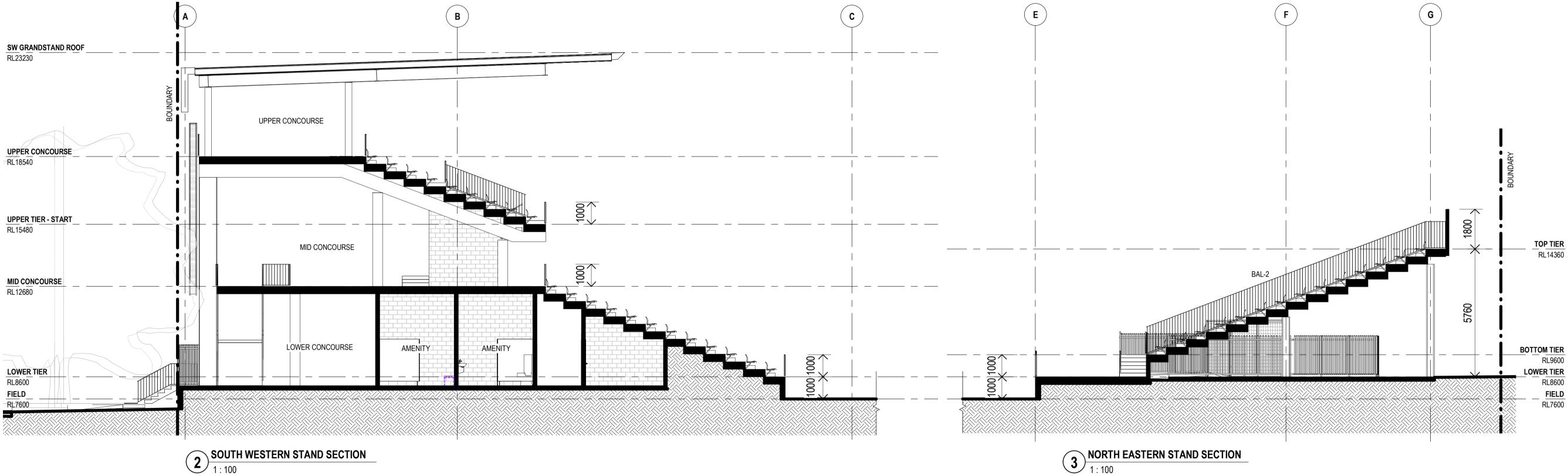
ROSP0101 CD A1-09



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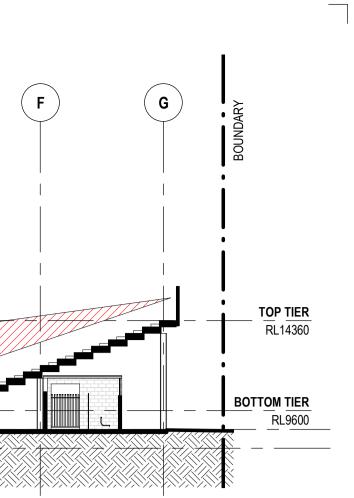




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EV.	DESCRIPTION	BY	DATE
١	ISSUE FOR PRICING	SS	02/12/2
}	ISSUED FOR INFORMATION PURPOSES	WSL	16/03/2
)	DA FINAL	IP	19/05/2
)	DA RFI RESPONSE		17/08/2

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PROJECT

ROCKY SPORTS CLUB

ROCKHAMPTON STADIUM

TITLE

SECTIONS

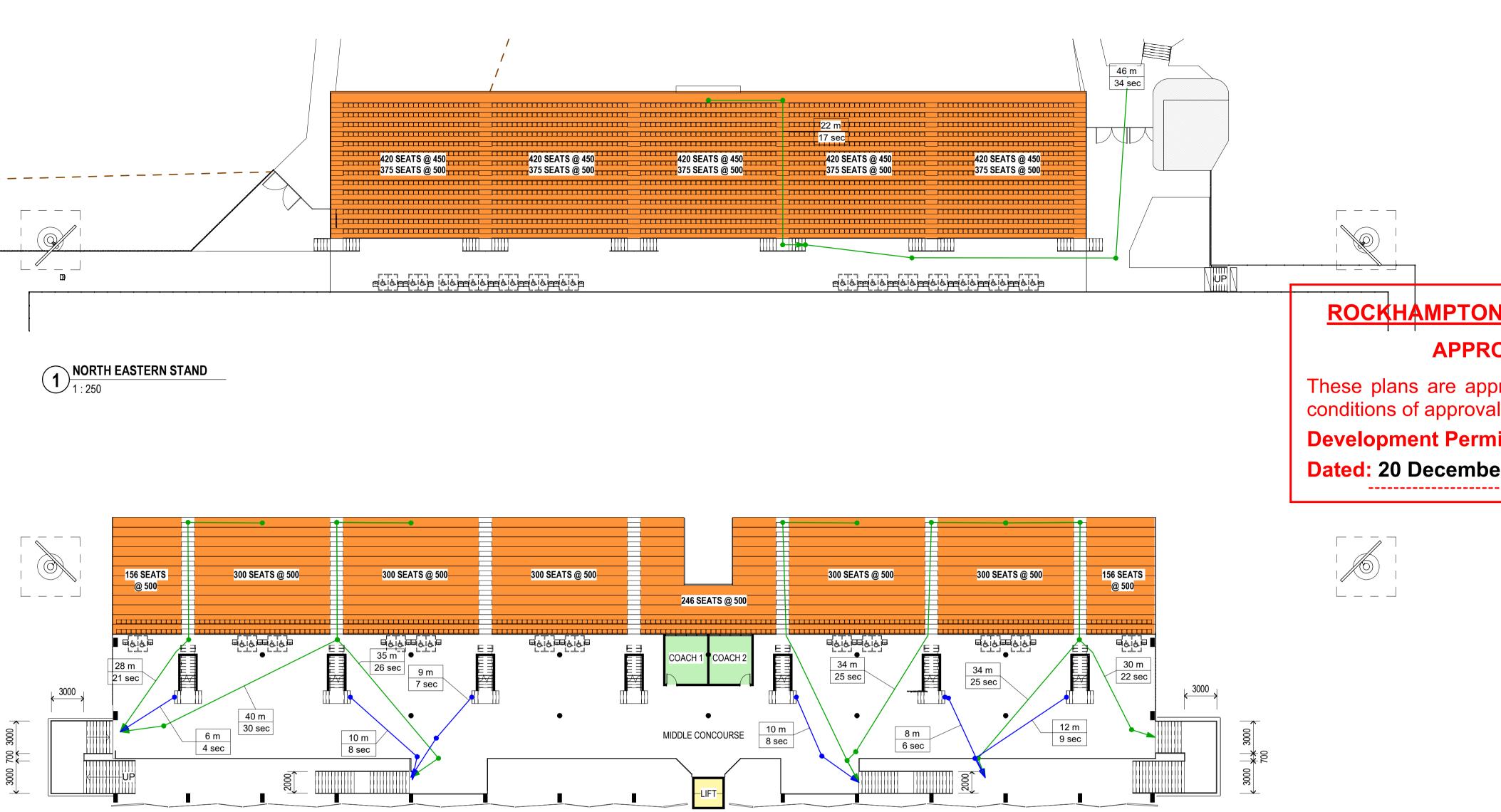
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	PROJECT NO.	PHASE	DRAWING NO.	REV.
	CLIENT NO.		APPROVED BY Approver	
	SCALE As indicated @ A1		CHECKED BY Checker	
	DATE 17/08/23		DRAWN BY Author	
	DATE			



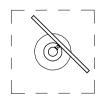


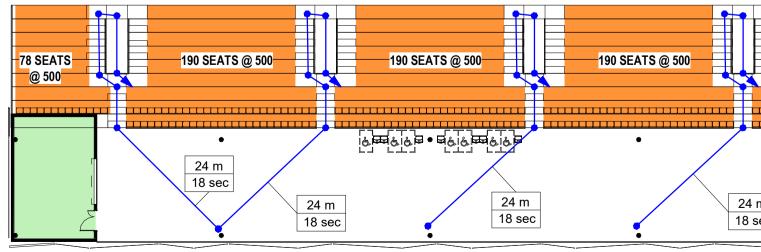




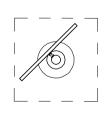


2 SOUTH WESTERN STAND - MID CONCOURSE 1:250





3 SOUTH WESTERN STAND - UPPER CONCOURSE 1 : 250



190 SEATS @ 500	190 SEATS @ 500		190 SEATS @ 500	78 SEATS @ 500
• UPPER CONCOURSE	•	ာ မြ	المعلم المعلم المعلم المعلم	
LIFT	•		•	

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REV. DESCRIPTION PRELIMINARY FOR REVIEW

ISSUED FOR INFORMATION PURPOSES C DA FINAL

D DA RFI RESPONSE

DATE SS 11/11/22 WSL 16/03/23 IP 19/05/23

17/08/23

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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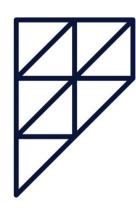
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PROJECT

ROCKY SPORTS CLUB

ROCKHAMPTON STADIUM

TITLE

25m

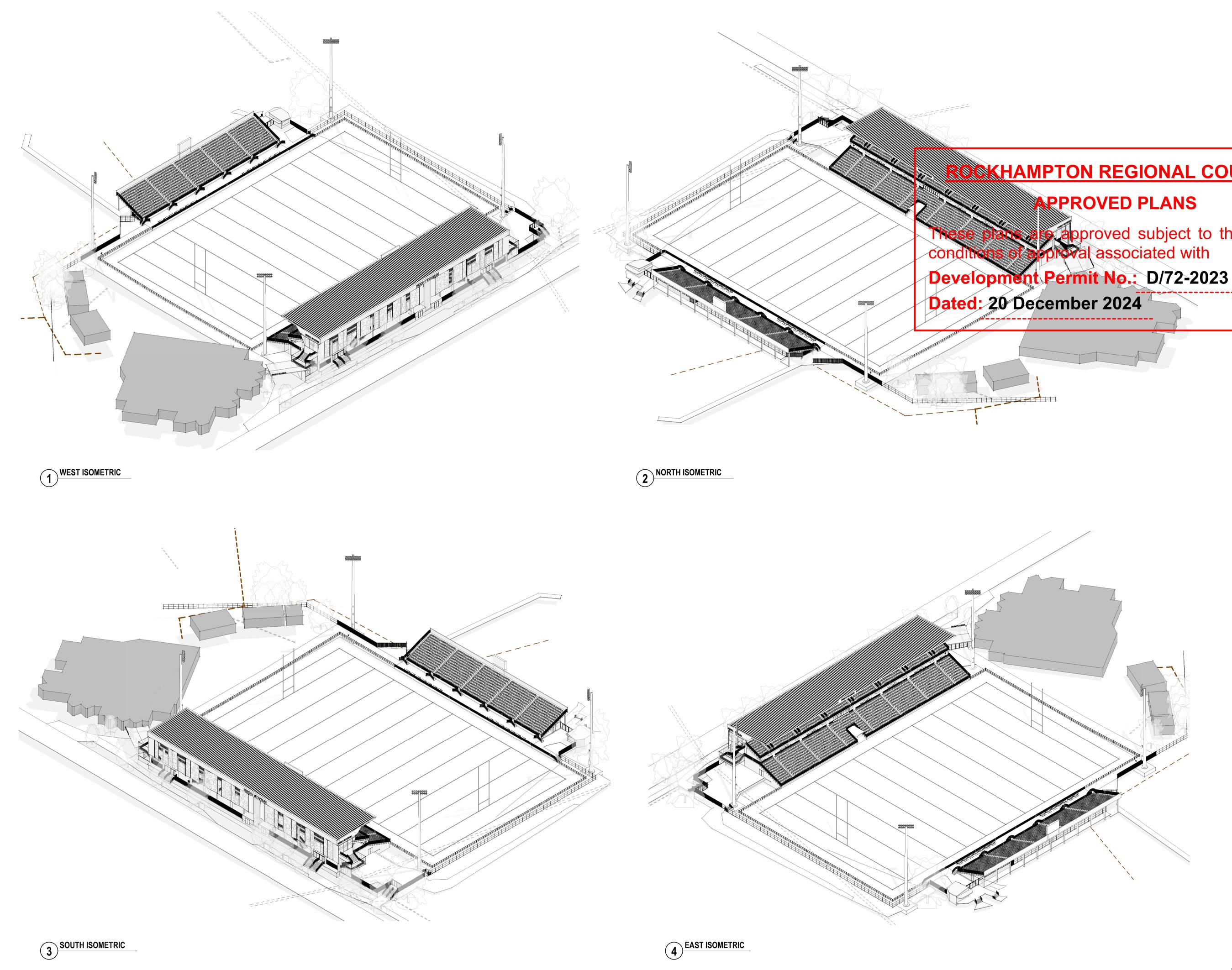
PATH OF TRAVEL EXIT WIDTH

DATE DRAWN BY 17/08/23 Author SCALE CHECKED BY 1 : 250 @ A1 Checker CLIENT NO. APPROVED BY Approver PROJECT NO. DRAWING NO. PHASE

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ROSP0101 SD A1-12

NOTE: FURTHER INVESTIGATION IS REQUIRED WITH BUILDING CERTIFIER / SPECIALIST FIRE ENGINEER INTO PERFORMANCE SOLUTIONS AND ASSESSMENT AGAINST THE GREEN GUIDE TO ANALYSE TIME BASED EXIT STRATEGY CAN BE ADOPTED TO SUPPORT THE EXIT WIDTHS / NUMBER OF STAIRS CURRENTLY DESIGNED



REV. DESCRIPTION В

A PRELIMINARY FOR REVIEW **ISSUE FOR PRICING**

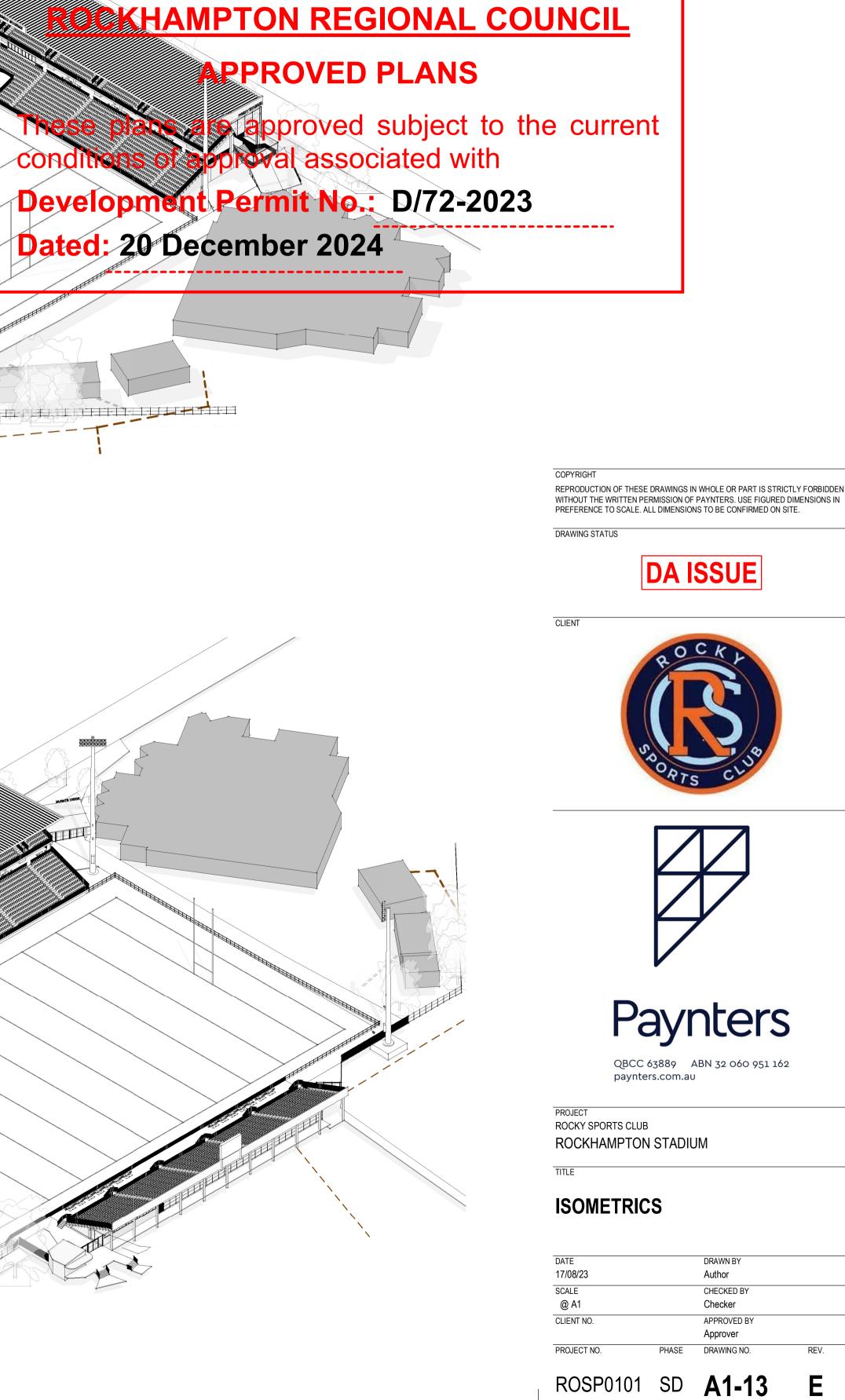
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E DA RFI RESPONSE

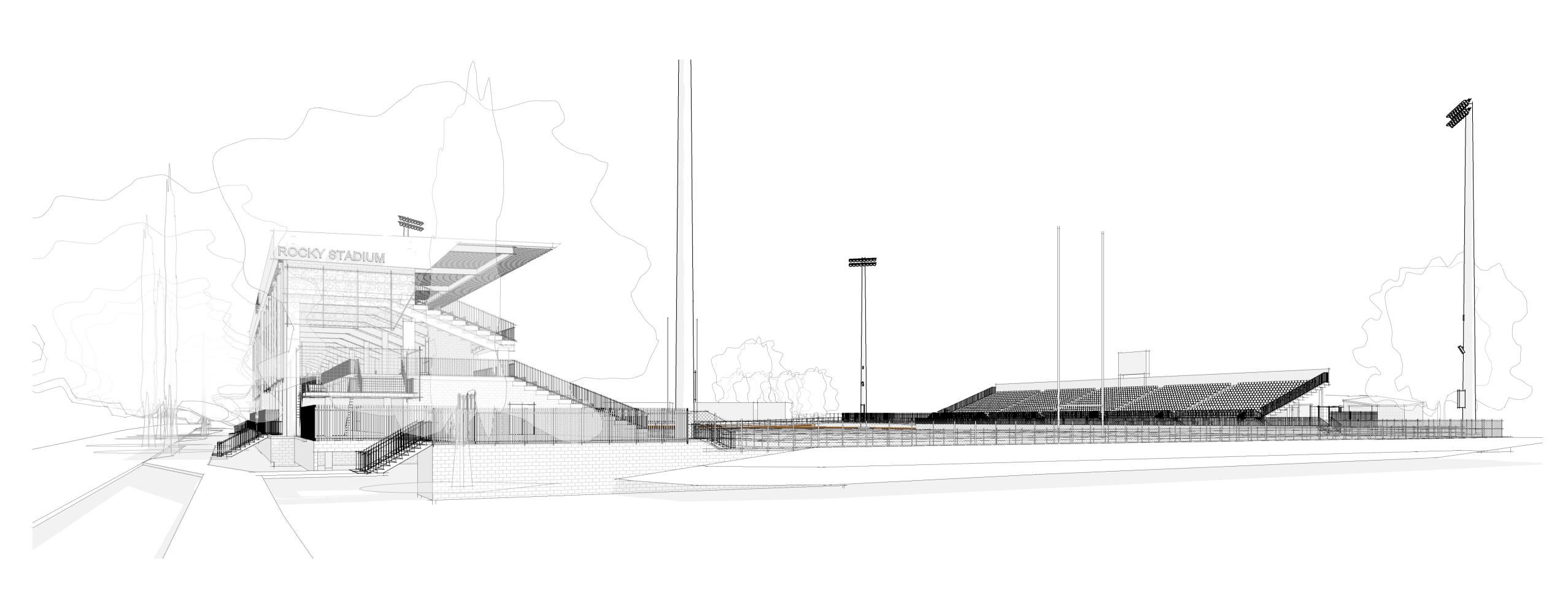
DATE SS 11/11/22 SS 02/12/22 WSL 16/03/23 IP 19/05/23 17/08/23

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ENTRY PERSPECTIVE



CNR ACTON WAY & HUISH DRIVE



ROCKHAMPTON REGIONAL COUNCIL

conditions of approval associated with

Dated: 20 December 2024 ------

4

DESCRIPTION

С

PRELIMINARY FOR REVIEW

ISSUE FOR PRICING В

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ROCKHAMPTON STADIUM

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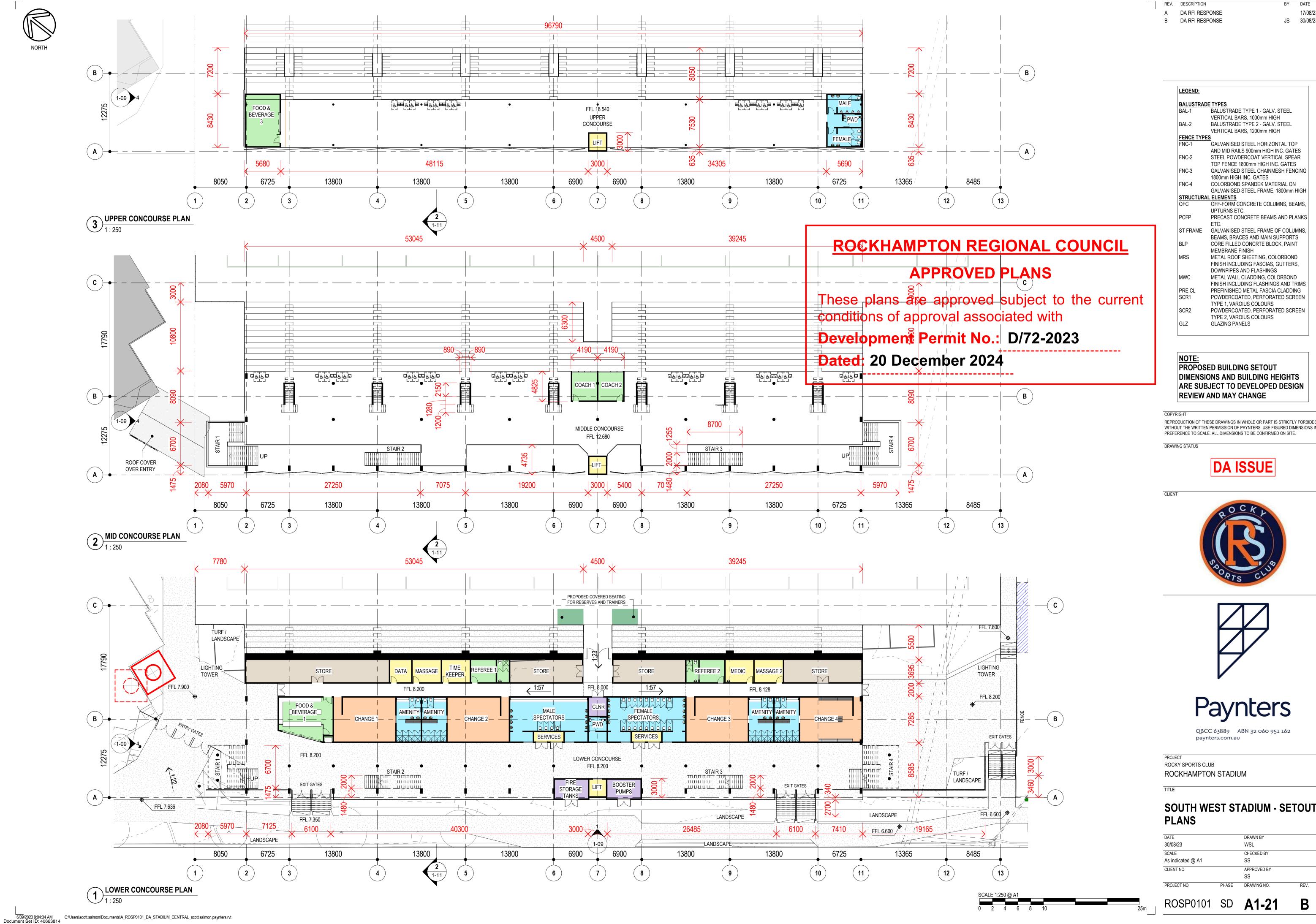
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PERSPECTIVES

DATE DRAWN BY 17/08/23 Author SCALE CHECKED BY @ A1 Checker CLIENT NO. APPROVED BY Approver PROJECT NO. DRAWING NO.

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ROSP0101 SD A1-14



Version: 1, Version Date: 01/12/2023

BY DATE 17/08/23 JS 30/08/23

LEGEND:	
BALUSTRAD	DE TYPES
BAL-1	BALUSTRADE TYPE 1 - GALV. STEEL
	VERTICAL BARS, 1000mm HIGH
BAL-2	BALUSTRADE TYPE 2 - GALV. STEEL
	VERTICAL BARS, 1200mm HIGH
FENCE TYPE	<u>=S</u>
FNC-1	GALVANISED STEEL HORIZONTAL TOP
	AND MID RAILS 900mm HIGH INC. GATES
FNC-2	STEEL POWDERCOAT VERTICAL SPEAR
	TOP FENCE 1800mm HIGH INC. GATES
FNC-3	GALVANISED STEEL CHAINMESH FENCING
	1800mm HIGH INC. GATES
FNC-4	COLORBOND SPANDEK MATERIAL ON
	GALVANISED STEEL FRAME, 1800mm HIGH
	AL ELEMENTS
OFC	OFF-FORM CONCRETE COLUMNS, BEAMS,
	UPTURNS ETC.
PCFP	PRECAST CONCRETE BEAMS AND PLANKS
	ETC.
ST FRAME	GALVANISED STEEL FRAME OF COLUMNS,
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BLP	CORE FILLED CONCRTE BLOCK, PAINT
	MEMBRANE FINISH
MRS	METAL ROOF SHEETING, COLORBOND
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SCR2	POWDERCOATED, PERFORATED SCREEN
0.7	TYPE 2, VAROIUS COLOURS
GLZ	GLAZING PANELS
1	1

DIMENSIONS AND BUILDING HEIGHTS ARE SUBJECT TO DEVELOPED DESIGN

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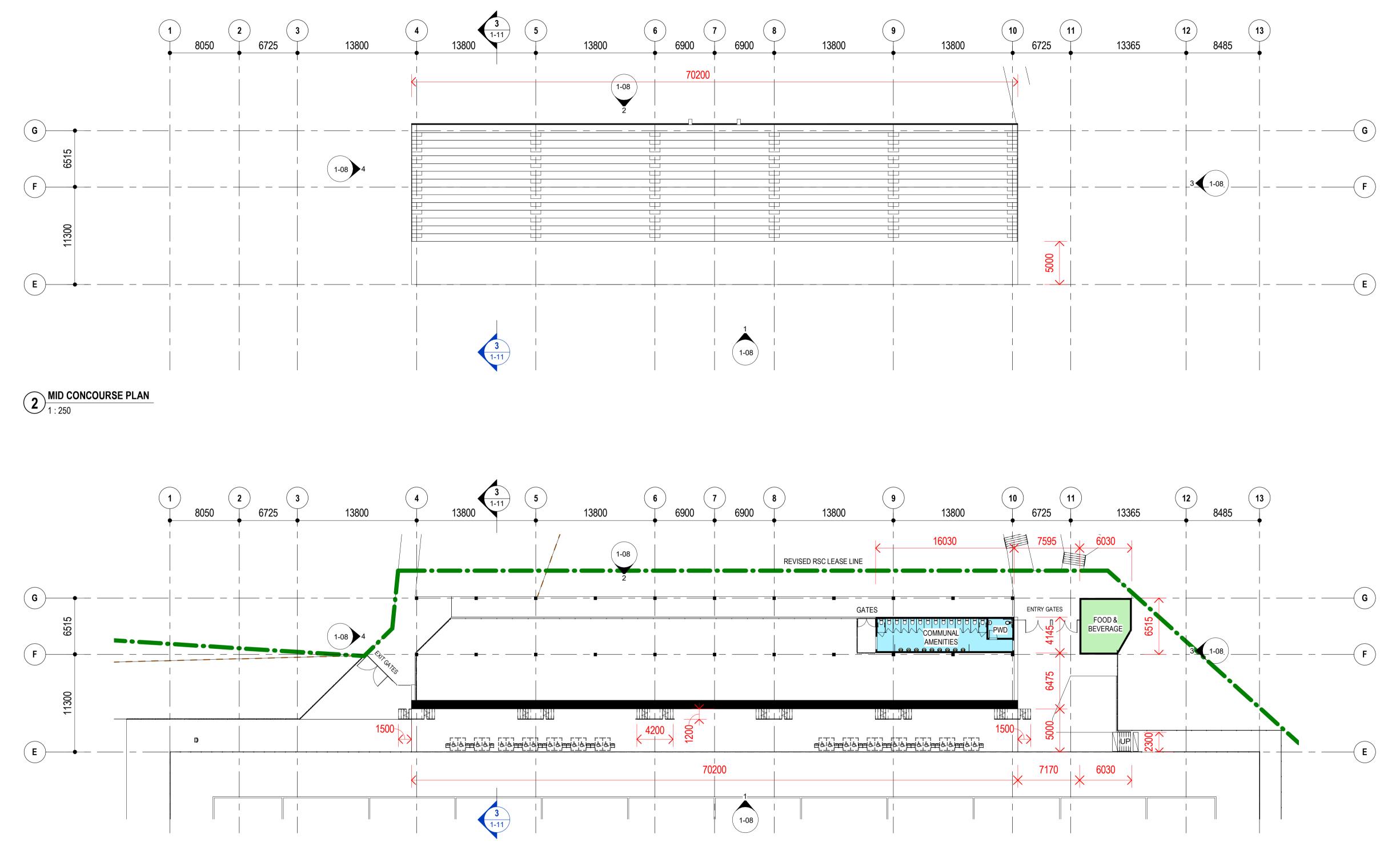
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SOUTH WEST STADIUM - SETOUT

DATE		DRAWN BY	
30/08/23		WSL	
SCALE		CHECKED BY	
As indicated @ A1		SS	
CLIENT NO.		APPROVED BY	
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LOWER CONCOURSE PLAN 1:250

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ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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Development Permit No.: D/72-2023 _____

Dated: 20 December 2024 -----

REV. DESCRIPTION A DA RFI RESPONSE BY DATE 17/08/23

DE TYPES
BALUSTRADE TYPE 1 - GALV. STEEL
VERTICAL BARS, 1000mm HIGH
BALUSTRADE TYPE 2 - GALV. STEEL
VERTICAL BARS, 1200mm HIGH
<u>=S</u>
GALVANISED STEEL HORIZONTAL TOP
AND MID RAILS 900mm HIGH INC. GATES
STEEL POWDERCOAT VERTICAL SPEAR
TOP FENCE 1800mm HIGH INC. GATES
GALVANISED STEEL CHAINMESH FENCING 1800mm HIGH INC. GATES
COLORBOND SPANDEK MATERIAL ON
GALVANISED STEEL FRAME, 1800mm HIGH
L ELEMENTS
OFF-FORM CONCRETE COLUMNS, BEAMS,
UPTURNS ETC.
PRECAST CONCRETE BEAMS AND PLANKS
ETC.
GALVANISED STEEL FRAME OF COLUMNS,
BEAMS, BRACES AND MAIN SUPPORTS
CORE FILLED CONCRTE BLOCK, PAINT
METAL ROOF SHEETING, COLORBOND
FINISH INCLUDING FASCIAS, GUTTERS, DOWNPIPES AND FLASHINGS
METAL WALL CLADDING, COLORBOND
FINISH INCLUDING FLASHINGS AND TRIMS
PREFINISHED METAL FASCIA CLADDING
POWDERCOATED, PERFORATED SCREEN
TYPE 1, VAROIUS COLOURS
POWDERCOATED, PERFORATED SCREEN
TYPE 2, VAROIUS COLOURS
GLAZING PANELS

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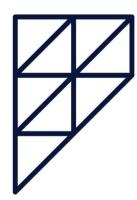
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PROJECT

ROCKY SPORTS CLUB

ROCKHAMPTON STADIUM

TITLE

NORTH EAST STADIUM - SETOUT PLANS

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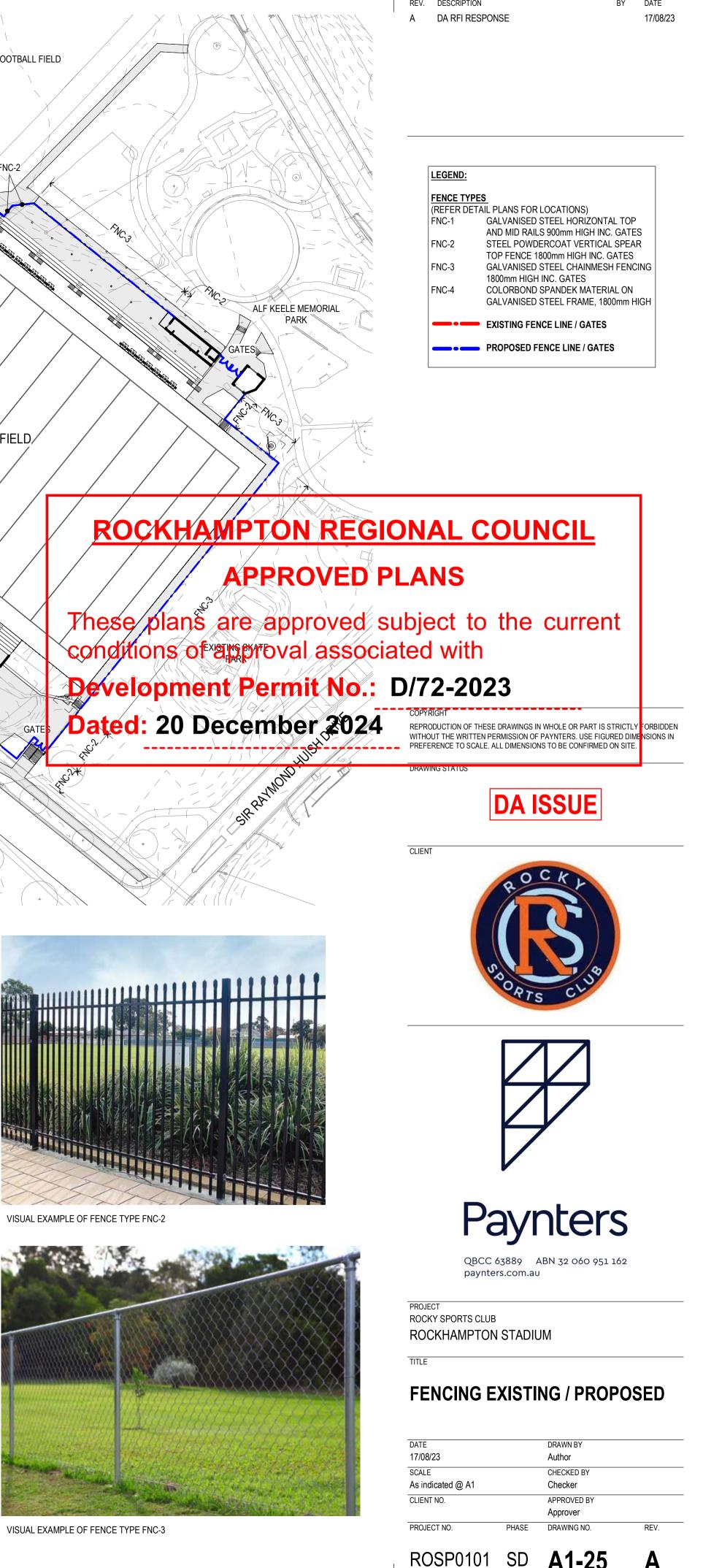


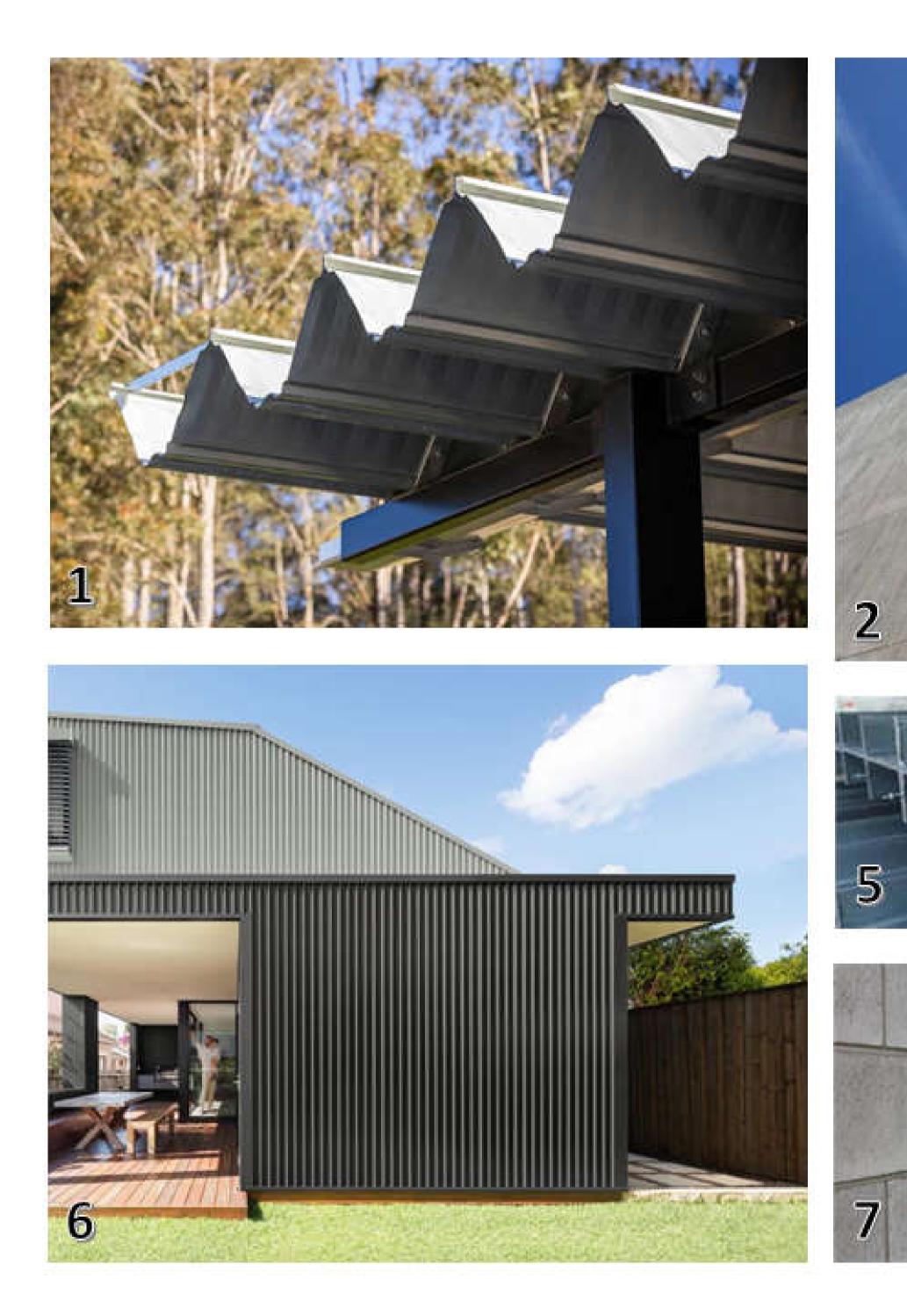


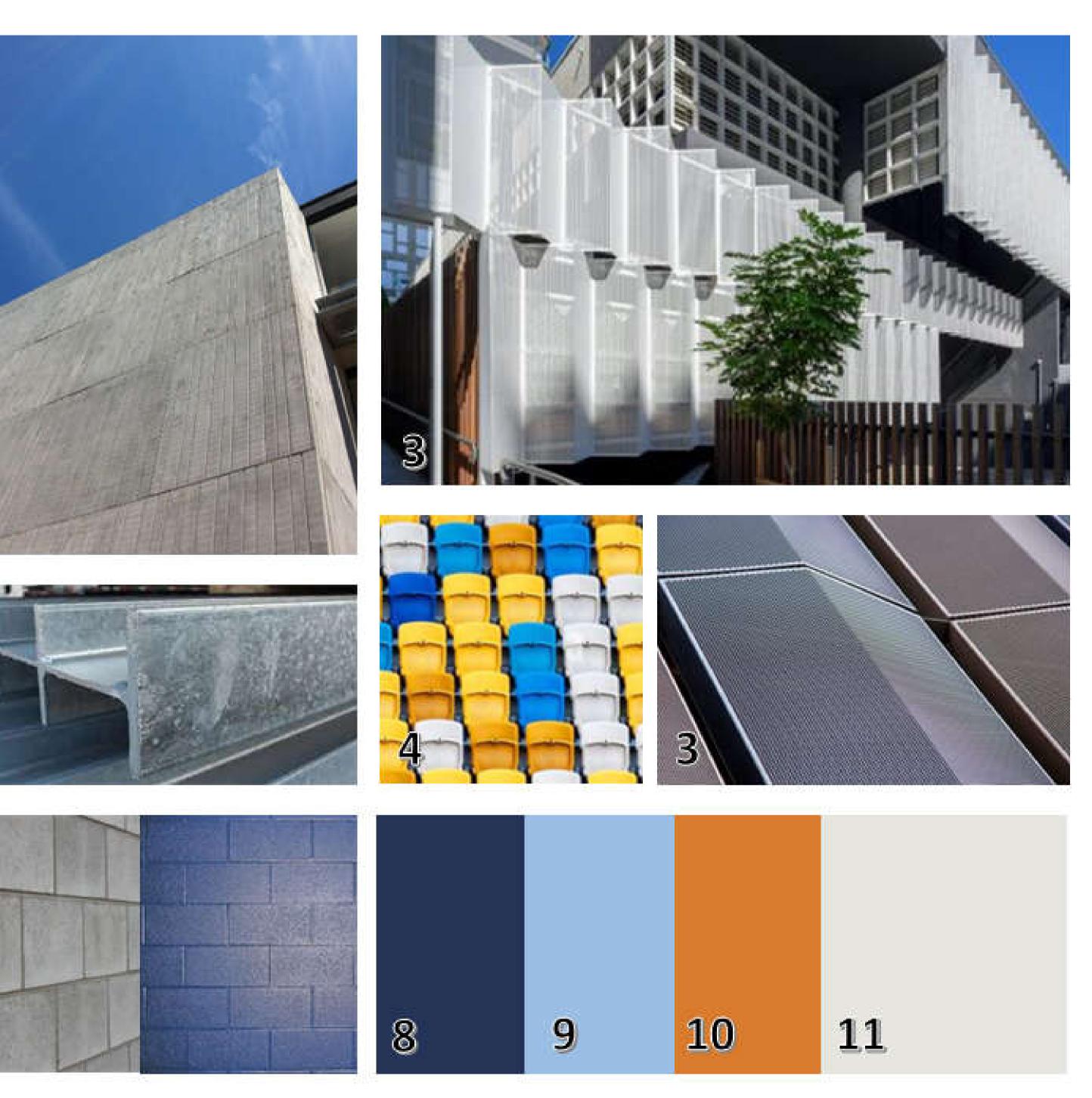












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Development Permit No.: D/72-2023 -----

Dated: 20 December 2024 -----

REV. DESCRIPTION A DA RFI RESPONSE

LEGEND:

- 1 DEEP PAN METAL ROOF SHEETING ON PAINTED STEEL STRUCTURE (MRS)
- 2 OFF FORM & PRECAST CONCRETE
- 3 PERFORATED METAL SCREENS, POWDERCOAT FINISH (SCR1 & 2)
- 4 STADIUM SEATING IN ALTERNATING COLOURS
- 5 GALVANISED STEEL STRUCTURAL STEELWORK / BALUSTRADES
- 6 METAL CLADDING FASICA & SCREENS (MWC)
- 7 BLOCKWORK / PAINTED BLOCKWORK
- 8 PAINT / POWDERCOAT / SEAT COLOUR 1
- 9 PAINT / POWDERCOAT / SEAT COLOUR 2
- 10 PAINT / POWDERCOAT / SEAT COLOUR 3
- 11 PAINT / POWDERCOAT / SEAT COLOUR 4

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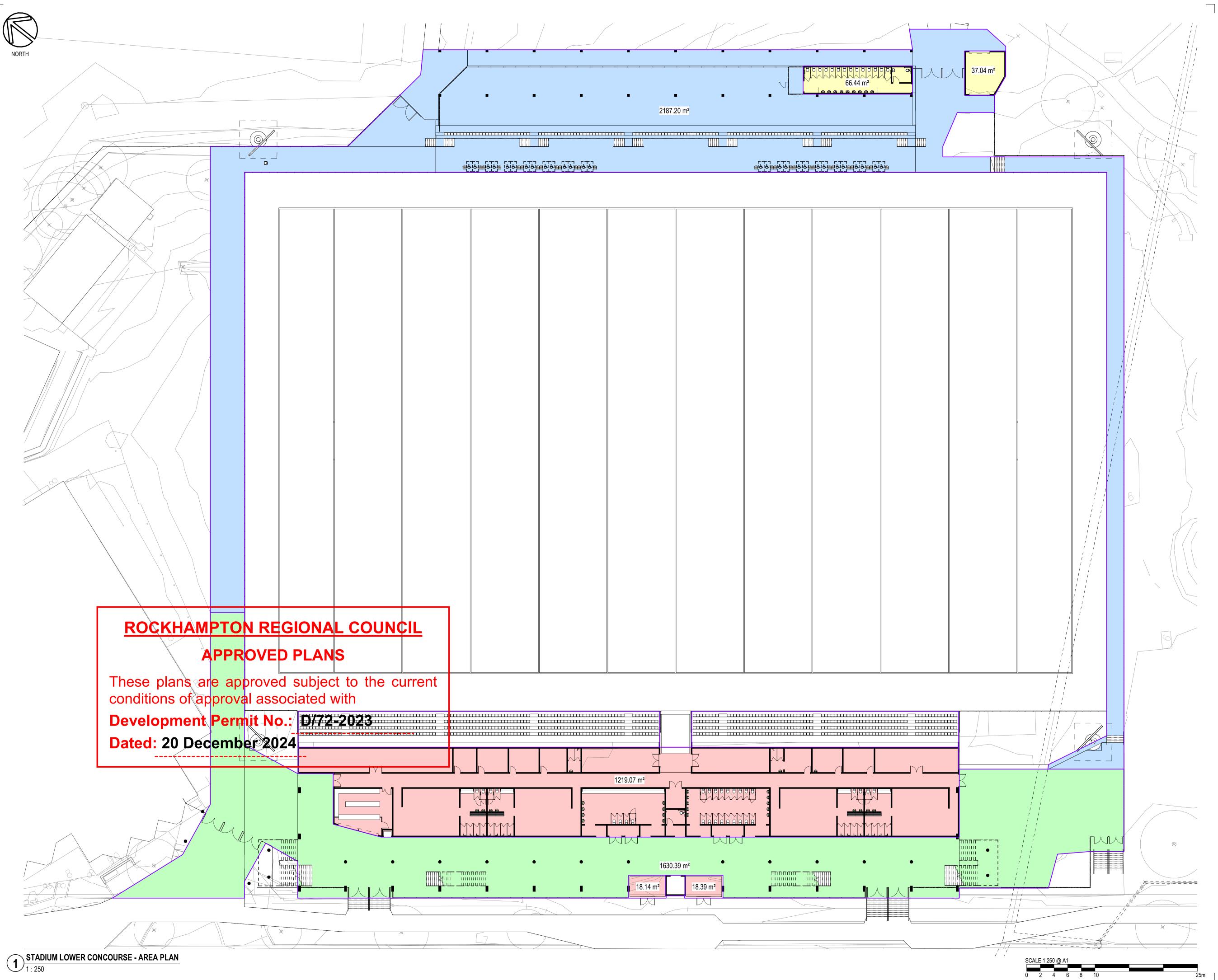
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TITLE

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STAGE 1 - GFA: LOWER CONCOURSE MIDDLE CONCOURSE UPPER CONCOURSE TOTAL:	1255.60m ² 40.45m ² 97.43m ² 1393.48m ²	
STAGE 1 - EXTERIOR: LOWER CONCOURSE MIDDLE CONCOURSE UPPER CONCOURSE TOTAL:	1630.30m ² 0m ² 1630.30m ²	
STAGE 2 - GFA: LOWER CONCOURSE MIDDLE CONCOURSE UPPER CONCOURSE TOTAL:	103.48 ² 0m ² 0m ² 103.48m²	
STAGE 2 - EXTERIOR: LOWER CONCOURSE MIDDLE CONCOURSE UPPER CONCOURSE TOTAL:	2187.20m ² 0m ² 0m ² 2187.20m ²	

1496.96m²

3817.50m²

TOTAL GFA:

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STAGE 1 - EXTERIOR: LOWER CONCOURSE MIDDLE CONCOURSE UPPER CONCOURSE TOTAL:	1630.30m ² 0m ² 0m ² 1630.30m²
STAGE 2 - GFA: LOWER CONCOURSE MIDDLE CONCOURSE UPPER CONCOURSE TOTAL:	103.48 ² 0m ² 0m ² 103.48m²
STAGE 2 - EXTERIOR: LOWER CONCOURSE MIDDLE CONCOURSE UPPER CONCOURSE	2187.20m ² 0m ² 0m ² 2187.20m ²

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ROCKY SPORTS CLUB

ROCKHAMPTON STADIUM

TITLE

STADIUM LOWER CONCOURSE AREAS PLAN

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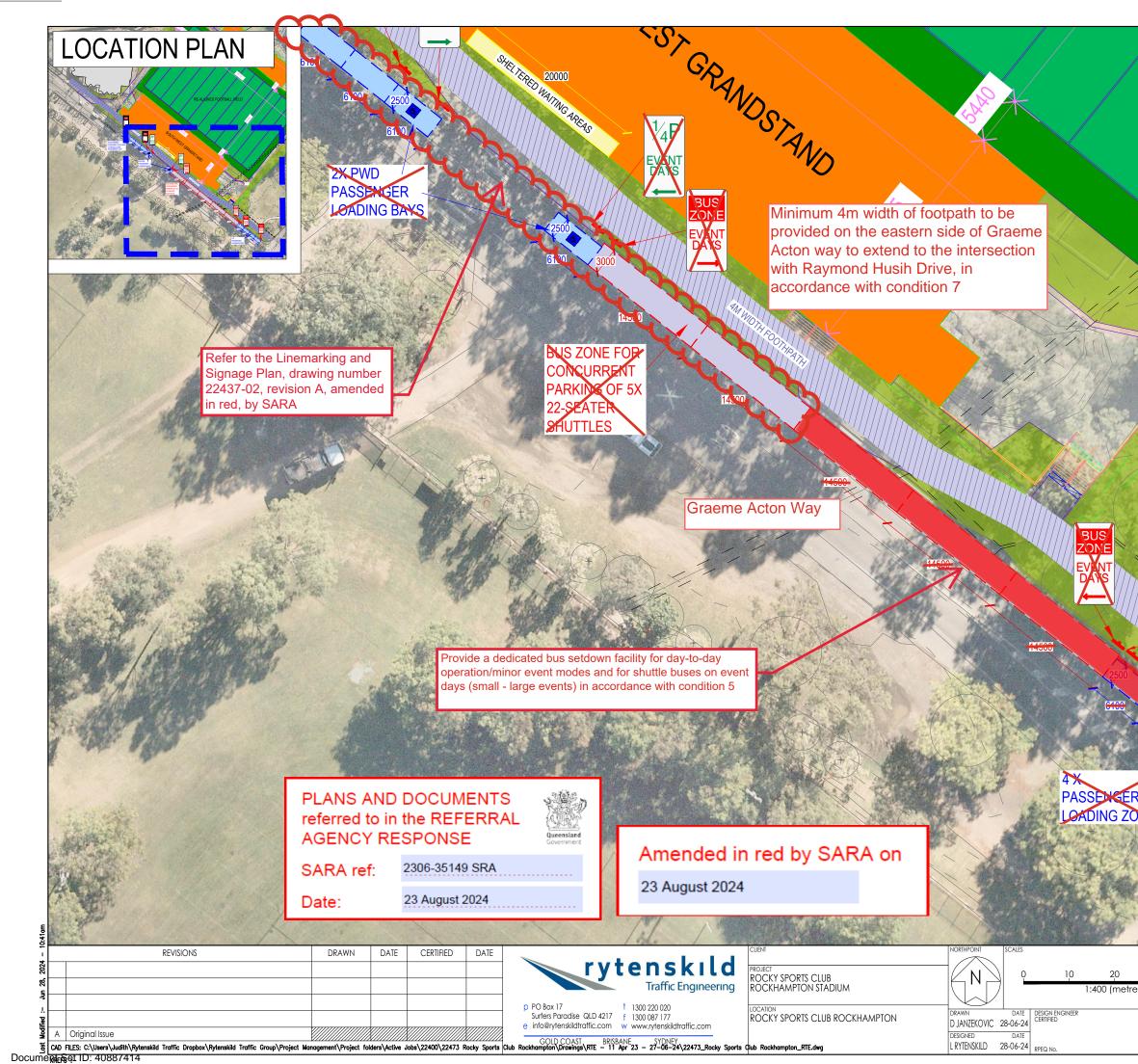
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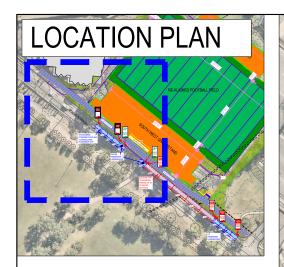
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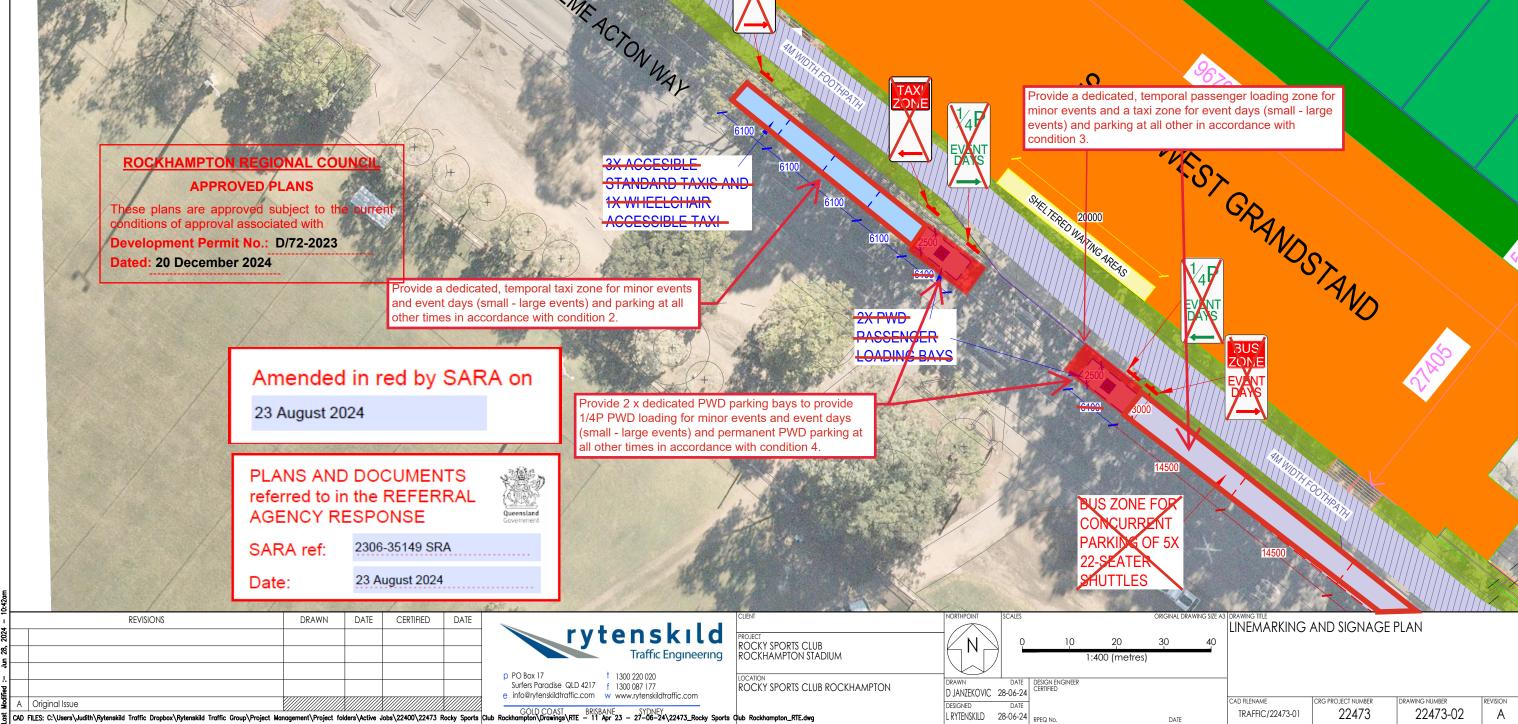
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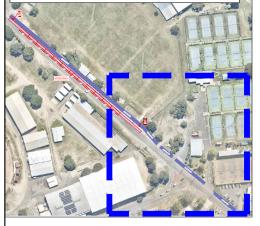
Minimum 4m width of footpath to be provided on the eastern side of Graeme Acton way to extend to the intersection with Raymond Husih Drive, in accordance with condition 7



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RE-ALIGNED FO

LOCATION PLAN



Refer to the Linemarking and Signage Plan, drawing number 22437-04, revision A, amended in red by SARA.

Minimum 4m width of footpath to be provided on the eastern side of Graeme Acton way to extend to the intersection with Raymond Husih Drive, in accordance with condition 7

ROCKHAMPTON REG APPROVED PLANS

ese plans are approved sub ditions of approval evelopment Permit No.: D/72-2023 Dated: 20 December 2024

Amended in red by SARA on

23 August 2024

PLANS AND DOCUMENTS referred to in the REFERRAL AGENCY RESPONSE

SARA ref:

ROCKY SPORTS CLUB ROCKHAMPTON STADIUM

LOCATION ROCKY SPORTS CLUB ROCKHAMPTON

2306-35149 SRA

D JANZEKOVIC 28-06-24

DESIGNED DATE L RYTENSKILD 28-06-24 RPEQ NO

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Date:

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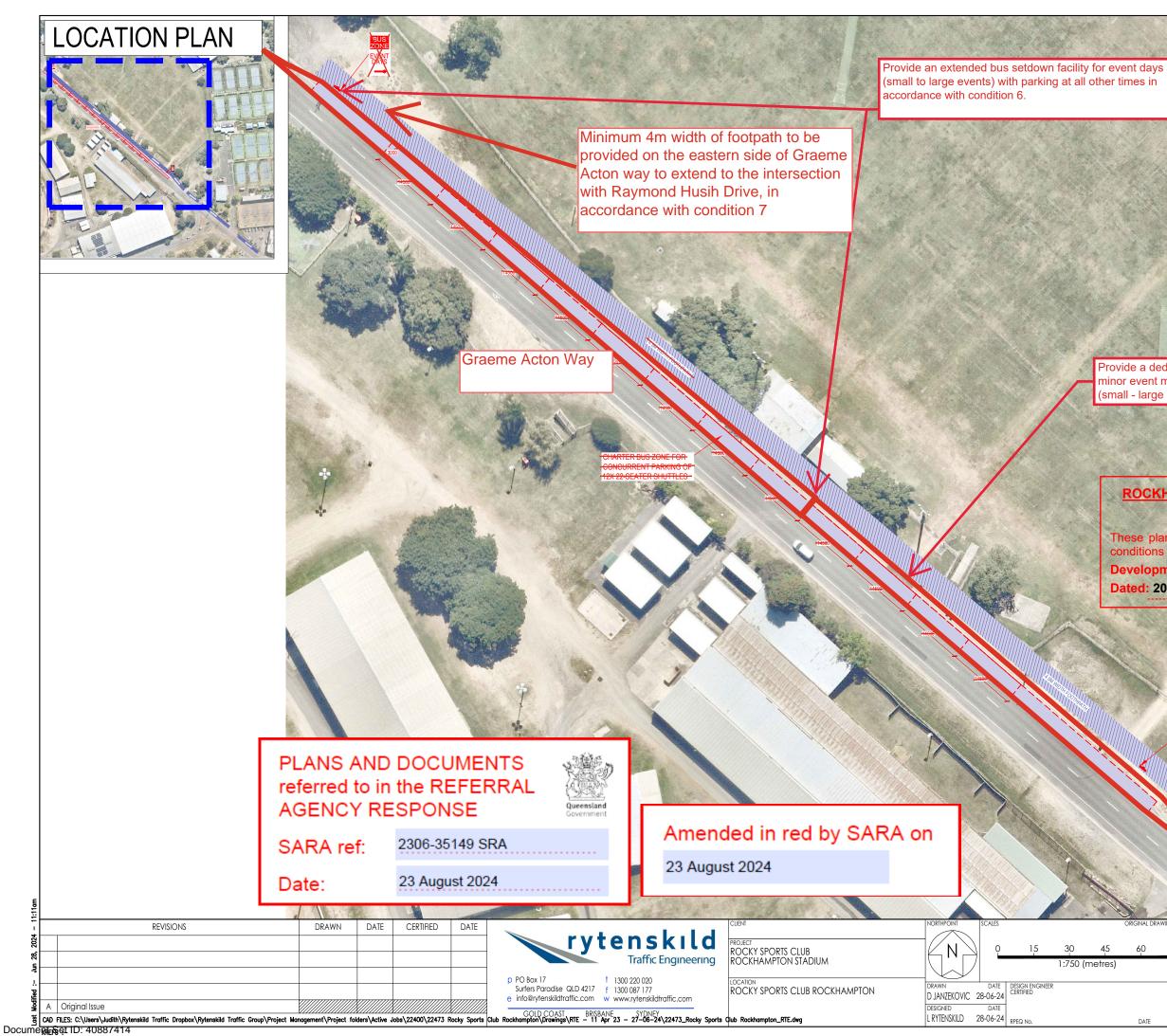
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Provide a dedicated bus zone for day-to-day operation and minor event modes and a bus setdown facility for event days (small - large events) in accordance with condition 6.

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LINEMARKING AND SIGNAGE PLAN

60 75

Prepared for Paynters Pty Ltd ABN: 32 060 951 162



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Rockhampton Stadium Graeme Acton Way, Wandal

Flood Impact Assessment

23-May-2023 Rockhampton Stadium





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23 August 2024

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23-May-2023

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Quality Information

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Ref	60651466
Date	23-May-2023
Originator	Patrick Lewis
Checker/s	Kristy Jenson
Verifier/s	Richard Corbett

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			Name/Position	Signature
1	15-May-2023	Draft	Richard Corbett Project Manager	Original Signed
A	23-May-2023	Final	Richard Corbett Project Manager	Original Signed

Professional Registration

This document includes professional services that require approval from a registered professional.

Registration Scheme	Discipline / Area of Practice	Name of Registered Professional*	Signature	Registration No.	Date
RPEQ	Civil	Richard Corbett	that bet	18139	23-May-2023

* The registered professional must be the originator of this work or have provided direct supervision to the originator.

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3.0	Impact Assessme	nt	Date:	23 August 2024	

3.1 Stadium Model Representation

To represent the proposed stadium in the TUFLOW Hydraulic Model the baseline topography was firstly updated to suit the design information provided by Paynters. This generally consisted of:

- Playing field raised to 7.600m AHD
- Surrounding concrete concourse and grandstand areas raised to between 7.6m and 8.8m AHD (based on the levels provided on Stadium Lower Concourse Plan, Rev C, Issued 16/03/23).

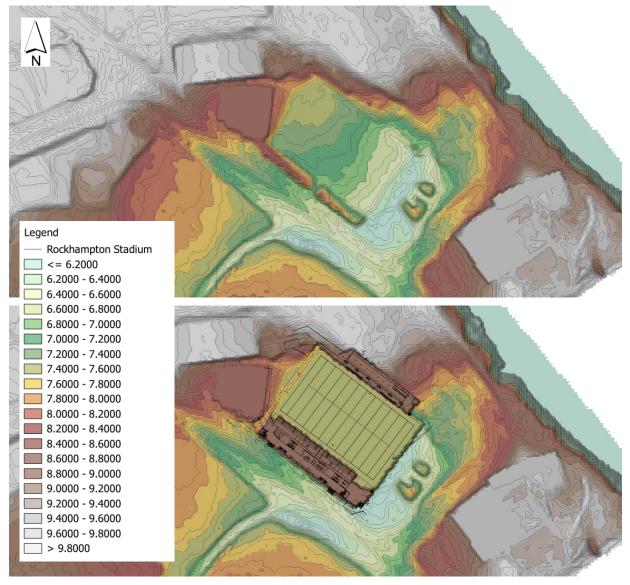


Figure 4 Baseline (Top) and Developed (Bottom) Topography Adopted

The material roughness within the TUFLOW models was also updated to reflect the nature of the proposed stadium. The roughness of the sports field and surrounding concourse was changed to a manning's roughness of 0.025. The buildings and grandstand areas on the North-East and South-West of the field were changed to represent a building roughness in accordance with other buildings in the baseline model. The building roughness applied is depth varying with a smooth starting manning's of 0.018 that transitions to a very rough manning's of 0.500 at depths above 0.3m.

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TRANSPORT IMPACT ASSESSMENT

PROPOSED NEW SPORTS STADIUM 1 GRAEME ACTON WAY, WANDAL LOT 40 ON SP240869 (UPDATED REPORT IN RESPONSE TO SARA'S ADVICE NOTE DATED 3RD NOVEMBER 2023)

Prepared for ROCKY SPORTS CLUB

11 DECEMBER 2024



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1.0 INTRODUCTION

Rytenskild Traffic Engineering (RTE) has been engaged by Rocky Sports Club to prepare a Transport Impact Assessment for its proposed Rockhampton Stadium at Wandal.

This is an updated report in response to Councils Further Advice dated 18th December 2023 and SARA's Advice Note dated 3rd November 2023. A brief response to each item is provided below.

Reference is made to the Transport Impact Assessment (TIA) prepared by Stantec for the Browne Park Stadium located at Rockhampton. Notably, there has been no reference to particular matters outlined in the Information Request found below. Particularly, the TIA does not undertake any form of road safety risk assessment (for any road users), and only refers to passenger set down areas within the prepared General Traffic Management Plan (TMP). See below extract from Stantec TIA.

"The frequency and operations of shuttle services and drop-off facilities (including taxis) catering for movements to and from the stadium will need to be considered, planned, and included in any traffic management planning for stadium events. Similarly, the capacity of set-down facilities (for buses, taxis or public drop-off) would need to be considered as part of this traffic management planning."

Given the above, the highlighted matters are considered to be out of the scope of this TIA and should be investigated further as part of the Traffic Management Plan (TMP) prepared prior to each event.



Councils Advice Note:

2.0 TRAFFIC IMPACT ASSESSMENT 2.1 Development traffic calculations

Advice:

The submitted Traffic Impact Assessment (TIA) has applied a 30% loading factor to existing traffic volumes as a means of assessing development traffic. The 30% loading factor has not been justified in the report and is not accepted by Council. Considering the relatively low traffic volumes on some roads within the assessment area, the 30% rate has a high likelihood of underrepresenting the impacts the development is expected to have on the surrounding road network.

It is unclear if the 30% loading factor is intended to represent the 'typical' or 'large' crowd events, however it is assumed it is for the 'typical' events. In this case, no information is provided to demonstrate how development traffic for the 'large' events was calculated.

It would be expected that a large portion of the vehicles accessing the site would be arriving within the same hour either before or after the event, inducing a large simultaneous demand on the network.

Action:

Provide a revised Traffic Impact Assessment (TIA) to address the following matters:

- 1. Include an updated development traffic distribution based on a 'first principles' approach. This is to consider various factors including, but not limited to:
 - Likely parking locations/footprints (including consideration of background parking occupancy).
 - Likely routes to/from the parking areas.
 - Loading factors which consider the simultaneous arrival/departure of a large percentage of attendees immediately before or after an event.
- 2. The TIA is to clearly state the traffic generation and trip distribution through the network for 'typical' and 'large' events.
- 3. The development impact assessment area is to cover all intersections where the development traffic exceeds 5% of the base traffic for any movement in the design peak period.
- 4. Where road closures are proposed under TMPs during 'large' events (e.g., Graeme Acton Way), this needs to be reflected in the traffic distribution (i.e., traffic is to be redistributed onto parallel routes). This is to be included in the SIDRA modelling for 'large' events.

Response:

The Traffic Impact Assessment (TIA) has been revised to include an updated development traffic distribution based on the 'first principles' approach, for both 'typical' and 'large' event sizes. Refer to Section 7.



2.2 Inconsistencies in SIDRA modelling and provided count data Advice:

The TIA states that traffic counts were redone on a weekday in August 2023, although the provided counts say they were recorded in July 2023. There are inconsistencies between the count data and SIDRA volumes, and the modelled SIDRA volumes do not reflect those shown in Figure 3.12 to Figure 3.15.

Following a review of the submitted SIDRA results for the Bolsover Street/Graeme Acton Way/North Street and Graeme Acton Way/Exhibition Street intersections, it appears that errors are present in the modelling of both these intersections, including possible incorrect/inconsistent application of design traffic and incorrect values entered.

Development traffic (where applied) generally doesn't reflect a 30% traffic increase from base volumes, nor 30% increase in the weekday afternoon peak hour period, as outlined in Section 7.3. In some circumstances, the modelling performed for the 'with development' cases showed lower volumes for some movements than the base vehicle count. It is not made clear how development traffic is applied to intersection movements, and it appears to have been applied inconsistently across intersection vehicle movements. For example, at the Bolsover Street/Graeme Acton Way/North Street intersection, some scenarios appear to have development traffic applied to only one movement, others have it applied to two movements, and one has development traffic applied to all movements.

The analysis of the Graeme Acton Way / Bolsover Street / North Street intersection does not specify the phases used in the intersection analysis. This has a significant bearing on the performance of the intersection and needs to be included in the TIA document. Furthermore, the analysis of Graeme Acton Way and Huish Drive needs to be modelled in series with Graeme Acton Way / Bolsover Street / North Street as the queues from this intersection extend and impact the Huish Drive access.

Action:

Provide updated SIDRA intersection modelling to reflect the necessary updates to the assumed development traffic distributions. Diagram(s) should be provided outlining the assumed development traffic (similar to figure 3.12) and SIDRA volumes are to match the volumes in the intersection movement counts and diagrams. Graeme Acton Way / Bolsover Street / North Street is to be modelled in series with Graeme Acton Way / Huish Drive to understand impacts of intersections on one another. Where intersections are signalised, the assumed phasing summaries are to be included in the analysis.

Response:

The SIDRA intersection modelling has been revised to reflect the updated development traffic distribution. SIDRA modelling results have been provided in Attachment C and D, including phasing summaries for signalised intersections.



2.3 Road safety risk assessment

Advice:

The submitted risk assessment only addresses the risks to pedestrians, and not to all road users. The scope of the risk assessment needs to be expanded to cover all locations and intersections expected to be impacted by both 'typical' and 'large' events. Furthermore, there has been no review of road crash data included as part of the road safety risk assessment.

Note the pedestrian signals installed on Graeme Acton Way were installed as a Coroner's recommendation following a patron of the sports club being fatally injured while crossing Graeme Acton Way.

Action:

Provide an updated road safety risk assessment to include risks to all road users. Risk assessment area must include all locations impacted by the development. A review of road crash data must be included as part of the risk assessment.

Response:

Consistent with the traffic report prepared by the Browns Park Project, a road safety risk assessment is considered to be out of the scope of this TIA and should be investigated further as part of the Traffic Management Plan (TMP) prepared prior to each event.

Not withstanding the above, a road safety risk assessment has been carried out for the following:

- Pedestrian safety on Campbell Street (adjacent to the site);
- Pedestrian safety at the railway crossing along Graeme Acton Way;
- Pedestrian safety at the following intersections:
 - Albert Street / Bolsover Street intersection;
 - Albert Street / Campbell Street intersection;
 - Campbell Street / North Street intersection;
 - Campbell Street / Wandal Road / Exhibition Road intersection.

The assessment generally indicated that the existing pedestrian facilities will provide satisfactory and safe access to the development by foot.



2.4 No intersection delay mitigation proposed where >5% additional delay Advice:

The provided SIDRA modelling generally shows that 'typical' events result in greater than 5% increase in average delay at the modelled intersections.

The submission states that the 5% assessment has 'historically' been based on Annual Average Daily Traffic volumes. The current Transport and Main Roads Guide to Traffic Impact Assessment (GTIA) states that the design traffic generations and parking demands are based on development peak traffic, not average traffic generation. In line with the GTIA, to ensure no net worsening of the road network, Council requires mitigating intersection treatments to be implemented where average delay across the impact assessment area for 'typical' crowd events exceeds 5% of base delay.

Council accepts that less frequent 'large' events will have a more detrimental impact on network performance and expects these impacts to be mitigated through the implementation of a TMP. The submission is required to demonstrate how the TMP will adequately mitigate the impacts of 'large' events.

Action:

Where the average intersection delay across the study area exceeds 5% of the base delay, mitigating actions are required to ensure 'no net worsening' on the road network under 'typical' crowd events.

Response:

As shown in Section 7.3, SIDRA modelling has been carried out for the following intersections:

- Lion Creek Road / Hall Street;
- Lion Creek Road / Exhibition Road;
- Lion Creek Road / Huish Drive;
- Lion Creek Road / North Street / Bolsover Street;
- Exhibition Road / Wandal Road / Campbell Street;
- Campbell Street / North Street;
- Albert Street / Campbell Street.

The results indicate that the road network surrounding the site has ample capacity to accommodate traffic generated by the 'typical' weekly events. As shown, most intersections have additional capacity to cater for larger events of 3,000+ patrons. As shown in Table 7.2, the Lion Creek Road / Exhibition Road T junction is the only intersection that fails under the larger event scenario.

An analysis of intersections outside of the survey zone was considered redundant as majority of traffic will park within the immediate vicinity of the site (along Huish Drive), or within comfortable walking distance of the site.



2.5 Projected travel model splits Advice:

The TIA does not outline how the values in Figure 5.1 were calculated. No explanation is given to how the estimated mode split volumes were derived from the travel mode survey of approximately 1000 patrons. Furthermore, there are inconsistencies throughout the tables e.g. in the top table, there is a linear correlation between crown sizes of 1000-3000, however a crowd size of 4000 patrons only marginally increases from 3000. No explanation has been given for how the estimated number of cars were calculated from the patronage/attendance figures.

The TIA states that a travel mode survey was conducted on a crowd of approximately 1000 patrons. This survey shows approximately 4.5% of patrons utilising bus transportation. The submission considers it 'reasonable' that a public transport mode split of more than 20% could be achieved for crowds of 3000-4000, however no justification is provided for these figures. The submission claims there are over 800 parking spaces within a 10 minute walk of the site. Considering the nearest bus stops are 650-900m away (10-15 minute walk) from the proposed stadium, it is not clearly demonstrated how an increase in patronage from 1000 to 3000 patrons would see an increase in bus utilisation from 4.5% to 20%+, considering the stated high availability of on-street parking in close proximity to the site.

Action:

Outline how the values in submission Figure 5.1 were calculated. In the absence of sufficient justification for the adoption of a 20% bus transport split, this figure is not accepted by Council. A 10% split of bus patrons would be accepted.

Response:

As shown in Section 5, projected travel mode splits were calculated based on the 2017 DTMR 'How Queensland Travels' survey. As shown, the adopted mode split detailed in Table 5.1 is considered to be conservative as it would result in greater vehicle trip generation than the expected initial business case.



2.6 Background traffic growth rate Advice:

The TIA assumes that as the local area is 'well established', and that future background traffic growth will be negligible (i.e. no growth rate applied to traffic volumes). In the absence of sufficient justification to support this stance, it is not accepted by Council. It is anticipated that the Rockhampton Ring Road (RRR) connection will result in more people utilising the area to access the CBD. As such, growth in the CBD and surrounding area is likely to continue at a rate consistent with growth in the wider Rockhampton region. Considering this, Council does not accept the adoption of 0% background traffic growth.

Action:

Provide justification for the adoption of a 0% growth rate. In the absence of substantiated data, it would be acceptable to apply a 1-2% background growth rate in accordance with industry practice.

Response:

An annual growth rate of 2.5% per annum has been adopted for all roads within the study area. The selected growth rate is considered to be conservative for this assessment.

The background 2025 peak traffic volumes are shown in Figures 3.18 – 3.21.



2.7 Construction of car parking facility Advice:

Overall, the project is providing no additional on-site parking, and is reliant upon on street parking within the surrounding road network. At present, there is a small (23 bay) off-street car park for the adjacent sports club, however it is noted that the existing sports club usage results in frequent heavy usage of the sealed parking area located on the opposite side of Graeme Acton Way. Additionally, during events held adjacent to the club (e.g. football games), there is heavy use of the unsealed verge along Graeme Acton Way.

The images provided in Figure 5.2 of the submission generally show an area that is unsealed and unsuitable for regular, formal use. Localised water ponding is shown, and there is evidence of damaged/uneven surface created by vehicles driving through this area. While this area is currently informally used for overflow parking for the Rocky Sports Club/Brothers Leagues Club and other surrounding properties, as the stadium is proposing for this to be utilised regularly (that is, for both 'typical' and 'large' events), this area should be sealed and formalised as part of the project.

The figures used to calculate available parking for events do not consider any existing parking occupancy. Given the likely alignment between events at the proposed site and other sporting activities within this precinct some further consideration to existing parking demand is required.

Action:

Extend the verge parking area on Graeme Acton Way, from the existing car park to Sir Raymond Huish Drive. The car parking area must have a sealed surface and linemarked parking bays. Consideration must also be given to safe vehicle access to/from the car park by vehicles, as well as pedestrian access from the parking areas to the facility. The parking area extent identified for a "typical" event is to have line-marked bays installed to ensure efficient use of parking. The TIA is to specifically indicate the number of parking bays available within each segment of road shown in Figure 3.10 and 3.11.

Response:

In accordance with the above item, the verge parking area on Graeme Acton Way is proposed to be extended from the existing car park to Sir Raymond Huish Drive to the south. The car parking area will be designed in accordance with AS2890, with a sealed surface and line marked parking bays. As shown in Figure 5.2, a provision of 50 formalised car parking spaces will be provided.

Furthermore, the footpath along the northern side of Graeme Acton Way is proposed to be extended from the existing club (CQ Leagues Club) towards hall street to the west. As shown in Figure 8.1, the extension will allow pedestrians to access the proposed bus layby area located along the newly constructed curb lane. This will provide patrons the opportunity to conveniently utilise charter services without having to walk throughout the surrounding road network.



2.8 Construction of car parking facility

Advice:

The provided example Traffic Management Plan (TMP) does not demonstrate an ability to adequately mitigate network impacts caused by 'large' events and is simply a list of items to be included in a TMP. At present, the submission shows that there will be great impacts to some intersections, however the proposed TMP has not outlined how these impacts may be addressed/mitigated through the implementation of TMPs.

Action:

Provide a draft TMP demonstrating adequate mitigation of network impacts caused by 'large' events. The TMP should specify the broad strategies to be adopted for large scale events and how these will be achieved. For example: Park and ride shuttles and where they will pick-up and drop off passengers, expected pedestrian routes to the facility from the CBD and how they will be safely managed, etc. This will form the basis of future TMPs to be submitted to Council for approval.

Note: Council are unlikely to permit regular closure of Graeme Acton Way for events, due to the significant network impacts caused by the closure.

Response:

A Traffic Management Plan (TMP) has been drafted and will be provided in addition to this TIA.

As stated in the TMP, closure of Graeme Acton Way is only requested during 'large' event sizes, which are proposed to occur 10 times per year. Given this low frequency, the closure is not expected to have a significant impact upon the wider road network.

2.9 Construction of car parking facility

Advice:

Considering the footprint shown for 400 car parking spaces (submission Figure 3.10), it is expected that 'typical' events will generate demand for parking on Graeme Acton Way between Hall Street and Exhibition Road. This is based on the statement in Section 7.1 that a 'typical' event will attract approximately 430 private vehicles. Considering this, a footpath should be provided on the northern side of Graeme Acton Way between Hall Street and Exhibition Road. This will mean that footpath facilities will be provided for majority of the expected footprint for 'typical' events.

Action:

Ensure there is a footpath connection to all parking areas identified to be within the required parking footprint area for 'typical' events. In determining the anticipated parking footprint area, consideration must be given to background parking occupancy.

Response:

As aforementioned, formalised pedestrian footpath connection will be provided from the CQ Leagues Club towards the layby bus area located along the newly constructed curb on the northern side of Graeme Acton Way. Refer to Figure 8.1.



2.10 Construction of car parking facility

Advice:

The TIA does not provide any consideration for provision of parking for People with Disabilities (PWD).

Action:

Permanent PWD-compliant parking bays are to be provided within an off-street parking facility adjacent to the proposed stadium with a disability-compliant route from the parking location to the stadium. The required number of permanent PWD parking bays should consider the 'typical' crowd size.

Provision for additional temporary PWD parking is to be included as part of the event TMPs for 'large' events.

Response:

Accessible (PWD) car parking spaces will be provided near the entrance to the stadium or within the new car parking area (refer to Figure 5.2). These will be detailed in the TMP. The number of PWD spaces to be provided will be as per the ratio requirements of the NCC / BCA for the proposed building classification.

2.11 No identified location for passenger vehicle set-down area for private vehicles, taxis and rideshare vehicles

Advice:

Report does not specify a location for a set-down zone/s for passenger vehicles, taxis and rideshare vehicles.

Action:

Outline the strategy for providing adequate passenger set-down areas, while ensuring separation of modes (i.e., separate areas provided for different user types). Consideration to be given to ensure the length of the facilities is adequate to accommodate the anticipated number of vehicles. The strategy must not conflict with areas identified for patron car-parking.

Response:

As detailed in the Traffic Management Plan (TMP), there is a proposal to temporarily close part of Graeme Acton Way during 'large' events to facilitate passenger set-down areas for taxis and rideshare vehicles. Additionally, a bus laydown area will be along the newly constructed curb on the northern side of Graeme Acton Way. Refer to Figure 8.1.



2.12 Location identified for bus/coach parking Advice:

The locations for bus parking areas shown in Figure 8.2 (Graeme Acton Way and Exhibition Road) are already identified as key parking locations, and the project is reliant upon the provision of onstreet parking for patrons.

Action:

Provide an updated TIA that considers where appropriate bus parking can be located, noting that it must not be in a location identified for another parking use.

Response:

As aforementioned, a bus laydown area will be along the newly constructed kerb on the northern side of Graeme Acton Way. Refer to Figure 8.1.



SARA Advice Note:

State Transport Infrastructure

Item 1

Issue: As the development will rely on on-street carparking for large events there will be additional pedestrian movements within the surrounding area. Proximate areas in all directions will be attractive for carparks and the safety of pedestrian movements to and from these areas is required to be analysed.

Where pedestrian routes are identified as being unsafe, according to a Road Safety Risk Assessment, upgrades or mitigation strategies to address deficiencies must be demonstrated for all events. Conceptual designs must be provided for mitigation strategies where upgrades are proposed and where traffic management is proposed to be relied upon, site-specific Traffic Management Plans and associated Traffic Guidance Schemes must be

provided.

Action: Provide a Road Safety Risk Assessment for pedestrian movements for all areas within a 10 minute walk of the site. The Road Safety Risk Assessment must:

- (a) Address the increased movements anticipated across all legs of the Exhibition Road roundabout on Ridgelands Roads.
- (b) Review crash data to ensure the risk assessment considers historical crash data in the creation of proposed mitigation measures for the development.

Note: Queensland Globe shows there have been numerous crashes along Ridgelands Road (Campbell Street and Wandal Road) in the vicinity of the Rockhampton High School and the Showgrounds.

- (c) Ensure any mitigation measures/upgrades will achieve compliance with the Disability Discrimination Act.1992.
- (d) Demonstrate the safety of the pedestrian crossing at the Bolsover Street railway crossing to accommodate additional volumes associated with the development. Where upgrades are identified provide conceptual plans.

- a. Consistent with the traffic report prepared by the Browns Park Project, a road safety risk assessment is considered to be out of the scope of this TIA and should be investigated further as part of the Traffic Management Plan (TMP) prepared prior to each event.
- b. The report has been amended to include a brief review of road crash data. Refer to Section 10.
- c. Refer to Traffic Management Plan (TMP).
- d. A safety risk assessment of the Bolsover Street railway crossing has been provided. Refer to Section 9.3.



The application material, including the response to SARA's information request did not include traffic generation rates for the proposed development. Calculations and examples to support the traffic generation rates determined for the proposed development must be provided. **Action:** Provide traffic generation rates for the following event sizes: (a) 500

(b) 1000

- (c) 2000
- (d) 2000
- (d) 3000
- (e) 4000
- (f) 5000
- (g) 6000

Response:

It is noted that the associated Event Transport Management Plan (ETMP), which is supported by SARA includes specific traffic management measures for events with an attendance of level of more than 3,000 persons. As such, roads and intersections surrounding the site will be appropriately controlled for such events and so detailed SIDRA modelling for the road network for these scenarios is not considered to be relevant.

Notwithstanding the above, traffic generation estimates for the above crowd sizes are outlined in Table 5.3. The impact of large events up to a crowd size of 4,500 persons has been modelled using SIDRA software. It is noted that events with a crowd size of over 3,000 persons are likely to have significant traffic management measures implemented including manual intersection control and road closures (depending on the timing of the event). As such, SIDRA modelling of these scenarios is unlikely to be representative of actual traffic conditions. Modelling of the proposed largest event size (6000 persons) has not been carried out as such events will have full management measures in place including the manual control of critical intersections and road closures in the vicinity of the site.

Item 3

Issue: A revised traffic impact assessment is required for each of the event sizes stated in Item 2 above. Further, a traffic management plan is required where an event will result in the closure of Bolsover Street and re-directing traffic onto Campbell Street.

Action:

- (a) Provide a revised traffic impact assessment to assess the impacts of each of the events sizes stated in Item 2 of this advice notice and their impact on each of the state-controlled road intersections.
- (b) Where a traffic management plan proposes to close off Bolsover Street and redirect traffic onto Campbell Street, provide an assessment of the impacts of this on the following intersections:

i. Bruce Highway / Campbell Street intersection.

ii. The local road network between Campbell Street and Graeme Acton Way

- a. The TIA has been amended to include traffic generation rates for various crowd sizes. Refer to table 5.3.
- b. A Traffic Management Plan (TMP) has drafted and will be provided in addition to this report.



Issue: Further information is required to estimate the appropriate modal split of travel to and from the proposed development for the event categories identified in Item 2 above with assumptions relied upon adequately justified

Action:

(a) Estimate the likely modal split of travel to and from the proposed development for the event categories identified in Item 2 above.
Note: The model split should differentiate between the different public passenger transport modes.

Note: The modal split should differentiate between the different public passenger transport modes (urban bus, private/chartered bus/coach, taxi, rideshare), active transport modes (walking and cycling) and private vehicle travel.

- (b) Identify the existing public passenger transport services and infrastructure servicing the site and its location (within or beyond a walkable catchment). Public passenger transport includes:
 - i. a bus stop, bus shelter, bus station, or bus lay-by and the roads on which a bus service operates;
 - ii. And any taxi ranks.
- (c) Identify any necessary public passenger transport infrastructure required to support the development including the upgrade of existing facilities and/or the provision of new infrastructure. Provide conceptual plans for any upgrades required.

- a. The projected travel mode splits are shown in Table 5.1, and are estimated based on the 2017 DTMR 'How Queensland Travels' survey for Rockhampton.
- b. The TIA has been amended to identify the existing public passenger transport services surrounding the development. Refer to Figure 3.13.
- c. Given that a bus laydown area is proposed as part of the development, upgrades of existing bus stop facilities or new infrastructure is not considered necessary.



Issue: The application material, including the response to SARA's information request did not include a road safety risk assessment or provide mitigation strategies in accordance with the Department of Transport and Main Roads' Guide to Traffic Impact Assessment.

Action:

- (a) Provide a Road Safety Risk Assessment to demonstrate the safety and efficiency of the statecontrolled network will not be compromised by the proposed development. Include clear definitions of categories/classifications of events at the beginning of the report to be carried through the entirety of the report. Provide provision of analysis for events of the following attendee numbers:
 - i. 500
 - ii. 1000
 - iii. 2000
 - iv. 3000
 - v. 4000
 - vi. 5000 vii. 6000
 - Note: The Traffic Impact Assessment (Rytenskild, 8488 (rev.2), dated 26 September 2023) included a SIDRA extract for Graeme Acton Way/North Street Weekday Morning peak hour – Typical Crowd. Results within this SIDRA showed a back of queue distance of 278.9m. As the length of the Bolsover Road segment between the railway corridor and the Bruce Highway is 192metres, the information submitted demonstrates traffic on the Bruce Highway is already disrupted during current events permitted for the subject site.

Note: No analysis has been performed to determine the impact of the development upon the statecontrolled intersection of the Bruce Highway and Bolsover Street.

Note: As identified in Item 9 of the SARA Information Request issued on the 30 June 2023 the Department of Transport and Main Roads is progressing detailed design for improvements on Albert Street for the Albert to Bolsover Intersection Upgrade Project (Investment ID 854972 in the Queensland Transport and Roads Investment Program 2023-24 to 2026-27) analysis of the impact of the development is critical to ensuring any future upgrades accommodate the proposed development.

- (b) Provide mitigation strategies in accordance with the Department of Transport and Main Roads' Guide to Traffic Impact Assessment, 2018 for impacts identified from part (a) for items i through to vii.
- (c) Where upgrades or traffic management are identified/proposed, include the following for each impacted state-controlled road section and/or intersection:
 - i. conceptual plans for upgrades
 - ii. an example of a site-specific Traffic Management Plan inclusive of associated Traffic Guidance Schemes for each site.

- a. Consistent with the traffic report prepared by the Browns Park Project, a road safety risk assessment is considered to be out of the scope of this TIA and should be investigated further as part of the Event Traffic Management Plan (ETMP) prepared prior to each event.
- b. Refer to Event Traffic Management Plan (ETMP) for mitigation strategies.
- c. An Event Traffic Management Plan (ETMP) has been provided in addition to the TIA.



Issue: The 30% loading relied upon for traffic generation is not supported. No supporting information nor demonstration of how this figure was arrived at was provided

Action: Provide further information and justification of why 30% loading is being relied upon for traffic generation.

Response:

The TIA has been amended to take on a first principles approach. Refer to Sections 6 and 7.

Item 7

Issue: Item 8 of SARA's information requested, dated 26 September 2023, required the applicant to address several discrepancies in the traffic impact assessment. The revised traffic impact assessment has not addressed these discrepancies.

Action: Provide a revised traffic impact assessment which ensures there are no discrepancies, and in particular, ensure alignment between calculated traffic volumes and associated figures throughout the traffic impact assessment

Response:

The TIA has been amended to ensure coherency between traffic volumes (background and design) and SIDRA modelling.



2.0 SUBJECT SITE

As shown in Figure 2.1, the subject site is located on the northern side of Graeme Acton Way, with northern frontage onto Sir Raymond Huish Drive ("Huish Drive"). It is identified as Lot 40 on SP240869 and is located within the L2 – Sport and Recreation zone.

The Rocky Sports Club site is located within a Sport and Recreation precinct. The football field is home to the Brothers Rugby Club. Surrounding activities include a tennis club, aquatic centre and parklands. There are other sporting clubs and infrastructure to the north-west of the site including cricket, basketball, and bowls. The Rockhampton State High School and Showgrounds are to the west of the site.

As shown in Figure 2.1, the location of the proposed stadium is currently vacant with no formal access or driveway.



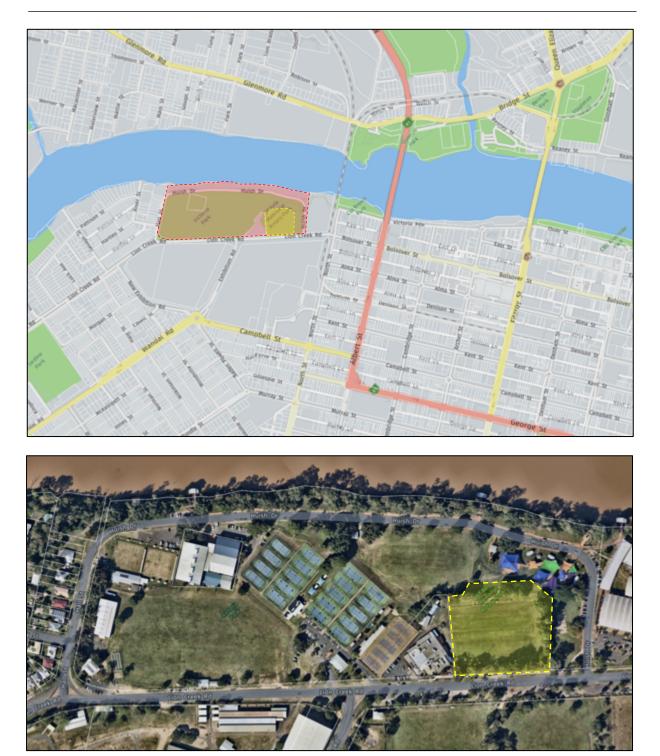


FIGURE 2.1 – LOCATION OF SUBJECT SITE



3.0 SURROUNDING TRANSPORT NETWORK

3.1 Surrounding Road Network

A brief description of the surrounding road network is provided in Tables 3.1 and 3.2 that utilises the road hierarchy extract from Rockhampton Regional Council (refer to Figure 3.1).

Road	Road Hierarchy Function	Description
Graeme Acton Way	Major Council Road	Two-lane, with bicycle lane and parking on
(adjacent to site)	Major Council Road	northern side
Sir Raymond Huish	Standard Council Road	Undivided two-lane, with lined parking
Drive	Stanuaru Councii Roau	generally available on both sides
Hall Street	Standard Council Road	Undivided two-lane, with parking generally
		available on both sides
Exhibition Road	Major Council Road	Undivided two-lane, with limited parking
New Exhibition Road	Standard Council Road	Two-lane, with parking available on both sides
North Street	Standard Council Road	Two-lane, with parking available on both sides
Bolsover Street	Major Council Road	Two-lane, with parking generally available on
		both sides
Wandal Road	Main Roads	Two-lane, with a centre parking median
Campbell Street	Main Roads	Two-lane, with parking generally available on
		both sides

Table 3.1 – Surrounding roads near the site

Table 3.2 – Surrounding intersections near the site

Intersection	Description	
Graeme Acton Way / Sir Raymond Huish Drive	Basic Give-way T-junction (Graeme	
Intersection	Acton Way as priority)	
	Basic Give-way T-junction (Graeme	
Graeme Acton Way / Hall Street Intersection	Acton Way as priority), with left slip	
	lanes	
	Basic Give-way T-junction (Graeme	
Graeme Acton Way / Exhibition Road Intersection	Acton Way as priority), with left slip	
	lanes	
Graeme Acton Way / North Road / Bolsover Street	Signalised four-way junction, with	
Intersection	dedicated right turn lanes	
Campbell Street / North Road Intersection	Single-lane Roundabout, with single	
	lane approaches	
Campbell Street / Exhibition Road / Baden Powell Street	Two-lane Roundabout, with mostly	
/ New Exhibition Road Intersection	two-lane approaches	
Graeme Acton Way / New Exhibition Road Intersection	Basic Give-way T-junction (Graeme	
Graeme Acton way / New Exhibition Road Intersection	Acton Way as priority)	

Images of the local road network are shown in Figures 3.2 - 3.9.





FIGURE 3.1 – COUNCIL ROAD HEIRACHY MAP (EXTRACT FROM ROCKHAMPTION REGIONAL PLANNING SCHEME)





FIGURE 3.2 – LAYOUT OF SURROUNDING ROAD NETWORK (KEY MAP – REFER TO FIGURES 3.3 – 3.9)





FIGURE 3.3 – AERIAL VIEW OF THE GRAEME ACTON WAY / HALL STREET INTERSECTION



FIGURE 3.4 – AERIAL VIEW OF THE GRAEME ACTON WAY / EXHIBITION ROAD INTERSECTION





FIGURE 3.5 – AERIAL VIEW OF THE GRAEME ACTON WAY / SIR RAYMOND HUISH DRIVE INTERSECTION



FIGURE 3.6 – AERIAL VIEW OF THE GRAEME ACTON WAY / NORTH STREET INTERSECTION





FIGURE 3.7 – AERIAL VIEW OF THE CAMPBELL STREET / NORTH STREET INTERSECTION



FIGURE 3.8 – AERIAL VIEW OF THE CAMPBELL STREET / WANDAL ROAD / BADEN POWELL STREET / NEW EXHIBITION ROAD / EXHIBITION ROAD ROUNDABOUT





FIGURE 3.9 – AERIAL VIEW OF THE GRAEME ACTON WAY / NEW EXHIBITION ROAD INTERSECTION





FIGURE 3.10 – AERIAL VIEW OF THE ALBERT STREET / CAMPBELL STREET INTERSECTION

3.2 On-street car parking

The local street system surrounding the site provides for on-street car parking in various formats (parallel, angle, centre street). As shown in Figures 3.11 and 3.12, there is an abundance of on-street car parking available within 5 and 10 minute walk radius of the site.

In addition, on-street car parking is available within the CBD and it is expected that a significant number of visitors for larger events will park in that area visit the various restaurants and bars before or after an event.





FIGURE 3.11 - SURROUNDING ON-STREET CAR PARKING (OVER 400 SPACES WITHIN 5 MIN WALK)





FIGURE 3.12 - SURROUNDING ON-STREET CAR PARKING (OVER 800 SPACES WITHIN 10 MIN WALK)



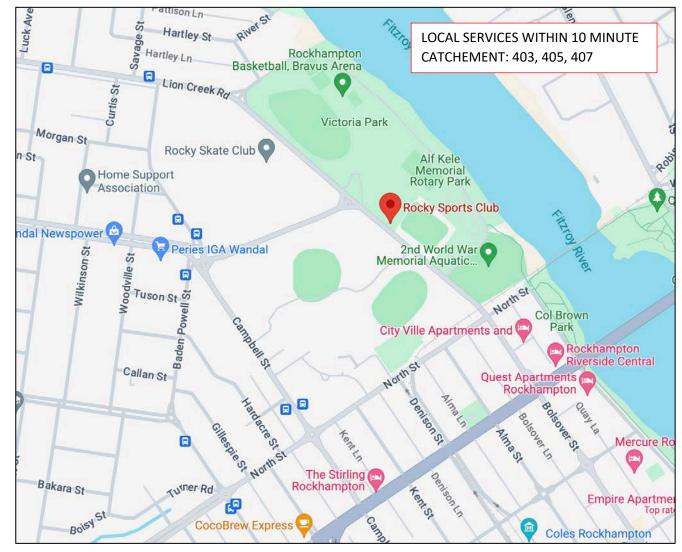


FIGURE 3.13 - SURROUNDING PUBLIC TRANSPORT SERVICES (WITHIN 10 MIN WALK)



3.3 Surveyed traffic volumes

RTE carried out traffic counts at the following intersections over a typical weekday and Saturday in July 2023.

- Graeme Acton Way / North Street;
- Graeme Acton Way / Sir Raymond Huish Drive;
- Graeme Acton Way / Hall Street;
- Graeme Acton Way / Exhibition Road;
- Wandal Road / New Exhibition Road / Exhibition Road / Campbell Street / Baden Powell Street;
- Campbell Street / North Street;
- Albert Street / Campbell Street.

A summary of the surveyed peak hour for each intersection is shown in Figures 3.14 - 3.18.

3.4 Projected background traffic volumes

An annual growth rate of 2.5% per annum has been adopted for all roads within the study area. The selected growth rate is considered to be conservative for this assessment.

The background 2025 peak traffic volumes are shown in Figures 3.19–3.22.



AM PEAK HOUR TRAFFIC VOLUMES (8.00AM - 9.00AM FRI 14 JULY 2023)

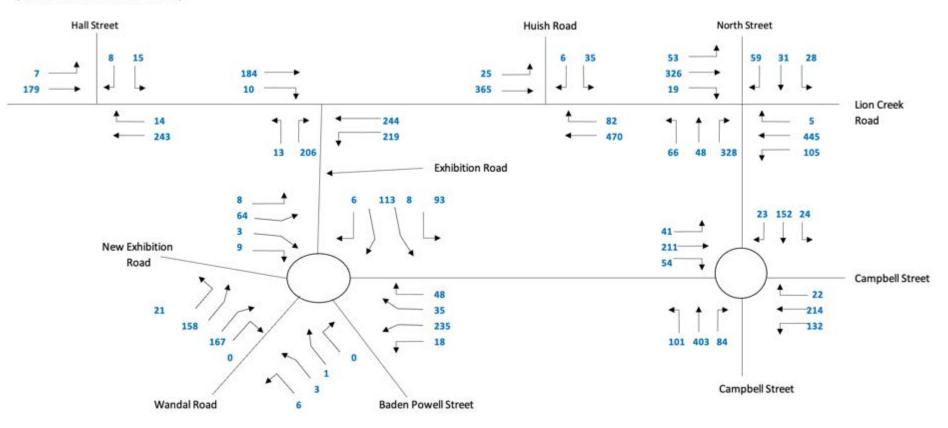


FIGURE 3.14 – SURVEYED WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES



PM PEAK HOUR TRAFFIC VOLUMES (4.00PM - 5.00PM FRI 14 JULY 2023)

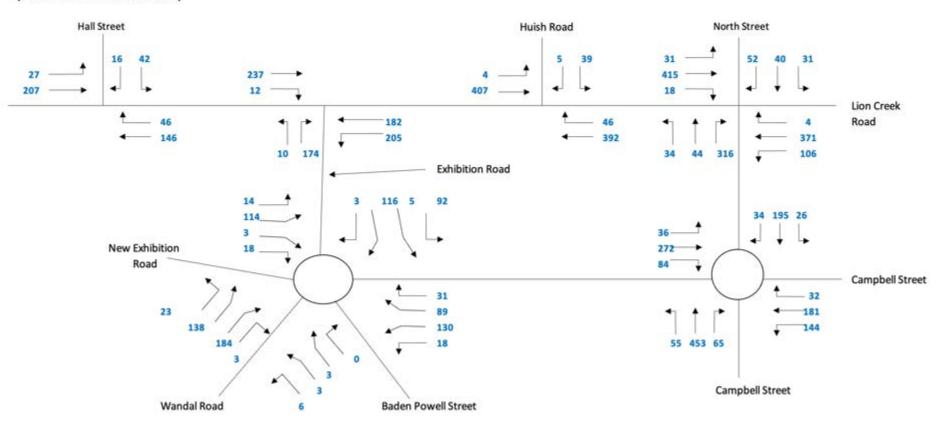


FIGURE 3.15 – SURVEYED WEEKDAY AFTERNOON PEAK HOUR TRAFFIC VOLUMES



SAT PEAK HOUR AM (10.45AM - 11.45AM SAT 15 JULY 2023)

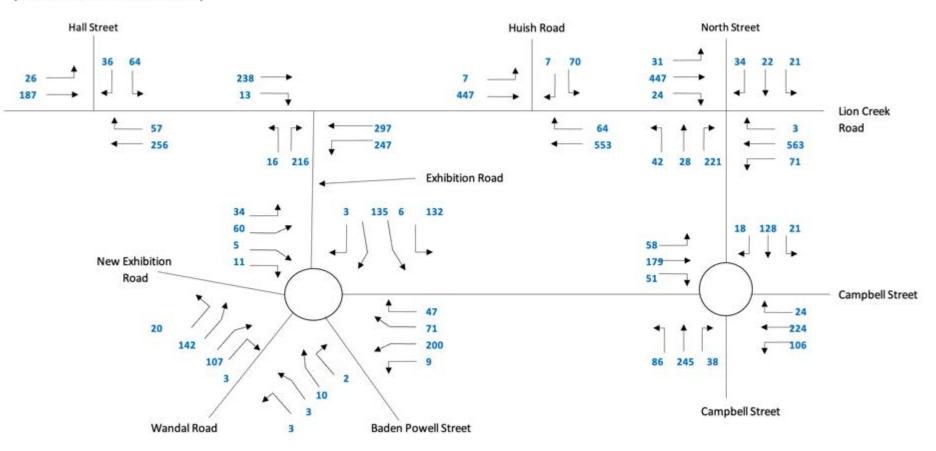


FIGURE 3.16 – SURVEYED SATURDAY MORNING PEAK HOUR TRAFFIC VOLUMES



SAT PEAK HOUR PM (12.30PM - 1.30PM SAT 15 JULY 2023)

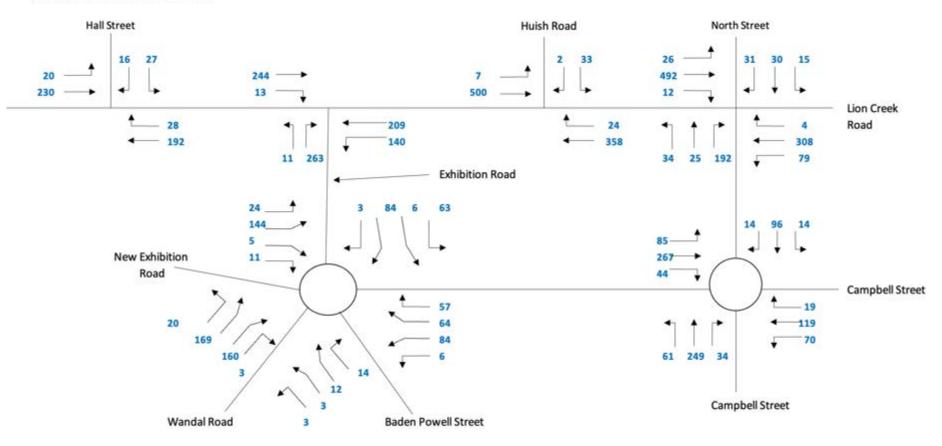


FIGURE 3.17 – SURVEYED SATURDAY AFTERNOON PEAK HOUR TRAFFIC VOLUMES



AM PEAK HOUR TRAFFIC VOLUMES Background 2025 Peak Taffic

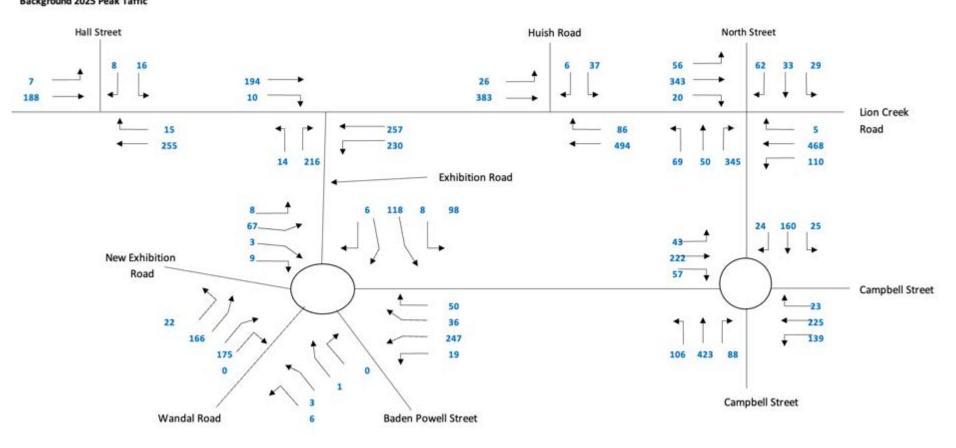


FIGURE 3.18 – BACKGROUND 2025 MORNING PEAK HOUR TRAFFIC VOLUMES



AM PEAK HOUR TRAFFIC VOLUMES Background 2025 Peak Taffic

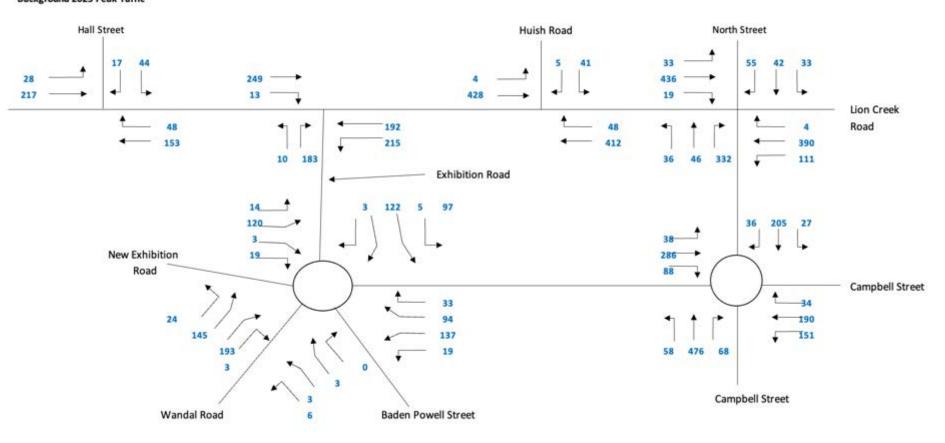


FIGURE 3.19 – BACKGROUND 2025 AFTERNOON PEAK HOUR TRAFFIC VOLUMES



SAT PEAK HOUR AM Background 2025 Peak Taffic

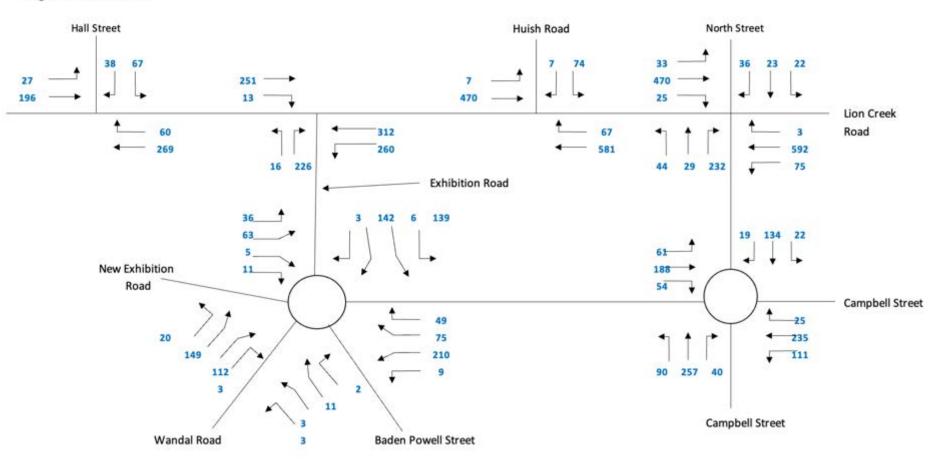


FIGURE 3.20- BACKGROUND 2025 SATURDAY MORNING PEAK HOUR TRAFFIC VOLUMES



SAT PEAK HOUR PM Background 2025 Peak Taffic

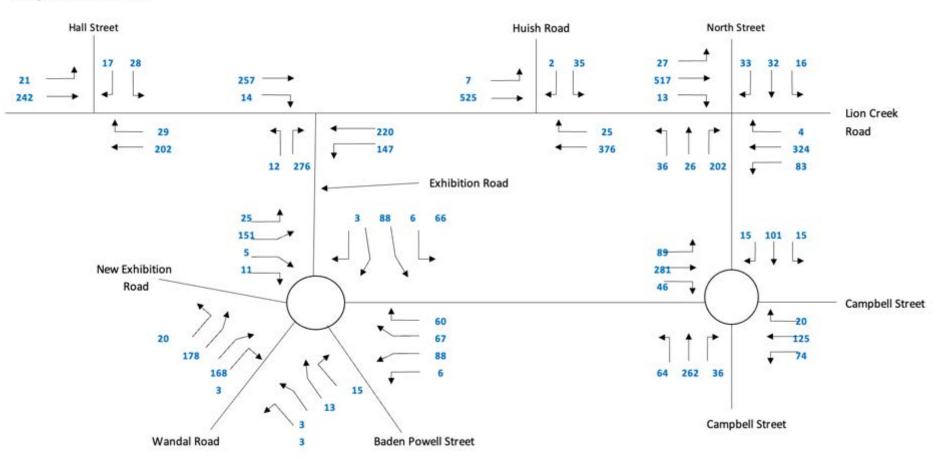
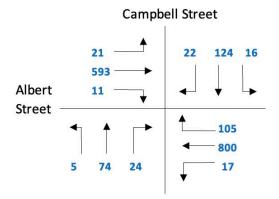


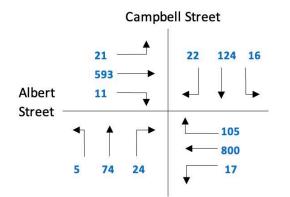
FIGURE 3.21 – BACKGROUND 2025 SATURDAY AFTERNOON PEAK HOUR TRAFFIC VOLUMES



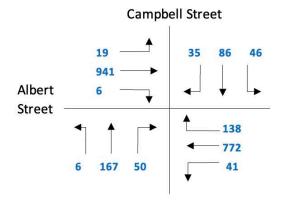
AM PEAK HOUR TRAFFIC VOLUMES (7.00AM - 8.00AM THURS 23 JUNE 2022)



AM PEAK HOUR TRAFFIC VOLUMES Background 2025 Peak Traffic



PM PEAK HOUR TRAFFIC VOLUMES (4.00PM - 5.00PM THURS 23 JUNE 2022)



PM PEAK HOUR TRAFFIC VOLUMES

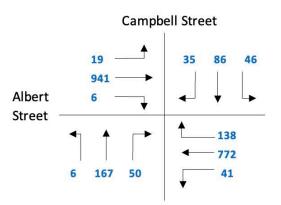


FIGURE 3.22 – SURVEYED AND BACKGROUND (2025) WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES AT THE ALBERT STREET / CAMPBELL STREET INTERSECTION



4.0 DEVELOPMENT PROPOSAL

The proposal is for a new sports stadium at the location of the existing football field immediately to the east of the Rocky Sports Club (RSC). The development will include realignment of the existing field, a south-west stand and north-east stand providing seating capacity for up to 5,369 patrons, and standing capacity for an additional 565 patrons.

The stadium is proposed to cater for more frequent small-scale events (e.g sporting carnivals, home games etc) rather than frequent major events. It is anticipated that these weekly events will generate up to 500 people, and the major events (held up to 10 times per year) will generate between 2500 - 4000 patrons.

On-site car parking is not proposed given the abundance of public on-street car parking surrounding the site, and the proximity of the site to the Central Business District (CBD). There are also opportunities in the area for event car parking, such as the showgrounds which is located within comfortable walking distance of the site.

The Applicant has requested up to ten major events per year, which will be catered for using a Traffic Management Plan (TMP).

The proposed site plan is shown in Figure 4.1.





FIGURE 4.1 – PROPOSED SITE PLAN



5.0 CAR PARKING

5.1 Car Parking Generation

In accordance with the Rockhampton Regional Council, *9.3.1 Access, parking and transport code, Table 9.3.1.3.2: Car parking rates,* the following rate applies to the proposed development:

Outdoor Sport and Recreation:

Sufficient spaces to accommodate the amount of vehicular traffic likely to be generated by the particular use.

As discussed in Section 4, the staffing and visitation profile will vary significantly from each event. Regular weekly events (e.g sporting carnivals, home games etc) are expected to generate up to 500 patrons, whereas larger events will host approximately 3,000 – 6,000 patrons up to 10 times per year.

The 2017 DTMR report 'How Queensland Travels' analyses household travel behaviours across Queensland, noting Rockhampton as a minor regional centre heavily reliant on private vehicles due to its workforce composition. This mode split is presented within Table 5.1 alongside adopted mode share assumptions for traffic generation.

TRAVEL MODE	2017 BUSINESS CASE	ADOPTED MODE SHARE
CAR	40%	30%
BUS	30%	5%
DROPPED OFF (TAXI, RIDESHARE, ETC)	15%	20%
WALKED / BICYCLE	5%	5%
SHUTTLE	10%	40%

Table 5.1 – Projected Travel Mode Split

The adopted mode split detailed in Table 4.1 is considered to be conservative as it would result in a greater vehicle trip generation (i.e. greater impacts) than that expected by the initial business case. Table 4.2 below outlines typical vehicle occupancies to assist in determining development traffic generation. Given the site's proximity to the CBD, an increased rate has been applied to the mode share for private and contracted buses and shuttles. Additionally, as outlined in Section 2.3, surrounding public transport bus routes have low frequency during the expected event times. Consequently, a lower rate has been applied to the bus mode share.

TABLE 5.2 – Vehicle Occupancy

TRAVEL MODE	VEHICLE OCCUPANCY (Persons per vehicle)	
CAR	1.6	
BUS	50	
DROPPED OFF (TAXI, RIDESHARE, ETC)	1.2	
SHUTTLE	20	



The resulting vehicle trip generation based on the assumptions detailed above (within Tables 5.1 and 5.2) has been detailed in Table 5.3.

Table 5.3 – Applied Travel Mode Split

TRAVEL MODE		CROWD SIZE		
	MINOR	SMALL	MEDIUM	LARGE
CAPACITY	500	3,000	4,500	6,000
CAR	150	900	1350	1800
BUS	25	150	225	300
DROPPED OFF (TAXI, RIDESHARE, ETC)	100	600	900	1200
WALKED / BICYCLE	25	150	225	300
SHUTTLE	200	1200	1800	2400
EST NO. PRIVATE CARS	94	563	844	1125
EST NO. BUSES	1	3	5	6
EST NO. TAXIS ETC	83	500	750	1000
EST NO. SHUTTLES	10	60	90	120
EST TOTAL NO. VEHICLES	188	1126	1688	2251

5.2 Surrounding Car Parking Supply

As discussed in Section 3, on-site car parking is not proposed given the abundance of public on-street car parking surrounding the site, and the proximity of the site to the Central Business District (CBD). There are also opportunities in the area for event car parking, such as the showgrounds which is located within comfortable walking distance of the site.

The scheduling and management of larger events will need to consider other activities occurring in the local area.

There are approximately 400 on-street car parking spaces along Sir Raymond Huish Drive and Graeme Acton Way within 5 minutes walking distance of the site, and over 1,000 spaces located within 10 minutes walk. The availability of this parking will vary depending on the day and timing of an event. Other users in the area include the State High School, showgrounds, and other sporting and recreation facilities located in the local precinct.

Notwithstanding the above, the verge (refer to Figure 5.1) parking area on Graeme Acton Way is proposed to be extended from the existing car park to Sir Raymond Huish Drive to the south. The car parking area will be designed in accordance with AS2890, with a sealed surface and line marked parking bays. As shown in Figure 5.2, a provision of 50 formalised car parking spaces will be provided.













FIGURE 5.1 – PARKING VERGE ALONG GRAEME ACTON WAY





FIGURE 5.2 – LAYOUT OF PROPSOED CAR PARKING FACILTIES ALONG GRAEME ACTON WAY



6.0 **PROVISION FOR PEDESTRIANS AND CYCLISTS**

The proposal makes for efficient access by pedestrians, with four points of access located at each corner of the stadium. As shown in Figure 6.1, the proposed site plan provides for efficient pedestrian linkages to the surrounding area.

As shown in Figure 6.2, the linkages will extend to the existing path along the river side which provides for a pleasant and efficient walk or cycle to the CBD. Alternatively, pedestrians and cyclists can use Graeme Acton Way and Bolsover Street to access the CBD.

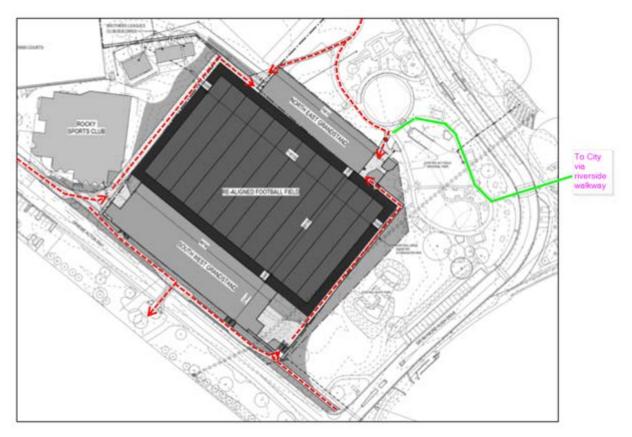


FIGURE 6.1 – PEDESTRIAN ACCESS TO THE SITE



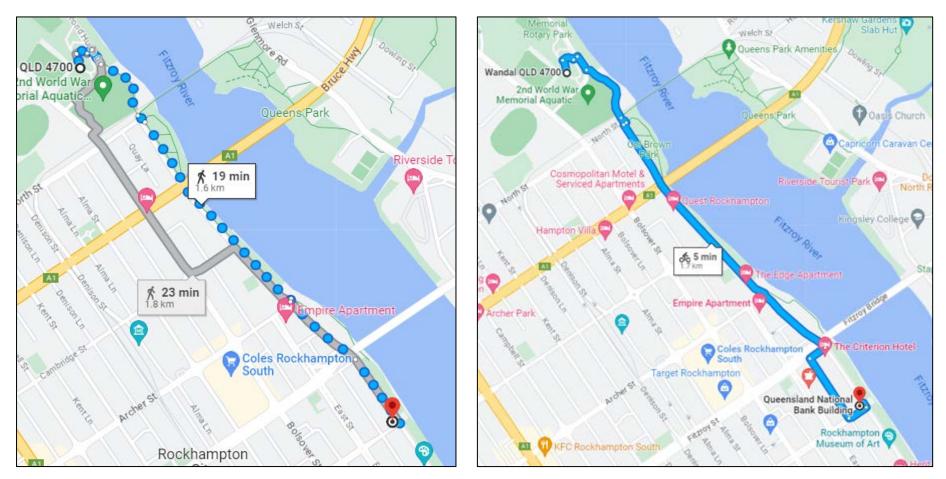


FIGURE 6.2 – WALKING AND CYCLING ACCESS TO CBD



7.0 ROAD NETWORK IMPACT 7.1 Development Traffic Generation

The traffic generation of the proposal will vary with crowd sizes, the type of event, and the scheduled time of the event. In general, it is expected that the majority of attendees will travel by private car and park in the surrounding road network. For occasional larger events, it is expected that shuttle bus services would be provided between the CBD and the site, reducing the volume of private car traffic that would access the site.

As discussed in Section 5, it is estimated that typical event (500 patrons) will generate in the order of 138 private vehicles. These will be distributed throughout the surrounding road network, and a small percentage of vehicles will park in the CBD.

7.2 Development Traffic Distribution

Given that on-site car parking is not proposed, development traffic will distribute throughout the local street system and utilise on-street car parking. As such, the traffic will not distribute to the subject site, but rather spread the traffic load throughout the local network.

Notwithstanding the above, to account for traffic generated by an event, a first principles approach has been assumed. Resultant estimates of peak hour traffic distributions (for 'typical' and 'large' event sizes) are shown in Figures 7.2 - 7.6, with projected design peak hour traffic volumes at years 2025 shown in Figures 7.7 - 7.14.

It is noted that the associated Event Transport Management Plan (ETMP), which is supported by SARA includes specific traffic management measures for events with an attendance of level of more than 3,000 persons. As such, roads and intersections surrounding the site will be appropriately controlled for such events and so detailed SIDRA modelling for the road network for these scenarios is not considered to be relevant. Notwithstanding this, for the purposes of assessing road network impacts, 4,500 persons has been adopted as the design scenario.



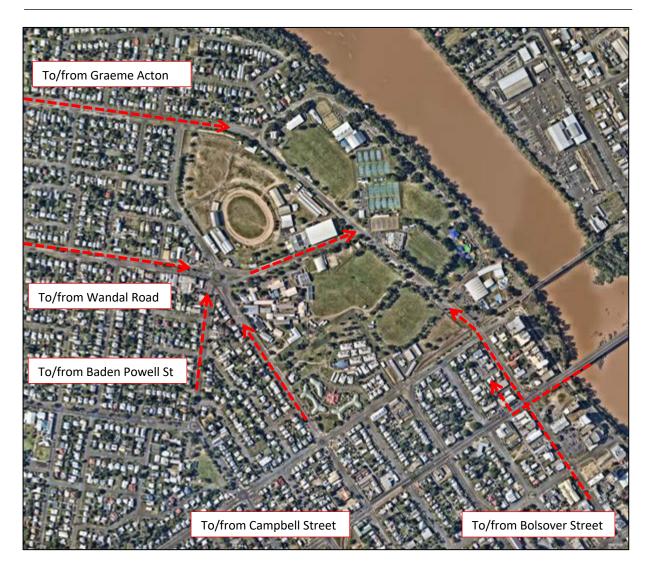


FIGURE 7.1 – INDICATIVE TRAFFIC DISTRIBUTION MAP



'BEFORE THE EVENT' WEEKDAY PEAK HOUR TRAFFIC VOLUMES Development Traffic Estimates - Typical Crowd Size (500 patrons)

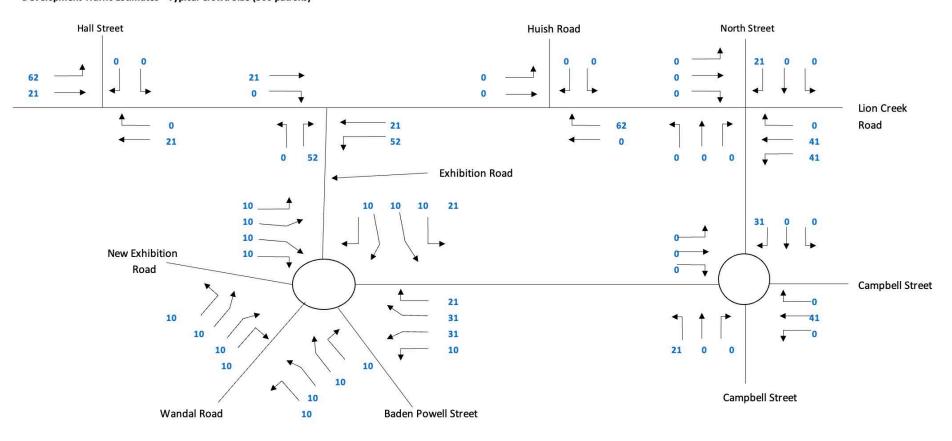


FIGURE 7.2 – DEVELOPMENT TRAFFIC ESTIMATES – TYPICAL CROWD SIZE (500 PATRONS)



'AFTER THE EVENT' WEEKDAY PEAK HOUR TRAFFIC VOLUMES

Development Traffic Estimates - Typical Crowd Size (500 patrons)

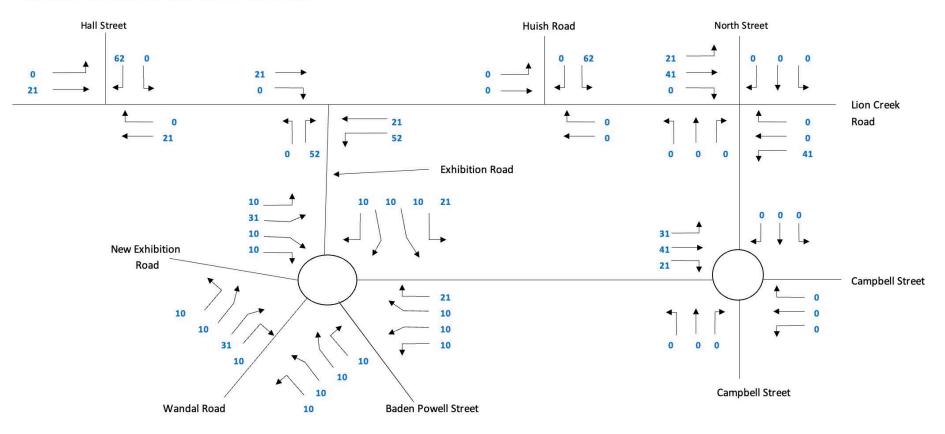


FIGURE 7.3 – DEVELOPMENT TRAFFIC ESTIMATES – TYPICAL CROWD SIZE (500 PATRONS)



'BEFORE THE EVENT' WEEKDAY PEAK HOUR TRAFFIC VOLUMES

Development Traffic Estimates - Larger Crowd Size (>3,000 patrons)

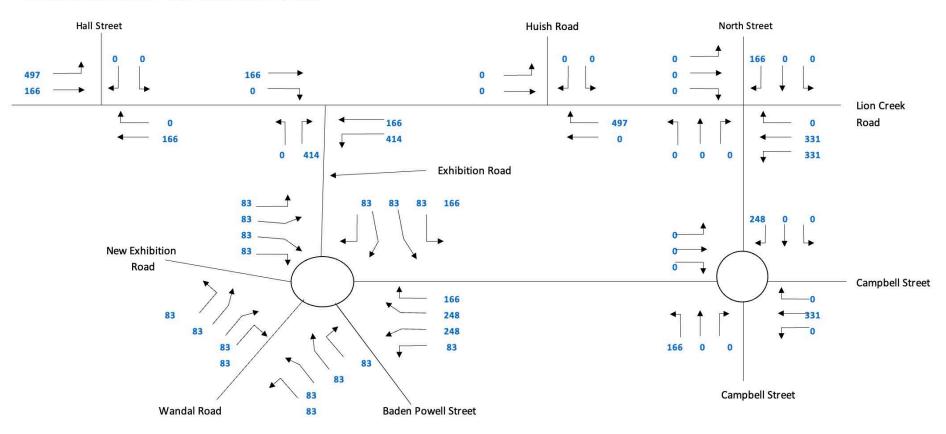


FIGURE 7.4 – DEVELOPMENT TRAFFIC ESTIMATES – LARGE CROWD SIZE (4,500 PATRONS)



'AFTER THE EVENT' WEEKDAY PEAK HOUR TRAFFIC VOLUMES

Development Traffic Estimates - Larger Crowd Size (>3,000 patrons)

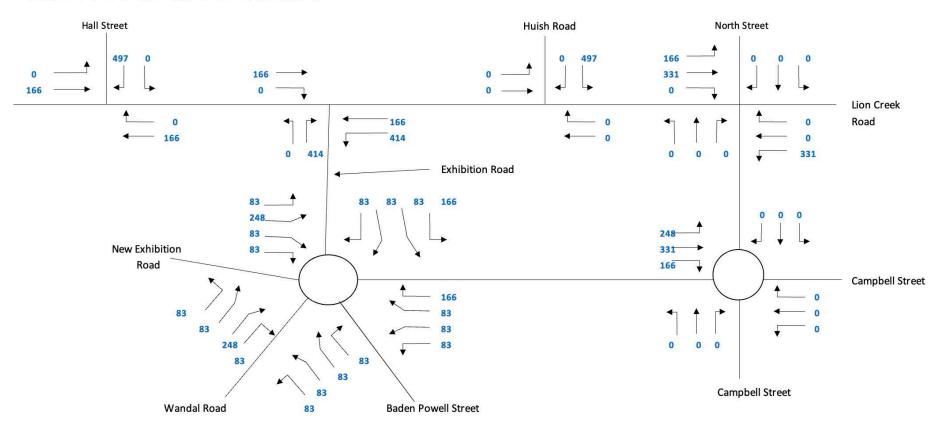
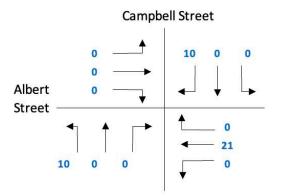
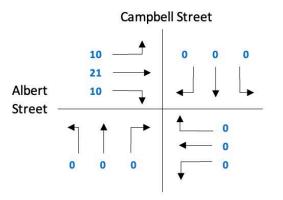


FIGURE 7.5 – DEVELOPMENT TRAFFIC ESTIMATES – LARGE CROWD SIZE (4,500 PATRONS)



AM PEAK HOUR TRAFFIC VOLUMES PM PEAK HOUR TRAFFIC VOLUMES Development Traffic Estimates - Typical Crowd Size (500 patrons)





AM PEAK HOUR TRAFFIC VOLUMES

PM PEAK HOUR TRAFFIC VOLUMES

Development Traffic Estimates - Larger Crowd Size (>3,000 patrons)

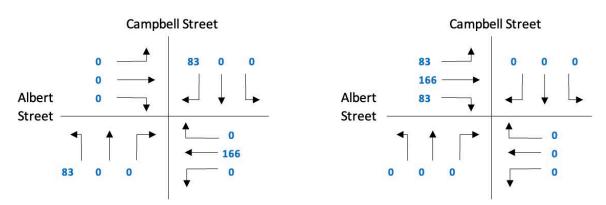


FIGURE 7.6 – DEVELOPMENT TRAFFIC ESTIMATES AT THE ALBERT STREET / CAMPBELL STREET INTERSECTION



'BEFORE THE EVENT' WEEKDAY PEAK HOUR TRAFFIC VOLUMES Design 2025 Peak Taffic - Typical Crowd Size (500 patrons)

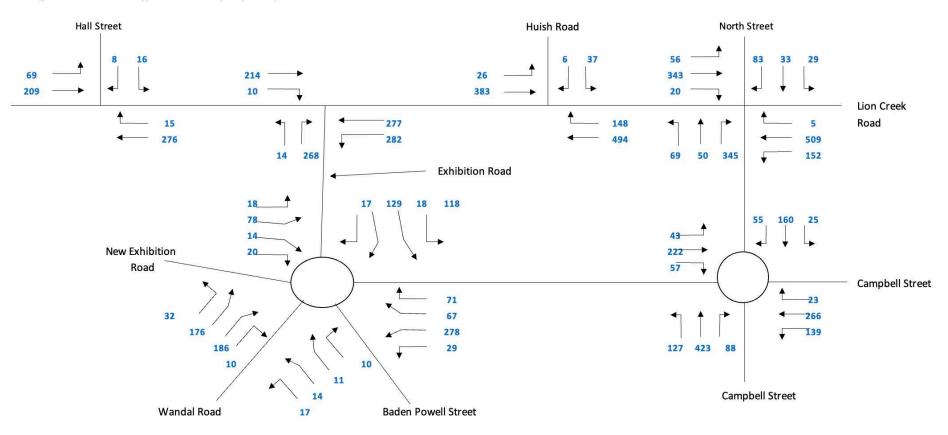


FIGURE 7.7 – DESIGN WEEKDAY 2025 PEAK TRAFFIC– LARGE CROWD SIZE (500 PATRONS)



'AFTER THE EVENT' WEEKDAY PEAK HOUR TRAFFIC VOLUMES

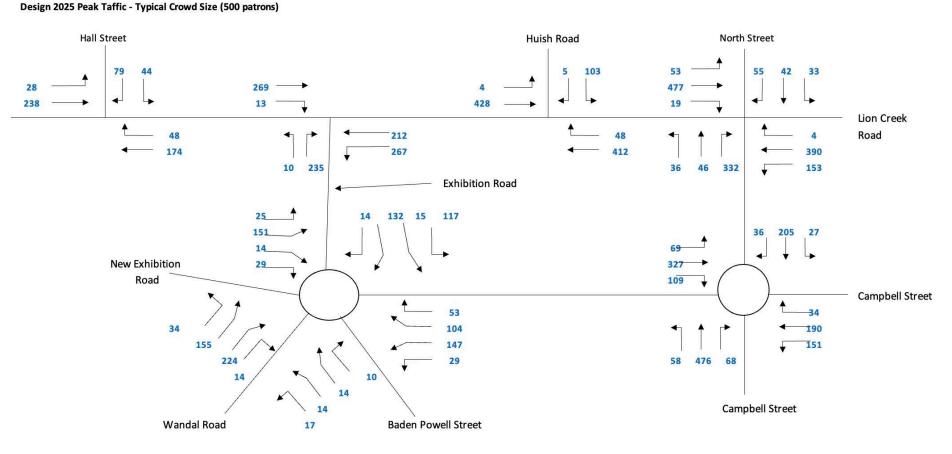


FIGURE 7.8 – DESIGN WEEKDAY 2025 PEAK TRAFFIC– LARGE CROWD SIZE (500 PATRONS)



'BEFORE THE EVENT' SATURDAY PEAK HOUR TRAFFIC VOLUMES Design 2025 Peak Taffic - Typical Crowd Size (500 patrons)

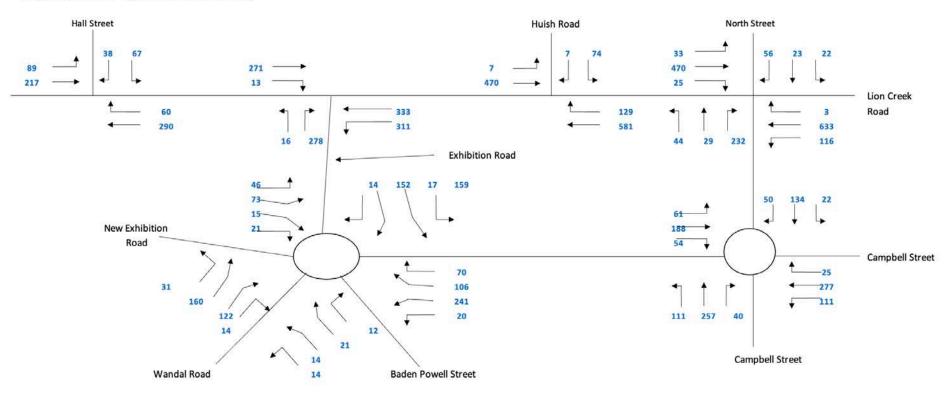


FIGURE 7.9 – DESIGN SATURDAY 2025 PEAK TRAFFIC– LARGE CROWD SIZE (500 PATRONS)



'AFTER THE EVENT' SATURDAY PEAK HOUR TRAFFIC VOLUMES Design 2025 Peak Taffic - Typical Crowd Size (500 patrons)

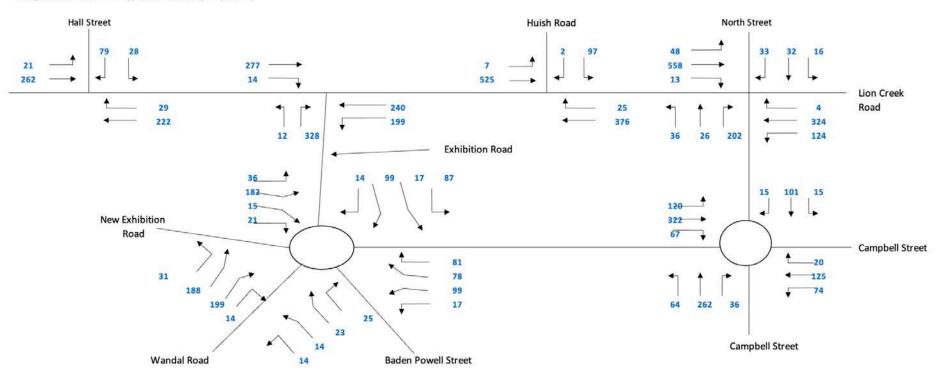


FIGURE 7.10 – DESIGN SATURDAY 2025 PEAK TRAFFIC– LARGE CROWD SIZE (500 PATRONS)



'BEFORE THE EVENT' WEEKDAY PEAK HOUR TRAFFIC VOLUMES

Design 2025 Peak Taffic - Larger Crowd Size

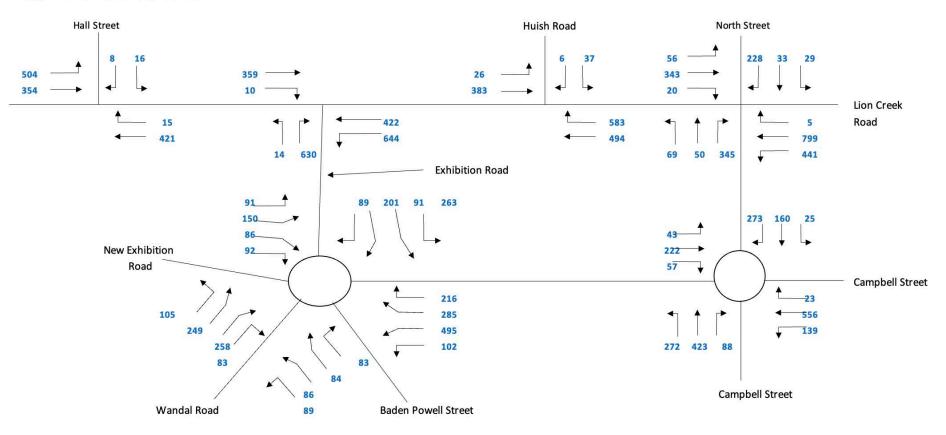


FIGURE 7.11 – DESIGN WEEKDAY 2025 PEAK TRAFFIC– LARGE CROWD SIZE (4,500 PATRONS)



'AFTER THE EVENT' WEEKDAY PEAK HOUR TRAFFIC VOLUMES

Design 2025 Peak Taffic - Larger Crowd Size

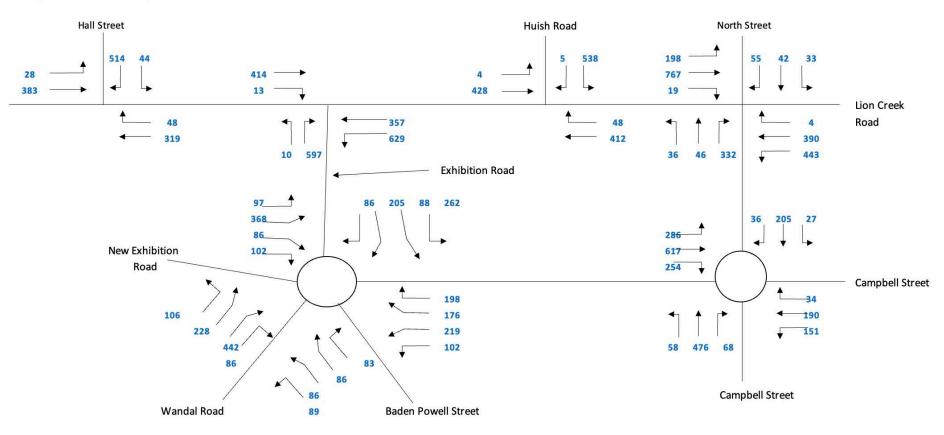


FIGURE 7.12 – DESIGN WEEKDAY 2025 PEAK TRAFFIC– LARGE CROWD SIZE (4,500 PATRONS)



'BEFORE THE EVENT' SATURDAY PEAK HOUR TRAFFIC VOLUMES

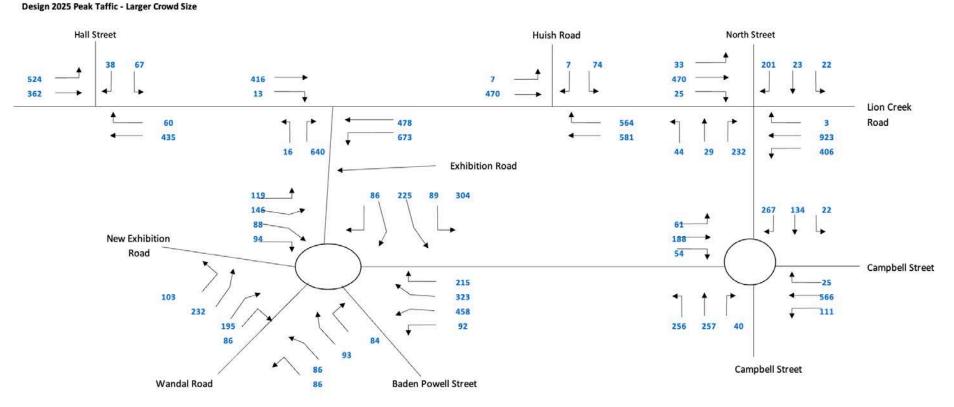


FIGURE 7.13 – DESIGN SATURDAY 2025 PEAK TRAFFIC- LARGE CROWD SIZE (4,500 PATRONS)



'AFTER THE EVENT' SATURDAY PEAK HOUR TRAFFIC VOLUMES

Design 2025 Peak Taffic - Larger Crowd Size

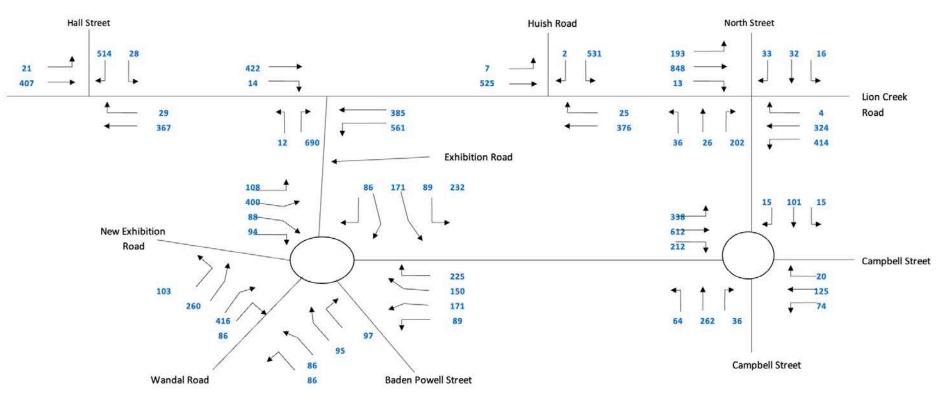


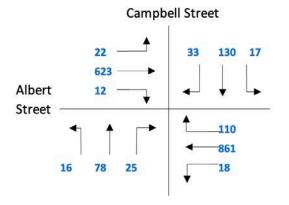
FIGURE 7.14 – DESIGN SATURDAY 2025 PEAK TRAFFIC– LARGE CROWD SIZE (4,500 PATRONS)

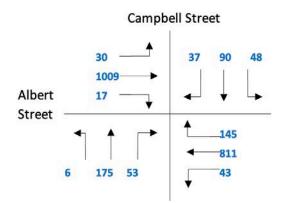


AM PEAK HOUR TRAFFIC VOLUMES

PM PEAK HOUR TRAFFIC VOLUMES

Design 2025 Peak Taffic - Typical Crowd Size (500 patrons)

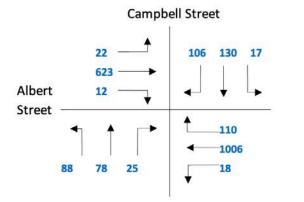




AM PEAK HOUR TRAFFIC VOLUMES

PM PEAK HOUR TRAFFIC VOLUMES

Design 2025 Peak Taffic - Larger Crowd Size (>3,000 patrons)



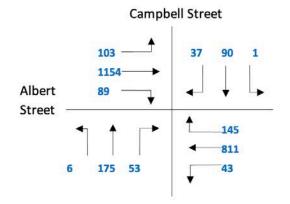


FIGURE 7.15 – DESIGN SATURDAY 2025 PEAK TRAFFIC AT THE ALBERT STREET / CAMPBELL STREET INTERSECTION



7.3 Local Road Network Impacts

The impact of large events up to a crowd size of 4,500 persons has been modelled using SIDRA software. It is noted that events with a crowd size of over 3,000 persons are likely to have significant traffic management measures implemented including manual intersection control and road closures (depending on the timing of the event). As such, SIDRA modelling of these scenarios is unlikely to be representative of actual traffic conditions. Modelling of the proposed largest event size (6000 persons) has not been carried out as such events will have full management measures in place including the manual control of critical intersections and road closures in the vicinity of the site.

SIDRA modelling has been carried out for key intersections in the surrounding area. A summary of the results for the base (surveyed) and design (with proposal) scenarios is provided in Tables 7.1 - 7.7 with the SIDRA Movement Summary for each provided as Appendix B.

Scenario	Degree of Saturation	Average Delay (second)	95% Back of Queue (metres)
Background 2025 Weekday AM peak hour	0.150	0.6	0.9
Background 2025 Weekday AM peak hour	0.138	1.8	2.5
Background 2025 Weekday SAT AM peak hour	0.191	2.0	3.4
Background 2025 Weekday SAT PM peak hour	0.147	1.2	1.7
Weekday AM peak hour with typical crowd	0.162	1.1	3.0
Weekday AM peak hour with typical crowd	0.150	2.4	3.6
SAT AM peak hour with typical crowd	0.204	2.3	4.0
SAT PM peak hour with typical crowd	0.158	1.8	3.3
Weekday AM peak hour with large crowd	0.531	2.5	27.2
Weekday PM peak hour with large crowd	1.031	28.2	214.2
SAT AM peak hour with large crowd	0.563	3.3	29.6
SAT PM peak hour with large crowd	1.086	42.7	293.8
SENSITIVITY Weekday PM peak hour with moderate crowd (3,000 persons)	0.710	6.2	39.2

Table 7.1: SIDRA Results (Lion Creek Road / Hall Street Intersection)

Table 7.2: SIDRA Results (Lion Creek Road / Exhibition Road Intersection)

Scenario	Degree of Saturation	Average Delay (second)	95% Back of Queue (metres)
Background 2025 Weekday AM peak hour	0.341	3.9	10.5
Background 2025 Weekday AM peak hour	0.279	3.5	8.4
Background 2025 Weekday SAT AM peak hour	0.423	4.1	14.0
Background 2025 Weekday SAT PM peak hour	0.419	4.1	14.8
Weekday AM peak hour with typical crowd	0.458	4.5	16.4
Weekday AM peak hour with typical crowd	0.386	4.1	12.6
SAT AM peak hour with typical crowd	0.569	4.9	21.9
SAT PM peak hour with typical crowd	0.539	4.9	22.1



Weekday AM peak hour with large crowd	2.293	368.9	1720.7
Weekday AM peak hour with large crowd	2.041	289.8	1473.3
SAT AM peak hour with large crowd	3.028	544.6	2071.8
SAT PM peak hour with large crowd	2.364	422.0	1916.4
SENSITIVITY Weekday AM peak hour with moderate crowd (2,000 persons)	0.959	13.2	102.9
SENSITIVITY Weekday PM peak hour with moderate crowd (2,000 persons)	0.845	8.1	54.4

Table 7.3: SIDRA Results (Lion Creek Road / Huish Drive Intersection)

Scenario	Degree of Saturation	Average Delay (second)	95% Back of Queue (metres)
Background 2025 Weekday AM peak hour	0.270	1.2	2.4
Background 2025 Weekday AM peak hour	0.236	0.9	1.5
Background 2025 Weekday SAT AM peak hour	0.318	1.1	3.0
Background 2025 Weekday SAT PM peak hour	0.291	0.6	1.2
Weekday AM peak hour with typical crowd	0.270	1.5	4.3
Weekday AM peak hour with typical crowd	0.236	1.3	3.3
SAT AM peak hour with typical crowd	0.318	1.5	3.9
SAT PM peak hour with typical crowd	0.291	1.1	3.2
Weekday AM peak hour with large crowd	0.534	4.0	32.7
Weekday AM peak hour with large crowd	0.564	4.0	32.2
SAT AM peak hour with large crowd	0.565	4.2	43.7
SAT PM peak hour with large crowd	0.623	4.3	36.2

Table 7.4: SIDRA Results (Lion Creek Road / North Street / Bolsover Street Intersection)

Scenario	Degree of Saturation	Average Delay (second)	95% Back of Queue (metres)
Background 2025 Weekday AM peak hour	0.893	62.9	250.1
Background 2025 Weekday AM peak hour	0.846	55.1	181.5
Background 2025 Weekday SAT AM peak hour	0.889	52.4	257.0
Background 2025 Weekday SAT PM peak hour	0.898	47.1	188.5
Weekday AM peak hour with typical crowd	0.891	70.2	322.0
Weekday AM peak hour with typical crowd	0.887	60.5	210.8
SAT AM peak hour with typical crowd	0.872	55.2	320.8
SAT PM peak hour with typical crowd	0.871	48.4	214.0
Weekday AM peak hour with large crowd	1.299	255.8	1443.1
Weekday AM peak hour with large crowd	1.072	127.8	791.4
SAT AM peak hour with large crowd	1.247	221.4	1443.3
SAT PM peak hour with large crowd	0.991	78.5	713.2



Table 7.5: SIDRA Results (Exhibition Road / Wandal Road / Campbell Street Roundabout)

Scenario	Degree of Saturation	Average Delay (second)	95% Back of Queue (metres)
Background 2025 Weekday AM peak hour	0.244	5.7	8.3
Background 2025 Weekday AM peak hour	0.253	6.0	8.6
Background 2025 Weekday SAT AM peak hour	0.266	5.7	8.1
Background 2025 Weekday SAT PM peak hour	0.264	6.2	8.8
Weekday AM peak hour with typical crowd	0.293	6.2	11.3
Weekday AM peak hour with typical crowd	0.309	6.6	11.0
SAT AM peak hour with typical crowd	0.295	6.2	11.4
SAT PM peak hour with typical crowd	0.320	6.8	11.1
Weekday AM peak hour with large crowd	0.969	22.0	229.2
Weekday AM peak hour with large crowd	0.877	20.8	150.9
SAT AM peak hour with large crowd	0.989	25.5	266.9
SAT PM peak hour with large crowd	1.002	29.7	278.9

Table 7.6: SIDRA Results (Campbell Street / North Street Roundabout)

Scenario	Degree of Saturation	Average Delay (second)	95% Back of Queue (metres)
Background 2025 Weekday AM peak hour	0.596	7.2	38.1
Background 2025 Weekday AM peak hour	0.576	8.1	37.1
Background 2025 Weekday SAT AM peak hour	0.384	6.3	18.6
Background 2025 Weekday SAT PM peak hour	0.427	6.1	21.1
Weekday AM peak hour with typical crowd	0.666	8.2	51.8
Weekday AM peak hour with typical crowd	0.694	9.3	57.8
SAT AM peak hour with typical crowd	0.435	6.7	21.8
SAT PM peak hour with typical crowd	0.518	6.4	27.9
Weekday AM peak hour with large crowd	1.545	185.3	1374.4
Weekday AM peak hour with large crowd	1.559	253.2	2029.1
SAT AM peak hour with large crowd	1.104	47.2	388.0
SAT PM peak hour with large crowd	1.124	82.4	776.8
SENSITIVITY Weekday AM peak hour with moderate crowd (2,000 persons)	0.930	17.1	164.9
SENSITIVITY Weekday PM peak hour with moderate crowd (1,000 persons)	0.823	11.5	94.2



Scenario	Degree of Saturation	Average Delay (second)	95% Back of Queue (metres)
Background 2025 Weekday AM peak hour	0.716	27.6	101.3
Background 2025 Weekday AM peak hour	0.845	33.5	141.1
Weekday AM peak hour with typical crowd	0.770	32.9	124.9
Weekday PM peak hour with typical crowd	0.812	37.9	170.4
Weekday AM peak hour with large crowd	0.862	35.7	165.0
Weekday PM peak hour with large crowd	0.931	66.6	395.0
SENSITIVITY Weekday AM peak hour with moderate crowd (3,000 persons)	0.862	42.3	236.0

Table 7.7: SIDRA Results (Campbell Street / Albert Street Intersection)

As indicated above, the road network surrounding the site has ample capacity to accommodate traffic generated by the typical weekly events. As shown, the below intersections fail under the larger event scenario:

- Lion Creek Road / Hall Street intersection (Table 7.1)
- Lion Creek Road / Exhibition Road T junction (Table 7.2)
- Lion Creek Road / North Street / Bolsover Street Intersection (Table 7.4)
- Campbell Street / North Street roundabout (Table 7.6)

However, the above analysis is considered conservative as it assumes that event arrival and departure times will coincide with normal peak morning and afternoon periods. Considering this, traffic management measures including the deployment of traffic control personnel will be required for the above critical intersections, and can be explored in the TMP prior to each large event.

Sensitivity Analysis

A sensitivity analysis has been completed to determine the threshold patronage levels at which each intersection would experience operational failure.

The results of the sensitivity assessment are presented in Tables 7.1 - 7.7, with a summary of these findings provided in Table 7.8 below.

Intersection	SIDRA Assessment – 4,500 patrons	Sensitivity Assessment
Lion Creek Road / Hall Street	Large Crowd Not Acceptable for	SENS -
Intersection	Weekday PM or Sat PM	3,000 patrons acceptable
Lion Creek Road / Exhibition Road	Large Crowd Not Acceptable	SENS -
Intersection	Large Crowd <u>Not</u> Acceptable	2,000 patrons acceptable
Lion Creek Road / Huish Drive	All acceptable	N/A
Intersection	All acceptable	N/A
Lion Creek Road / North Street /	Large Crowd Not Acceptable	**2025 Background at
Bolsover Street Intersection	Large Crowd <u>Not</u> Acceptable	capacity
Exhibition Road / Wandal Road /	Large Crowd could be Acceptable	N/A
Campbell Street Roundabout	Large Crowd <u>could be</u> Acceptable	N/A

Table 7.8: SIDRA Sensitivity Result Summary



Campbell Street / North Street Roundabout	Large Crowd <u>Not</u> Acceptable	SENS - AM: 2,000 patrons acceptable PM: 1,000 patrons acceptable
Campbell Street / Albert Street Intersection	Large crowd – Weekday PM	SENS - 3,000 patrons acceptable

As shown in Table 7.8, the surveyed intersections experience capacity limitations under various patronage conditions. However, it should be noted that the Lion Creek Road / North Street / Bolsover Street intersection is already operating beyond its capacity under current traffic conditions, irrespective of the proposed development.

It is noted that approval conditions could be implemented at 2,000 patrons; however, the Campbell Street / North Street Roundabout may face challenges during peak afternoon conditions. If the Lion Creek Road / North Street / Bolsover Street intersection were upgraded prior to the proposal's commencement, it could potentially ease congestion at the Campbell Street / North Street Roundabout.



7.4 Impacts on State controlled roads

Albert Street to the east of the site forms part of the Bruce Highway and is therefore a State controlled road. Visitors travelling to an event from the north or east will generally turn from Albert Street to Campbell Street or Bolsover Street to access the site. As shown in Figure 7.14, the respective intersections with Albert Street and signalised and include channelised turn treatments.

Given the nature of the proposed use and infrequent schedule of events, it is considered that the proposal will not adversely impact upon the operation of the intersections shown. Events with a significant crowd size would generally be scheduled on weekends and outside of normal peak traffic periods. Any occasional larger event that coincides with a weekday peak period (eg a Friday night football game) may require the inclusion of some traffic management measures on the Bruce Highway. This would be considered as part of the Traffic Management Plan for that particular event and require approval by TMR.



Bruce Hwy / Campbell Street intersection



Bruce Hwy / Bolsover Street intersection FIGURE 7.14 – LAYOUT OF NEARBY STATE CONTROLLED INTERSECTIONS



8.0 TRAFFIC MANAGEMENT MEASURES 8.1 General

Given that car parking will be dispersed throughout the surrounding road network, temporary traffic management measures such as road closures and temporary signage and barriers will generally only be required for medium - large events.

The measures discussed below are general in nature. Specific requirements for larger events will be detailed in a Traffic Management Plan that will need to be submitted to Council and TMR for approval prior to each event. The requirements for each event may vary depending on time and day that the event is scheduled. In general, it is considered that the location of the site and the structure of the surrounding road network is such that traffic management measures can be deployed so that traffic impacts are appropriately mitigated.

8.2 Shuttle bus

Given the location of the site is relation to the CBD, it is considered that a shuttle bus service should be implemented for large events. This would not only assist transport management, but also encourage visitors to support local businesses by utilising food and drink outlets in the area before and / or after an event.

Specific pick up and drop off locations in the CBD can be determined through consultation with Council, as part of a Transport Management Plan for each event.

As shown in Figure 8.1, it is proposed that a bus laydown area will be provided along the newly constructed curb on the northern side of Graeme Acton Way. A U-turn facility should be implemented so that buses can turn when Graeme Acton Way is closed before the railway line.

8.3 Car parking

As referred to in Section 5, the verge parking area on Graeme Acton Way is proposed to be extended from the existing car park to Sir Raymond Huish Drive to the south. The car parking area will be designed in accordance with AS2890, with a sealed surface and line marked parking bays. As shown, a provision of 50 formalised car parking spaces will be provided.

Despite the above, car parking is generally available throughout the surrounding road network. There may be opportunity to utilise the showgrounds for car parking for larger events, and such should be investigated as part of the TMP in the lead up to larger events. Rockhampton State High School has advised that it is willing to make the school sports grounds available for car parking for larger events, when such do not coincide with school activities, which would generally be the case as large events would generally be held during the evenings and on weekends.



8.4 Bus / Coach parking

As aforementioned, it is proposed that a bus laydown area will be provided along the newly constructed curb on the northern side of Graeme Acton Way.

8.5 Road closures

There is opportunity to close Graeme Acton Way on each side of the railway line, during large events. Appropriate temporary signage and traffic control personnel would be deployed to assist in the detouring of traffic via Campbell Street.

As shown in Figure 8.2, provision will be made for traffic controllers to supervise U-turn movements on Graeme Acton Way, before the road closure.

8.6 Temporary signage and traffic control

Temporary signage and traffic control personnel requirements will be specified in the Event Traffic Management Plan and associated Traffic Guidance Schemes. However, in general, it is considered that traffic control personnel will be required at the Graeme Acton Way / Huish Drive and Graeme Acton Way / Exhibition Road intersections. Additional controllers will be required to manage set down / pick up areas and key pedestrian crossing points.

For large events, if the railway crossing is closed, traffic personnel would need to be deployed at the following intersections:

- Campbell Street / North Street roundabout;
- Exhibition Road / Wandal Road / Campbell Street Roundabout;
- Lion Creek Road / New Exhibition Road T junction;
- Lion Creek Road / Hall Street intersection.

This measure would address the increased traffic demand at these locations resulting from the redistribution of vehicles due to the railway closure.

General traffic management measures for large events are shown in Figures 8.2 - 8.3.





FIGURE 8.1 – PROPOSED PEDESTRIAN FACILITIES AND CHARTER RANK



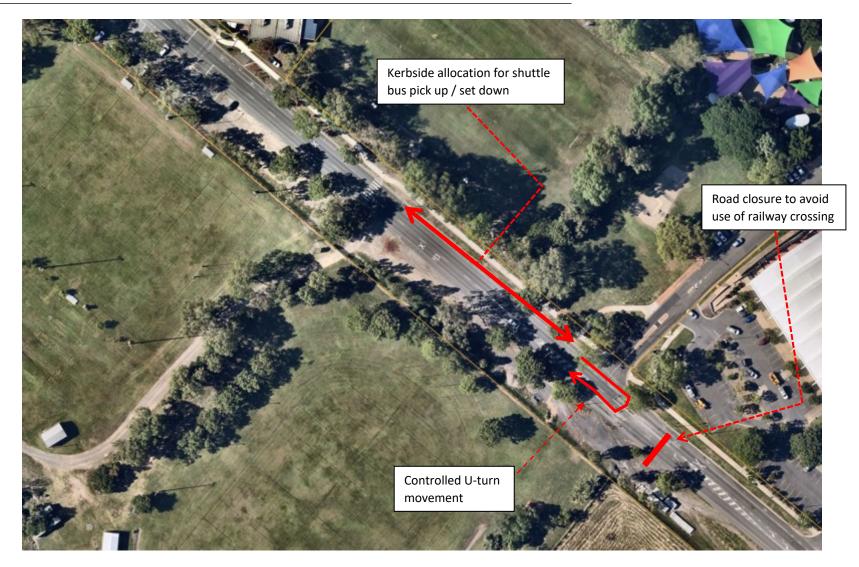


FIGURE 8.2 – GENERAL TRAFFIC MANAGEMENT MEASURES FOR LARGE EVENTS





FIGURE 8.3 – GENERAL TRAFFIC MANAGEMENT MEASURES FOR LARGE EVENTS



9.0 RISK ASSESSMENT (PEDESTRIAN ACCESS)

9.1 Safety Risk Score Matrix

For the purposes of the analysis a risk assessment has been carried out at the existing access in accordance with the TMR Guide to Traffic Impact Assessments (GTIA). The assessment has been carried under the current and proposed development scenarios. To establish the risk criteria at the existing access location, the safety risk matrix as shown in Figure 9.1 was adopted for the analysis, with the results of the assessment summarised in Table 9.1.

Figure 9.3.2(a) -	Safety risk	score	matrix
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		Potential consequence								
		Property only (1)	Minor injury (2)	Medical treatment (3)	Hospitalisation (4)	Fatality (5)				
Potential likelihood	Almost certain (5)	М	М	н	Н	н				
	Likely (4)	М	М	M	н	H H M				
	Moderate (3)	L	м	М	М					
	Unlikely (2)	L	L	М	М					
	Rare (1)	L	L	L	М	М				

L: Low risk M: Medium risk

H: High risk





9.2 Campbell Street

Given there will be an increased amount of foot traffic utilising the Campbell Street pedestrian facilities, a safety risk matrix has been carried out and is shown in Table 9.1.

Risk Item		Without Development		With Development			Mitigation Measures	With development & mitigation		
	Likelihood*	Consequence*	Risk score*	Likelihood*	Consequence*	Risk score*		Likelihood*	Consequence*	Risk score*
Conflict between pedestrian crossing at the 'zebra' crossing and car travelling along Graeme Acton Way (refer to Figure 9.2).	2	5	м	3	5	Н	Implementation of traffic control personnel to manage the crossing during events.	1	5	м
Conflict between pedestrian crossing using the facilities along Campbell Street (refer to Figure 9.3).	2	5	Н	3	5	н	Implementation of traffic control personnel to manage the crossing during events.	1	5	м

*Refer to below risk score matrix (GTIA, Figure 9.3.2(a))

Images of the existing pedestrian pathway and associated facilities along Graeme Acton Way and Campbell Street are shown in Figures 9.2 and 9.3.





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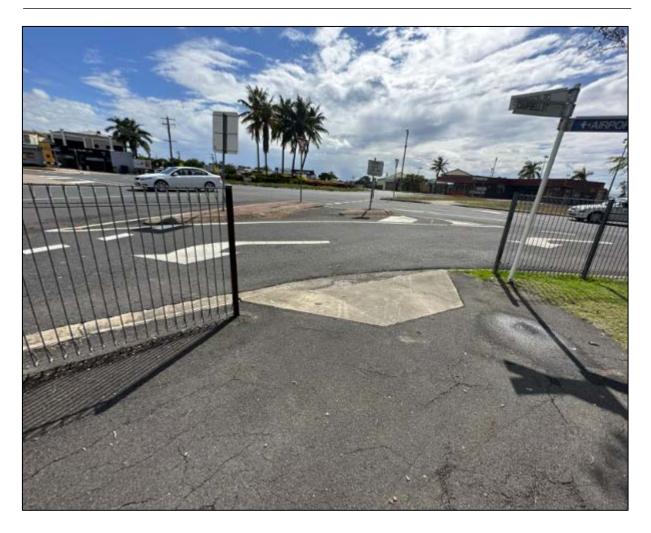


FIGURE 9.2 – IMAGES OF THE PEDESTRIAN FACILITIES ALONG CAMPBELL STREET



9.3 Graeme Acton Way Railway Crossing

As illustrated in Figure 3.11, there are more than 800 car parking spaces available within a 10-minute walking distance from the site. Given this, it is anticipated that the majority of patrons will choose to park in these areas located to the west of the crossing, resulting in a limited number of patrons crossing the railway on Graeme Acton Way.

Notwithstanding the above, a small number of visitors will utilise the crossing to travel to/from the CBD. To remain conservative, approximately 5% of visitors are expected to utilise the crossing, equating to 200 visitors based on a 4,000-visitor event.

The existing pathway and measures (boom gate) in-place are considered acceptable in catering for this volume of foot traffic given the extremely low frequency of trains. An overview of the railway crossing timetable is shown below.

Monday:	1:27am, 10:16pm, 11.25pm
Tuesday:	1:27am, 10:16pm
Wednesday:	1:27am, 5:18am, 10:16pm
Thursday:	11:25pm
Friday:	1:27am, 10:16pm
Saturday:	1:27am, 10:16pm
Sunday:	3:18am

As shown above, the railway crossing experiences low frequencies of trains, with early or late arrival times. It is noted that the above level of foot traffic will occur very infrequently (10 times per year), and events will generally occur of 500 patrons, resulting in 25 visitors using the crossing.

A safety risk matrix has been carried out for the Graeme Acton Way railway crossing, and is shown in Table 9.2.

Risk Item		Without Development			With elopn		Mitigation Measures		With elopm nitigat	nent
	Likelihood*	Consequence*	Risk score*	Likelihood*	Consequence*	Risk score*		Likelihood*	Consequence*	Risk score*
Conflict between train line crossing and pedestrian travelling on Graeme Acton Way (refer to Figure 9.3).	1	5	м	2	5	М	No mitigation measures are proposed due to the trains infrequency, early/late arrival times, and measures already in place.	1	5	м

Table 9.2: Road Safety Assessment (Pedestrian Safety Graeme Acton Way railway crossing)

*Refer to below risk score matrix (GTIA, Figure 9.3.2(a))

Images of the existing pedestrian pathway and associated facilities at the Graeme Acton Way railway crossing are shown in Figure 9.3.





FIGURE 9.3 – IMAGES OF THE RAILWAY CROSSING ALONG GRAEME ACTON WAY



9.4 Albert Street / Bolsover Street Intersection

A safety risk matrix has been carried out for the Albert Street / Bolsover Street intersection, and is shown in Table 9.3.

Risk Item		Vithou elopn	-	Dev	With elopn	nent	Mitigation Measures		With elopment nitigation	
	Likelihood*	Consequence*	Risk score*	Likelihood*	Consequence*	Risk score*		Likelihood*	Consequence*	Risk score*
Conflict between pedestrian crossing at the 'zebra' crossing and car travelling along Bolsover Street (refer to Figure 9.5: Detail C).	2	5	м	3	5	Н	Implementation of traffic control personnel to manage the crossing during events.	1	5	м
Conflict between pedestrian crossing using the facilities along Albert and Bolsover Street (refer to Figure 9.5).	1	5	М	2	5	М	No mitigation measures are proposed due to the extremely low likelihood, and measures already in place.	2	5	М

*Refer to below risk score matrix (GTIA, Figure 9.3.2(a))

Images of the existing pedestrian pathway and associated facilities at the Albert Street / Bolsover Street intersection and along Bolsover Street and Albert Street are shown in Figures 9.4 and 9.5.



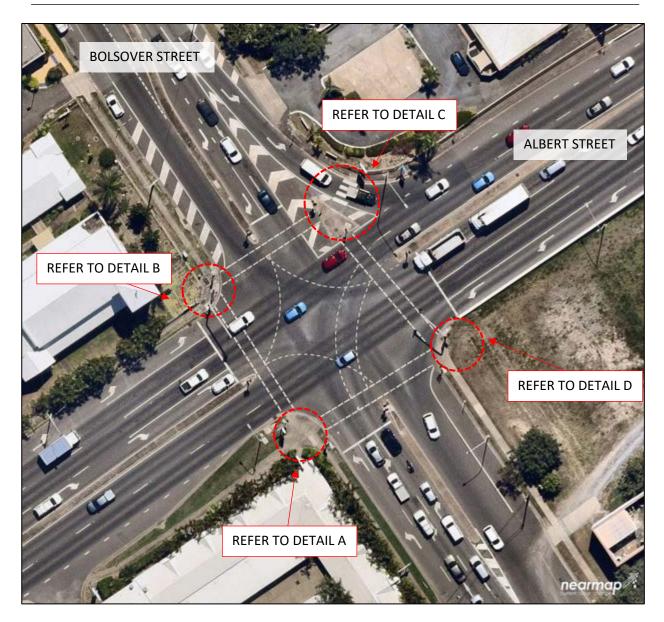


FIGURE 9.4 – AERIAL OF THE ALBERT STREET / BOLSOVER STREET INTERSECTION











FIGURE 9.5 – PEDESTRIAN FACILITIES AT THE ALBERT STREET / BOLSOVER STREET INTERSECTION



9.5 Albert Street / Campbell Street Intersection

A safety risk matrix has been carried out for the Albert Street / Campbell Street intersection, and is shown in Table 9.4.

Table 9.4: Road Safety Assessment (Pedestrian Safety at the Albert Street / Campbell Street intersection)

Risk Item		Without Development			With elopn		Mitigation Measures		With elopn nitigat	nent
	Likelihood*	Consequence*	Risk score*	Likelihood*	Consequence*	Risk score*		Likelihood*	Consequence*	Risk score*
Conflict between pedestrian crossing using the facilities along Campbell and North Street (refer to Figure 9.7).	1	5	М	2	5	М	No mitigation measures are proposed due to the extremely low likelihood, and measures already in place.	2	5	м

*Refer to below risk score matrix (GTIA, Figure 9.3.2(a))

Images of the existing pedestrian pathway and associated facilities at the Albert Street / Campbell Street intersection and along Campbell Street and Albert Street are shown in Figures 9.6 and 9.7.



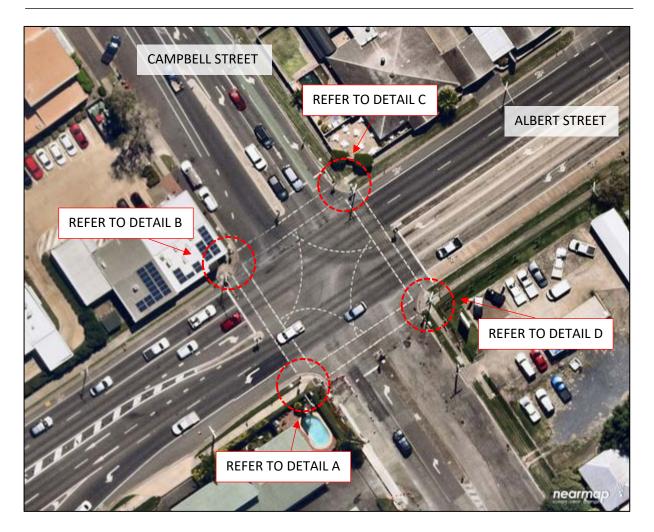


FIGURE 9.6 – AERIAL OF THE ALBERT STREET / CAMPBELL STREET INTERSECTION











FIGURE 9.7 – PEDESTRIAN FACILITIES AT THE ALBERT STREET / CAMPBELL STREET INTERSECTION



9.6 Campbell Street / North Street Intersection

A safety risk matrix has been carried out for the Campbell Street / North Street intersection, and is shown in Table 9.5.

-							, ,			
Risk Item	Without Development		With Development			Mitigation Measures		With elopm nitigat	nent	
	Likelihood*	Consequence*	Risk score*	Likelihood*	Consequence*	Risk score*		Likelihood*	Consequence*	Risk score*
Conflict between pedestrian crossing using the facilities along Campbell and North Street (refer to Figure 9.9).	2	5	М	3	5	Н	Implementation of traffic control personnel to manage the crossing during events.	1	5	м

*Refer to below risk score matrix (GTIA, Figure 9.3.2(a))

Images of the existing pedestrian pathway and associated facilities at the Campbell Street / North Street intersection and along Campbell Street and North Street are shown in Figures 9.8 and 9.9.



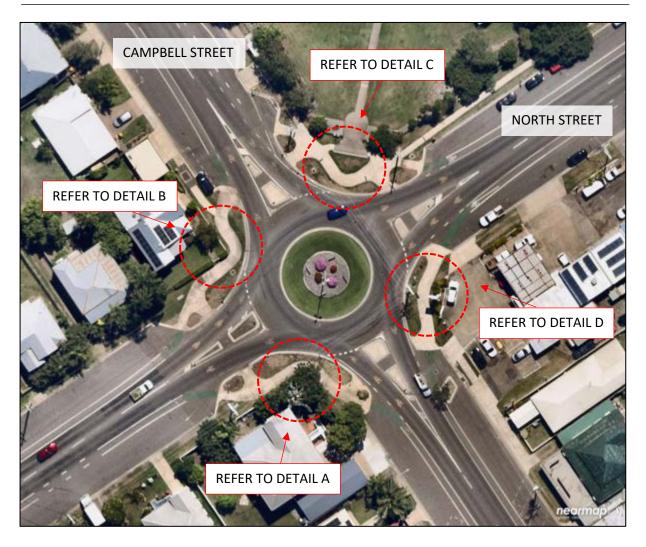


FIGURE 9.8 – AERIAL OF THE CAMPBELL STREET / NORTH STREET INTERSECTION











FIGURE 9.9 – PEDESTRIAN FACILITIES AT THE CAMPBELL STREET / NORTH STREET INTERSECTION



9.7 Campbell Street / Wandal Road / Exhibition Road Intersection

A safety risk matrix has been carried out for the Campbell Street / Wandal Road / Exhibition Road intersection, and is shown in Table 9.6.

Table 9.6: Road Safety	Assessment	(Pedestrian	Safety a	at the	Campbell	Street /	Wandal F	Road /
Exhibition Road)								

Risk Item		/ithou elopn	-	Dev	With elopn	nent	Mitigation Measures		With elopment nitigation	
	Likelihood*	Consequence*	Risk score*	Likelihood*	Consequence*	Risk score*		Likelihood*	Consequence*	Risk score*
Conflict between pedestrian crossing using the facilities along Campbell Street, Baden Powell Street, Exhibition Road and New Exhibition Road (refer to Figure 9.11).	2	5	Н	3	5	Н	Implementation of traffic control personnel to manage the crossing during events.	1	5	М
Conflict between pedestrian attempting to cross Wandal Road (refer to Figure 9.12).	2	5	H	3	5	Н	Implementation of traffic control personnel to manage the crossing during events.	1	5	М

*Refer to below risk score matrix (GTIA, Figure 9.3.2(a))

Images of the existing pedestrian pathway and associated facilities at the Campbell Street / Wandal Road / Exhibition Road intersection and along Campbell Street, Wandal Road, Exhibition Road and New Exhibition Road are shown in Figures 9.10 and 9.11.



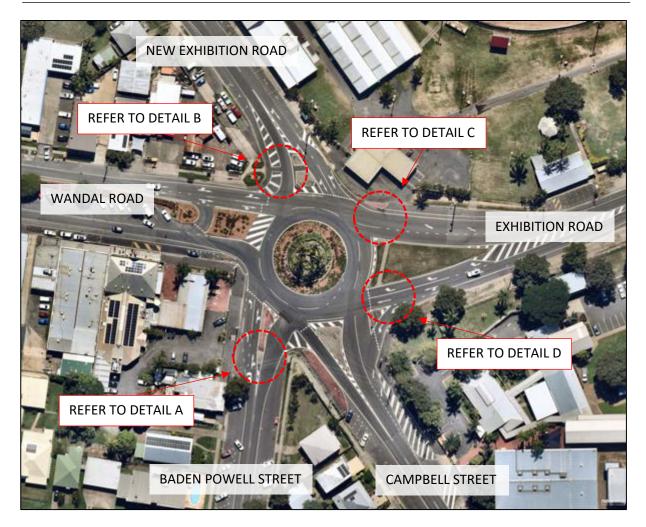


FIGURE 9.10 – AERIAL OF THE CAMPBELL STREET / WANDAL ROAD / EXHIBITION ROAD INTERSECTION











FIGURE 9.11 – PEDESTRIAN FACILITIES AT THE CAMPBELL STREET / WANDAL ROAD / EXHIBITION ROAD INTERSECTION





FIGURE 9.12 – IMAGES OF WANDAL ROAD



10.0 ROAD CRASH DATA

Based on the crash data shown in Figure 10.1, a concentration of accidents can be seen to occur at the various intersections.

It is noted that pedestrian signals on Graeme Acton Way were installed as a Coroners recommendation following a patron of the sports club being fatally injured (as shown in Figure 10.1).

TRANSPORT IMPACT ASSESSMENT 1 GRAEME ACTON WAY, WANDAL RTE REF 22473





FIGURE 10.1 – ROAD CRASH DATA MAP



11.0 SUMMARY AND CONCLUSION

- The subject site is located on the northern side of Graeme Acton Way, with northern frontage onto Sir Raymond Huish Drive ("Huish Drive"). It is identified as Lot 40 on SP240869 and is located within the L2 Sport and Recreation zone.
- The Rocky Sports Club site is located within a Sport and Recreation precinct. The football field is home to the Brothers Rugby Club. Surrounding activities include a tennis club, aquatic centre and parklands. There are other sporting clubs and infrastructure to the north-west of the site including cricket, basketball and bowls. The Rockhampton State High School and Showgrounds are to the west of the site.
- The proposal is for a new sports stadium at the location of the existing football field immediately to the east of the Rocky Sports Club (RSC). The development will include realignment of the existing field, a south-west stand and north-east stand providing seating for approximately 5,500 persons. The stadium is proposed to cater for more frequent small-scale events (e.g sporting carnivals, home games etc) rather than frequent major events.
- Specific requirements for larger events will be detailed in a Traffic Management Plan that will need to be submitted to Council and TMR for approval prior to each event. The requirements for each event may vary depending on time and day that the event is scheduled. In general, it is considered that the location of the site and the structure of the surrounding road network is such that traffic management measures can be deployed so that traffic impacts are appropriately mitigated.
- Given the nature of the proposed use and infrequent schedule of events, it is considered that the proposal will not adversely impact upon the operation of surrounding State controlled roads. Any occasional larger event that coincides with a weekday peak period (eg a Friday night football game) may require the inclusion of some traffic management measures on the Bruce Highway. This would be considered as part of the Traffic Management Plan for that particular event and require approval by TMR.
- On-site car parking is not proposed given the abundance of public on-street car parking surrounding the site, and the proximity of the site to the Central Business District (CBD). There are also opportunities in the area for event car parking, such as the showgrounds which is located within comfortable walking distance of the site.
- Traffic modelling indicates that the surrounding road network generally has capacity to cater for traffic generated by typical weekly events. Traffic management measures including the deployment of traffic control personnel will be required for critical intersections and pedestrian facilities around the site, particularly for large events.
- In general, the location of the subject site and its proximity to the CBD, and the structure of the surrounding road network, is such that transport demands can be managed effectively so that impacts on surrounding infrastructure and land uses are appropriately mitigated.



APPENDIX

- APPENDIX A PEAK PERIOD TRAFFIC SURVEY RESULTS
- APPENDIX B CRITERIA FOR THE ASSESSMENT OF SIDRA RESULTS
- APPENDIX C SIDRA MODELLING (SURVEYED TRAFFIC CONDITIONS)
- APPENDIX D SIDRA MODELLING (DESIGN TRAFFIC CONDITIONS)



APPENDIX A – PEAK PERIOD TRAFFIC SURVEY RESULTS

Unit Type:	Camera
RTE ID:	22473
Location:	Lion Creek Road / Hall Street
Date:	Friday, 14 July 2023

Comments: Fine weather

Time	N-Thru	N-Right	N-Left	S-Thru	S-Right	S-Left	E-Thru	E-Right	E-Left	W-Thru	W-Right	W-Left	Total	Cumul Tot
07:00	26	0	2	46	3	0	0	0	1	0	0	0	78	
07:15	38	0	1	63	1	0	0	1	2	0	0	0	106	
07:30	43	0	1	71	3	0	0	2	3	0	0	0	123	
07:45	54	0	1	58	5	0	0	2	4	0	0	0	124	431
08:00	44	0	4	51	5	0	0	3	6	0	0	0	113	466
08:15	39	0	5	41	4	0	0	2	2	0	0	0	93	453
08:30	49	0	3	41	2	0	0	4	2	0	0	0	101	431
08:45	35	0	6	68	3	0	0	3	3	0	0	0	118	425
09:00	34	0	5	44	11	0	0	4	6	0	0	0	104	416
09:15	28	0	5	39	10	0	0	6	4	0	0	0	92	415
09:30	19	0	4	54	4	0	0	3	6	0	0	0	90	404
09:45	37	0	12	69	3	0	0	6	6	0	0	0	133	419
10:00	35	0	6	42	5	0	0	4	15	0	0	0	107	422
10:15	34	0	5	46	3	0	0	4	9	0	0	0	101	431
AM PEAK HR	179	0	7	243	14	0	0	8	15	0	0	0	466	
14:30	98	0	1	36	4	0	0	3	5	0	0	0	147	
14:45	38	0	1	31	3	0	0	2	5	0	0	0	80	
15:00	53	0	6	22	4	0	0	5	2	0	0	0	92	
15:15	42	0	19	35	19	0	0	4	3	0	0	0	122	441
15:30	26	0	7	43	18	0	0	4	19	0	0	0	117	411
15:45	42	0	5	42	4	0	0	3	7	0	0	0	103	434
16:00	70	0	4	35	3	0	0	2	6	0	0	0	120	462
16:15	50	0	7	45	21	0	0	6	12	0	0	0	141	481
16:30	50	0	6	37	9	0	0	6	11	0	0	0	119	483
16:45	37	0	10	29	13	0	0	2	13	0	0	0	104	484
17:00	42	0	6	41	6	0	0	5	19	0	0	0	119	483
17:15	19	0	11	49	16	0	0	5	12	0	0	0	112	454
17:30	20	0	9	44	11	0	0	7	22	0	0	0	113	448
17:45	28	0	4	23	7	0	0	3	4	0	0	0	69	413
PM PEAK HR	207	0	27	146	46	0	0	16	42	0	0	0	484	



Unit Type:	Camera
RTE ID:	22473
Location:	Lion Creek Road / Huish Drive
Date:	Friday, 14 July 2023
Comments:	Fine weather

Time	N-Thru	N-Right	N-Left	S-Thru	S-Right	S-Left	E-Thru	E-Right	E-Left	W-Thru	W-Right	W-Left	Total	Cumul Tot
07:00	43	0	0	66	8	0	0	2	3	0	0	0	122	
07:15	64	0	1	90	13	0	0	3	5	0	0	0	176	
07:30	71	0	3	130	20	0	0	4	12	0	0	0	240	
07:45	102	0	8	115	12	0	0	4	10	0	0	0	251	789
08:00	73	0	6	102	23	0	0	3	15	0	0	0	222	889
08:15	93	0	7	118	24	0	0	1	9	0	0	0	252	965
08:30	93	0	3	121	15	0	0	0	9	0	0	0	241	966
08:45	93	0	13	129	20	0	0	1	7	0	0	0	263	978
09:00	86	0	2	102	23	0	0	4	10	0	0	0	227	983
09:15	69	0	6	103	30	0	0	0	9	0	0	0	217	948
09:30	52	0	14	113	13	0	0	1	2	0	0	0	195	902
09:45	83	0	4	106	19	0	0	2	11	0	0	0	225	864
10:00	67	0	6	75	20	0	0	2	16	0	0	0	186	823
10:15	71	0	7	94	16	0	0	4	11	0	0	0	203	809
AM PEAK HR	365	0	25	470	82	0	0	6	35	0	0	0	983	
		•												
14:30	153	0	1	68	2	0	0	1	9	0	0	0	234	
14:45	104	0	1	75	7	0	0	1	2	0	0	0	190	
15:00	108	0	1	73	6	0	0	1	8	0	0	0	197	
15:15	100	0	3	83	16	0	0	2	13	0	0	0	217	838
15:30	92	0	0	100	10	0	0	1	9	0	0	0	212	816
15:45	83	0	1	75	12	0	0	1	4	0	0	0	176	802
16:00	123	0	0	78	7	0	0	0	3	0	0	0	211	816
16:15	109	0	2	114	11	0	0	1	10	0	0	0	247	846
16:30	100	0	0	76	11	0	0	1	6	0	0	0	194	828
16:45	91	0	1	86	15	0	0	1	8	0	0	0	202	854
17:00	107	0	1	116	9	0	0	2	15	0	0	0	250	893
17:15	64	0	2	119	9	0	0	3	10	0	0	0	207	853
17:30	86	0	0	98	11	0	0	1	5	0	0	0	201	860
17:45	63	0	1	78	18	0	0	1	12	0	0	0	173	831
PM PEAK HR	407	0	4	392	46	0	0	5	39	0	0	0	893	



Unit Type:CameraRTE ID:22473Location:Lion Creek Road / North Street / Bolsover StreetDate:Friday, 14 July 2023

Comments: Fine weather

Time	N-Thru	N-Right	N-Left	S-Thru	S-Right	S-Left	E-Thru	E-Right	E-Left	W-Thru	W-Right	W-Left	Total	Cumul Tot
07:00	41	2	7	63	0	25	4	8	0	5	37	6	198	
07:15	56	5	11	98	0	19	9	11	2	5	43	6	265	
07:30	75	4	11	126	0	26	8	9	5	8	50	12	334	
07:45	89	5	14	102	0	39	7	5	5	20	58	14	358	1155
08:00	57	5	10	101	1	15	9	13	6	6	56	21	300	1257
08:15	93	8	17	111	1	29	5	22	6	9	91	19	411	1403
08:30	98	3	23	102	0	30	11	15	10	18	113	19	442	1511
08:45	79	2	8	119	3	25	8	12	2	12	72	15	357	1510
09:00	56	6	5	113	1	21	7	10	10	9	52	13	303	1513
09:15	73	4	9	114	0	28	6	6	3	10	58	15	326	1428
09:30	51	1	5	112	1	30	10	13	9	10	52	10	304	1290
09:45	74	3	9	106	2	24	12	10	4	14	61	8	327	1260
10:00	72	2	7	108	1	27	11	9	6	9	53	7	312	1269
10:15	75	5	5	102	0	23	10	9	6	8	53	8	304	1247
AM PEAK HR	326	19	53	445	5	105	31	59	28	48	328	66	1513	
		-	-	-	-		-			-		-	-	
14:30	108	8	5	56	1	35	12	13	6	9	76	6	335	
14:45	95	2	7	79	0	25	13	11	6	5	90	1	334	
15:00	88	3	6	74	0	39	12	5	11	14	109	3	364	
15:15	113	7	9	68	0	31	9	6	4	11	111	9	378	1411
15:30	98	3	1	87	0	26	6	9	2	4	113	13	362	1438
15:45	82	6	5	71	0	25	8	11	12	12	89	11	332	1436
16:00	114	8	10	89	1	17	11	9	1	10	88	7	365	1437
16:15	112	5	14	98	1	18	8	8	8	6	77	14	369	1428
16:30	106	6	5	82	1	23	11	14	8	17	69	3	345	1411
16:45	85	2	8	93	1	27	8	10	5	11	92	7	349	1428
17:00	112	5	4	98	1	38	13	20	10	10	78	10	399	1462
17:15	53	6	8	104	0	30	9	19	3	8	68	10	318	1411
17:30	77	12	7	97	1	15	7	10	3	4	38	9	280	1346
17:45	41	6	2	110	1	29	9	10	5	5	49	9	276	1273
PM PEAK HR	415	18	31	371	4	106	40	52	31	44	316	34	1462	



Unit Type:CameraRTE ID:22473Location:North Street / Campbell StreetDate:Friday, 14 July 2023Comments:Fine weather

Time	N-Thru	N-Right	N-Left	S-Thru	S-Right	S-Left	E-Thru	E-Right	E-Left	W-Thru	W-Right	W-Left	Total	Cumul Tot
07:00	13	8	5	28	3	7	36	0	2	49	4	12	167	
07:15	19	8	4	42	3	17	33	0	1	51	8	26	212	
07:30	17	6	5	37	4	28	30	5	1	72	9	16	230	
07:45	35	12	7	52	5	40	52	3	4	87	20	25	342	951
08:00	48	12	9	48	2	29	32	5	5	83	14	21	308	1092
08:15	55	15	11	59	8	34	43	7	5	99	23	33	392	1272
08:30	60	13	11	54	7	30	44	8	10	120	28	28	413	1455
08:45	48	14	10	53	5	39	33	3	4	101	19	19	348	1461
09:00	41	11	7	45	5	21	35	7	5	74	11	17	279	1432
09:15	25	9	8	64	3	32	27	7	7	81	9	20	292	1332
09:30	27	10	8	52	9	31	36	5	5	63	4	24	274	1193
09:45	30	13	9	59	6	35	37	4	1	71	10	21	296	1141
10:00	23	5	8	42	8	23	34	8	6	74	9	12	252	1114
10:15	30	9	8	53	4	27	39	6	6	67	10	17	276	1098
AM PEAK HR	211	54	41	214	22	132	152	23	24	403	84	101	1461	
14:30	76	11	10	33	10	22	56	6	7	81	11	14	337	
14:45	58	29	11	53	6	38	45	11	6	93	12	16	378	
15:00	78	32	8	45	8	45	51	11	7	132	20	11	448	
15:15	60	12	7	50	8	39	43	6	6	147	22	14	414	1577
15:30	42	9	5	47	6	34	36	6	7	104	12	12	320	1560
15:45	32	13	7	49	8	46	37	3	7	105	13	15	335	1517
16:00	63	16	7	40	6	27	39	5	5	93	15	14	330	1399
16:15	42	7	5	39	3	35	41	6	3	95	15	12	303	1288
16:30	43	7	5	48	2	21	33	10	10	91	14	11	295	1263
16:45	26	6	9	30	9	39	34	9	7	109	12	10	300	1228
17:00	27	4	9	51	4	24	49	7	8	90	9	16	298	1196
17:15	22	5	7	42	3	27	32	8	3	78	3	10	240	1133
17:30	27	8	7	30	5	26	35	2	3	54	11	15	223	1061
17:45	25	8	5	30	5	30	39	2	3	58	6	12	223	984
PM PEAK HR	272	84	36	181	32	144	195	34	26	453	65	55	1577	



Unit Type: Camera RTE ID: 22473 Location: Lion Creek Road / Hall Street Date: Saturday, 15 July 2023 Comments: Fine weather Class All Vehicles

Time	N-Thru	N-Right	N-Left	S-Thru	S-Right	S-Left	E-Thru	E-Right	E-Left	W-Thru	W-Right	W-Left	Total	Cumul Tot
07:00	17	0	2	20	3	0	0	1	1	0	0	0	44	
07:15	11	0	6	22	6	0	0	3	4	0	0	0	52	
07:30	21	0	8	47	2	0	0	6	6	0	0	0	90	
07:45	25	0	7	44	5	0	0	2	6	0	0	0	89	275
08:00	28	0	9	42	10	0	0	4	7	0	0	0	100	331
08:15	24	0	10	26	9	0	0	3	8	0	0	0	80	359
08:30	31	0	10	43	9	0	0	5	8	0	0	0	106	375
08:45	31	0	6	48	14	0	0	6	4	0	0	0	109	395
09:00	36	0	13	46	14	0	0	9	9	0	0	0	127	422
09:15	23	0	5	57	5	0	0	6	11	0	0	0	107	449
09:30	32	0	8	58	5	0	0	6	19	0	0	0	128	471
09:45	37	0	10	66	8	0	0	5	9	0	0	0	135	497
10:00	33	0	6	68	5	0	0	9	19	0	0	0	140	510
10:15	43	0	9	67	6	0	0	8	16	0	0	0	149	552
10:30	42	0	8	65	6	0	0	2	10	0	0	0	133	557
10:45	45	0	10	55	21	0	0	8	12	0	0	0	151	573
11:00	48	0	7	71	19	0	0	12	33	0	0	0	190	623
11:15	46	0	5	66	9	0	0	5	9	0	0	0	140	614
11:30	48	0	4	64	8	0	0	11	10	0	0	0	145	626
11:45	54	0	1	48	7	0	0	2	7	0	0	0	119	594
AM PEAK HR	187	0	26	256	57	0	0	36	64	0	0	0	626	
12:00	57	0	3	44	7	0	0	7	22	0	0	0	140	
12:15	62	0	6	41	6	0	0	6	8	0	0	0	129	
12:30	59	0	5	42	9	0	0	3	10	0	0	0	128	
12:45	45	0	4	39	7	0	0	5	5	0	0	0	105	502
13:00	70	0	7	44	4	0	0	4	8	0	0	0	137	499
13:15	56	0	4	67	8	0	0	4	4	0	0	0	143	513
13:30	54	0	3	56	7	0	0	4	3	0	0	0	127	512
13:45	39	0	2	41	3	0	0	2	8	0	0	0	95	502
14:00	42	0	6	44	2	0	0	3	8	0	0	0	105	470
14:15	37	0	3	25	5	0	0	5	7	0	0	0	82	409
PM PEAK HR	230	0	20	192	28	0	0	16	27	0	0	0	513	

Unit Type: Camera



RTE ID:	22472													
	22473													
Location:	Lion Creek R	-	Drive											
Date:	Saturday, 15													
Comments:	Fine weathe													
Class	All Vehicles													
Time	N-Thru	N-Right	N-Left	S-Thru	S-Right	S-Left	E-Thru	E-Right	E-Left	W-Thru	W-Right	W-Left	Total	Cumul Tot
07:00	31	0	2	31	3	0	0	1	5	0	0	0	73	
07:15	27	0	0	44	7	0	0	3	2	0	0	0	83	
07:30	37	0	0	71	7	0	0	0	1	0	0	0	116	
07:45	47	0	2	71	12	0	0	1	6	0	0	0	139	411
08:00	58	0	1	71	13	0	0	2	7	0	0	0	152	490
08:15	40	0	5	70	30	0	0	1	10	0	0	0	156	563
08:30	69	0	1	108	8	0	0	0	9	0	0	0	195	642
08:45	63	0	3	123	18	0	0	0	11	0	0	0	218	721
09:00	86	0	3	132	20	0	0	3	16	0	0	0	260	829
09:15	60	0	2	112	15	0	0	3	8	0	0	0	200	873
09:30	74	0	5	121	12	0	0	0	13	0	0	0	225	903
09:45	100	0	4	123	22	0	0	0	7	0	0	0	256	941
10:00	98	0	1	124	10	0	0	3	24	0	0	0	260	941
10:15	106	0	4	136	23	0	0	1	20	0	0	0	290	1031
10:30	89	0	1	138	11	0	0	2	13	0	0	0	254	1060
10:45	130	0	2	134	16	0	0	1	20	0	0	0	303	1107
11:00	122	0	0	145	14	0	0	3	17	0	0	0	301	1148
11:15	99	0	3	108	7	0	0	1	18	0	0	0	236	1094
11:30	117	0	3	118	13	0	0	2	16	0	0	0	269	1109
11:45	136	0	2	83	6	0	0	2	11	0	0	0	240	1046
AM PEAK HR	447	0	7	553	64	0	0	7	70	0	0	0	1148	
12:00	137	0	2	93	6	0	0	1	14	0	0	0	253	
12:15	124	0	2	112	11	0	0	1	8	0	0	0	258	
12:30	141	0	3	81	5	0	0	0	5	0	0	0	235	
12:45	98	0	0	72	2	0	0	0	6	0	0	0	178	924
13:00	82	0	1	88	10	0	0	5	9	0	0	0	195	866
13:15	67	0	0	88	6	0	0	2	8	0	0	0	171	779
13:30	58	0	2	79	8	0	0	2	7	0	0	0	156	700
13:45	100	0	3	87	8	0	0	0	9	0	0	0	207	729
14:00	79	0	4	64	7	0	0	1	3	0	0	0	158	692
14:15	99	0	2	58	10	0	0	1	6	0	0	0	176	697
PM PEAK HR	500	0	7	358	24	0	0	2	33	0	0	0	924	



Unit Type:	Camera													
RTE ID:	22473													
ocation:		load / North	Street / Bol	sover Street										
Date:	Saturday, 15	5 July 2023												
Comments:	Fine weathe	er -												
Class	All Vehicles													
Time	N-Thru	N-Right	N-Left	S-Thru	S-Right	S-Left	E-Thru	E-Right	E-Left	W-Thru	W-Right	W-Left	Total	Cumul To
07:00	30	1	3	29	0	7	1	5	0	1	21	2	100	
07:15	27	3	2	49	1	15	3	3	5	3	13	1	125	
07:30	34	1	5	60	1	13	4	8	2	5	27	5	165	
07:45	50	2	8	66	0	7	3	5	3	6	21	6	177	567
08:00	52	1	6	81	2	10	5	6	4	5	20	4	196	663
08:15	44	3	9	95	2	7	7	6	2	5	32	13	225	763
08:30	70	2	7	96	0	9	7	7	1	5	35	9	248	846
08:45	59	3	7	119	0	10	5	11	1	7	40	14	276	945
09:00	84	10	10	146	0	13	3	10	4	3	33	10	326	1075
09:15	56	3	9	125	2	17	4	12	4	7	43	5	287	1137
09:30	78	2	6	134	0	19	7	10	1	6	47	8	318	1207
09:45	97	4	9	129	1	18	6	12	9	13	40	11	349	1280
10:00	108	6	9	131	1	15	10	11	3	7	61	8	370	1324
10:15	98	6	9	149	0	15	7	4	4	6	62	18	378	1415
10:30	92	5	5	127	0	17	5	7	7	11	49	7	332	1429
10:45	128	8	11	138	1	20	3	11	6	5	61	8	400	1480
11:00	129	5	6	149	2	19	7	12	4	6	49	9	397	1507
11:15	91	9	7	131	1	16	6	9	6	8	60	6	350	1479
11:30	127	4	6	94	0	25	7	10	2	9	47	7	338	1485
11:45	131	3	9	82	5	26	7	5	4	7	60	6	345	1430
AM PEAK HR	447	24	31	563	3	71	22	34	21	28	221	42	1507	
12:00	134	4	6	84	0	22	7	7	5	8	52	6	335	
12:15	128	2	4	87	1	28	9	11	5	6	61	15	357	
12:30	137	2	10	73	2	18	8	6	3	6	55	8	328	
12:45	93	4	6	64	1	11	6	7	2	5	24	5	228	1248
13:00	78	1	2	79	0	18	1	6	2	3	53	6	249	1162
13:15	76	1	2	86	1	16	7	8	6	7	61	8	279	1084
13:30	85	2	0	69	2	20	3	4	4	8	58	9	264	1020
13:45	81	3	8	81	1	30	2	10	7	4	69	3	299	1020
14:00	74	3	3	61	3	21	4	7	4	6	76	6	268	1110
14:15	97	4	9	53	0	30	8	9	2	9	41	9	271	1102
PM PEAK HR	492	12	26	308	4	79	30	31	15	25	192	34	1248	



 Unit Type:
 Camera

 RTE ID:
 22473

 Location:
 North Street / Campbell Street

 Date:
 Saturday, 15 July 2023

 Comments:
 Fine weather

 Class
 All Vehicles

Time	N-Thru	N-Right	N-Left	S-Thru	S-Right	S-Left	E-Thru	E-Right	E-Left	W-Thru	W-Right	W-Left	Total	Cumul Tot
07:00	10	5	2	8	1	5	9	4	0	18	1	3	66	
07:15	6	3	2	5	0	7	14	3	5	20	4	10	79	
07:30	8	2	4	11	1	8	11	2	1	36	5	10	99	
07:45	21	2	7	24	3	12	18	3	3	32	5	14	144	388
08:00	13	4	4	26	1	9	14	2	1	30	4	21	129	451
08:15	17	5	2	27	1	5	17	5	1	51	4	17	152	524
08:30	23	6	8	39	2	11	13	5	1	46	9	33	196	621
08:45	21	7	5	31	2	14	18	3	5	58	10	15	189	666
09:00	20	13	7	38	5	12	21	6	0	43	8	29	202	739
09:15	22	9	5	50	2	18	23	6	5	49	11	34	234	821
09:30	20	5	14	55	2	27	29	4	8	49	9	30	252	877
09:45	20	7	10	44	2	29	28	4	4	67	10	33	258	946
10:00	30	5	14	59	6	27	33	4	4	78	7	28	295	1039
10:15	30	10	20	64	6	18	24	11	2	63	10	42	300	1105
10:30	34	11	13	47	3	16	23	8	3	54	9	31	252	1105
10:45	42	12	14	64	7	28	27	4	8	69	12	29	316	1163
11:00	44	10	14	55	6	26	30	4	5	45	11	16	266	1134
11:15	45	19	20	41	3	18	32	5	6	65	8	23	285	1119
11:30	48	10	10	64	8	34	39	5	2	66	7	18	311	1178
11:45	49	18	16	42	6	17	39	1	8	51	6	15	268	1130
AM PEAK HR	179	51	58	224	24	106	128	18	21	245	38	86	1178	
12:00	49	8	12	53	6	15	44	4	3	60	5	19	278	
12:15	41	12	9	50	5	25	31	4	4	73	8	14	276	
12:30	43	16	13	35	4	22	27	5	3	54	7	17	246	
12:45	49	10	9	32	7	23	29	1	5	28	8	11	212	1012
13:00	74	11	19	26	6	19	21	3	3	59	6	18	265	999
13:15	76	16	28	38	2	25	22	2	7	56	7	9	288	1011
13:30	81	9	26	31	6	12	19	5	0	62	14	11	276	1041
13:45	36	8	12	24	5	14	34	4	4	72	7	23	243	1072
14:00	42	8	25	26	2	19	27	4	5	69	4	5	236	1043
14:15	33	10	13	23	8	22	34	8	3	54	4	4	216	971
PM PEAK HR	267	44	85	119	19	70	96	14	14	249	34	61	1072	

TRANSPORT IMPACT ASSESSMENT 1 GRAEME ACTON WAY, WANDAL RTE REF 22473



rytenskild

MANUAL TRAFFIC SURVEY RESULTS

 Unit Type:
 Camera

 RTE ID:
 22473

 Location:
 New Exhibition Road / Exhibition Road / Campbell Street / Wandal Road

 Date:
 Wednesday, 19 April 2023

 Comments:
 Fine weather

 Class
 All Vehicles

Time	N. Thurs	al Disha	NU - 44	C Thur	c pi-ha	61-4	r Thur	r pi-te	F 1 - 44	MAL Theme	14/ Di-h-t	14/1-44	Tetal	Current Test
Time	N-Thru	N-Right 0	N-Left	S-Thru 0	S-Right	S-Left 7	E-Thru	E-Right	E-Left	W-Thru	W-Right	W-Left	Total	Cumul Tot
06:00	12	-	0	-	0		8	2	1	15 17	19 9	0	64 67	
06:15 06:30	10 15	0	2	4	1 5	18 18	4	0	1	17	12	0	82	
06:45	7	0	1	4	4	20	11	0	4	26	21	1	96	309
07:00	9	0	0	6	8	20	17	1	2	17	18	1	105	350
07:15	11	0	1	3	5	20	9	0	7	29	25	2	103	397
07:13	11	3	2	2	3	22	9 14	1	3	29	25	1	114	440
07:45	13	3	2	11	4	27	8	1	9	30	39	2	125	440
08:00	17	1	1	5	10	31	16	1	13	40	56	5	196	586
08:15	9	2	1	6	10	49	23	2	24	40	36	2	211	683
08:30	15	1	3	2	5	62	23	0	17	43	40	6	211	773
08:45	13	2	0	10	5	51	14	1	8	31	24	1	160	782
09:00	9	3	0	8	5	39	14	2	6	28	25	5	145	731
09:15	8	1	2	6	5	31	13	0	6	28	27	4	145	651
09:30	8	1	2	7	2	29	19	0	5	23	27	4	127	563
09:45	12	1	1	14	5	33	15	1	5	19	29	4	139	542
10:00	12	3	0	7	4	38	15	0	9	13	23	4	135	529
10:00	9	0	1	5	6	47	21	0	3	24	27	4	132	545
10:30	6	1	0	8	3	42	21	0	2	22	24	5	134	515
10:45	11	1	2	5	5	49	22	0	6	22	27	3	153	566
11:00	3	1	0	18	6	44	15	0	1	15	25	2	130	564
11:15	5	2	5	2	4	42	19	1	5	15	29	4	133	550
11:30	7	0	0	8	6	51	11	0	6	20	26	2	133	553
11:45	7	4	4	17	5	53	12	2	4	33	27	4	172	572
AM PEAK HR	54	6	5	23	32	193	75	4	62	158	156	14	782	
12:00	15	0	2	13	4	41	22	0	3	20	20	2	142	
12:15	10	1	1	10	5	44	19	0	9	19	22	2	142	
12:30	10	4	0	10	5	42	16	2	6	22	21	1	139	
12:45	11	2	1	14	4	46	25	2	9	13	22	4	153	576
13:00	12	1	3	16	6	39	19	0	4	24	29	1	154	588
13:15	11	2	0	10	3	37	19	1	3	20	31	7	144	590
13:30	4	2	0	6	3	40	12	0	5	15	14	1	102	553
13:45	10	2	1	11	2	35	10	0	3	19	21	6	120	520
14:00	11	3	2	6	4	43	13	2	5	23	24	2	138	504
14:15	10	1	3	5	2	37	14	4	4	13	23	3	119	479
14:30	10	2	4	15	5	48	19	1	8	31	23	1	167	544
14:45	8	0	1	8	8	59	30	1	26	28	30	0	199	623
15:00	10	3	3	19	14	67	21	1	26	17	29	3	213	698
15:15	14	4	0	23	15	63	20	0	18	22	24	5	208	787
15:30	9	1	1	25	8	61	22	1	7	12	27	0	174	794
15:45	12	4	0	12	7	68	17	0	9	23	14	1	167	762
16:00	13	0	3	10	9	41	10	1	9	26	30	3	155	704
16:15	8	2	1	16	7	62	26	1	15	26	22	4	190	686
16:30	13	3	3	19	12	49	24	0	9	33	24	4	193	705
16:45	8	2	4	20	9	54	20	0	15	31	32	3	198	736
17:00	12	1	3	14	13	69	27	0	17	28	24	7	215	796
17:15	20	4	2	27	13	67	28	2	8	31	25	2	229	835
17:30	20	5	0	17	11	62	29	0	9	23	17	3	196	838
17:45	10	1	2	13	7	43	21	0	9	21	17	3	147	787
PM PEAK HR	60	12	9	78	46	252	104	2	49	113	98	15	838	



			Central Quee Fitzroy	insland		D		lbert St (10F ime: 25,025) / Campbell	St (511)							e: -23.37478 de: 150.502						
te Selection					wahali Feler	Leg 1	i@Albert St			Leg 2	ckay @ Campbell			shell Cate of	Leg 3	Hwy/Albert S		Prov	ce Hwy/Albert S	Leg 4		57/	Total
iursday, 23 Jun	ne 2022		Time	Left	Through	Right.	UTurn Pedestri				U Turn Ped					UTurn Per					i gcampoe I Turn - Pe		Traffic
	Let use	Ê		Lerc	inrougn	Right	u Turn Pedestri	0	Through		UTurn Ped	o	Lert 0	Inrougn	Right	o rum per	destrian	Lert		ngnt u	num pa	o	225
e Control	Start Time	Configure Peak	615	2	9	3	0	0	6 10		0	0	0	10	4	0	0	2	73	- 3	0	0	301
None Custom	600	AM 700 to 800	630 645	1		0	0	0	2 14			0	0	13 10	10.41	0	0	2		3	0	0	
AM Peak	End Time	200339 81 (2015)		6	10	4		6	1 14			0			3		6	4	110	2	100	4	312
PM Peak	1900	PM 1600 to 1700	700	5	16	4	0	0	3 16			0	2	10	5	0	0	2	86	1	0	0	325
	73.07	54637	715	4	12	3	0	1	5 16			0	0	14	6	0	1	2	109	2	1	0	340
stom: input m	ust be integer in ir	crement of 15	730	2	30	6	0	0	4 17			0	0	15	5	0	0	3	133	4	0	0	400
			745	4	28	4	0	1	6 25			0	2	25	5	0	0	8	174	2	0	0	54
			800	6	54	9	0	1	2 21			0	3	20	8	0	0	8	177	3	0	2	538
			815	10	43	14	0	0	7 25			2	6	31	5	0	0	12	222	4	0	2	66
			830	18	61	9	0	0	7 24			3	1	32	10	0	0	11	215	9	0	0	66
			845	9	57	7	0	0	5 22			6	1	32	7	0	0	9	235	5	0	0	65
			900	10	45	10	0	0	7 17			1	5	30	8	0	0	9	175	7	0	0	50
			915	9	27	8	0	0	6 18			0	1	19	4	0	0	3	208	3	0	0	50
			930	8	34	6	0	0	3 13			1	0	28	7	0	0	8	177	5	0	1	43
			945	10	55	3	0	0	3 21	5 34	1	1	3	21	8	0	0	- 4	187	3	0	0	51
			1000	8	34	8	0	0	6 15	33	0	0	2	19	12	0	0	6	187	7	0	1	47
			1015	7	23	6	0	0	8 16	5 16	5 2	0	1	22	6	0	0	8	167	1	0	1	43
			1030	10	26	7	0	0	7 17	3 28	1	1	2	22	12	0	Q	10	154	5	0	0	45
			1045	10	16	5	0	4	6 16	0 25	0	0	2	30	5	0	0	8	190	5	0	0	47
			1100	3	21	9	0	0	4 15	5 29	0	0	1	23	10	0	0	5	172	3	0	0	43
			1115	11	23	6	0	0	5 15	8 23	0	0	1	14	10	0	0	8	188	4	0	1	45
			1130	12	21	5	0	1	7 16	2 23	1	0	4	28	7	0	0	3	189	3	0	0	46
			1145	6	15	7	0	0	2 14	7 28	0	0	2	19	5	0	0	9	205	8	0	0	45
			1200	13	24	7	0	2	2 16	5 34	0	0	2	32	11	0	0	5	175	8	0	0	48
			1215	5	22	8	0	1	1 19	4 29	0	0	3	24	8	0	0	6	207	5	0	0	51
			1230	14	14	12	0	0	9 18	4 24	0	0	2	30	10	0	0	3	156	5	0	0	46
			1245	16	21	9	0	0	10 20	2 26	0	4	1	24	8	0	0	7	179	6	0	0	513
			1300	8	26	4	0	0	4 16	0 24	0	0	5	29	8	0	0	6	156	5	0	0	435
			1315	10	19	6	0	0	4 16		0	1	3	26	12	0	0	4	166	6	0	0	44
			1330	5	27	6	0	0	6 14			0	5	20	6	0	0	4	153	7	0	0	413
			1345	7	19	5	o	0	8 17			0	2	28	10	0	0	3	183	7	0	0	460
			AM Peak	16	124	22	0	3	17 8	00 10	15 4	0	5	74	24	0		1 2	21 593	11	1		2 1
			PM Peak	46	86	35	0	0	41 7	2 13	I8 2	0	6	167	50	0		0 1	9 941	6	1		0 2,



APPENDIX B – CRITERIA FOR ASSESSMENT OF SIDRA RESULTS

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'		Good operation.
'B'	Good operation.	Acceptable delays and spare capacity.
	Good with acceptable delays and spare capacity.	
'C'	Satisfactory.	Satisfactory but accident study required.
'D'	Operating near capacity.	Near capacity and accident study required.
'E'	At capacity; at signals incidents will cause excessive	At capacity and requires other control mode.
	delays. Roundabouts require other control mode.	
'F'	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode.

1. Level of Service (LOS)

2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (i.e. inner city conditions) and on some roads (i.e. minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
А	less than 14	Good operation.	Good operation.
В	15 to 28	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
С	29 to 42	Satisfactory.	Satisfactory but accident study required.
D	43 to 56	Operating near capacity.	Near capacity and accident study required.
	57 to 70	At capacity; at signals incidents will cause excessive delays.	At capacity and requires other control mode.
E		Roundabouts require other control mode.	

3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by **traffic signals**¹ both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a **roundabout or GIVE WAY or STOP signs**, satisfactory intersection operation is indicated by a DS of 0.8 or less.

¹*The values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs.*

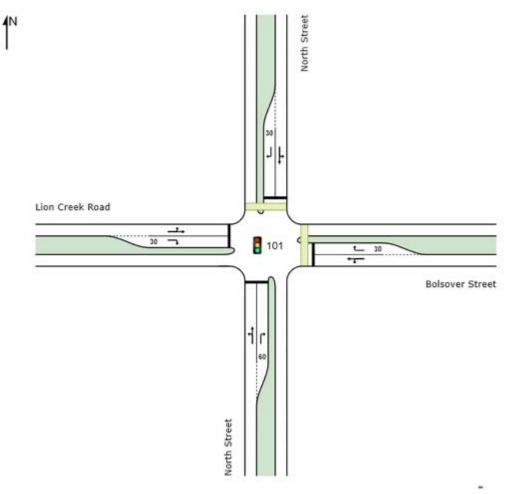


APPENDIX C – SIDRA MODELLING RESULTS (BACKGROUND VOLUMES)

- Graeme Acton Way / North Street;
- Graeme Acton Way / Sir Raymond Huish Drive;
- Graeme Acton Way / Hall Street;
- Graeme Acton Way / Exhibition Road;
- Wandal Road / New Exhibition Road / Exhibition Road / Campbell Street / Baden Powell Street;
- Campbell Street / North Street;
- Albert St / Campbell Street.



Graeme Acton Way / North Street





PHASING SUMMARY

Site: 101 [Background 2025 Peak Traffic AM (Site Folder: Lion Creek Road / North Street)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

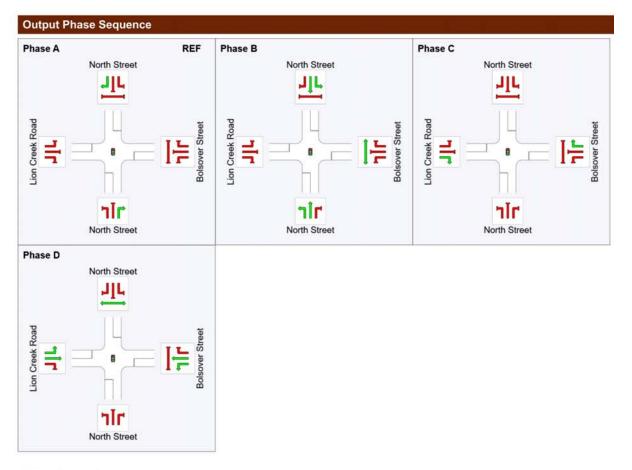
Lion Creek Road / North Street / Bolsover Street Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog Phase Times determined by the program Phase Sequence: Four-Phase Split Phasing Input Phase Sequence: A, B, C, D Output Phase Sequence: A, B, C, D

Reference Phase: Phase A

Phase Timing Summary				
Phase	Α	В	С	D
Phase Change Time (sec)	0	32	52	64
Green Time (sec)	26	14	6	40
Phase Time (sec)	32	20	12	46
Phase Split	29%	18%	11%	42%
Phase Frequency (%)	100.0	100.0	100.0	100.0

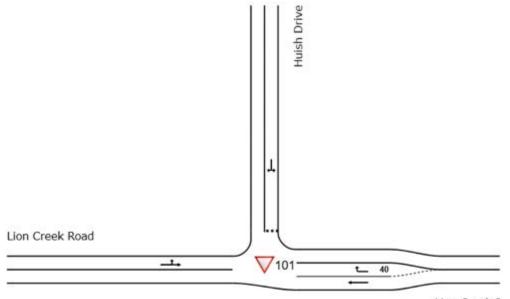
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase

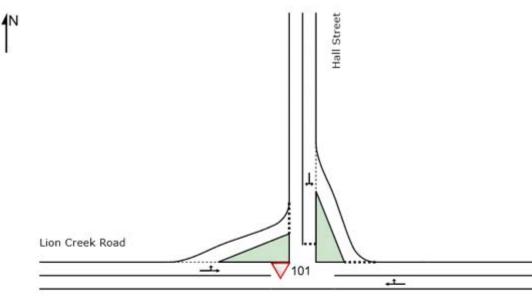


Graeme Acton Way / Sir Raymond Huish Drive



Lion Creek F

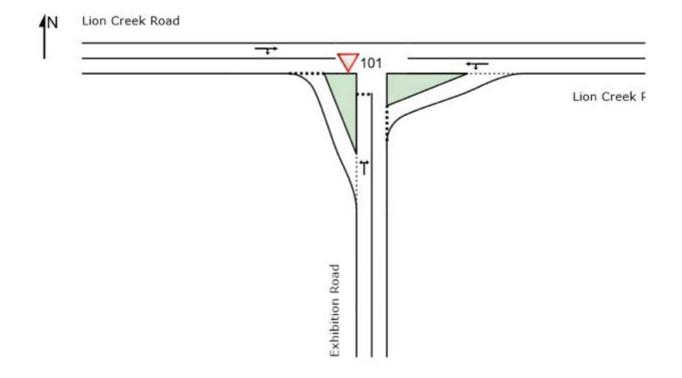
Graeme Acton Way / Hall Street



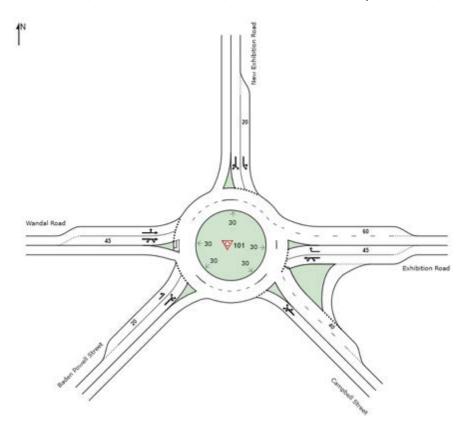
Lion Creek I



Graeme Acton Way / Exhibition Road

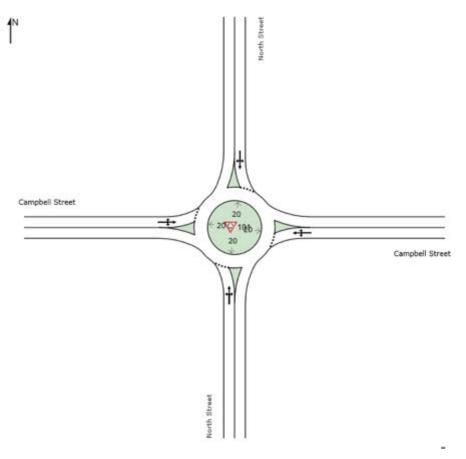


Wandal Road / New Exhibition Road / Exhibition Road / Campbell Street / Baden Powell Street

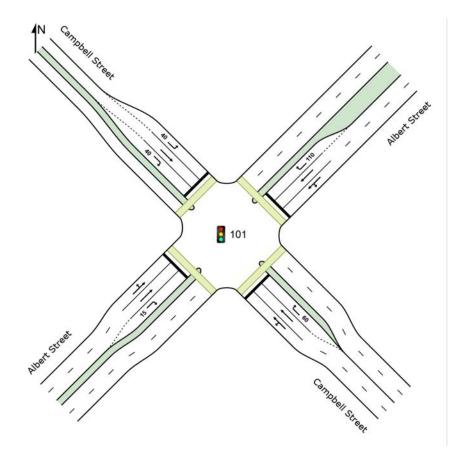




Campbell Street / North Street



Albert Street / Campbell Street





PHASING SUMMARY

Site: 101 [Background 2025 Peak Traffic AM (Site Folder: Campbell St / Albert St)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

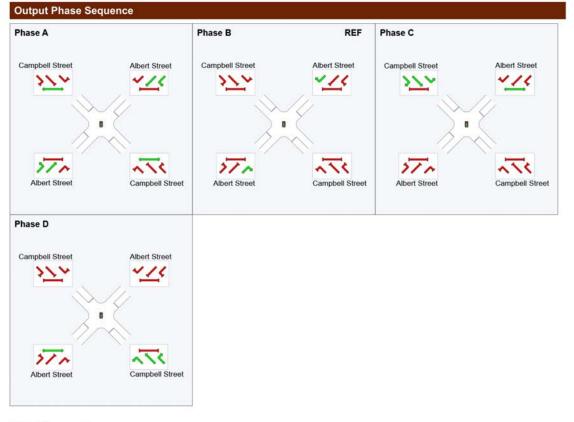
Albert Street / Campbell Street Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog Phase Times determined by the program Phase Sequence: Four-Phase Leading Right Turns Input Phase Sequence: A, B, C, D Output Phase Sequence: A, B, C, D Reference Phase: Phase B

Phase Timing Summary

Phase	Α	в	С	D
Phase Change Time (sec)	41	0	13	27
Green Time (sec)	23	7	8	8
Phase Time (sec)	29	13	14	14
Phase Split	41%	19%	20%	20%
Phase Frequency (%)	100.0	100.0	100.0	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase



Graeme Acton Way / North Street;

Weekday Morning peak hour

Mov ID	Turn	Mov Class	F	hand lows	F	rival lows	Deg. Satn	Aver. Delay	Level of Service	Qu	ack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver Speed
					[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/t
South	: North	n Street													
1	L2	All MCs	73	2.0	73	2.0	0.526	63.8	LOS E	6.5	46.3	0.98	0.79	0.98	31.3
2	T1	All MCs	53	2.0	53	2.0	* 0.526	58.2	LOS E	6.5	46.3	0.98	0.79	0.98	32.0
3	R2	All MCs	363	2.0	363	2.0	*0.893	70.6	LOS E	22.3	158.5	1.00	1.00	1.27	29.0
Appro	ach		488	2.0	488	2.0	0.893	68.2	LOS E	22.3	158.5	1.00	0.94	1.19	29.7
East:	Bolsov	ver Street	t												
4	L2	All MCs	116	2.0	116	2.0	0.884	75.6	LOS E	35.1	250.1	1.00	1.02	1.16	33.3
5	T1	All MCs	493	2.0	493	2.0	+0.884	70.0	LOS E	35.1	250.1	1.00	1.02	1.16	34.
6	R2	All MCs	5	2.0	5	2.0	0.053	86.0	LOS F	0.3	2.0	0.97	0.65	0.97	29.3
Appro	ach		614	2.0	614	2.0	0.884	71.2	LOS E	35.1	250.1	1.00	1.01	1.16	33.9
North	North	Street													
7	L2	All MCs	31	2.0	31	2.0	0.273	53.6	LOS D	3.3	23.2	0.94	0.74	0.94	32.0
8	T1	All MCs	35	2.0	35	2.0	0.273	48.0	LOS D	3.3	23.2	0.94	0.74	0.94	32.8
9	R2	All MCs	65	2.0	65	2.0	0.151	41.5	LOS D	2.8	19.8	0.83	0.74	0.83	34.8
Appro	ach		131	2.0	131	2.0	0.273	46.0	LOS D	3.3	23.2	0.89	0.74	0.89	33.6
West:	Lion (Creek Ro	ad												
10	L2	All MCs	59	2.0	59	2.0	0.623	53.7	LOS D	18.5	131.9	0.88	0.78	0.88	38.3
11	T1	All MCs	361	2.0	361	2.0	0.623	48.2	LOS D	18.5	131.9	0.88	0.78	0.88	39.5
12	R2	All MCs	21	2.0	21	2.0	*0.211	79.8	LOS E	1.2	8.2	0.99	0.70	0.99	29.0
Appro	ach		441	2.0	441	2.0	0.623	50.4	LOS D	18.5	131.9	0.89	0.78	0.89	38.6
All Ve	hicles		1674	2.0	1674	2.0	0.893	62.9	LOS E	35.1	250.1	0.96	0.91	1.07	33.6

Weekday Afternoon peak hour

Vehi	cle Me	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	F	nand lows HV]		rival lows HV]	Deg. Satn	Aver. Delay	Level of Service	95% B Que [Veh.	ack Of eue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/ł
South	h: Nort	h Street													
1	L2	All MCs	38	2.0	38	2.0	0.353	52.9	LOS D	4.0	28.3	0.95	0.75	0.95	33.2
2	T1	All MCs	48	2.0	48	2.0	*0.353	47.4	LOS D	4.0	28.3	0.95	0.75	0.95	34.
3	R2	All MCs	349	2.0	349	2.0	*0.846	56.0	LOS E	18.4	131.1	1.00	0.95	1.20	31.4
Appro	bach		436	2.0	436	2.0	0.846	54.8	LOS D	18.4	131.1	0.99	0.91	1.15	31.
East:	Bolso	ver Stree	t												
4	L2	All MCs	117	2.0	117	2.0	0.820	63.1	LOS E	25.5	181.5	0.98	0.94	1.07	35.
5	T1	All MCs	411	2.0	411	2.0	*0.820	57.5	LOS E	25.5	181.5	0.98	0.94	1.07	36.
6	R2	All MCs	4	2.0	4	2.0	0.038	76.1	LOS E	0.2	1.4	0.96	0.64	0.96	30.
Appro	bach		532	2.0	532	2.0	0.820	58.9	LOS E	25.5	181.5	0.98	0.93	1.07	30.
North	: North	n Street													
7	L2	All MCs	35	2.0	35	2.0	0.323	49.5	LOS D	3.6	25.7	0.95	0.75	0.95	33.
8	T1	All MCs	44	2.0	44	2.0	0.323	43.9	LOS D	3.6	25.7	0.95	0.75	0.95	34.
9	R2	All MCs	58	2.0	58	2.0	0.137	38.7	LOS D	2.3	16.1	0.83	0.74	0.83	35.
Appro	bach		137	2.0	137	2.0	0.323	43.1	LOS D	3.6	25.7	0.90	0.74	0.90	34.
West	: Lion (Creek Ro	ad												
10	L2	All MCs	35	2.0	35	2.0	0.778	59.1	LOS E	22.6	161.1	0.96	0.89	1.01	37.
11	T1	All MCs	459	2.0	459	2.0	0.778	53.5	LOS D	22.6	161.1	0.96	0.89	1.01	38.
12	R2	All MCs	20	2.0	20	2.0	*0.182	76.1	LOS E	1.0	7.0	0.98	0.70	0.98	30.
Appro	bach		514	2.0	514	2.0	0.778	54.8	LOS D	22.6	161.1	0.96	0.88	1.01	31.
All Ve	hicles		1618	2.0	1618	2.0	0.846	55.1	LOS E	25.5	181.5	0.97	0.89	1.06	31.

of 175



Saturday Morning peak hour

Mov ID	Turn	Mov Class		hand		rival lows	Deg.	Aver.	Level of		lack Of	Prop.	Eff.	Aver.	Aver
D		Class	[Total veh/h				Satn v/c	Delay sec	Service	[Veh. veh	eue Dist] m	Que	Stop Rate	No. of Cycles	Speed km/t
South	: North	n Street													
1	L2	All MCs	46	2.0	46	2.0	0.317	49.5	LOS D	3.5	25.0	0.95	0.75	0.95	33.0
2	T1	All MCs	31	2.0	31	2.0	*0.317	43.9	LOS D	3.5	25.0	0.95	0.75	0.95	33.8
3	R2	All MCs	244	2.0	244	2.0	* 0.889	62.2	LOS E	13.8	98.1	1.00	1.01	1.35	29.1
Appro	ach		321	2.0	321	2.0	0.889	58.6	LOS E	13.8	98.1	0.99	0.94	1.25	30.0
East	Bolsov	ver Street	l)												
4	L2	All MCs	79	2.0	79	2.0	0.877	63.2	LOS E	36.1	257.0	0.99	1.00	1.13	36.0
5	T1	All MCs	623	2.0	623	2.0	*0.877	57.6	LOS E	36.1	257.0	0.99	1.00	1.13	37.0
6	R2	All MCs	3	2.0	3	2.0	0.029	75.5	LOS E	0.2	1.1	0.96	0.63	0.96	30.8
Appro	ach		705	2.0	705	2.0	0.877	58.3	LOS E	36.1	257.0	0.99	1.00	1.13	36.8
North	North	Street													
7	L2	All MCs	23	2.0	23	2.0	0.194	48.5	LOS D	2.1	15.1	0.93	0.72	0.93	33.4
8	T1	All MCs	24	2.0	24	2.0	0.194	43.0	LOS D	2.1	15.1	0.93	0.72	0.93	34.3
9	R2	All MCs	38	2.0	38	2.0	0.138	46.1	LOS D	1.6	11.7	0.90	0.73	0.90	33.3
Appro	ach		85	2.0	85	2.0	0.194	45.9	LOS D	2.1	15.1	0.92	0.72	0.92	33.6
West:	Lion (Creek Ro	ad												
10	L2	All MCs	35	2.0	35	2.0	0.679	46.0	LOS D	20.9	149.0	0.87	0.78	0.87	40.9
11	Τ1	All MCs	495	2.0	495	2.0	0.679	40.4	LOS D	20.9	149.0	0.87	0.78	0.87	42.3
12	R2	All MCs	26	2.0	26	2.0	*0.240	72.2	LOS E	1.3	9.3	0.99	0.71	0.99	30.3
Appro	ach		556	2.0	556	2.0	0.679	42.3	LOS D	20.9	149.0	0.88	0.77	0.88	41.4
All Ve	hicles		1667	2.0	1667	2.0	0.889	52.4	LOS D	36.1	257.0	0.95	0.90	1.06	36.4

Saturday Afternoon peak hour

Mov	Tum	Mov		hand		rival	Deg.	Aver.	Level of	95% B		Prop.	Eff.	Aver.	Aver
ID		Class			[Total	lows HV] %	Satn v/c	Delay	Service	Que [Veh. veh	Dist]	Que	Stop Rate	No. of Cycles	Speed km/h
South	: North	Street													
1	L2	All MCs	38	2.0	38	2.0	0.233	38.9	LOS D	2.3	16.5	0.92	0.73	0.92	36.5
2	T1	All MCs	27	2.0	27	2.0	*0.233	33.4	LOS C	2.3	16.5	0.92	0.73	0.92	37.5
3	R2	All MCs	213	2.0	213	2.0	* 0.845	49.5	LOS D	9.4	66.7	1.00	0.98	1.33	32.3
Appro	ach		278	2.0	278	2.0	0.845	46.4	LOS D	9.4	66.7	0.98	0.92	1.23	33.3
East:	Bolsov	ver Street	Ę.												
4	L2	All MCs	87	2.0	87	2.0	0.670	41.3	LOS D	14.5	103.3	0.91	0.80	0.91	40.8
5	T1	All MCs	341	2.0	341	2.0	0.670	35.7	LOS D	14.5	103.3	0.91	0.80	0.91	42.1
6	R2	All MCs	4	2.0	4	2.0	0.031	55.1	LOS E	0.2	1.1	0.95	0.64	0.95	33.9
Appro	ach		433	2.0	433	2.0	0.670	37.0	LOS D	14.5	103.3	0.91	0.80	0.91	41.7
North	North	Street													
7	L2	All MCs	17	2.0	17	2.0	0.178	38.5	LOS D	1.8	12.7	0.91	0.70	0.91	37.1
8	T1	All MCs	34	2.0	34	2.0	0.178	33.0	LOS C	1.8	12.7	0.91	0.70	0.91	38.2
9	R2	All MCs	35	2.0	35	2.0	0.138	39.4	LOS D	1.2	8.8	0.91	0.72	0.91	35.5
Appro	ach		85	2.0	85	2.0	0.178	36.7	LOS D	1.8	12.7	0.91	0.71	0.91	36.8
West:	Lion (Creek Ro	ad												
10	L2	All MCs	28	2.0	28	2.0	0.898	61.7	LOS E	26.5	188.5	1.00	1.10	1.29	35.3
11	Τ1	All MCs	544	2.0	544	2.0	* 0.898	56.1	LOS E	26.5	188.5	1.00	1.10	1.29	36.2
12	R2	All MCs	14	2.0	14	2.0	*0.100	61.3	LOS E	0.5	3.8	0.96	0.68	0.96	33.7
Appro	ach		586	2.0	586	2.0	0.898	56.5	LOS E	26.5	188.5	1.00	1.09	1.28	36.1
All Ve	hicles		1382	2.0	1382	2.0	0.898	47.1	LOS D	26.5	188.5	0.96	0.94	1.13	37.1



Graeme Acton Way / Sir Raymond Huish Drive;

Weekday Morning peak hour

Mov ID	Turn	Mov Class	Dem Fl	and lows		rival ows	Deg. Satn	Aver. Delay	Level of Service		Back Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h		[Total veh/h	HV] %		sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
East:	Lion C	reek Roa	d												
5	T1	All MCs	520	2.0	520	2.0	0.270	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	91	2.0	91	2.0	0.079	7.2	LOS A	0.3	2.4	0.48	0.67	0.48	51.3
Appro	ach		611	2.0	611	2.0	0.270	1.1	NA	0.3	2.4	0.07	0.10	0.07	58.4
North	: Huist	Drive													
7	L2	All MCs	39	2.0	39	2.0	0.058	7.1	LOS A	0.2	1.5	0.51	0.67	0.51	50.6
9	R2	All MCs	6	2.0	6	2.0	0.058	17.7	LOS C	0.2	1.5	0.51	0.67	0.51	50.4
Appro	ach		45	2.0	45	2.0	0.058	8.6	LOS A	0.2	1.5	0.51	0.67	0.51	50.6
West	Lion (Creek Ro	ad												
10	L2	All MCs	27	2.0	27	2.0	0.224	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.0
11	T1	All MCs	403	2.0	403	2.0	0.224	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Appro	ach		431	2.0	431	2.0	0.224	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.4
All Ve	hicles		1086	2.0	1086	2.0	0.270	1.2	NA	0.3	2.4	0.06	0.10	0.06	58.4

Weekday Afternoon peak hour

Mov ID	Turn	Mov Class		and ows		rival ows	Deg. Satn	Aver. Delay	Level of Service		lack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h		[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/n
East:	Lion C	reek Roa	ad												
5	T1	All MCs	434	2.0	434	2.0	0.225	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	51	2.0	51	2.0	0.045	7.2	LOS A	0.2	1.3	0.48	0.66	0.48	51.3
Appro	ach		484	2.0	484	2.0	0.225	0.8	NA	0.2	1.3	0.05	0.07	0.05	58.8
North	: Huist	n Drive													
7	L2	All MCs	43	2.0	43	2.0	0.058	7.3	LOS A	0.2	1.5	0.50	0.68	0.50	50.9
9	R2	All MCs	5	2.0	5	2.0	0.058	15.5	LOS C	0.2	1.5	0.50	0.68	0.50	50.6
Appro	ach		48	2.0	48	2.0	0.058	8.2	LOS A	0.2	1.5	0.50	0.68	0.50	50.8
West:	Lion (Creek Ro	ad												
10	L2	All MCs	4	2.0	4	2.0	0.236	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	451	2.0	451	2.0	0.236	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Appro	ach		455	2.0	455	2.0	0.236	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
All Ve	hicles		987	2.0	987	2.0	0.236	0.9	NA	0.2	1.5	0.05	0.07	0.05	58.8



Saturday Morning peak hour

Mov ID	Tum	Mov Class		ows	F	rival ows	Deg. Satn	Aver. Delay	Level of Service	Qu	Back Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver Speed
			[Total veh/h		[Total veh/h	HV] %		sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
East:	Lion C	reek Roa	ad												
5	T1	All MCs	612	2.0	612	2.0	0.318	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	71	2.0	71	2.0	0.067	7.5	LOS A	0.3	2.0	0.51	0.69	0.51	51.0
Appro	ach		682	2.0	682	2.0	0.318	0.9	NA	0.3	2.0	0.05	0.07	0.05	58.8
North	Huist	h Drive													
7	L2	All MCs	78	2.0	78	2.0	0.115	7.7	LOS A	0.4	3.0	0.56	0.74	0.56	50.3
9	R2	All MCs	7	2.0	7	2.0	0.115	23.6	LOS C	0.4	3.0	0.56	0.74	0.56	50.0
Appro	ach		85	2.0	85	2.0	0.115	9.0	LOS A	0.4	3.0	0.56	0.74	0.56	50.3
West:	Lion	Creek Ro	ad												
10	L2	All MCs	7	2.0	7	2.0	0.261	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	495	2.0	495	2.0	0.261	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Appro	ach		502	2.0	502	2.0	0.261	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Ve	hicles		1269	2.0	1269	2.0	0.318	1.1	NA	0.4	3.0	0.07	0.09	0.07	58.5

Saturday Afternoon peak hour

Mov ID	Tum	Mov Class	Dem Fl	and ows		rival lows	Deg. Satn	Aver. Delay	Level of Service		Back Of Ieue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h	HV] %	[Total veh/h	HV] %		sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
East:	Lion C	reek Roa	ad												
5	Τ1	All MCs	396	2.0	396	2.0	0.206	0.1	LOSA	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	26	2.0	26	2.0	0.027	7.8	LOS A	0.1	0.8	0.53	0.68	0.53	50.9
Appro	ach		422	2.0	422	2.0	0.206	0.5	NA	0.1	0.8	0.03	0.04	0.03	59.2
North	Huis	h Drive													
7	L2	All MCs	37	2.0	37	2.0	0.048	7.9	LOS A	0.2	1.2	0.53	0.71	0.53	50.8
9	R2	All MCs	2	2.0	2	2.0	0.048	16.8	LOS C	0.2	1.2	0.53	0.71	0.53	50.5
Appro	ach		39	2.0	39	2.0	0.048	8.4	LOS A	0.2	1.2	0.53	0.71	0.53	50.7
West:	Lion	Creek Ro	ad												
10	L2	All MCs	7	2.0	7	2.0	0.291	5.6	LOSA	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	553	2.0	553	2.0	0.291	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Appro	ach		560	2.0	560	2.0	0.291	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Ve	hicles		1021	2.0	1021	2.0	0.291	0.6	NA	0.2	1.2	0.03	0.05	0.03	59.1



Graeme Acton Way / Hall Street;

Weekday Morning peak hour

Mov ID	Turn	Mov Class	Dem Fi	and iows		rival lows	Deg. Satn	Aver. Delay	Level of Service		lack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
				HV]	[Total veh/h		v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
East:	Lion C	reek Roa	bd												
5	T1	All MCs	268	2.0	268	2.0	0.150	0.0	LOS A	0.1	0.9	0.04	0.05	0.04	59.5
6	R2	All MCs	16	2.0	16	2.0	0.150	7.2	LOS A	0.1	0.9	0.04	0.05	0.04	56.6
Appro	ach		284	2.0	284	2.0	0.150	0.4	NA	0.1	0.9	0.04	0.05	0.04	59.3
North	Hall	Street													
7	L2	All MCs	17	2.0	17	2.0	0.023	6.2	LOS A	0.1	0.6	0.33	0.56	0.33	52.1
9	R2	All MCs	8	2.0	8	2.0	0.023	7.5	LOS A	0.1	0.6	0.33	0.56	0.33	51.5
Appro	ach		25	2.0	25	2.0	0.023	6.7	LOSA	0.1	0.6	0.33	0.56	0.33	51.9
West:	Lion (Creek Ro	ad												
10	L2	All MCs	7	2.0	7	2.0	0.108	5.6	LOS A	0.0	0.3	0.01	0.02	0.01	57.5
11	T1	All MCs	198	2.0	198	2.0	0.108	0.0	LOS A	0.0	0.3	0.01	0.02	0.01	59.8
Appro	ach		205	2.0	205	2.0	0.108	0.2	NA	0.0	0.3	0.01	0.02	0.01	59.7
All Ve	hicles		515	2.0	515	2.0	0.150	0.6	NA	0.1	0.9	0.04	0.07	0.04	59.1

Weekday Afternoon peak hour

Vehi	cle M	ovemen	t Perfo	rma	nce										
Mov ID	Tum	Mov Class		lows		rival lows HV]	Deg. Satn	Aver. Delay	Level of Service		lack Of eue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m		ACCENCY		km/h
East:	Lion C	creek Roa	ad												
5	T1	All MCs	161	2.0	161	2.0	0.120	0.0	LOSA	0.4	2.5	0.18	0.22	0.18	58.0
6	R2	All MCs	51	2.0	51	2.0	0.120	7.2	LOSA	0.4	2.5	0.18	0.22	0.18	55.3
Appro	bach		212	2.0	212	2.0	0.120	1.7	NA	0.4	2.5	0.18	0.22	0.18	57.3
North	: Hall 3	Street													
7	L2	All MCs	46	2.0	46	2.0	0.057	6.4	LOSA	0.2	1.5	0.34	0.58	0.34	52.0
9	R2	All MCs	18	2.0	18	2.0	0.057	7.5	LOSA	0.2	1.5	0.34	0.58	0.34	51.5
Appro	bach		64	2.0	64	2.0	0.057	6.7	LOSA	0.2	1.5	0.34	0.58	0.34	51.9
West	: Lion (Creek Ro	ad												
10	L2	All MCs	29	2.0	29	2.0	0.138	5.8	LOS A	0.2	1.3	0.04	0.07	0.04	57.0
11	T1	All MCs	228	2.0	228	2.0	0.138	0.0	LOSA	0.2	1.3	0.04	0.07	0.04	59.2
Appro	bach		258	2.0	258	2.0	0.138	0.7	NA	0.2	1.3	0.04	0.07	0.04	59.0
All Ve	hicles		534	2.0	534	2.0	0.138	1.8	NA	0.4	2.5	0.13	0.19	0.13	57.4



Saturday Morning peak hour

Mov ID	Turn	Mov Class		ows	FI	rival ows	Deg. Satn	Aver. Delay	Level of Service	Qu	Back Of Jeue	Prop. Que	Eff. Stop	Aver. No. of	Aver Speed
			[Total I veh/h		[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/t
East:	Lion C	reek Roa	nd												
5	T1	All MCs	283	2.0	283	2.0	0.191	0.0	LOSA	0.5	3.4	0.14	0.17	0.14	58.4
6	R2	All MCs	63	2.0	63	2.0	0.191	7.2	LOSA	0.5	3.4	0.14	0.17	0.14	55.7
Appro	ach		346	2.0	346	2.0	0.191	1.3	NA	0.5	3.4	0.14	0.17	0.14	57.9
North	Hall	Street													
7	L2	All MCs	71	2.0	71	2.0	0.107	6.3	LOSA	0.4	2.8	0.37	0.60	0.37	51.9
9	R2	All MCs	40	2.0	40	2.0	0.107	8.4	LOSA	0.4	2.8	0.37	0.60	0.37	51.3
Appro	ach		111	2.0	111	2.0	0.107	7.1	LOSA	0.4	2.8	0.37	0.60	0.37	51.7
West	Lion (Creek Ro	ad												
10	L2	All MCs	28	2.0	28	2.0	0.126	5.9	LOSA	0.2	1.3	0.04	0.08	0.04	57.0
11	T1	All MCs	206	2.0	206	2.0	0.126	0.0	LOSA	0.2	1.3	0.04	0.08	0.04	59.1
Appro	ach		235	2.0	235	2.0	0.126	0.7	NA	0.2	1.3	0.04	0.08	0.04	58.9
All Ve	hicles		692	2.0	692	2.0	0.191	2.0	NA	0.5	3.4	0.15	0.21	0.15	57.1

Saturday Afternoon peak hour

Mov ID	Tum	Mov Class	Dem Fl	and ows		rival Iows	Deg. Satn	Aver. Delay	Level of Service	Qu	lack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h		[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
East:	Lion C	reek Roa	ad												
5	T1	All MCs	213	2.0	213	2.0	0.133	0.0	LOSA	0.2	1.7	0.11	0.13	0.11	58.9
6	R2	All MCs	31	2.0	31	2.0	0.133	7.7	LOS A	0.2	1.7	0.11	0.13	0.11	56.0
Appro	ach		243	2.0	243	2.0	0.133	1.0	NA	0.2	1.7	0.11	0.13	0.11	58.5
North	Hall S	Street													
7	L2	All MCs	29	2.0	29	2.0	0.046	6.5	LOS A	0.2	1.2	0.37	0.60	0.37	51.9
9	R2	All MCs	18	2.0	18	2.0	0.046	7.7	LOS A	0.2	1.2	0.37	0.60	0.37	51.4
Appro	ach		47	2.0	47	2.0	0.046	6.9	LOS A	0.2	1.2	0.37	0.60	0.37	51.7
West	Lion (Creek Ro	ad												
10	L2	All MCs	22	2.0	22	2.0	0.147	5.7	LOSA	0.1	1.0	0.02	0.05	0.02	57.3
11	T1	All MCs	255	2.0	255	2.0	0.147	0.0	LOS A	0.1	1.0	0.02	0.05	0.02	59.5
Appro	ach		277	2.0	277	2.0	0.147	0.5	NA	0.1	1.0	0.02	0.05	0.02	59.3
All Ve	hicles		567	2.0	567	2.0	0.147	1.2	NA	0.2	1.7	0.09	0.13	0.09	58.2



Graeme Acton Way / Exhibition Road;

Weekday Morning peak hour

Mov ID	Turn	Mov Class	Dem Fl	and lows		rival ows	Deg. Satn	Aver. Delay	Level of Service		Back Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h	HV] %		HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	: Exhil	bition Roa	ad												
1	L2	All MCs	15	2.0	15	2.0	0.341	7.2	LOSA	1.5	10.5	0.56	0.84	0.69	50.2
3	R2	All MCs	227	2.0	227	2.0	0.341	9.7	LOS A	1.5	10.5	0.56	0.84	0.69	49.7
Appro	ach		242	2.0	242	2.0	0.341	9.5	LOSA	1.5	10.5	0.56	0.84	0.69	49.7
East:	Lion C	reek Roa	ad												
4	L2	All MCs	242	2.0	242	2.0	0.295	5.7	LOSA	1.4	9.9	0.05	0.26	0.05	55.3
5	T1	All MCs	271	2.0	271	2.0	0.295	0.0	LOSA	1.4	9.9	0.05	0.26	0.05	57.3
Appro	ach		513	2.0	513	2.0	0.295	2.7	NA	1.4	9.9	0.05	0.26	0.05	56.3
West:	Lion (Creek Ro	ad												
11	T1	All MCs	204	2.0	204	2.0	0.114	0.0	LOSA	0.1	0.6	0.05	0.06	0.05	59.5
12	R2	All MCs	11	2.0	11	2.0	0.114	7.9	LOS A	0.1	0.6	0.05	0.06	0.05	56.6
Appro	ach		215	2.0	215	2.0	0.114	0.4	NA	0.1	0.6	0.05	0.06	0.05	59.4
All Ve	hicles		969	2.0	969	2.0	0.341	3.9	NA	1.5	10.5	0.18	0.36	0.21	55.1

Weekday Afternoon peak hour

Mov ID	Tum	Mov Class	Dem Fl	and lows		rival lows	Deg. Satn	Aver. Delay	Level of Service	Qu	lack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h		[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	: Exhil	bition Roa	ad												
1	L2	All MCs	11	2.0	11	2.0	0.279	6.6	LOSA	1.1	7.7	0.53	0.79	0.58	50.6
3	R2	All MCs	193	2.0	193	2.0	0.279	9.1	LOS A	1.1	7.7	0.53	0.79	0.58	50.1
Appro	ach		203	2.0	203	2.0	0.279	8.9	LOSA	1.1	7.7	0.53	0.79	0.58	50.1
East:	Lion C	reek Roa	d												
4	L2	All MCs	226	2.0	226	2.0	0.249	5.7	LOSA	1.2	8.4	0.06	0.29	0.06	55.0
5	T1	All MCs	202	2.0	202	2.0	0.249	0.0	LOSA	1.2	8.4	0.06	0.29	0.06	57.0
Appro	ach		428	2.0	428	2.0	0.249	3.0	NA	1.2	8.4	0.06	0.29	0.06	55.9
West:	Lion (Creek Ro	ad												
11	T1	All MCs	262	2.0	262	2.0	0.146	0.0	LOSA	0.1	0.8	0.04	0.05	0.04	59.6
12	R2	All MCs	14	2.0	14	2.0	0.146	7.2	LOS A	0.1	0.8	0.04	0.05	0.04	56.7
Appro	ach		276	2.0	276	2.0	0.146	0.4	NA	0.1	0.8	0.04	0.05	0.04	59.4
All Ve	hicles		907	2.0	907	2.0	0.279	3.5	NA	1.2	8.4	0.16	0.33	0.17	55.5



Saturday Morning peak hour

Mov ID	Tum	Mov Class	Dem	and ows		rival ows	Deg. Satn	Aver. Delay	Level of Service		lack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h	HV]			v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	: Exhil	oition Roa	ad												
1	L2	All MCs	17	2.0	17	2.0	0.423	8.1	LOSA	2.0	14.0	0.65	0.94	0.90	48.8
3	R2	All MCs	238	2.0	238	2.0	0.423	11.8	LOS B	2.0	14.0	0.65	0.94	0.90	48.3
Appro	ach		255	2.0	255	2.0	0.423	11.5	LOS B	2.0	14.0	0.65	0.94	0.90	48.4
East:	Lion C	reek Roa	ad												
4	L2	All MCs	274	2.0	274	2.0	0.345	5.7	LOSA	1.7	12.1	0.07	0.25	0.07	55.3
5	T1	All MCs	328	2.0	328	2.0	0.345	0.0	LOSA	1.7	12.1	0.07	0.25	0.07	57.3
Appro	ach		602	2.0	602	2.0	0.345	2.6	NA	1.7	12.1	0.07	0.25	0.07	56.4
West:	Lion (Creek Ro	ad												
11	T1	All MCs	264	2.0	264	2.0	0.148	0.0	LOSA	0.1	0.9	0.05	0.06	0.05	59.5
12	R2	All MCs	14	2.0	14	2.0	0.148	8.7	LOSA	0.1	0.9	0.05	0.06	0.05	56.6
Appro	ach		278	2.0	278	2.0	0.148	0.4	NA	0.1	0.9	0.05	0.06	0.05	59.4
All Ve	hicles		1135	2.0	1135	2.0	0.423	4.1	NA	2.0	14.0	0.19	0.36	0.25	55.0

Saturday Afternoon peak hour

Mov ID	Turn	Mov Class		ows	F	rival ows	Deg. Satn	Aver. Delay	Level of Service	Qu	lack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h	HV] %		HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	: Exhi	bition Roa	ad												
1	L2	All MCs	13	2.0	13	2.0	0.419	7.4	LOSA	2.1	14.8	0.58	0.88	0.79	49.9
3	R2	All MCs	291	2.0	291	2.0	0.419	10.1	LOS B	2.1	14.8	0.58	0.88	0.79	49.4
Appro	ach		303	2.0	303	2.0	0.419	10.0	LOSA	2.1	14.8	0.58	0.88	0.79	49.4
East:	Lion C	reek Roa	ad												
4	L2	All MCs	155	2.0	155	2.0	0.219	5.7	LOS A	0.9	6.2	0.06	0.22	0.06	55.6
5	T1	All MCs	232	2.0	232	2.0	0.219	0.0	LOS A	0.9	6.2	0.06	0.22	0.06	57.6
Appro	ach		386	2.0	386	2.0	0.219	2.3	NA	0.9	6.2	0.06	0.22	0.06	56.8
West	Lion (Creek Ro	ad												
11	T1	All MCs	271	2.0	271	2.0	0.151	0.0	LOSA	0.1	0.8	0.05	0.05	0.05	59.5
12	R2	All MCs	15	2.0	15	2.0	0.151	7.5	LOS A	0.1	0.8	0.05	0.05	0.05	56.6
Appro	ach		285	2.0	285	2.0	0.151	0.4	NA	0.1	0.8	0.05	0.05	0.05	59.4
All Ve	hicles		975	2.0	975	2.0	0.419	4.1	NA	2.1	14.8	0.22	0.38	0.28	54.9



Wandal Road / New Exhibition Road / Exhibition Road / Campbell Street / Baden Powell Street; Campbell Street / North Street.

Weekday Morning peak hour

		ovement													
Mov ID	Turn	Mov Class	F [Total				Deg. Satn v/c	Aver. Delay sec	Level of Service		ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/t
South	East:	Campbell	000		VOINT	70		000		V GIT					
21	L2	All MCs	6	2.0	6	2.0	0.012	5.1	LOS A	0.0	0.3	0.44	0.54	0.44	53.3
21a	L1	All MCs	3	2.0	3	2.0	0.012	4.8	LOS A	0.0	0.3	0.44	0.54	0.44	53.
23a	R1	All MCs	1	2.0	1	2.0	0.012	9.6	LOS A	0.0	0.3	0.44	0.54	0.44	52.
23b	R3	All MCs	1	2.0	1	2.0	0.012	12.0	LOS B	0.0	0.3	0.44	0.54	0.44	52.
Appro	bach		12	2.0	12	2.0	0.012	6.0	LOS A	0.0	0.3	0.44	0.54	0.44	53.
East:	Exhibi	tion Road	ł												
4b	L3	All MCs	20	2.0	20	2.0	0.226	3.4	LOS A	1.1	8.2	0.23	0.37	0.23	54.
4a	L1	All MCs	260	2.0	260	2.0	0.226	3.7	LOS A	1.1	8.2	0.23	0.37	0.23	55.
5	T1	All MCs	38	2.0	38	2.0	0.226	4.1	LOS A	1.1	8.2	0.23	0.37	0.23	55.
6	R2	All MCs	53	2.0	53	2.0	0.060	10.1	LOS B	0.2	1.7	0.30	0.62	0.30	50.
Appro	bach		371	2.0	371	2.0	0.226	4.6	LOS A	1.1	8.2	0.24	0.40	0.24	54.
North	: New	Exhibitior	n Road												
7	L2	All MCs	103	2.0	103	2.0	0.092	5.0	LOS A	0.4	2.7	0.35	0.50	0.35	54.
7a	L1	All MCs	8	2.0	8	2.0	0.108	4.0	LOS A	0.5	3.2	0.34	0.60	0.34	51.
9a	R1	All MCs	124	2.0	124	2.0	0.108	8.8	LOS A	0.5	3.2	0.34	0.60	0.34	50.
9	R2	All MCs	6	2.0	6	2.0	0.108	10.0	LOS B	0.5	3.2	0.34	0.60	0.34	50.
Appro	bach		242	2.0	242	2.0	0.108	7.1	LOS A	0.5	3.2	0.34	0.56	0.34	52.
West:	Wand	lal Road													
10	L2	All MCs	8	2.0	8	2.0	0.025	5.5	LOS A	0.1	0.9	0.50	0.50	0.50	53.
11	T1	All MCs	71	2.0	71	2.0	0.048	5.1	LOS A	0.3	1.9	0.48	0.51	0.48	53.
12a	R1	All MCs	3	2.0	3	2.0	0.048	9.3	LOS A	0.3	1.9	0.48	0.52	0.48	52.
12b	R3	All MCs	9	2.0	9	2.0	0.048	11.7	LOS B	0.3	1.9	0.48	0.52	0.48	52.
Appro	bach		92	2.0	92	2.0	0.048	6.0	LOS A	0.3	1.9	0.48	0.51	0.48	53.
South	West:	Baden P	owell S	treet											
30b	L3	All MCs	23	2.0	23	2.0	0.025	4.2	LOS A	0.1	0.7	0.23	0.49	0.23	54.
30a	L1	All MCs	175	2.0	175	2.0	0.244	3.5	LOS A	1.2	8.3	0.23	0.50	0.23	53.
32a	R1	All MCs	184	2.0	184	2.0	0.244	8.3	LOS A	1.2	8.3	0.23	0.50	0.23	52.
32	R2	All MCs	1	2.0	1	2.0	0.244	9.5	LOS A	1.2	8.3	0.23	0.50	0.23	52.
Appro	bach		383	2.0	383	2.0	0.244	5.9	LOS A	1.2	8.3	0.23	0.50	0.23	53.
All Ve	hicles		1099	2.0	1099	2.0	0.244	5.7	LOS A	1.2	8.3	0.28	0.48	0.28	53.



Weekday Afternoon peak hour

Vehi	cle M	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	Fi [Total		F [Total		Deg. Satn	Aver. Delay	Level of Service	95% B Que [Veh.		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed
South	Fast	Campbel		%	veh/h	%	v/c	sec	_	veh	m			1000	km/ł
21		All MCs		2.0	6	2.0	0.014	4.9	LOS A	0.1	0.4	0.42	0.54	0.42	53.0
21a	L1	0.000		2.0	7.185	2.0	0.014	4.6	LOSA	0.1	0.4	0.42	0.54	0.42	53.4
23a	R1	1176-13-1108-15-3	9873	2.0	15784	2.0	0.014	9.5	LOSA	0.1	0.4	0.42	0.54	0.42	52.4
23b		All MCs		2.0		2.0	0.014	11.8	LOS B	0.1	0.4	0.42	0.54	0.42	52.4
Appro				2.0	22.1	2.0	0.014	6.4	LOSA	0.1	0.4	0.42	0.54	0.42	52.
East:	Exhib	ition Road	ł												
4b		All MCs		2.0	20	2.0	0.190	3.4	LOS A	0.9	6.7	0.22	0.37	0.22	54.
4a	L1	All MCs	144	2.0	144	2.0	0.190	3.7	LOSA	0.9	6.7	0.22	0.37	0.22	55.
5	T1	All MCs	99	2.0	99	2.0	0.190	4.1	LOS A	0.9	6.7	0.22	0.37	0.22	55.
6	R2	All MCs	35	2.0	35	2.0	0.040	10.2	LOS B	0.2	1.1	0.31	0.62	0.31	50.
Appro	bach		298	2.0	298	2.0	0.190	4.6	LOS A	0.9	6.7	0.23	0.40	0.23	54.
North	: New	Exhibition	n Road												
7	L2	All MCs	102	2.0	102	2.0	0.096	5.5	LOS A	0.4	2.8	0.40	0.53	0.40	53.
7a	L1	All MCs	5	2.0	5	2.0	0.111	4.2	LOSA	0.5	3.4	0.39	0.63	0.39	51.
9a	R1	All MCs	128	2.0	128	2.0	0.111	9.1	LOSA	0.5	3.4	0.39	0.63	0.39	50.
9	74.50.207	All MCs	3	2.0	3	2.0	0.111	10.2	LOS B	0.5	3.4	0.39	0.63	0.39	50.
Appro	bach		239	2.0	239	2.0	0.111	7.4	LOSA	0.5	3.4	0.40	0.58	0.40	51.
West	Wand	dal Road													
10	L2	All MCs	15	2.0	15	2.0	0.044	5.5	LOS A	0.2	1.6	0.50	0.51	0.50	53.
11	T1	All MCs	126	2.0	126	2.0	0.086	5.1	LOSA	0.5	3.5	0.49	0.52	0.49	53.
12a	R1	All MCs	3	2.0	3	2.0	0.086	9.3	LOS A	0.5	3.5	0.48	0.52	0.48	52.
12b	R3	All MCs	20	2.0	20	2.0	0.086	11.7	LOS B	0.5	3.5	0.48	0.52	0.48	52.
Appro	bach		164	2.0	164	2.0	0.086	6.0	LOS A	0.5	3.5	0.49	0.52	0.49	52.
South	West:	Baden P	owell S	treet											
30b	L3	All MCs	25	2.0	25	2.0	0.028	4.5	LOS A	0.1	0.8	0.28	0.50	0.28	54.
30a	L1	All MCs	153	2.0	153	2.0	0.253	3.6	LOS A	1.2	8.6	0.28	0.52	0.28	53.
32a	R1	All MCs	203	2.0	203	2.0	0.253	8.5	LOSA	1.2	8.6	0.28	0.52	0.28	52.
32	R2	All MCs	3	2.0	3	2.0	0.253	9.7	LOS A	1.2	8.6	0.28	0.52	0.28	52.
Appro	bach		384	2.0	384	2.0	0.253	6.3	LOS A	1.2	8.6	0.28	0.52	0.28	52.
	hicles		1099	20	1099	20	0.253	6.0	LOS A	1.2	8.6	0.32	0.50	0.32	53.
, un ve	noies		1033	2.0	1033	2.0	0.200	0.0	LOOA	1.2	0.0	0.02	0.00	0.52	00.0



Saturday Morning peak hour

Vohi		ovomon	100	rma	200	_									
Mov	a series and	ovemen Mov	and the second second second second	rma nand		rival	Deg.	Aver.	Level of	95% B	ack Of	Prop.	Eff.	Aver.	Aver
ID	Turri	Class		lows		lows	Satn	Delay	Service	Que		Que	Stop	No. of	Speed
					[Total veh/h		v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/ł
South	East:	Campbel		70	Venin	70	V/C	300		Ven		_	_	_	K(1)/1
21	L2	All MCs	6	2.0	6	2.0	0.014	4.9	LOS A	0.1	0.4	0.42	0.54	0.42	53.0
21a	L1	All MCs	3	2.0	3	2.0	0.014	4.6	LOSA	0.1	0.4	0.42	0.54	0.42	53.4
23a	R1	All MCs	3	2.0	3	2.0	0.014	9.5	LOSA	0.1	0.4	0.42	0.54	0.42	52.
23b	R3	All MCs	1	2.0	1	2.0	0.014	11.8	LOS B	0.1	0.4	0.42	0.54	0.42	52.
Appro	bach		14	2.0	14	2.0	0.014	6.4	LOS A	0.1	0.4	0.42	0.54	0.42	52.
East:	Exhib	ition Road	ł												
4b	L3	All MCs	20	2.0	20	2.0	0.190	3.4	LOS A	0.9	6.7	0.22	0.37	0.22	54.
4a	L1	All MCs	144	2.0	144	2.0	0.190	3.7	LOS A	0.9	6.7	0.22	0.37	0.22	55.
5	T1	All MCs	99	2.0	99	2.0	0.190	4.1	LOS A	0.9	6.7	0.22	0.37	0.22	55.
6	R2	All MCs	35	2.0	35	2.0	0.040	10.2	LOS B	0.2	1.1	0.31	0.62	0.31	50.
Appro	bach		298	2.0	298	2.0	0.190	4.6	LOS A	0.9	6.7	0.23	0.40	0.23	54.
North	: New	Exhibition	n Road												
7	L2	All MCs	102	2.0	102	2.0	0.096	5.5	LOS A	0.4	2.8	0.40	0.53	0.40	53.
7a	L1	All MCs	5	2.0	5	2.0	0.111	4.2	LOS A	0.5	3.4	0.39	0.63	0.39	51.
9a	R1	All MCs	128	2.0	128	2.0	0.111	9.1	LOS A	0.5	3.4	0.39	0.63	0.39	50.
9	R2	All MCs	3	2.0	3	2.0	0.111	10.2	LOS B	0.5	3.4	0.39	0.63	0.39	50.
Appro	bach		239	2.0	239	2.0	0.111	7.4	LOS A	0.5	3.4	0.40	0.58	0.40	51.
West	Wand	dal Road													
10	L2	All MCs	15	2.0	15	2.0	0.044	5.5	LOS A	0.2	1.6	0.50	0.51	0.50	53.
11	T1	All MCs	126	2.0	126	2.0	0.086	5.1	LOS A	0.5	3.5	0.49	0.52	0.49	53.
12a	R1	All MCs	3	2.0	3	2.0	0.086	9.3	LOS A	0.5	3.5	0.48	0.52	0.48	52.
12b	R3	All MCs	20	2.0	20	2.0	0.086	11.7	LOS B	0.5	3.5	0.48	0.52	0.48	52.
Appro	bach		164	2.0	164	2.0	0.086	6.0	LOS A	0.5	3.5	0.49	0.52	0.49	52.
South	West:	Baden P	owell S	treet											
30b	L3	All MCs	25	2.0	25	2.0	0.028	4.5	LOS A	0.1	0.8	0.28	0.50	0.28	54.
30a	L1	All MCs	153	2.0	153	2.0	0.253	3.6	LOS A	1.2	8.6	0.28	0.52	0.28	53.
32a	R1	All MCs	203	2.0	203	2.0	0.253	8.5	LOS A	1.2	8.6	0.28	0.52	0.28	52.
32	R2	All MCs	3	2.0	3	2.0	0.253	9.7	LOS A	1.2	8.6	0.28	0.52	0.28	52.
Appro	bach		384	2.0	384	2.0	0.253	6.3	LOSA	1.2	8.6	0.28	0.52	0.28	52.
All Ve	hicles		1099	2.0	1099	2.0	0.253	6.0	LOS A	1.2	8.6	0.32	0.50	0.32	53.
							0.200	0.0	20071		0.0	0.01	0.00	0.01	00.



Saturday Afternoon peak hour

1		ovement	t Perfo	rma											
Mov ID	Turn	Mov Class	F [Total		F [Total		Deg. Satn	Aver. Delay	Level of Service	95% B Que [Veh.	eue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed
South	East:	Campbel	1.222		veh/h	70	v/c	sec		veh	m				km/ł
21	L2	All MCs	6	2.0	6	2.0	0.014	4.9	LOS A	0.1	0.4	0.42	0.54	0.42	53.0
21a	L1	All MCs	3	2.0	3	2.0	0.014	4.6	LOS A	0.1	0.4	0.42	0.54	0.42	53.4
23a	R1	All MCs	3	2.0	3	2.0	0.014	9.5	LOSA	0.1	0.4	0.42	0.54	0.42	52.
23b	R3	All MCs	1	2.0	1	2.0	0.014	11.8	LOS B	0.1	0.4	0.42	0.54	0.42	52.4
Appro	bach		14	2.0	14	2.0	0.014	6.4	LOS A	0.1	0.4	0.42	0.54	0.42	52.
East:	Exhibi	ition Road	d												
4b	L3	All MCs	20	2.0	20	2.0	0.190	3.4	LOS A	0.9	6.7	0.22	0.37	0.22	54.
4a	L1	All MCs	144	2.0	144	2.0	0.190	3.7	LOSA	0.9	6.7	0.22	0.37	0.22	55.
5	T1	All MCs	99	2.0	99	2.0	0.190	4.1	LOS A	0.9	6.7	0.22	0.37	0.22	55.
6	R2	All MCs	35	2.0	35	2.0	0.040	10.2	LOS B	0.2	1.1	0.31	0.62	0.31	50.
Appro	bach		298	2.0	298	2.0	0.190	4.6	LOS A	0.9	6.7	0.23	0.40	0.23	54.
North	: New	Exhibition	n Road												
7	L2	All MCs	102	2.0	102	2.0	0.096	5.5	LOS A	0.4	2.8	0.40	0.53	0.40	53.
7a	L1	All MCs	5	2.0	5	2.0	0.111	4.2	LOSA	0.5	3.4	0.39	0.63	0.39	51.
9a	R1	All MCs	128	2.0	128	2.0	0.111	9.1	LOS A	0.5	3.4	0.39	0.63	0.39	50.
9	R2	All MCs	3	2.0	3	2.0	0.111	10.2	LOS B	0.5	3.4	0.39	0.63	0.39	50.
Appro	bach		239	2.0	239	2.0	0.111	7.4	LOS A	0.5	3.4	0.40	0.58	0.40	51.
West	Wand	dal Road													
10	L2	All MCs	15	2.0	15	2.0	0.044	5.5	LOS A	0.2	1.6	0.50	0.51	0.50	53.
11	T1	All MCs	126	2.0	126	2.0	0.086	5.1	LOS A	0.5	3.5	0.49	0.52	0.49	53.
12a	R1	All MCs	3	2.0	3	2.0	0.086	9.3	LOS A	0.5	3.5	0.48	0.52	0.48	52.
12b	R3	All MCs	20	2.0	20	2.0	0.086	11.7	LOS B	0.5	3.5	0.48	0.52	0.48	52.
Appro	bach		164	2.0	164	2.0	0.086	6.0	LOS A	0.5	3.5	0.49	0.52	0.49	52.
South	West:	Baden P	owell S	treet											
30b	L3	All MCs	25	2.0	25	2.0	0.028	4.5	LOS A	0.1	0.8	0.28	0.50	0.28	54.
30a	L1	All MCs	153	2.0	153	2.0	0.253	3.6	LOS A	1.2	8.6	0.28	0.52	0.28	53.
32a	R1	All MCs	203	2.0	203	2.0	0.253	8.5	LOS A	1.2	8.6	0.28	0.52	0.28	52.
32	R2	All MCs	3	2.0	3	2.0	0.253	9.7	LOSA	1.2	8.6	0.28	0.52	0.28	52.
Appro	bach		384	2.0	384	2.0	0.253	6.3	LOSA	1.2	8.6	0.28	0.52	0.28	52.
All Ve	hicles		1099	2.0	1099	2.0	0.253	6.0	LOS A	1.2	8.6	0.32	0.50	0.32	53.



Campbell Street / North Street

Weekday Morning peak hour

Mov ID	Tum	Mov Class		and		rival lows	Deg. Satn	Aver. Delay	Level of		Back Of	Prop. Que	Eff. Stop	Aver. No. of	Aver
		Giass	[Total veh/h	HV]			v/c	sec	Service	[Veh. veh	Dist] m	Que	Rate	Cycles	Speed km/t
South	: North	n Street													
1	L2	All MCs	112	2.0	112	2.0	0.596	6.5	LOSA	5.3	38.1	0.71	0.62	0.73	51.5
2	T1	All MCs	445	2.0	445	2.0	0.596	6.7	LOS A	5.3	38.1	0.71	0.62	0.73	51.9
3	R2	All MCs	93	2.0	93	2.0	0.596	11.4	LOS B	5.3	38.1	0.71	0.62	0.73	51.0
Appro	ach		649	2.0	649	2.0	0.596	7.4	LOSA	5.3	38.1	0.71	0.62	0.73	51.7
East:	Camp	bell Stree	t												
4	L2	All MCs	146	2.0	146	2.0	0.370	5.5	LOSA	2.5	17.8	0.54	0.54	0.54	52.5
5	T1	All MCs	237	2.0	237	2.0	0.370	5.7	LOSA	2.5	17.8	0.54	0.54	0.54	52.9
6	R2	All MCs	24	2.0	24	2.0	0.370	10.3	LOS B	2.5	17.8	0.54	0.54	0.54	52.0
Appro	ach		407	2.0	407	2.0	0.370	5.9	LOSA	2.5	17.8	0.54	0.54	0.54	52.7
North	North	Street													
7	L2	All MCs	26	2.0	26	2.0	0.230	6.1	LOSA	1.4	10.1	0.60	0.59	0.60	52.0
8	Τ1	All MCs	168	2.0	168	2.0	0.230	6.3	LOSA	1.4	10.1	0.60	0.59	0.60	52.3
9	R2	All MCs	25	2.0	25	2.0	0.230	10.9	LOS B	1.4	10.1	0.60	0.59	0.60	51.4
Appro	ach		220	2.0	220	2.0	0.230	6.8	LOSA	1.4	10.1	0.60	0.59	0.60	52.2
West:	Camp	bell Stre	et												
10	L2	All MCs	45	2.0	45	2.0	0.422	7.8	LOSA	3.0	21.7	0.79	0.70	0.79	50.9
11	T1	All MCs	234	2.0	234	2.0	0.422	8.0	LOS A	3.0	21.7	0.79	0.70	0.79	51.2
12	R2	All MCs	60	2.0	60	2.0	0.422	12.6	LOS B	3.0	21.7	0.79	0.70	0.79	50.4
Appro	ach		339	2.0	339	2.0	0.422	8.8	LOSA	3.0	21.7	0.79	0.70	0.79	51.0
All Ve	hicles		1616	2.0	1616	2.0	0.596	7.2	LOSA	5.3	38.1	0.67	0.61	0.68	51.9



Weekday Afternoon peak hour

ID	Tum	Mov Class		and		rival lows	Deg. Satn	Aver. Delay	Level of Service		lack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver
U		Ciass	[Total veh/h	HV]			v/c	sec	Service	[Veh. veh	Dist]	Que	Rate	Cycles	km/l
South	: North	Street													
1	L2	All MCs	61	2.0	61	2.0	0.576	6.1	LOSA	4.9	35.1	0.69	0.59	0.69	51.6
2	T1	All MCs	501	2.0	501	2.0	0.576	6.3	LOSA	4.9	35.1	0.69	0.59	0.69	52.
3	R2	All MCs	72	2.0	72	2.0	0.576	11.0	LOS B	4.9	35.1	0.69	0.59	0.69	51.
Appro	ach		634	2.0	634	2.0	0.576	6.8	LOS A	4.9	35.1	0.69	0.59	0.69	51.8
East:	Camp	bell Stree	t												
4	L2	All MCs	159	2.0	159	2.0	0.395	6.2	LOSA	2.7	19.3	0.63	0.60	0.63	52.
5	T1	All MCs	200	2.0	200	2.0	0.395	6.4	LOSA	2.7	19.3	0.63	0.60	0.63	52.
6	R2	All MCs	36	2.0	36	2.0	0.395	11.0	LOS B	2.7	19.3	0.63	0.60	0.63	51.
Appro	ach		395	2.0	395	2.0	0.395	6.7	LOSA	2.7	19.3	0.63	0.60	0.63	52.
North	: North	Street													
7	L2	All MCs	28	2.0	28	2.0	0.322	6.8	LOSA	2.2	15.6	0.70	0.64	0.70	51.4
8	T1	All MCs	216	2.0	216	2.0	0.322	7.0	LOSA	2.2	15.6	0.70	0.64	0.70	51.
9	R2	All MCs	38	2.0	38	2.0	0.322	11.6	LOS B	2.2	15.6	0.70	0.64	0.70	50.
Appro	ach		282	2.0	282	2.0	0.322	7.6	LOSA	2.2	15.6	0.70	0.64	0.70	51.
West:	Camp	bell Stree	et												
10	L2	All MCs	40	2.0	40	2.0	0.563	10.5	LOS B	5.2	37.1	0.88	0.82	1.05	49.
11	T1	All MCs	301	2.0	301	2.0	0.563	10.6	LOS B	5.2	37.1	0.88	0.82	1.05	49.
12	R2	All MCs	93	2.0	93	2.0	0.563	15.3	LOS B	5.2	37.1	0.88	0.82	1.05	48.
Appro	ach		434	2.0	434	2.0	0.563	11.6	LOS B	5.2	37.1	0.88	0.82	1.05	49.
All Ve			1744	2.0	1744	2.0	0.576	8.1	LOSA	5.2	37.1	0.73	0.66	0.77	51.



Saturday Morning peak hour

Mov ID	Turn	Mov Class		and		rival lows	Deg. Satn	Aver. Delav	Level of Service		lack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver
		Cidos	[Total veh/h	HV]	[Total veh/h		v/c	sec	Service	[Veh. veh	Dist]	Que	Rate	Cycles	km/t
South	: North	h Street													
1	L2	All MCs	95	2.0	95	2.0	0.384	5.8	LOS A	2.6	18.6	0.58	0.57	0.58	52.1
2	T1	All MCs	271	2.0	271	2.0	0.384	6.0	LOS A	2.6	18.6	0.58	0.57	0.58	52.5
3	R2	All MCs	42	2.0	42	2.0	0.384	10.6	LOS B	2.6	18.6	0.58	0.57	0.58	51.6
Appro	bach		407	2.0	407	2.0	0.384	6.4	LOS A	2.6	18.6	0.58	0.57	0.58	52.3
East:	Camp	bell Stree	t												
4	L2	All MCs	117	2.0	117	2.0	0.340	5.2	LOS A	2.2	15.7	0.48	0.52	0.48	52.7
5	T1	All MCs	247	2.0	247	2.0	0.340	5.4	LOS A	2.2	15.7	0.48	0.52	0.48	53.0
6	R2	All MCs	26	2.0	26	2.0	0.340	10.1	LOS B	2.2	15.7	0.48	0.52	0.48	52.1
Appro	bach		391	2.0	391	2.0	0.340	5.7	LOSA	2.2	15.7	0.48	0.52	0.48	52.9
North	: North	n Street													
7	L2	All MCs	23	2.0	23	2.0	0.176	5.5	LOS A	1.0	7.3	0.50	0.54	0.50	52.4
8	T1	All MCs	141	2.0	141	2.0	0.176	5.7	LOSA	1.0	7.3	0.50	0.54	0.50	52.7
9	R2	All MCs	20	2.0	20	2.0	0.176	10.3	LOS B	1.0	7.3	0.50	0.54	0.50	51.9
Appro	bach		184	2.0	184	2.0	0.176	6.1	LOSA	1.0	7.3	0.50	0.54	0.50	52.6
West	Camp	bell Stree	et												
10	L2	All MCs	64	2.0	64	2.0	0.317	6.0	LOS A	2.1	14.7	0.59	0.59	0.59	51.9
11	T1	All MCs	198	2.0	198	2.0	0.317	6.2	LOS A	2.1	14.7	0.59	0.59	0.59	52.3
12	R2	All MCs	57	2.0	57	2.0	0.317	10.8	LOS B	2.1	14.7	0.59	0.59	0.59	51.4
Appro	bach		319	2.0	319	2.0	0.317	7.0	LOS A	2.1	14.7	0.59	0.59	0.59	52.0
All Ve	hicles		1301	2.0	1301	2.0	0.384	6.3	LOS A	2.6	18.6	0.54	0.56	0.54	52.5



Saturday Afternoon peak hour

	Turn			and		rival	Deg.	Aver.	Level of		lack Of	Prop.	Eff.	Aver.	Ave
ID		Class	[Total		Total veh/h		Satn v/c	Delay sec	Service	[Veh. veh	eue Dist] m	Que	Stop Rate	No. of Cycles	Spee km/
South	: Norti	n Street													
1	L2	All MCs	67	2.0	67	2.0	0.313	4.9	LOS A	2.0	14.3	0.42	0.49	0.42	52.
2	T1	All MCs	276	2.0	276	2.0	0.313	5.1	LOS A	2.0	14.3	0.42	0.49	0.42	53.
3	R2	All MCs	38	2.0	38	2.0	0.313	9.7	LOS A	2.0	14.3	0.42	0.49	0.42	52.
Appro	ach		381	2.0	381	2.0	0.313	5.5	LOSA	2.0	14.3	0.42	0.49	0.42	53.
East:	Camp	bell Stree	t												
4	L2	All MCs	78	2.0	78	2.0	0.196	4.8	LOS A	1.1	8.0	0.38	0.49	0.38	53.
5	T1	All MCs	132	2.0	132	2.0	0.196	5.0	LOS A	1.1	8.0	0.38	0.49	0.38	53.
6	R2	All MCs	21	2.0	21	2.0	0.196	9.6	LOS A	1.1	8.0	0.38	0.49	0.38	52.
Appro	ach		231	2.0	231	2.0	0.196	5.3	LOSA	1.1	8.0	0.38	0.49	0.38	53.
North	North	Street													
7	L2	All MCs	16	2.0	16	2.0	0.143	5.9	LOSA	0.8	5.9	0.56	0.58	0.56	52.
8	T1	All MCs	106	2.0	106	2.0	0.143	6.1	LOSA	0.8	5.9	0.56	0.58	0.56	52.
9	R2	All MCs	16	2.0	16	2.0	0.143	10.7	LOS B	0.8	5.9	0.56	0.58	0.56	51.
Appro	ach		138	2.0	138	2.0	0.143	6.6	LOSA	0.8	5.9	0.56	0.58	0.56	52.
West:	Camp	bell Stree	et												
10	L2	All MCs	94	2.0	94	2.0	0.427	6.2	LOSA	3.0	21.1	0.63	0.59	0.63	51.
11	T1	All MCs	296	2.0	296	2.0	0.427	6.4	LOSA	3.0	21.1	0.63	0.59	0.63	52.
12	R2	All MCs	48	2.0	48	2.0	0.427	11.0	LOS B	3.0	21.1	0.63	0.59	0.63	51.
Appro	ach		438	2.0	438	2.0	0.427	6.9	LOSA	3.0	21.1	0.63	0.59	0.63	52.



Albert Street / Campbell Street

Weekday Morning peak hour

Mov	Turn	Mov	Dem	nand		rival	Deg.	Aver.	Level of	95% B	ack Of	Prop.	Eff.	Aver.	Aver.
ID		Class		ows		ows	Satn	Delay	Service	Que		Que	Stop	No. of	Speed
			[Total veh/h		[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	East:	Campbell	Street												
21	L2	All MCs	5	2.0	5	2.0	0.066	36.5	LOS D	0.5	3.2	0.92	0.65	0.92	37.9
22	T1	All MCs	82	2.0	82	2.0	*0.332	32.3	LOS C	2.4	17.3	0.95	0.72	0.95	39.2
23	R2	All MCs	26	2.0	26	2.0	0.126	37.1	LOS D	0.8	6.0	0.93	0.71	0.93	36.5
Appro	bach		114	2.0	114	2.0	0.332	33.6	LOS C	2.4	17.3	0.95	0.72	0.95	38.5
North	East: A	Albert Stre	eet												
24	L2	All MCs	19	2.0	19	2.0	0.716	29.1	LOS C	14.2	101.1	0.94	0.84	0.98	41.9
25	T1	All MCs	885	2.0	885	2.0	*0.716	23.6	LOS C	14.2	101.3	0.94	0.84	0.98	43.3
26	R2	All MCs	116	2.0	116	2.0	*0.632	41.3	LOS D	4.2	29.6	1.00	0.83	1.10	35.0
Appro	bach		1020	2.0	1020	2.0	0.716	25.7	LOS C	14.2	101.3	0.94	0.84	0.99	42.1
North	West:	Campbel	Street												
27	L2	All MCs	18	2.0	18	2.0	0.086	36.8	LOS D	0.6	4.1	0.92	0.69	0.92	36.4
28	T1	All MCs	137	2.0	137	2.0	*0.622	34.4	LOS C	4.8	34.2	1.00	0.82	1.07	38.4
29	R2	All MCs	24	2.0	24	2.0	0.116	37.0	LOS D	0.8	5.5	0.93	0.70	0.93	36.4
Appro	bach		179	2.0	179	2.0	0.622	35.0	LOS C	4.8	34.2	0.98	0.79	1.04	37.9
South	West:	Albert St	reet												
30	L2	All MCs	23	2.0	23	2.0	0.544	26.6	LOS C	9.8	69.4	0.87	0.75	0.87	43.0
31	T1	All MCs	656	2.0	656	2.0	0.544	27.0	LOS C	9.8	69.4	0.87	0.74	0.87	44.6
32	R2	All MCs	13	2.0	13	2.0	0.069	49.4	LOS D	0.4	2.9	0.93	0.68	0.93	36.2
Appro	bach		692	2.0	692	2.0	0.544	27.4	LOS C	9.8	69.4	0.87	0.74	0.87	41.4
	hicles		2004		2004	2.0	0,716	27.6	LOS C	14.2	101.3	0.92	0.80	0.95	41.2



Weekday Afternoon peak hour

Mov	Turn	Mov	Dem	and	Ar	rival	Deq.	Aver.	Level of	95% B	ack Of	Prop.	Eff.	Aver.	Ave
D		Class	F	ows		ows	Satn	Delay	Service	Qu	eue	Que	Stop	No. of	Spee
			[Total veh/h		[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/
South	East:	Campbell	Street												
21	L2	All MCs	6	2.0	6	2.0	0.145	37.1	LOS D	1.0	7.2	0.93	0.68	0.93	38.
22	T1	All MCs	184	2.0	184	2.0	*0.723	35.3	LOS D	5.8	41.2	0.99	0.86	1.14	38.
23	R2	All MCs	56	2.0	56	2.0	0.267	37.9	LOS D	1.8	13.1	0.95	0.74	0.95	36.
Appro	ach		246	2.0	246	2.0	0.723	35.9	LOS D	5.8	41.2	0.98	0.83	1.09	37.
North	East: /	Albert Stre	et												
24	L2	All MCs	45	2.0	45	2.0	0.712	29.1	LOS C	14.1	100.1	0.94	0.84	0.98	41.
25	T1	All MCs	854	2.0	854	2.0	0.712	23.5	LOS C	14.1	100.6	0.94	0.84	0.98	43.
26	R2	All MCs	153	2.0	153	2.0	*0.834	45.9	LOS D	6.0	42.5	1.00	0.98	1.40	33.
Appro	ach		1052	2.0	1052	2.0	0.834	27.0	LOS C	14.1	100.6	0.94	0.86	1.04	41.
North	West:	Campbel	Street												
27	L2	All MCs	51	2.0	51	2.0	0.241	37.7	LOS D	1.7	11.8	0.95	0.74	0.95	36.
28	T1	All MCs	95	2.0	95	2.0	<mark>* 0</mark> .431	33.0	LOS C	3.2	22.8	0.97	0.75	0.97	39.
29	R2	All MCs	39	2.0	39	2.0	0.186	37.4	LOS D	1.3	9.0	0.94	0.72	0.94	36.
Appro	ach		184	2.0	184	2.0	0.431	35.2	LOS D	3.2	22.8	0.96	0.74	0.96	37.
South	West:	Albert St	reet												
30	L2	All MCs	21	2.0	21	2.0	0.845	35.8	LOS D	19.8	141.1	0.99	1.01	1.20	38.
31	T1	All MCs	1041	2.0	1041	2.0	<mark>*</mark> 0.845	38.9	LOS D	19.8	141.1	0.99	1.01	1.20	40
32	R2	All MCs	6	2.0	6	2.0	0.034	54.5	LOS D	0.2	1.4	0.93	0.65	0.93	36
	10000		1068	2.0	1068	2.0	0.845	39.0	LOS D	19.8	141.1	0.99	1.00	1.20	36
Appro	ach		1008	2.0	1000	2.0	0.040	00.0	200 5	10.0		0.00	1.00	1.20	00



APPENDIX D – SIDRA MODELLING RESULTS (DESIGN VOLUMES)

- Graeme Acton Way / North Street;
- Graeme Acton Way / Sir Raymond Huish Drive;
- Graeme Acton Way / Hall Street;
- Graeme Acton Way / Exhibition Road;
- Wandal Road / New Exhibition Road / Exhibition Road / Campbell Street / Baden Powell Street;
- Campbell Street / North Street;
- Albert Street / Campbell Street.



Graeme Acton Way / North Street;

Weekday Morning peak hour – Typical Crowd

Mov	Turn	Mov		hand		rival	Deg.	Aver.	Level of		ack Of	Prop.	Eff.	Aver.	Aver
ID		Class			۲۱ Total] veh/h	ows HV] %	Satn v/c	Delay sec	Service	Que [Veh. veh	eue Dist] m	Que	Stop Rate	No. of Cycles	Speed km/t
South	n: Norti	n Street													
1	L2	All MCs	73	2.0	73	2.0	0.622	82.5	LOS F	7.9	56.1	1.00	0.81	1.02	28.4
2	T1	All MCs	53	2.0	53	2.0	*0.622	76.9	LOS E	7.9	56.1	1.00	0.81	1.02	29.0
3	R2	All MCs	363	2.0	363	2.0	*0.891	84.3	LOS F	25.6	182.4	1.00	0.98	1.22	27.5
Appro	bach		488	2.0	488	2.0	0.891	83.3	LOS F	25.6	182.4	1.00	0.94	1.17	24.9
East:	Bolsov	ver Street	t												
4	L2	All MCs	160	2.0	160	2.0	0.886	80.7	LOS F	45.2	322.0	1.00	0.98	1.10	32.8
5	T1	All MCs	536	2.0	536	2.0	*0.886	75.1	LOS E	45.2	322.0	1.00	0.98	1.10	33.7
6	R2	All MCs	5	2.0	5	2.0	0.062	101.2	LOS F	0.3	2.4	0.98	0.65	0.98	26.9
Appro	bach		701	2.0	701	2.0	0.886	76.6	LOS E	45.2	322.0	1.00	0.98	1.10	26.5
North	: North	Street													
7	L2	All MCs	31	2.0	31	2.0	0.322	64.8	LOS E	3.9	28.0	0.96	0.75	0.96	29.1
8	T1	All MCs	35	2.0	35	2.0	0.322	59.3	LOS E	3.9	28.0	0.96	0.75	0.96	29.8
9	R2	All MCs	87	2.0	87	2.0	0.194	47.2	LOS D	4.4	31.1	0.83	0.76	0.83	33.0
Appro	bach		153	2.0	153	2.0	0.322	53.5	LOS D	4.4	31.1	0.89	0.75	0.89	31.4
West	Lion (Creek Ro	ad												
10	L2	All MCs	59	2.0	59	2.0	0.547	54.2	LOS D	19.9	141.8	0.81	0.73	0.81	38.5
11	T1	All MCs	361	2.0	361	2.0	0.547	48.7	LOS D	19.9	141.8	0.81	0.73	0.81	39.6
12	R2	All MCs	21	2.0	21	2.0	*0.249	92.2	LOS F	1.4	9.8	1.00	0.70	1.00	26.5
Appro	bach		441	2.0	441	2.0	0.547	51.5	LOS D	19.9	141.8	0.82	0.73	0.82	32.4
All Ve	hicles		1783	2.0	1783	2.0	0.891	70.2	LOS E	45.2	322.0	0.95	0.89	1.03	27.6

Weekday Afternoon peak hour – Typical Crowd

Vehi	cle Mo	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	F			rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Que [Veh. veh	ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	n: Nortl	n Street													
1	L2	All MCs	38	2.0	38	2.0	0.353	53.5	LOS D	4.0	28.3	0.95	0.75	0.95	33.2
2	T1	All MCs	48	2.0	48	2.0	*0.353	47.9	LOS D	4.0	28.3	0.95	0.75	0.95	34.0
3	R2	All MCs	349	2.0	349	2.0	*0.887	61.8	LOS E	19.5	139.2	1.00	1.00	1.28	30.1
Appro	bach		436	2.0	436	2.0	0.887	59.6	LOS E	19.5	139.2	0.99	0.95	1.22	29.8
East:	Bolso	ver Street	t												
4	L2	All MCs	161	2.0	161	2.0	0.865	67.9	LOS E	29.6	210.8	1.00	1.00	1.15	34.5
5	T1	All MCs	411	2.0	411	2.0	*0.865	62.4	LOS E	29.6	210.8	1.00	1.00	1.15	35.4
6	R2	All MCs	4	2.0	4	2.0	0.038	77.0	LOS E	0.2	1.4	0.96	0.64	0.96	30.7
Appro	bach		576	2.0	576	2.0	0.865	64.0	LOS E	29.6	210.8	1.00	0.99	1.15	29.1
North	: North	Street													
7	L2	All MCs	35	2.0	35	2.0	0.323	49.5	LOS D	3.6	25.7	0.95	0.75	0.95	33.2
8	T1	All MCs	44	2.0	44	2.0	0.323	43.9	LOS D	3.6	25.7	0.95	0.75	0.95	34.1
9	R2	All MCs	58	2.0	58	2.0	0.144	39.6	LOS D	2.3	16.3	0.84	0.74	0.84	35.4
Appro	bach		137	2.0	137	2.0	0.323	43.5	LOS D	3.6	25.7	0.90	0.74	0.90	34.4
West	Lion (Creek Ro	ad												
10	L2	All MCs	56	2.0	56	2.0	0.854	66.3	LOS E	28.4	202.0	1.00	0.99	1.13	35.2
11	T1	All MCs	502	2.0	502	2.0	0.854	60.7	LOS E	28.4	202.0	1.00	0.99	1.13	36.2
12	R2	All MCs	20	2.0	20	2.0	*0.182	78.0	LOS E	1.0	7.0	0.98	0.70	0.98	30.4
Appro	bach		578	2.0	578	2.0	0.854	61.8	LOS E	28.4	202.0	0.99	0.98	1.13	29.7
All Ve	hicles		1726	2.0	1726	2.0	0.887	60.5	LOS E	29.6	210.8	0.99	0.96	1.14	29.8

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Saturday Morning peak hour – Typical Crowd

	Turn			nand		rival	Deg.	Aver.	Level of		ack Of	Prop.	Eff.	Aver.	Aver
ID		Class	[Total		Fi [Total veh/h		Satn v/c	Delay sec	Service	Qu [Veh. veh	eue Dist] m	Que	Stop Rate	No. of Cycles	Speed km/h
South	: North	n Street													
1	L2	All MCs	46	2.0	46	2.0	0.353	59.7	LOS E	4.3	30.4	0.96	0.76	0.96	30.2
2	T1	All MCs	31	2.0	31	2.0	*0.353	54.1	LOS D	4.3	30.4	0.96	0.76	0.96	30.9
3	R2	All MCs	244	2.0	244	2.0	*0.842	66.0	LOS E	15.4	109.5	1.00	0.94	1.20	28.2
Appro	bach		321	2.0	321	2.0	0.842	64.0	LOS E	15.4	109.5	0.99	0.90	1.15	28.7
East:	Bolsov	ver Street													
4	L2	All MCs	122	2.0	122	2.0	0.872	65.3	LOS E	45.1	320.8	0.97	0.95	1.05	36.2
5	T1	All MCs	666	2.0	666	2.0	*0.872	59.7	LOS E	45.1	320.8	0.97	0.95	1.05	37.2
6	R2	All MCs	3	2.0	3	2.0	0.034	89.6	LOS F	0.2	1.3	0.97	0.63	0.97	28.1
Appro	bach		792	2.0	792	2.0	0.872	60.7	LOS E	45.1	320.8	0.97	0.95	1.05	29.9
North	: North	Street													
7	L2	All MCs	23	2.0	23	2.0	0.216	58.5	LOS E	2.6	18.3	0.94	0.72	0.94	30.6
8	T1	All MCs	24	2.0	24	2.0	0.216	52.9	LOS D	2.6	18.3	0.94	0.72	0.94	31.4
9	R2	All MCs	59	2.0	59	2.0	0.203	53.5	LOS D	3.0	21.7	0.91	0.75	0.91	31.2
Appro	bach		106	2.0	106	2.0	0.216	54.5	LOS D	3.0	21.7	0.92	0.74	0.92	31.1
West:	Lion	Creek Roa	ad												
10	L2	All MCs	35	2.0	35	2.0	0.601	45.7	LOS D	22.5	160.3	0.79	0.71	0.79	41.2
11	T1	All MCs	495	2.0	495	2.0	0.601	40.2	LOS D	22.5	160.3	0.79	0.71	0.79	42.5
12	R2	All MCs	26	2.0	26	2.0	*0.287	84.3	LOS F	1.6	11.3	1.00	0.71	1.00	27.6
Appro	bach		556	2.0	556	2.0	0.601	42.6	LOS D	22.5	160.3	0.80	0.71	0.80	35.2
All Ve	hicles		1775	2.0	1775	2.0	0.872	55.2	LOS E	45.1	320.8	0.92	0.85	0.98	31.2

Saturday Afternoon peak hour – Typical Crowd

Vehi	cle Mo	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	F			rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Que [Veh. veh		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/r
South	: North	n Street													
1	L2	All MCs	38	2.0	38	2.0	0.242	43.5	LOS D	2.6	18.7	0.92	0.73	0.92	34.9
2	T1	All MCs	27	2.0	27	2.0	*0.242	37.9	LOS D	2.6	18.7	0.92	0.73	0.92	35.8
3	R2	All MCs	213	2.0	213	2.0	*0.871	56.5	LOS E	10.7	76.2	1.00	1.00	1.36	30.5
Appro	ach		278	2.0	278	2.0	0.871	52.9	LOS D	10.7	76.2	0.98	0.93	1.26	31.5
East:	Bolsov	ver Street	t												
4	L2	All MCs	131	2.0	131	2.0	0.642	42.3	LOS D	16.9	120.6	0.87	0.79	0.87	40.9
5	T1	All MCs	341	2.0	341	2.0	0.642	36.8	LOS D	16.9	120.6	0.87	0.79	0.87	42.2
6	R2	All MCs	4	2.0	4	2.0	0.034	62.3	LOS E	0.2	1.3	0.96	0.64	0.96	32.3
Appro	bach		476	2.0	476	2.0	0.642	38.5	LOS D	16.9	120.6	0.87	0.79	0.87	36.5
North	: North	Street													
7	L2	All MCs	17	2.0	17	2.0	0.185	43.0	LOS D	2.0	14.3	0.92	0.71	0.92	35.5
8	T1	All MCs	34	2.0	34	2.0	0.185	37.4	LOS D	2.0	14.3	0.92	0.71	0.92	36.5
9	R2	All MCs	35	2.0	35	2.0	0.142	43.8	LOS D	1.4	9.9	0.92	0.72	0.92	34.1
Appro	ach		85	2.0	85	2.0	0.185	41.1	LOS D	2.0	14.3	0.92	0.71	0.92	35.3
West	Lion (Creek Ro	ad												
10	L2	All MCs	51	2.0	51	2.0	0.869	59.5	LOS E	30.1	214.0	0.99	1.01	1.16	36.6
11	T1	All MCs	587	2.0	587	2.0	*0.869	53.9	LOS D	30.1	214.0	0.99	1.01	1.16	37.6
12	R2	All MCs	14	2.0	14	2.0	*0.112	68.7	LOS E	0.6	4.3	0.97	0.68	0.97	32.0
Appro	bach		652	2.0	652	2.0	0.869	54.6	LOS D	30.1	214.0	0.99	1.01	1.15	31.6
All Ve	hicles		1491	2.0	1491	2.0	0.871	48.4	LOS D	30.1	214.0	0.95	0.91	1.07	33.2



Weekday Morning peak hour – Large Crowd

Mov	Turn	Mov	Dem	nand	Ar	rival	Deg.	Aver.	Level of	95% E	Back Of	Prop.	Eff.	Aver.	Aver
ID		Class	Fl [Total veh/h				Satn v/c	Delay sec	Service	Qu [Veh. veh	eue Dist] m	Que	Stop Rate	No. of Cycles	Speec km/t
South	: North	n Street													
1	L2	All MCs	73	2.0	73	2.0	0.718	109.1	LOS F	9.4	66.7	1.00	0.86	1.09	25.8
2	T1	All MCs	53	2.0	53	2.0	*0.718	103.5	LOS F	9.4	66.7	1.00	0.86	1.09	26.3
3	R2	All MCs	363	2.0	363	2.0	* 1.260	347.1	LOS F	54.1	385.0	1.00	1.48	2.38	9.6
Appro	bach		488	2.0	488	2.0	1.260	285.5	LOS F	54.1	385.0	1.00	1.32	2.05	10.5
East:	Bolsov	ver Street													
4	L2	All MCs	464	2.0	464	2.0	1.299	355.7	LOS F	202.7	1443.1	1.00	1.95	2.43	9.6
5	T1	All MCs	841	2.0	841	2.0	* 1.299	350.1	LOS F	202.7	1443.1	1.00	1.95	2.43	9.
6	R2	All MCs	5	2.0	5	2.0	0.072	116.9	LOS F	0.4	2.8	0.99	0.65	0.99	24.8
Appro	bach		1311	2.0	1311	2.0	1.299	351.2	LOS F	202.7	1443.1	1.00	1.94	2.42	8.8
North	: North	Street													
7	L2	All MCs	31	2.0	31	2.0	0.372	109.8	LOS F	4.6	32.8	0.98	0.76	0.98	26.
8	T1	All MCs	35	2.0	35	2.0	0.372	104.2	LOS F	4.6	32.8	0.98	0.76	0.98	27.3
9	R2	All MCs	240	2.0	240	2.0	0.869	114.8	LOS F	19.0	135.3	1.00	0.95	1.21	25.3
Appro	bach		305	2.0	305	2.0	0.869	113.1	LOS F	19.0	135.3	1.00	0.91	1.16	20.3
West:	Lion (Creek Roa	ad												
10	L2	All MCs	59	2.0	59	2.0	0.425	40.4	LOS D	18.1	129.2	0.65	0.60	0.65	42.2
11	T1	All MCs	361	2.0	361	2.0	0.425	34.9	LOS C	18.1	129.2	0.65	0.60	0.65	43.
12	R2	All MCs	21	2.0	21	2.0	*0.287	98.4	LOS F	1.6	11.3	1.00	0.71	1.00	24.
Appro	bach		441	2.0	441	2.0	0.425	38.6	LOS D	18.1	129.2	0.67	0.61	0.67	36.
	hicles		2545	2.0	2545	2.0	1.299	255.8	LOS F	202.7	1443.1	0.94	1.47	1.89	11.

Weekday Afternoon peak hour – Large Crowd

Mov		ovement Mov	Dem			rival	Dea.	Aver.	Level of	05% P	ack Of	Prop.	Eff.	Aver.	Aver
D	Tunn	Class	F	lows	F	lows	Satn	Delay	Service	Qu	eue	Que	Stop	No. of	Speed
			l lotal veh/h		[Total veh/h	HV J %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/ł
South	n: North	n Street													
1	L2	All MCs	38	2.0	38	2.0	0.491	102.1	LOS F	6.2	44.0	0.99	0.78	0.99	26.
2	T1	All MCs	48	2.0	48	2.0	*0.491	96.5	LOS F	6.2	44.0	0.99	0.78	0.99	27.
3	R2	All MCs	349	2.0	349	2.0	* 1.045	168.0	LOS F	37.0	263.5	1.00	1.17	1.61	17.
Appro	bach		436	2.0	436	2.0	1.045	154.3	LOS F	37.0	263.5	1.00	1.09	1.49	16.
East:	Bolsov	ver Street													
4	L2	All MCs	466	2.0	466	2.0	0.928	86.0	LOS F	67.4	479.9	1.00	1.00	1.11	31.
5	T1	All MCs	411	2.0	411	2.0	0.928	80.4	LOS F	67.4	479.9	1.00	1.00	1.11	32.
6	R2	All MCs	4	2.0	4	2.0	0.057	113.6	LOS F	0.3	2.2	0.98	0.64	0.98	24.
Appro	bach		881	2.0	881	2.0	0.928	83.5	LOS F	67.4	479.9	1.00	0.99	1.11	25.
North	: North	Street													
7	L2	All MCs	35	2.0	35	2.0	0.449	76.8	LOS E	5.6	40.1	0.99	0.77	0.99	26.
8	T1	All MCs	44	2.0	44	2.0	0.449	71.3	LOS E	5.6	40.1	0.99	0.77	0.99	27.
9	R2	All MCs	58	2.0	58	2.0	0.158	58.7	LOS E	3.5	24.8	0.86	0.75	0.86	29.
Appro	bach		137	2.0	137	2.0	0.449	67.4	LOS E	5.6	40.1	0.94	0.76	0.94	28.
West	: Lion (Creek Roa	ad												
10	L2	All MCs	208	2.0	208	2.0	1.072	167.6	LOS F	111.2	791.4	1.00	1.40	1.56	18.
11	T1	All MCs	807	2.0	807	2.0	* 1.072	162.1	LOS F	111.2	791.4	1.00	1.40	1.56	19.
12	R2	All MCs	20	2.0	20	2.0	*0.273	119.2	LOS F	1.5	10.8	1.00	0.70	1.00	24.
Appro	bach		1036	2.0	1036	2.0	1.072	162.4	LOS F	111.2	791.4	1.00	1.39	1.55	16.
All Ve	hicles		2489	2.0	2489	2.0	1.072	127.8	LOS F	111.2	791.4	1.00	1.16	1.35	19.



Saturday Morning peak hour – Large Crowd

Mov	Turn	Mov	Dem	nand	Ar	rival	Deg.	Aver.	Level of	95% <u>E</u>	ack Of	Prop.	Eff.	Aver.	Aver
ID		Class	Fl [Total	lows HV]	F	lows HV]	Satn v/c				eue Dist] m	Que	Stop Rate	No. of Cycles	Speec km/t
South	: Norti	h Street	Veniin	/0	Veniin	70	v/C	360		Ven		_	_	_	KIT#1
1	L2	All MCs	46	2.0	46	2.0	0.441	89.5	LOS F	5.5	39.0	0.99	0.77	0.99	26.4
2	T1	All MCs	31	2.0	31	2.0	*0.441	83.9	LOS F	5.5	39.0	0.99	0.77	0.99	27.0
3	R2	All MCs	244	2.0	244	2.0	*1.184	269.7	LOS F	32.6	231.8	1.00	1.34	2.15	11.4
Appro	bach		321	2.0	321	2.0	1.184	226.0	LOS F	32.6	231.8	1.00	1.21	1.87	12.6
East:	Bolsov	ver Street													
4	L2	All MCs	427	2.0	427	2.0	1.247	300.1	LOS F	202.7	1443.3	1.00	1.84	2.24	11.1
5	T1	All MCs	972	2.0	972	2.0	*1.247	294.5	LOS F	202.7	1443.3	1.00	1.84	2.24	11.1
6	R2	All MCs	3	2.0	3	2.0	0.043	112.3	LOS F	0.2	1.6	0.98	0.63	0.98	24.9
Appro	bach		1402	2.0	1402	2.0	1.247	295.8	LOS F	202.7	1443.3	1.00	1.84	2.23	10.2
North	: North	Street													
7	L2	All MCs	23	2.0	23	2.0	0.270	110.1	LOS F	3.3	23.5	0.97	0.74	0.97	26.9
8	T1	All MCs	24	2.0	24	2.0	0.270	104.5	LOS F	3.3	23.5	0.97	0.74	0.97	27.4
9	R2	All MCs	212	2.0	212	2.0	1.123	241.3	LOS F	25.5	181.5	1.00	1.26	1.95	13.5
Appro	bach		259	2.0	259	2.0	1.123	216.7	LOS F	25.5	181.5	0.99	1.17	1.77	13.1
West	Lion (Creek Roa	ad												
10	L2	All MCs	35	2.0	35	2.0	0.481	35.3	LOS D	21.5	153.4	0.61	0.57	0.61	44.4
11	T1	All MCs	495	2.0	495	2.0	0.481	29.7	LOS C	21.5	153.4	0.61	0.57	0.61	46.0
12	R2	All MCs	26	2.0	26	2.0	*0.359	97.7	LOS F	2.0	14.3	1.00	0.72	1.00	24.4
Appro	bach		556	2.0	556	2.0	0.481	33.3	LOS C	21.5	153.4	0.63	0.58	0.63	38.7
All Ve	hicles		2538	2.0	2538	2.0	1.247	221.4	LOS F	202.7	1443.3	0.92	1.41	1.79	12.9

Saturday Afternoon peak hour – Large Crowd

10.000		ovement	1002555												
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Que [Veh. veh		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Ave Spee km/l
South	: North	Street	ven/m	/0	ven/m	/0	V/C	360	_	Ven		_	_	_	KI1/1
1		All MCs	38	2.0	38	2.0	0.374	79.2	LOS E	4.6	32.8	0.98	0.76	0.98	26.
2	000000	All MCs	2228221.5	2.0	27		* 0.374	73.6	LOS E	4.6	32.8	0.98	0.76	0.98	27.
3	1816	All MCs	213	2.0	213	177.252	* 0.980	113.8	LOS F	19.8	141.0	1.00	1.07	1.48	21.
Appro		All WOS	278		278		0.980	105.2	LOS F	19.8	141.0	1.00	1.00	1.36	21.
East:	Bolsov	/er Street	t												
4	L2	All MCs	436	2.0	436	2.0	0.711	46.7	LOS D	39.5	281.1	0.77	0.79	0.77	40.
5	T1	All MCs	341	2.0	341	2.0	0.711	41.1	LOS D	39.5	281.1	0.77	0.79	0.77	41.
6	R2	All MCs	4	2.0	4	2.0	0.057	101.4	LOS F	0.3	2.2	0.98	0.64	0.98	24.
Appro	ach		781	2.0	781	2.0	0.711	44.5	LOS D	39.5	281.1	0.77	0.78	0.77	34.
North	: North	Street													
7	L2	All MCs	17	2.0	17	2.0	0.286	75.4	LOS E	3.5	25.1	0.97	0.74	0.97	27
8	T1	All MCs	34	2.0	34	2.0	0.286	69.8	LOS E	3.5	25.1	0.97	0.74	0.97	27.
9	R2	All MCs	35	2.0	35	2.0	0.158	70.0	LOS E	2.3	16.4	0.93	0.73	0.93	27.
Appro	ach		85	2.0	85	2.0	0.286	71.0	LOS E	3.5	25.1	0.95	0.73	0.95	27.
West	Lion (Creek Roa	ad												
10	L2	All MCs	203	2.0	203	2.0	0.991	100.7	LOS F	100.2	713.2	1.00	1.16	1.23	27.
11	T1	All MCs	893	2.0	893	2.0	*0.991	95.2	LOS F	100.2	713.2	1.00	1.16	1.23	28.
12	R2	All MCs	14	2.0	14	2.0	*0.187	112.7	LOS F	1.0	7.3	1.00	0.69	1.00	24.
Appro	ach		1109	2.0	1109	2.0	0.991	96.4	LOS F	100.2	713.2	1.00	1.15	1.23	23.
All Ve	hicles		2254	2.0	2254	2.0	0.991	78.5	LOS E	100.2	713.2	0.92	0.99	1.08	26.



Graeme Acton Way / Sir Raymond Huish Drive;

Vehi	cle M	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		lack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/t
East:	Lion C	reek Roa	ad												
5	T1	All MCs	520	2.0	520	2.0	0.270	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	156	2.0	156	2.0	0.135	7.3	LOS A	0.6	4.3	0.49	0.69	0.49	51.2
Appro	bach		676	2.0	676	2.0	0.270	1.7	NA	0.6	4.3	0.11	0.16	0.11	57.6
North	: Huisl	h Drive													
7	L2	All MCs	39	2.0	39	2.0	0.061	7.1	LOS A	0.2	1.5	0.52	0.68	0.52	50.5
9	R2	All MCs	6	2.0	6	2.0	0.061	19.3	LOS C	0.2	1.5	0.52	0.68	0.52	50.2
Appro	bach		45	2.0	45	2.0	0.061	8.8	LOS A	0.2	1.5	0.52	0.68	0.52	50.4
West	Lion	Creek Ro	ad												
10	L2	All MCs	27	2.0	27	2.0	0.224	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.0
11	T1	All MCs	403	2.0	403	2.0	0.224	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Appro	bach		431	2.0	431	2.0	0.224	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.4
All Ve	hicles		1152	2.0	1152	2.0	0.270	1.5	NA	0.6	4.3	0.09	0.13	0.09	57.9

Weekday Morning peak hour – Typical Crowd

Weekday Afternoon peak hour – Typical Crowd

Mov	Turn	Mov	Dem			rival	Deg.	Aver.	Level of		ack Of	Prop.	Eff.	Aver.	Aver
ID		Class			Fi [Total veh/h	ows HV] %	Satn v/c	Delay sec	Service	Que [Veh. veh	eue Dist] m	Que	Stop Rate	No. of Cycles	Speec km/h
East:	Lion C	reek Roa	ad												
5	T1	All MCs	434	2.0	434	2.0	0.225	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	51	2.0	51	2.0	0.045	7.2	LOS A	0.2	1.3	0.48	0.66	0.48	51.3
Appro	bach		484	2.0	484	2.0	0.225	0.8	NA	0.2	1.3	0.05	0.07	0.05	58.8
North	: Huisł	n Drive													
7	L2	All MCs	108	2.0	108	2.0	0.121	7.4	LOS A	0.5	3.3	0.49	0.70	0.49	51.1
9	R2	All MCs	5	2.0	5	2.0	0.121	16.2	LOS C	0.5	3.3	0.49	0.70	0.49	50.9
Appro	bach		114	2.0	114	2.0	0.121	7.8	LOS A	0.5	3.3	0.49	0.70	0.49	51.1
West	Lion (Creek Ro	ad												
10	L2	All MCs	4	2.0	4	2.0	0.236	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	451	2.0	451	2.0	0.236	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Appro	bach		455	2.0	455	2.0	0.236	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
All Ve	hicles		1053	2.0	1053	2.0	0.236	1.3	NA	0.5	3.3	0.08	0.11	0.08	58.3



Saturday Morning peak hour – Typical Crowd

Vehi	cle Mo	ovement	t Perfo	rmai	nce										
Mov ID	Turn	Mov Class	Dem Fl [Total veh/h	ows HV]	FI	rival ows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		Back Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/ł
East:	Lion C	reek Roa	ad												
5	T1	All MCs	612	2.0	612	2.0	0.318	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	136	2.0	136	2.0	0.129	7.7	LOS A	0.6	3.9	0.53	0.72	0.53	51.0
Appro	bach		747	2.0	747	2.0	0.318	1.5	NA	0.6	3.9	0.10	0.13	0.10	58.0
North	: Huisł	n Drive													
7	L2	All MCs	78	2.0	78	2.0	0.119	7.7	LOS A	0.4	3.1	0.57	0.74	0.57	50.2
9	R2	All MCs	7	2.0	7	2.0	0.119	25.8	LOS D	0.4	3.1	0.57	0.74	0.57	49.9
Appro	bach		85	2.0	85	2.0	0.119	9.2	LOS A	0.4	3.1	0.57	0.74	0.57	50.1
West	: Lion (Creek Ro	ad												
10	L2	All MCs	7	2.0	7	2.0	0.261	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	495	2.0	495	2.0	0.261	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Appro	bach		502	2.0	502	2.0	0.261	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Ve	hicles		1335	2.0	1335	2.0	0.318	1.5	NA	0.6	3.9	0.09	0.12	0.09	58.0

Saturday Afternoon peak hour – Typical Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class		ows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Qu [Veh. veh	ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/t
East:	Lion C	reek Roa	ad												
5	T1	All MCs	396	2.0	396	2.0	0.206	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	26	2.0	26	2.0	0.027	7.8	LOS A	0.1	0.8	0.53	0.68	0.53	50.9
Appro	bach		422	2.0	422	2.0	0.206	0.5	NA	0.1	0.8	0.03	0.04	0.03	59.2
North	: Huisł	n Drive													
7	L2	All MCs	102	2.0	102	2.0	0.120	8.1	LOS A	0.5	3.2	0.53	0.74	0.53	50.8
9	R2	All MCs	2	2.0	2	2.0	0.120	17.6	LOS C	0.5	3.2	0.53	0.74	0.53	50.6
Appro	bach		104	2.0	104	2.0	0.120	8.3	LOS A	0.5	3.2	0.53	0.74	0.53	50.8
West	: Lion (Creek Ro	ad												
10	L2	All MCs	7	2.0	7	2.0	0.291	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	553	2.0	553	2.0	0.291	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Appro	bach		560	2.0	560	2.0	0.291	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Ve	hicles		1086	2.0	1086	2.0	0.291	1.1	NA	0.5	3.2	0.06	0.09	0.06	58.6



Weekday Morning peak hour – Large Crowd

Mov	Turn	Mov	Dem	hand	Δr	rival	Deg.	Aver.	Level of	95% F	Back Of	Prop.	Eff.	Aver.	Aver
ID	Turri	Class		lows		ows	Satn	Delay	Service		eue	Que	Stop	No. of	Speed
		01033			[Total		Oaur	Delay	0011100	[Veh.	Dist]	Que	Rate	Cycles	opeer
			veh/h		veh/h	%	v/c	sec		veh	m			-,	km/h
East:	Lion C	reek Roa	ad												
5	T1	All MCs	520	2.0	520	2.0	0.270	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	614	2.0	614	2.0	0.534	9.2	LOS A	4.6	32.7	0.64	0.86	0.92	49.9
Appro	bach		1134	2.0	1134	2.0	0.534	5.0	NA	4.6	32.7	0.35	0.46	0.50	54.0
North	: Huisł	n Drive													
7	L2	All MCs	39	2.0	39	2.0	0.092	7.1	LOS A	0.3	2.2	0.63	0.72	0.63	48.6
9	R2	All MCs	6	2.0	6	2.0	0.092	38.9	LOS E	0.3	2.2	0.63	0.72	0.63	48.4
Appro	bach		45	2.0	45	2.0	0.092	11.5	LOS B	0.3	2.2	0.63	0.72	0.63	48.6
West	Lion (Creek Ro	ad												
10	L2	All MCs	27	2.0	27	2.0	0.224	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.0
11	T1	All MCs	403	2.0	403	2.0	0.224	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.
Appro	bach		431	2.0	431	2.0	0.224	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.4
All Ve	hicles		1609	2.0	1609	2.0	0.534	4.0	NA	4.6	32.7	0.26	0.36	0.37	55.2

Weekday Afternoon peak hour – Large Crowd

Vehi	cle Mo	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	[Total	ows HV]	Fi [Total	rival lows HV]	Deg. Satn	Aver. Delay	Level of Service		lack Of eue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m		1 - 1 - 1 - 1 		km/ł
East:	Lion C	reek Roa	ad												
5	T1	All MCs	434	2.0	434	2.0	0.225	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	51	2.0	51	2.0	0.045	7.2	LOS A	0.2	1.3	0.48	0.66	0.48	51.3
Appro	bach		484	2.0	484	2.0	0.225	0.8	NA	0.2	1.3	0.05	0.07	0.05	58.
North	: Huisł	n Drive													
7	L2	All MCs	566	2.0	566	2.0	0.564	9.7	LOS A	4.5	32.2	0.64	0.91	0.99	49.
9	R2	All MCs	5	2.0	5	2.0	0.564	23.1	LOS C	4.5	32.2	0.64	0.91	0.99	49.
Appro	bach		572	2.0	572	2.0	0.564	9.8	LOS A	4.5	32.2	0.64	0.91	0.99	49.
West	: Lion (Creek Ro	ad												
10	L2	All MCs	4	2.0	4	2.0	0.236	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.
11	T1	All MCs	451	2.0	451	2.0	0.236	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.
Appro	bach		455	2.0	455	2.0	0.236	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.
All Ve	hicles		1511	2.0	1511	2.0	0.564	4.0	NA	4.5	32.2	0.26	0.37	0.39	55.3



Saturday Morning peak hour – Large Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		Back Of leue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/h
East:	Lion C	reek Roa		70	VGHITT	70	1/0	300		Ven					KIIDT
5	T1	All MCs	612	2.0	612	2.0	0.432	0.6	LOS A	2.1	15.0	0.49	0.13	0.49	57.9
6	R2	All MCs	594	2.0	594	2.0	0.565	10.2	LOS B	4.9	34.7	0.68	0.94	1.08	49.2
Appro	ach		1205	2.0	1205	2.0	0.565	5.3	NA	4.9	34.7	0.59	0.53	0.78	53.3
North	: Huisł	n Drive													
7	L2	All MCs	78	2.0	78	2.0	0.166	7.7	LOS A	0.6	4.0	0.65	0.78	0.65	48.6
9	R2	All MCs	7	2.0	7	2.0	0.166	51.9	LOS F	0.6	4.0	0.65	0.78	0.65	48.4
Appro	ach		85	2.0	85	2.0	0.166	11.5	LOS B	0.6	4.0	0.65	0.78	0.65	48.6
West	Lion (Creek Ro	ad												
10	L2	All MCs	7	2.0	7	2.0	0.261	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	495	2.0	495	2.0	0.261	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Appro	ach		502	2.0	502	2.0	0.261	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Ve	hicles		1793	2.0	1793	2.0	0.565	4.2	NA	4.9	34.7	0.42	0.40	0.55	54.7

Saturday Afternoon peak hour – Large Crowd

Vehi	cle Mo	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Lion C	reek Roa	ad												
5	T1	All MCs	396	2.0	396	2.0	0.206	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	26	2.0	26	2.0	0.027	7.8	LOS A	0.1	0.8	0.53	0.68	0.53	50.9
Appro	bach		422	2.0	422	2.0	0.206	0.5	NA	0.1	0.8	0.03	0.04	0.03	59.2
North	: Huisł	n Drive													
7	L2	All MCs	559	2.0	559	2.0	0.623	11.3	LOS B	5.1	36.2	0.70	1.03	1.24	48.7
9	R2	All MCs	2	2.0	2	2.0	0.623	25.8	LOS D	5.1	36.2	0.70	1.03	1.24	48.5
Appro	ach		561	2.0	561	2.0	0.623	11.4	LOS B	5.1	36.2	0.70	1.03	1.24	48.7
West:	Lion (Creek Ro	ad												
10	L2	All MCs	7	2.0	7	2.0	0.291	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	553	2.0	553	2.0	0.291	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Appro	bach		560	2.0	560	2.0	0.291	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Ve	hicles		1543	2.0	1543	2.0	0.623	4.3	NA	5.1	36.2	0.26	0.39	0.46	55.1



Graeme Acton Way / Hall Street;

Weekday Morning peak hour – Typical Crowd

Vehic	cle Mo	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class		ows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Ave Spee km/
East:	Lion C	reek Roa			- Contraction			000							
5	T1	All MCs	291	2.0	291	2.0	0.162	0.1	LOS A	0.1	0.9	0.04	0.05	0.04	59.
6	R2	All MCs	16	2.0	16	2.0	0.162	6.3	LOS A	0.1	0.9	0.04	0.05	0.04	56.0
Appro	ach		306	2.0	306	2.0	0.162	0.4	NA	0.1	0.9	0.04	0.05	0.04	59.4
North	: Hall S	Street													
7	L2	All MCs	17	2.0	17	2.0	0.024	6.3	LOS A	0.1	0.6	0.35	0.57	0.35	52.
9	R2	All MCs	8	2.0	8	2.0	0.024	8.0	LOS A	0.1	0.6	0.35	0.57	0.35	51.4
Appro	ach		25	2.0	25	2.0	0.024	6.9	LOS A	0.1	0.6	0.35	0.57	0.35	51.
West:	Lion (Creek Ro	ad												
10	L2	All MCs	73	2.0	73	2.0	0.161	5.6	LOS A	0.4	3.0	0.04	0.14	0.04	56.4
11	T1	All MCs	220	2.0	220	2.0	0.161	0.0	LOS A	0.4	3.0	0.04	0.14	0.04	58.
Appro	ach		293	2.0	293	2.0	0.161	1.4	NA	0.4	3.0	0.04	0.14	0.04	58.
All Ve	hicles		624	2.0	624	2.0	0.162	1.1	NA	0.4	3.0	0.05	0.11	0.05	58.4

Weekday Afternoon peak hour – Typical Crowd

Vehic	cle Mo	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [Total] veh/h	lows HV]	FI	rival ows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Que [Veh. veh		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/t
East:	Lion C	reek Roa	ad												
5	T1	All MCs	183	2.0	183	2.0	0.132	0.3	LOS A	0.4	2.6	0.18	0.21	0.18	58.1
6	R2	All MCs	51	2.0	51	2.0	0.132	6.4	LOS A	0.4	2.6	0.18	0.21	0.18	55.4
Appro	ach		234	2.0	234	2.0	0.132	1.6	NA	0.4	2.6	0.18	0.21	0.18	57.5
North	: Hall \$	Street													
7	L2	All MCs	46	2.0	46	2.0	0.141	6.5	LOS A	0.5	3.6	0.42	0.67	0.42	51.7
9	R2	All MCs	83	2.0	83	2.0	0.141	7.9	LOS A	0.5	3.6	0.42	0.67	0.42	51.1
Appro	ach		129	2.0	129	2.0	0.141	7.4	LOS A	0.5	3.6	0.42	0.67	0.42	51.3
West:	Lion (Creek Ro	ad												
10	L2	All MCs	29	2.0	29	2.0	0.150	5.7	LOS A	0.2	1.3	0.03	0.06	0.03	57.1
11	T1	All MCs	251	2.0	251	2.0	0.150	0.0	LOS A	0.2	1.3	0.03	0.06	0.03	59.3
Appro	ach		280	2.0	280	2.0	0.150	0.6	NA	0.2	1.3	0.03	0.06	0.03	59.0
All Ve	hicles		643	2.0	643	2.0	0.150	2.4	NA	0.5	3.6	0.17	0.24	0.17	56.8



Saturday Morning peak hour – Typical Crowd

Mov	Turn	Mov	Dem	and	Ar	rival	Deg.	Aver.	Level of	95% B	ack Of	Prop.	Eff.	Aver.	Aver
ID	, airi	Class	FI Total	ows HV]	FI [Total]	ows HV]	Satn	Delay	Service	Qu [Veh.	eue Dist]	Que	Stop Rate	No. of Cycles	Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East:	Lion C	reek Roa	ad												
5	T1	All MCs	305	2.0	305	2.0	0.204	0.2	LOS A	0.5	3.5	0.15	0.17	0.15	58.5
6	R2	All MCs	63	2.0	63	2.0	0.204	6.4	LOS A	0.5	3.5	0.15	0.17	0.15	55.7
Appro	bach		368	2.0	368	2.0	0.204	1.3	NA	0.5	3.5	0.15	0.17	0.15	58.0
North	: Hall \$	Street													
7	L2	All MCs	71	2.0	71	2.0	0.114	6.4	LOS A	0.4	3.0	0.40	0.62	0.40	51.8
9	R2	All MCs	40	2.0	40	2.0	0.114	9.0	LOS A	0.4	3.0	0.40	0.62	0.40	51.2
Appro	bach		111	2.0	111	2.0	0.114	7.3	LOS A	0.4	3.0	0.40	0.62	0.40	51.5
West	: Lion (Creek Ro	ad												
10	L2	All MCs	94	2.0	94	2.0	0.181	5.8	LOS A	0.6	4.0	0.10	0.18	0.10	55.9
11	T1	All MCs	228	2.0	228	2.0	0.181	0.1	LOS A	0.6	4.0	0.10	0.18	0.10	58.0
Appro	bach		322	2.0	322	2.0	0.181	1.8	NA	0.6	4.0	0.10	0.18	0.10	57.4
All Ve	hicles		801	2.0	801	2.0	0.204	2.3	NA	0.6	4.0	0.16	0.24	0.16	56.8

Saturday Afternoon peak hour – Typical Crowd

Vehi	cle M	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Que [Veh. veh	ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Lion C	Creek Roa	ad												
5	T1	All MCs	234	2.0	234	2.0	0.144	0.2	LOS A	0.2	1.7	0.11	0.13	0.11	58.9
6	R2	All MCs	31	2.0	31	2.0	0.144	6.5	LOS A	0.2	1.7	0.11	0.13	0.11	56.1
Appro	bach		264	2.0	264	2.0	0.144	0.9	NA	0.2	1.7	0.11	0.13	0.11	58.6
North	: Hall S	Street													
7	L2	All MCs	29	2.0	29	2.0	0.135	6.6	LOS A	0.5	3.3	0.45	0.70	0.45	51.4
9	R2	All MCs	83	2.0	83	2.0	0.135	8.2	LOS A	0.5	3.3	0.45	0.70	0.45	50.9
Appro	bach		113	2.0	113	2.0	0.135	7.8	LOS A	0.5	3.3	0.45	0.70	0.45	51.0
West:	Lion	Creek Ro	ad												
10	L2	All MCs	22	2.0	22	2.0	0.158	5.6	LOS A	0.1	1.0	0.02	0.04	0.02	57.3
11	T1	All MCs	276	2.0	276	2.0	0.158	0.0	LOS A	0.1	1.0	0.02	0.04	0.02	59.5
Appro	bach		298	2.0	298	2.0	0.158	0.4	NA	0.1	1.0	0.02	0.04	0.02	59.3
All Ve	hicles		675	2.0	675	2.0	0.158	1.8	NA	0.5	3.3	0.13	0.19	0.13	57.5



Weekday Morning peak hour – Large Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class		ows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		Back Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/ł
East:	Lion C	reek Roa	ad								2008				
5	T1	All MCs	443	2.0	443	2.0	0.243	0.1	LOS A	0.2	1.1	0.04	0.05	0.04	59.6
6	R2	All MCs	16	2.0	16	2.0	0.243	7.1	LOS A	0.2	1.1	0.04	0.05	0.04	56.7
Appro	bach		459	2.0	459	2.0	0.243	0.3	NA	0.2	1.1	0.04	0.05	0.04	59.5
North	: Hall \$	Street													
7	L2	All MCs	17	2.0	17	2.0	0.039	6.9	LOS A	0.1	0.9	0.53	0.67	0.53	50.4
9	R2	All MCs	8	2.0	8	2.0	0.039	14.0	LOS B	0.1	0.9	0.53	0.67	0.53	49.9
Appro	bach		25	2.0	25	2.0	0.039	9.3	LOS A	0.1	0.9	0.53	0.67	0.53	50.3
West	Lion (Creek Ro	ad												
10	L2	All MCs	531	2.0	531	2.0	0.531	5.7	LOS A	3.8	27.2	0.11	0.32	0.11	54.5
11	T1	All MCs	373	2.0	373	2.0	0.531	0.0	LOS A	3.8	27.2	0.11	0.32	0.11	56.5
Appro	bach		903	2.0	903	2.0	0.531	3.4	NA	3.8	27.2	0.11	0.32	0.11	55.3
All Ve	hicles		1387	2.0	1387	2.0	0.531	2.5	NA	3.8	27.2	0.09	0.24	0.09	56.5

Weekday Afternoon peak hour – Large Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival ows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		Back Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/t
East:	Lion C	reek Roa	ad												
5	T1	All MCs	336	2.0	336	2.0	0.218	0.4	LOS A	0.5	3.4	0.16	0.19	0.16	58.6
6	R2	All MCs	51	2.0	51	2.0	0.218	7.3	LOS A	0.5	3.4	0.16	0.19	0.16	55.8
Appro	bach		386	2.0	386	2.0	0.218	1.3	NA	0.5	3.4	0.16	0.19	0.16	58.2
North	: Hall S	Street													
7	L2	All MCs	46	2.0	46	2.0	1.031	61.1	LOS F	30.1	214.2	1.00	2.83	7.06	28.1
9	R2	All MCs	541	2.0	541	2.0	1.031	66.9	LOS F	30.1	214.2	1.00	2.83	7.06	28.0
Appro	ach		587	2.0	587	2.0	1.031	66.4	LOS F	30.1	214.2	1.00	2.83	7.06	28.0
West	Lion (Creek Ro	ad												
10	L2	All MCs	29	2.0	29	2.0	0.229	5.7	LOS A	0.2	1.5	0.02	0.04	0.02	57.3
11	T1	All MCs	403	2.0	403	2.0	0.229	0.0	LOS A	0.2	1.5	0.02	0.04	0.02	59.5
Appro	bach		433	2.0	433	2.0	0.229	0.4	NA	0.2	1.5	0.02	0.04	0.02	59.4
All Ve	hicles		1406	2.0	1406	2.0	1.031	28.2	NA	30.1	214.2	0.47	1.25	3.00	40.3



Saturday Morning peak hour – Large Crowd

Mov ID	Turn	Mov Class	Dem Fl	and ows	Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h	HV]	[Total veh/h		v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
East:	Lion C	reek Roa	d												
5	T1	All MCs	458	2.0	458	2.0	0.291	0.4	LOS A	0.6	4.4	0.15	0.18	0.15	58.7
6	R2	All MCs	63	2.0	63	2.0	0.291	7.3	LOS A	0.6	4.4	0.15	0.18	0.15	55.9
Appro	bach		521	2.0	521	2.0	0.291	1.2	NA	0.6	4.4	0.15	0.18	0.15	58.4
North	: Hall S	Street													
7	L2	All MCs	60	2.0	60	2.0	0.184	7.1	LOS A	0.6	4.4	0.62	0.77	0.62	49.3
9	R2	All MCs	40	2.0	40	2.0	0.184	16.5	LOS C	0.6	4.4	0.62	0.77	0.62	48.8
Appro	bach		100	2.0	100	2.0	0.184	10.9	LOS B	0.6	4.4	0.62	0.77	0.62	49.1
West:	Lion (Creek Ro	ad												
10	L2	All MCs	552	2.0	552	2.0	0.563	6.0	LOS A	4.2	29.6	0.25	0.35	0.25	54.0
11	T1	All MCs	381	2.0	381	2.0	0.563	0.3	LOS A	4.2	29.6	0.25	0.35	0.25	56.0
Appro	bach		933	2.0	933	2.0	0.563	3.7	NA	4.2	29.6	0.25	0.35	0.25	54.8
All Ve	hicles		1554	2.0	1554	2.0	0.563	3.3	NA	4.2	29.6	0.24	0.32	0.24	55.5

Saturday Afternoon peak hour – Large Crowd

Vehi	cle Mo	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fi [Total veh/h	lows HV]		rival ows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		Back Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/h
East:	Lion C	reek Roa	ad												
5	T1	All MCs	386	2.0	386	2.0	0.228	0.2	LOS A	0.3	2.2	0.10	0.12	0.10	59.2
6	R2	All MCs	31	2.0	31	2.0	0.228	7.4	LOSA	0.3	2.2	0.10	0.12	0.10	56.3
Appro	bach		417	2.0	417	2.0	0.228	0.8	NA	0.3	2.2	0.10	0.12	0.10	59.0
North	: Hall \$	Street													
7	L2	All MCs	29	2.0	29	2.0	1.086	100.9	LOS F	41.3	293.8	1.00	3.49	9.50	21.4
9	R2	All MCs	541	2.0	541	2.0	1.086	107.1	LOS F	41.3	293.8	1.00	3.49	9.50	21.3
Appro	bach		571	2.0	571	2.0	1.086	106.8	LOS F	41.3	293.8	1.00	3.49	9.50	21.4
West	: Lion (Creek Ro	ad												
10	L2	All MCs	22	2.0	22	2.0	0.237	5.6	LOS A	0.2	1.1	0.01	0.03	0.01	57.5
11	T1	All MCs	428	2.0	428	2.0	0.237	0.0	LOS A	0.2	1.1	0.01	0.03	0.01	59.7
Appro	bach		451	2.0	451	2.0	0.237	0.3	NA	0.2	1.1	0.01	0.03	0.01	59.6
All Ve	hicles		1438	2.0	1438	2.0	1.086	42.7	NA	41.3	293.8	0.43	1.43	3.80	34.8



Weekday Afternoon peak hour – Sensitivity (3,000 patrons)

Vehic	cle Mo	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival ows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		Back Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Lion C	Creek Roa	ad												
5	T1	All MCs	293	2.0	293	2.0	0.194	0.4	LOS A	0.4	3.2	0.17	0.19	0.17	58.5
6	R2	All MCs	51	2.0	51	2.0	0.194	7.0	LOS A	0.4	3.2	0.17	0.19	0.17	55.7
Appro	ach		343	2.0	343	2.0	0.194	1.3	NA	0.4	3.2	0.17	0.19	0.17	<mark>58</mark> .1
North	Hall	Street													
7	L2	All MCs	46	2.0	46	2.0	0.710	11.2	LOS B	5.5	39.2	0.77	1.17	1.60	46.8
9	R2	All MCs	409	2.0	409	2.0	0.710	15.1	LOS C	5.5	39.2	0.77	1.17	1.60	46.4
Appro	ach		456	2.0	456	2.0	0.710	14.7	LOS B	5.5	39.2	0.77	1.17	1.60	46.4
West:	Lion (Creek Ro	ad												
10	L2	All MCs	29	2.0	29	2.0	0.207	5.7	LOS A	0.2	1.4	0.03	0.05	0.03	57.3
11	T1	All MCs	360	2.0	360	2.0	0.207	0.0	LOS A	0.2	1.4	0.03	0.05	0.03	59.5
Appro	ach		389	2.0	389	2.0	0.207	0.4	NA	0.2	1.4	0.03	0.05	0.03	59.3
All Ve	hicles		1188	2.0	1188	2.0	0.710	6.2	NA	5.5	39.2	0.35	0.52	0.67	53.3



Graeme Acton Way / Exhibition Road;

Weekday Morning peak hour – Typical Crowd

Mov ID	Turn	Mov Class	Dem	nand lows		rival ows	Deg. Satn	Aver. Delav	Level of Service		lack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
		01835		HV]	[Total veh/h		v/c	sec	OCI VICE	[Veh. veh	Dist] m	Que	Rate	Cycles	km/h
South	: Exhil	bition Roa		70	Venin	70	110	300		VCII					KITIZTI
1	L2	All MCs	15	2.0	15	2.0	0.458	8.0	LOS A	2.3	16.4	0.63	0.94	0.91	49.1
3	R2	All MCs	282	2.0	282	2.0	0.458	11.3	LOS B	2.3	16.4	0.63	0.94	0.91	48.6
Appro	bach		297	2.0	297	2.0	0.458	11.2	LOS B	2.3	16.4	0.63	0.94	0.91	48.6
East:	Lion C	reek Roa	ad												
4	L2	All MCs	297	2.0	297	2.0	0.340	5.6	LOS A	1.8	12.5	0.06	0.28	0.06	55.1
5	T1	All MCs	292	2.0	292	2.0	0.340	0.0	LOS A	1.8	12.5	0.06	0.28	0.06	57.1
Appro	bach		588	2.0	588	2.0	0.340	2.9	NA	1.8	12.5	0.06	0.28	0.06	56.1
West	Lion (Creek Ro	ad												
11	T1	All MCs	225	2.0	225	2.0	0.125	0.1	LOS A	0.1	0.6	0.04	0.05	0.04	59.6
12	R2	All MCs	11	2.0	11	2.0	0.125	6.6	LOS A	0.1	0.6	0.04	0.05	0.04	56.7
Appro	bach		236	2.0	236	2.0	0.125	0.4	NA	0.1	0.6	0.04	0.05	0.04	59.4
All Ve	hicles		1121	2.0	1121	2.0	0.458	4.5	NA	2.3	16.4	0.21	0.41	0.28	54.5

Weekday Afternoon peak hour – Typical Crowd

Vehic	le Mo	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Derr Fl [Total veh/h	lows HV]	FI	rival ows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Qui [Veh. veh		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/l
South	: Exhil	bition Roa	ad												
1	L2	All MCs	11	2.0	11	2.0	0.386	7.3	LOS A	1.8	12.6	0.59	0.89	0.78	49.6
3	R2	All MCs	247	2.0	247	2.0	0.386	10.5	LOS B	1.8	12.6	0.59	0.89	0.78	49.1
Appro	ach		258	2.0	258	2.0	0.386	10.4	LOS B	1.8	12.6	0.59	0.89	0.78	49.1
East:	Lion C	reek Roa	ad												
4	L2	All MCs	281	2.0	281	2.0	0.295	5.7	LOS A	1.5	10.7	0.07	0.30	0.07	54.8
5	T1	All MCs	223	2.0	223	2.0	0.295	0.0	LOS A	1.5	10.7	0.07	0.30	0.07	56.8
Appro	ach		504	2.0	504	2.0	0.295	3.2	NA	1.5	10.7	0.07	0.30	0.07	55.7
West:	Lion (Creek Ro	ad												
11	T1	All MCs	283	2.0	283	2.0	0.157	0.1	LOS A	0.1	0.8	0.04	0.05	0.04	59.6
12	R2	All MCs	14	2.0	14	2.0	0.157	6.3	LOS A	0.1	0.8	0.04	0.05	0.04	56.7
Appro	ach		297	2.0	297	2.0	0.157	0.3	NA	0.1	0.8	0.04	0.05	0.04	59.4
All Ve	hicles		1059	2.0	1059	2.0	0.386	4.1	NA	1.8	12.6	0.19	0.37	0.23	54.9



Saturday Morning peak hour – Typical Crowd

Mov	Turo	Mov	Dem	and	Ar	rival	Deq.	Aver.	Level of	95% F	Back Of	Prop.	Eff.	Aver.	Aver
ID	Turri	Class	Fl [Total	ows HV]	FI [Total]	ows HV]	Satn	Delay	Service	Qu [Veh.	ieue Dist]	Que	Stop Rate	No. of Cycles	Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/ł
South	: Exhil	bition Roa	ad												
1	L2	All MCs	17	2.0	17	2.0	0.569	9.5	LOS A	3.1	21.9	0.75	1.05	1.25	47.3
3	R2	All MCs	293	2.0	293	2.0	0.569	14.3	LOS B	3.1	21.9	0.75	1.05	1.25	46.8
Appro	bach		309	2.0	309	2.0	0.569	14.0	LOS B	3.1	21.9	0.75	1.05	1.25	46.8
East:	Lion C	reek Roa	d												
4	L2	All MCs	327	2.0	327	2.0	0.391	5.7	LOS A	2.1	15.0	0.07	0.26	0.07	55.1
5	T1	All MCs	351	2.0	351	2.0	0.391	0.0	LOS A	2.1	15.0	0.07	0.26	0.07	57.2
Appro	bach		678	2.0	678	2.0	0.391	2.7	NA	2.1	15.0	0.07	0.26	0.07	56.2
West	Lion (Creek Ro	ad												
11	T1	All MCs	285	2.0	285	2.0	0.159	0.1	LOS A	0.1	0.9	0.05	0.06	0.05	59.5
12	R2	All MCs	14	2.0	14	2.0	0.159	6.9	LOS A	0.1	0.9	0.05	0.06	0.05	56.6
Appro	bach		299	2.0	299	2.0	0.159	0.4	NA	0.1	0.9	0.05	0.06	0.05	59.4
All Ve	hicles		1286	2.0	1286	2.0	0.569	4.9	NA	3.1	21.9	0.23	0.41	0.35	54.2

Saturday Afternoon peak hour – Typical Crowd

Vehic	cle Mo	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [Total veh/h	lows HV]	F	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Qui [Veh. veh	ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/t
South	: Exhil	bition Roa	ad												
1	L2	All MCs	13	2.0	13	2.0	0.539	8.4	LOS A	3.1	22.1	0.66	0.99	1.05	48.7
3	R2	All MCs	345	2.0	345	2.0	0.539	11.9	LOS B	3.1	22.1	0.66	0.99	1.05	48.2
Appro	ach		358	2.0	358	2.0	0.539	11.8	LOS B	3.1	22.1	0.66	0.99	1.05	48.2
East:	Lion C	creek Roa	ad												
4	L2	All MCs	209	2.0	209	2.0	0.265	5.7	LOS A	1.2	8.5	0.06	0.25	0.06	55.3
5	T1	All MCs	253	2.0	253	2.0	0.265	0.0	LOS A	1.2	8.5	0.06	0.25	0.06	57.3
Appro	ach		462	2.0	462	2.0	0.265	2.6	NA	1.2	8.5	0.06	0.25	0.06	56.4
West:	Lion (Creek Ro	ad												
11	T1	All MCs	292	2.0	292	2.0	0.162	0.1	LOS A	0.1	0.9	0.05	0.05	0.05	59.5
12	R2	All MCs	15	2.0	15	2.0	0.162	6.4	LOS A	0.1	0.9	0.05	0.05	0.05	56.7
Appro	ach		306	2.0	306	2.0	0.162	0.4	NA	0.1	0.9	0.05	0.05	0.05	59.4
All Ve	hicles		1126	2.0	1126	2.0	0.539	4.9	NA	3.1	22.1	0.25	0.43	0.37	54.2



Weekday Morning peak hour – Large Crowd

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Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		Back Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/ł
South	: Exhil	oition Roa	ad												
1	L2	All MCs	15	2.0	15	2.0	2.293	1173.1	LOS F	241.7	1720.7	1.00	9.58	34.59	2.9
3	R2	All MCs	663	2.0	663	2.0	2.293	1185.3	LOS F	241.7	1720.7	1.00	9.58	34.59	2.9
Appro	ach		678	2.0	678	2.0	2.293	1185.0	LOS F	241.7	1720.7	1.00	9.58	34.59	2.9
East:	Lion C	reek Roa	d												
4	L2	All MCs	678	2.0	678	2.0	0.660	5.7	LOS A	6.2	44.1	0.11	0.32	0.11	54.5
5	T1	All MCs	444	2.0	444	2.0	0.660	0.0	LOS A	6.2	44.1	0.11	0.32	0.11	56.4
Appro	ach		1122	2.0	1122	2.0	0.660	3.4	NA	6.2	44.1	0.11	0.32	0.11	55.2
West:	Lion (Creek Roa	ad												
11	T1	All MCs	378	2.0	378	2.0	0.206	0.1	LOS A	0.1	0.8	0.04	0.05	0.04	59.7
12	R2	All MCs	11	2.0	11	2.0	0.206	7.5	LOS A	0.1	0.8	0.04	0.05	0.04	56.8
Appro	ach		388	2.0	388	2.0	0.206	0.3	NA	0.1	0.8	0.04	0.05	0.04	59.6
All Ve	hicles		2188	2.0	2188	2.0	2.293	368.9	NA	241.7	1720.7	0.37	3.14	10.78	8.5

Weekday Afternoon peak hour – Large Crowd

Vehic	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [Total veh/h	lows HV]	F	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		Back Of leue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/t
South	: Exhi	bition Roa	ad												
1	L2	All MCs	11	2.0	11	2.0	2.041	946.6	LOS F	206.9	1473.3	1.00	9.08	32.36	3.6
3	R2	All MCs	628	2.0	628	2.0	2.041	958.5	LOS F	206.9	1473.3	1.00	9.08	32.36	3.6
Appro	ach		639	2.0	639	2.0	2.041	958.3	LOS F	206.9	1473.3	1.00	9.08	32.36	3.6
East:	Lion C	reek Roa	d												
4	L2	All MCs	662	2.0	662	2.0	0.615	5.7	LOS A	5.3	37.7	0.12	0.34	0.12	54.3
5	T1	All MCs	376	2.0	376	2.0	0.615	0.0	LOS A	5.3	37.7	0.12	0.34	0.12	56.2
Appro	ach		1038	2.0	1038	2.0	0.615	3.6	NA	5.3	37.7	0.12	0.34	0.12	55.0
West:	Lion (Creek Ro	ad												
11	Т1	All MCs	436	2.0	436	2.0	0.238	0.1	LOS A	0.1	1.0	0.04	0.05	0.04	59.7
12	R2	All MCs	14	2.0	14	2.0	0.238	7.1	LOS A	0.1	1.0	0.04	0.05	0.04	56.8
Appro	ach		449	2.0	449	2.0	0.238	0.3	NA	0.1	1.0	0.04	0.05	0.04	59.6
All Ve	hicles		2126	2.0	2126	2.0	2.041	289.8	NA	206.9	1473.3	0.36	2.91	9.79	10.4



Saturday Morning peak hour – Large Crowd

Mov	Turn	Mov	Dem	nand	Ar	rival	Deg.	Aver.	Level of	95% E	Back Of	Prop.	Eff.	Aver.	Aver.
ID		Class			Fi [Total veh/h	ows HV] %	Satn v/c	Delay sec	Service	Qu [Veh. veh	eue Dist] m	Que	Stop Rate	No. of Cycles	Speed km/h
South	: Exhil	oition Roa	10.52												
1	L2	All MCs	17	2.0	17	2.0	3.028	1834.8	LOS F	291.0	2071.8	1.00	9.34	34.89	1.9
3	R2	All MCs	674	2.0	674	2.0	3.028	1850.4	LOS F	291.0	2071.8	1.00	9.34	34.89	1.9
Appro	bach		691	2.0	691	2.0	3.028	1850.0	LOS F	291.0	2071.8	1.00	9.34	34.89	1.9
East:	Lion C	reek Roa	d												
4	L2	All MCs	708	2.0	708	2.0	0.711	5.7	LOS A	7.7	54.9	0.14	0.31	0.14	54.4
5	T1	All MCs	503	2.0	503	2.0	0.711	0.1	LOS A	7.7	54.9	0.14	0.31	0.14	56.4
Appro	bach		1212	2.0	1212	2.0	0.711	3.4	NA	7.7	54.9	0.14	0.31	0.14	55.2
West	Lion (Creek Roa	ad												
11	T1	All MCs	438	2.0	438	2.0	0.241	0.1	LOS A	0.2	1.1	0.05	0.06	0.05	59.6
12	R2	All MCs	14	2.0	14	2.0	0.241	7.9	LOS A	0.2	1.1	0.05	0.06	0.05	56.7
Appro	bach		452	2.0	452	2.0	0.241	0.4	NA	0.2	1.1	0.05	0.06	0.05	59.5
All Ve	hicles		2354	2.0	2354	2.0	3.028	544.6	NA	291.0	2071.8	0.37	2.91	10.32	6.0

Saturday Afternoon peak hour – Large Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fi [Total veh/h	lows HV]	F	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		Back Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/ł
South	: Exhil	bition Roa	ad												
1	L2	All MCs	13	2.0	13	2.0	2.364	1236.5	LOS F	269.2	1916.4	1.00	10.12	36.36	2.8
3	R2	All MCs	726	2.0	726	2.0	2.364	1248.2	LOS F	269.2	1916.4	1.00	10.12	36.36	2.8
Appro	ach		739	2.0	739	2.0	2.364	1248.0	LOS F	269.2	1916.4	1.00	10.12	36.36	2.8
East:	Lion C	reek Roa	ad												
4	L2	All MCs	591	2.0	591	2.0	0.586	5.7	LOS A	4.7	33.2	0.11	0.32	0.11	54.5
5	T1	All MCs	405	2.0	405	2.0	0.586	0.0	LOS A	4.7	33.2	0.11	0.32	0.11	56.5
Appro	ach		996	2.0	996	2.0	0.586	3.4	NA	4.7	33.2	0.11	0.32	0.11	55.3
West	Lion (Creek Ro	ad												
11	T1	All MCs	444	2.0	444	2.0	0.244	0.1	LOS A	0.1	1.1	0.04	0.05	0.04	59.6
12	R2	All MCs	15	2.0	15	2.0	0.244	7.3	LOS A	0.1	1.1	0.04	0.05	0.04	56.7
Appro	ach		459	2.0	459	2.0	0.244	0.3	NA	0.1	1.1	0.04	0.05	0.04	59.5
All Ve	hicles		2194	2.0	2194	2.0	2.364	422.0	NA	269.2	1916.4	0.40	3.56	12.31	7.5



Weekday Morning peak hour – Sensitivity (2,000 patrons)

Vehio	cle Mo	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	: Exhil	bition Roa	ad												
1	L2	All MCs	15	2.0	15	2.0	0.959	32.3	LOS D	14.4	102.9	0.98	2.02	4.59	35.6
3	R2	All MCs	445	2.0	445	2.0	0.959	39.6	LOS E	14.4	102.9	0.98	2.02	4.59	35.3
Appro	ach		460	2.0	460	2.0	0.959	39.3	LOS E	14.4	102.9	0.98	2.02	4.59	35.3
East:	Lion C	reek Roa	ad												
4	L2	All MCs	460	2.0	460	2.0	0.477	5.7	LOS A	3.1	22.2	80.0	0.31	0.08	54.8
5	T1	All MCs	357	2.0	357	2.0	0.477	0.0	LOS A	3.1	22.2	80.0	0.31	0.08	56.8
Appro	ach		817	2.0	817	2.0	0.477	3.2	NA	3.1	22.2	0.08	0.31	0.08	55.6
West:	Lion (Creek Ro	ad												
11	T1	All MCs	291	2.0	291	2.0	0.160	0.1	LOS A	0.1	0.7	0.04	0.05	0.04	59.6
12	R2	All MCs	11	2.0	11	2.0	0.160	6.9	LOS A	0.1	0.7	0.04	0.05	0.04	56.7
Appro	ach		301	2.0	301	2.0	0.160	0.3	NA	0.1	0.7	0.04	0.05	0.04	59.5
All Ve	hicles		1578	2.0	1578	2.0	0.959	13.2	NA	14.4	102.9	0.33	0.76	1.38	48.2

Weekday Afternoon peak hour – Sensitivity (2,000 patrons)

Vehic	cle Mo	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		lack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	: Exhi	bition Ro		70	Venim	70	10	300		Von					KITP/TT
1	L2	All MCs	11	2.0	11	2.0	0.845	16.2	LOS C	7.6	54.4	0.91	1.46	2.62	42.4
3	R2	All MCs	411	2.0	411	2.0	0.845	23.1	LOS C	7.6	54.4	0.91	1.46	2.62	42.0
Appro	ach		421	2.0	421	2.0	0.845	22.9	LOS C	7.6	54.4	0.91	1.46	2.62	42.0
East:	Lion C	creek Roa	ad												
4	L2	All MCs	444	2.0	444	2.0	0.432	5.7	LOS A	2.7	19.2	80.0	0.33	0.08	54.5
5	T1	All MCs	288	2.0	288	2.0	0.432	0.0	LOS A	2.7	19.2	0.08	0.33	0.08	56.5
Appro	ach		733	2.0	733	2.0	0.432	3.4	NA	2.7	19.2	0.08	0.33	0.08	55.3
West:	Lion (Creek Ro	ad												
11	T1	All MCs	348	2.0	348	2.0	0.191	0.1	LOS A	0.1	0.8	0.04	0.05	0.04	59.6
12	R2	All MCs	14	2.0	14	2.0	0.191	6.6	LOS A	0.1	0.8	0.04	0.05	0.04	56.7
Appro	ach		362	2.0	362	2.0	0.191	0.3	NA	0.1	0.8	0.04	0.05	0.04	59.5
All Ve	hicles		1516	2.0	1516	2.0	0.845	8.1	NA	7.6	54.4	0.30	0.57	0.78	51.6



Wandal Road / New Exhibition Road / Exhibition Road / Campbell Street / Baden Powell Street; Campbell Street / North Street.

Weekday Morning peak hour – Typical Crowd

Vehi	cle M	ovement	Perfo	rma	nce										
Mov ID		Mov Class	Den F [Total	nand lows HV]	Ar		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Que [Veh. veh	ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/l
South	East:	Campbell	1000				10000								
21	L2	All MCs	18	2.0	18	2.0	0.062	5.6	LOS A	0.3	1.9	0.51	0.65	0.51	52.
21a	L1	All MCs	15	2.0	15	2.0	0.062	5.4	LOS A	0.3	1.9	0.51	0.65	0.51	52.
23a	R1	All MCs	12	2.0	12	2.0	0.062	10.2	LOS B	0.3	1.9	0.51	0.65	0.51	51.
23b	R3	All MCs	11	2.0	11	2.0	0.062	12.6	LOS B	0.3	1.9	0.51	0.65	0.51	51.
Appro	bach		55	2.0	55	2.0	0.062	7.9	LOS A	0.3	1.9	0.51	0.65	0.51	52.
East:	Exhibi	ition Road	ł												
4b	L3	All MCs	31	2.0	31	2.0	0.293	3.6	LOS A	1.6	11.3	0.34	0.41	0.34	54.
4a	L1	All MCs	293	2.0	293	2.0	0.293	4.0	LOS A	1.6	11.3	0.34	0.41	0.34	54.
5	T1	All MCs	71	2.0	71	2.0	0.293	4.4	LOS A	1.6	11.3	0.34	0.41	0.34	54.
6	R2	All MCs	75	2.0	75	2.0	0.090	10.6	LOS B	0.4	2.7	0.37	0.64	0.37	49.
Appro	bach		468	2.0	468	2.0	0.293	5.1	LOS A	1.6	11.3	0.35	0.45	0.35	53.
North	: New	Exhibition	Road												
7	L2	All MCs	124	2.0	124	2.0	0.116	5.4	LOS A	0.5	3.5	0.40	0.53	0.40	53.
7a	L1	All MCs	19	2.0	19	2.0	0.139	4.2	LOS A	0.6	4.4	0.39	0.62	0.39	51.
9a	R1	All MCs	136	2.0	136	2.0	0.139	9.0	LOS A	0.6	4.4	0.39	0.62	0.39	50.
9	R2	All MCs	18	2.0	18	2.0	0.139	10.2	LOS B	0.6	4.4	0.39	0.62	0.39	50.
Appro	bach		297	2.0	297	2.0	0.139	7.3	LOS A	0.6	4.4	0.40	0.58	0.40	52.
West	Wand	al Road													
10	L2	All MCs	19	2.0	19	2.0	0.039	5.9	LOS A	0.2	1.5	0.55	0.55	0.55	53.
11	T1	All MCs	82	2.0	82	2.0	0.076	5.5	LOS A	0.5	3.2	0.55	0.57	0.55	52.
12a	R1	All MCs	15	2.0	15	2.0	0.076	9.7	LOS A	0.5	3.2	0.54	0.58	0.54	51.
12b	R3	All MCs	21	2.0	21	2.0	0.076	12.1	LOS B	0.5	3.2	0.54	0.58	0.54	51.
Appro	bach		137	2.0	137	2.0	0.076	7.0	LOS A	0.5	3.2	0.55	0.57	0.55	52.
South	West:	Baden P	owell S	treet											
30b	L3	All MCs	34	2.0	34	2.0	0.040	4.7	LOS A	0.1	1.1	0.33	0.53	0.33	54.
30a	L1	All MCs	185	2.0	185	2.0	0.288	3.8	LOS A	1.4	10.0	0.34	0.53	0.34	53.
32a	R1	All MCs		2.0	196	2.0	0.288	8.7	LOS A	1.4	10.0	0.34	0.53	0.34	52.
32	R2	All MCs	11	2.0	11	2.0	0.288	9.9	LOS A	1.4	10.0	0.34	0.53	0.34	52.
Appro			425	-	425	2.0	0.288	6.3	LOS A	1.4	10.0	0.34	0.53	0.34	52
All Ve	hicles		1382	20	1382	20	0.293	6.2	LOS A	1.6	11.3	0.38	0.52	0.38	52
			1002	2.0	1002	2.0	0.200	0.2	LOOK	1.0	11.0	0.00	0.02	0.00	02.0



Weekday Afternoon peak hour – Typical Crowd

Vehi	cle M	ovemen	t Perfo	rma	nce	/1					_				_
Mov		Mov		hand		rival	Deg.	Aver.	Level of	95% B	ack Of	Prop.	Eff.	Aver.	Aver
ID		Class		lows		ows	Satn	Delay	Service		eue	Que	Stop	No. of	Speed
					[Total veh/h		v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/ł
South	East:	Campbel	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1												
21	L2	All MCs	18	2.0	18	2.0	0.062	5.2	LOS A	0.3	1.8	0.47	0.63	0.47	52.3
21a	L1	All MCs	15	2.0	15	2.0	0.062	5.0	LOS A	0.3	1.8	0.47	0.63	0.47	52.0
23a	R1	All MCs	15	2.0	15	2.0	0.062	9.8	LOSA	0.3	1.8	0.47	0.63	0.47	51.
23b	R3	All MCs	11	2.0	11	2.0	0.062	12.2	LOS B	0.3	1.8	0.47	0.63	0.47	51.
Appro	bach		58	2.0	58	2.0	0.062	7.6	LOS A	0.3	1.8	0.47	0.63	0.47	52.
East:	Exhibi	ition Road	d												
4b	L3	All MCs	31	2.0	31	2.0	0.223	3.6	LOS A	1.1	8.1	0.32	0.41	0.32	54.
4a	L1	All MCs	155	2.0	155	2.0	0.223	4.0	LOS A	1.1	8.1	0.32	0.41	0.32	54.
5	T1	All MCs	109	2.0	109	2.0	0.223	4.4	LOS A	1.1	8.1	0.32	0.41	0.32	54.7
6	R2	All MCs	56	2.0	56	2.0	0.068	10.6	LOS B	0.3	2.0	0.38	0.65	0.38	49.
Appro	bach		351	2.0	351	2.0	0.223	5.1	LOS A	1.1	8.1	0.33	0.45	0.33	53.
North	: New	Exhibitio	n Road												
7	L2	All MCs	123	2.0	123	2.0	0.125	6.1	LOS A	0.5	3.9	0.47	0.57	0.47	53.0
7a	L1	All MCs	16	2.0	16	2.0	0.146	4.6	LOS A	0.7	4.8	0.46	0.65	0.46	51.3
9a	R1	All MCs	139	2.0	139	2.0	0.146	9.4	LOS A	0.7	4.8	0.46	0.65	0.46	50.
9	R2	All MCs	15	2.0	15	2.0	0.146	10.6	LOS B	0.7	4.8	0.46	0.65	0.46	50.
Appro	bach		293	2.0	293	2.0	0.146	7.8	LOS A	0.7	4.8	0.47	0.62	0.47	51.8
West	Wand	al Road													
10		All MCs	26	2.0	26	2.0	0.066	6.1	LOS A	0.4	2.6	0.57	0.57	0.57	52.9
11	T1	All MCs	159	2.0	159	2.0	0.130	5.7	LOS A	0.8	5.7	0.57	0.57	0.57	52.0
12a	R1	All MCs	672316-662	2.0	10.000	2.0	0.130	9.8	LOSA	0.8	5.7	0.57	0.57	0.57	51.6
12b	R3	All MCs	31	2.0	31	2.0	0.130	12.2	LOS B	0.8	5.7	0.57	0.57	0.57	51.
Appro	bach		231	2.0	231	2.0	0.130	6.8	LOS A	0.8	5.7	0.57	0.57	0.57	52.4
South	West:	Baden P	owell S	treet											
30b		All MCs		2.0		2.0	0.043	4.9	LOS A	0.2	1.1	0.34	0.54	0.34	54.
30a	1823	All MCs	5150	0.2045	163	12.125	0.309	3.9	LOSA	1.5	11.0	0.36	0.56	0.36	52.
32a	R1				236	2000 AV82	0.309	8.8	LOSA	1.5	11.0	0.36	0.56	0.36	51.8
32		All MCs		2.0		2.0	0.309	10.0	LOSA	1.5	11.0	0.36	0.56	0.36	51.
Appro			449				0.309	6.7	LOSA	1.5	11.0	0.36	0.55	0.36	52.
			4004	0.0	4004		0.000		100.1		44.0	0.40	0.55	0.40	50
All Ve	hicles		1381	2.0	1381	2.0	0.309	6.6	LOS A	1.5	11.0	0.42	0.55	0.42	52.6



Saturday Morning peak hour – Typical Crowd

Vehi	cle M	ovement	1000	rma	nce	715									
Mov ID	a second a second second	Mov Class	Dem F	nand Iows	Ar	rival lows HV]	Deg. Satn	Aver. Delay	Level of Service		ack Of eue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed
0 11	F	0	veh/h	%	veh/h		v/c	sec		veh	m				km/ł
		Campbell			40		0.000		100.4	0.0	4.0	0.47	0.00	0.47	50
21	1012	All MCs	26753	2.0	1.0000	2.0	0.062	5.2	LOSA	0.3	1.8	0.47	0.63	0.47	52.3
21a	20239	All MCs	2252.0	2.0		2.0	0.062	5.0	LOSA	0.3	1.8	0.47	0.63	0.47	52.
23a		All MCs		2.0		2.0	0.062	9.8	LOS A	0.3	1.8	0.47	0.63	0.47	51.
23b		All MCs		2.0	0.007	2.0 2.0	0.062	12.2	LOS B	0.3	1.8	0.47	0.63	0.47	51.
Appro	bach		56	2.0	56	2.0	0.062	7.6	LOS A	0.3	1.8	0.47	0.63	0.47	52.
East:	Exhib	ition Road													
4b	L3	All MCs	31	2.0	31	2.0	0.223	3.6	LOS A	1.1	8.1	0.32	0.41	0.32	54.
4a	L1	All MCs	155	2.0	155	2.0	0.223	4.0	LOS A	1.1	8.1	0.32	0.41	0.32	54.
5	T1	All MCs	109	2.0	109	2.0	0.223	4.4	LOS A	1.1	8.1	0.32	0.41	0.32	54.
6	R2	All MCs		2.0	NUCLEY INC.	2.0	0.068	10.6	LOS B	0.3	2.0	0.38	0.65	0.38	49.
Appro	bach		351	2.0	351	2.0	0.223	5.1	LOS A	1.1	8.1	0.33	0.45	0.33	53.
North	: New	Exhibition	Road												
7	L2	All MCs	123	2.0	123	2.0	0.125	6.1	LOS A	0.5	3.9	0.47	0.57	0.47	53.
7a	L1	All MCs	16	2.0	16	2.0	0.146	4.6	LOS A	0.7	4.8	0.46	0.65	0.46	51.
9a	R1	All MCs	139	2.0	139	2.0	0.146	9.4	LOS A	0.7	4.8	0.46	0.65	0.46	50.
9	R2	All MCs	15	2.0	15	2.0	0.146	10.6	LOS B	0.7	4.8	0.46	0.65	0.46	50.
Appro	bach		293	2.0	293	2.0	0.146	7.8	LOS A	0.7	4.8	0.47	0.62	0.47	51.
West	: Wand	dal Road													
10	L2	All MCs	26	2.0	26	2.0	0.066	6.1	LOS A	0.4	2.6	0.57	0.57	0.57	52.
11	Т1	All MCs	159	2.0	159	2.0	0.130	5.7	LOS A	0.8	5.7	0.57	0.57	0.57	52.
12a	R1	All MCs	15	2.0	15	2.0	0.130	9.8	LOSA	0.8	5.7	0.57	0.57	0.57	51.
12b	R3	All MCs	31	2.0	31	2.0	0.130	12.2	LOS B	0.8	5.7	0.57	0.57	0.57	51.
Appro	bach		231	2.0	231	2.0	0.130	6.8	LOSA	0.8	5.7	0.57	0.57	0.57	52.
South	West:	Baden P	owell S	treet											
30b		All MCs		2.0		2.0	0.043	4.9	LOS A	0.2	1.1	0.34	0.54	0.34	54.
30a	L1	All MCs	163	2.0	163	2.0	0.309	3.9	LOS A	1.5	11.0	0.36	0.56	0.36	52.
32a	R1	All MCs	236	2.0	236	2.0	0.309	8.8	LOS A	1.5	11.0	0.36	0.56	0.36	51.
32	R2	All MCs	15	2.0	15	2.0	0.309	10.0	LOSA	1.5	11.0	0.36	0.56	0.36	51.
Appro	bach		449		449	2.0	0.309	6.7	LOS A	1.5	11.0	0.36	0.55	0.36	52.
All Ve	hicles		1381	2.0	1381	2.0	0.309	6.6	LOS A	1.5	11.0	0.42	0.55	0.42	52.



Saturday Afternoon peak hour – Typical Crowd

Vehi	cle M	ovement	Perfo			. 7 P									
Mov		Mov		nand		rival	Deg.	Aver.	Level of	95% B	ack Of	Prop.	Eff.	Aver.	Aver.
ID		Class		lows		ows	Satn	Delay	Service	Que		Que	Stop	No. of	Speed
					[Total veh/h		v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	nEast:	Campbel													
21	L2	All MCs	18	2.0	18	2.0	0.062	5.2	LOS A	0.3	1.8	0.47	0.63	0.47	52.3
21a	L1	All MCs	15	2.0	15	2.0	0.062	5.0	LOS A	0.3	1.8	0.47	0.63	0.47	52.6
23a	R1	All MCs	15	2.0	15	2.0	0.062	9.8	LOS A	0.3	1.8	0.47	0.63	0.47	51.7
23b	R3	All MCs	11	2.0	11	2.0	0.062	12.2	LOS B	0.3	1.8	0.47	0.63	0.47	51.7
Appro	oach		58	2.0	58	2.0	0.062	7.6	LOS A	0.3	1.8	0.47	0.63	0.47	52.1
East:	Exhibi	ition Road	4												
4b	L3	All MCs	31	2.0	31	2.0	0.223	3.6	LOS A	1.1	8.1	0.32	0.41	0.32	54.1
4a	L1	All MCs	155	2.0	155	2.0	0.223	4.0	LOS A	1.1	8.1	0.32	0.41	0.32	54.7
5	T1	All MCs	109	2.0	109	2.0	0.223	4.4	LOS A	1.1	8.1	0.32	0.41	0.32	54.7
6	R2	All MCs	56	2.0	56	2.0	0.068	10.6	LOS B	0.3	2.0	0.38	0.65	0.38	49.8
Appro	oach		351	2.0	351	2.0	0.223	5.1	LOSA	1.1	8.1	0.33	0.45	0.33	53.7
North	: New	Exhibition	n Road												
7	L2	All MCs	123	2.0	123	2.0	0.125	6.1	LOS A	0.5	3.9	0.47	0.57	0.47	53.6
7a	L1	All MCs	16	2.0	16	2.0	0.146	4.6	LOS A	0.7	4.8	0.46	0.65	0.46	51.3
9a	R1	All MCs	139	2.0	139	2.0	0.146	9.4	LOSA	0.7	4.8	0.46	0.65	0.46	50.5
9	R2	All MCs	15	2.0	15	2.0	0.146	10.6	LOS B	0.7	4.8	0.46	0.65	0.46	50.5
Appro	bach		293	2.0	293	2.0	0.146	7.8	LOS A	0.7	4.8	0.47	0.62	0.47	51.8
West	: Wand	al Road													
10		All MCs	26	2.0	26	2.0	0.066	6.1	LOS A	0.4	2.6	0.57	0.57	0.57	52.9
11	T1	All MCs	159	2.0	159	2.0	0.130	5.7	LOSA	0.8	5.7	0.57	0.57	0.57	52.6
12a	R1	All MCs	15	2.0	15	2.0	0.130	9.8	LOS A	0.8	5.7	0.57	0.57	0.57	51.5
12b	R3	All MCs	31	2.0	31	2.0	0.130	12.2	LOS B	0.8	5.7	0.57	0.57	0.57	51.5
Appro	oach		231	2.0	231	2.0	0.130	6.8	LOSA	0.8	5.7	0.57	0.57	0.57	52.4
South	West:	Baden P	owell S	treet											
30b		All MCs		2.0		2.0	0.043	4.9	LOS A	0.2	1.1	0.34	0.54	0.34	54.0
30a	7576	All MCs	na na seconda da second	2.0	163		0.309	3.9	LOSA	1.5	11.0	0.36	0.56	0.36	52.7
32a	19763	All MCs	0.255.557	2.0	236	1747,885	0.309	8.8	LOSA	1.5	11.0	0.36	0.56	0.36	51.8
32		All MCs		2.0		2.0	0.309	10.0	LOSA	1.5	11.0	0.36	0.56	0.36	51.8
Appro			449		449		0.309	6.7	LOSA	1.5	11.0	0.36	0.55	0.36	52.3
			1001		1001		0.000		100.1		44.0	A 14	0	6 16	-
All Ve	ehicles		1381	2.0	1381	2.0	0.309	6.6	LOS A	1.5	11.0	0.42	0.55	0.42	52.6



Weekday Morning peak hour – Large Crowd

			0 10 0 00			0									
Vehi	cle M	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class		hand lows		rival lows	Deg. Satn	Aver. Delay	Level of Service		ack Of eue	Prop. Que	Eff. Stop	Aver. No. of	Aver Speed
ID.		Class			[Total		Saur	Delay	Service	[Veh.	Dist]	Que	Rate	Cycles	opeed
0	F	0	12.2	%	veh/h	%	v/c	Sec		veh	m				km/l
		Campbel					0.007	40.4	100.0	44.0	05.0	4.00	4.40	0.47	
21		All MCs		2.0	1539410	2.0	0.897	43.4	LOS D	11.9	85.0	1.00	1.46	2.47	34.:
21a	L1	19672 322 223	2.222	2.0	201103	2.0	0.897	43.1	LOS D	11.9	85.0	1.00	1.46	2.47	34.4
23a	R1			2.0		2.0	0.897	48.0	LOS D	11.9	85.0	1.00	1.46	2.47	34.
23b		All MCs	87		0.000000	2.0	0.897	50.4	LOS E	11.9	85.0	1.00	1.46	2.47	34.
Appro	bach		360	2.0	360	2.0	0.897	46.1	LOS D	11.9	85.0	1.00	1.46	2.47	34.3
East:	Exhibi	ition Road	ł												
4b	L3	All MCs	107	2.0	107	2.0	0.969	31.2	LOS C	32.2	229.2	1.00	1.77	2.87	37.9
4a	L1	All MCs	521	2.0	521	2.0	0.969	35.1	LOS D	32.2	229.2	1.00	1.77	2.87	38.
5	T1	All MCs	300	2.0	300	2.0	0.969	35.5	LOS D	32.2	229.2	1.00	1.77	2.87	38.
6	R2	All MCs	227	2.0	227	2.0	0.393	15.0	LOS B	2.3	16.4	0.75	0.81	0.80	47.
Appro	bach		1156	2.0	1156	2.0	0.969	30.9	LOS C	32.2	229.2	0.95	1.58	2.46	39.
North	: New	Exhibition	n Road												
7	L2	All MCs	277	2.0	277	2.0	0.380	9.3	LOS A	2.2	15.9	0.75	0.74	0.77	51.
7a	L1	All MCs	96	2.0	96	2.0	0.445	7.3	LOSA	3.1	21.9	0.78	0.78	0.83	50.3
9a	R1	All MCs	212	2.0	212	2.0	0.445	12.1	LOS B	3.1	21.9	0.78	0.78	0.83	49.
9	R2	All MCs	94	2.0	94	2.0	0.445	13.3	LOS B	3.1	21.9	0.78	0.78	0.83	49.
Appro	bach		678	2.0	678	2.0	0.445	10.5	LOS B	3.1	21.9	0.76	0.76	0.81	50.
West	Wand	lal Road													
10		All MCs	96	2.0	96	2.0	0.222	11.8	LOS B	1.6	11.6	0.93	0.77	0.93	49.4
11	T1	All MCs	n 920422	2.0	158	Concercos:	0.435	11.5	LOS B	4.1	29.1	0.99	0.79	1.02	48.
12a	R1	All MCs		2.0	1.833	2.0	0.435	15.7	LOS B	4.1	29.1	1.00	0.79	1.02	47.0
12b	R3	10000000000	97	1 1222/12	97	000000	0.435	18.1	LOS B	4.1	29.1	1.00	0.79	1.03	47.6
Appro		All WOS	441			2.0	0.435	13.9	LOS B	4.1	29.1	0.98	0.79	1.00	48.
						2.0	01100		2002		20.11	0.00	0.10		
		Baden P				0.0	0.100		100.1			0.00	0.77	0.00	
30b	9.005	All MCs	255255	2.0	0.00000000	2.0	0.199	7.9	LOSA	0.9	6.3	0.68	0.77	0.68	51.
30a	L1	All MCs	262		262	200000	0.694	9.4	LOS A	6.3	44.9	0.87	0.95	1.18	49.
32a		All MCs		2.0	272		0.694	14.2	LOS B	6.3	44.9	0.87	0.95	1.18	48.
32		All MCs		2.0		2.0	0.694	15.4	LOS B	6.3	44.9	0.87	0.95	1.18	48.
Appro	bach		732	2.0	732	2.0	0.694	11.7	LOS B	6.3	44.9	0.84	0.92	1.11	49.
All Ve	hicles		3366	2.0	3366	2.0	0.969	22.0	LOS C	32.2	229.2	0.90	1.16	1.64	43.



Weekday Afternoon peak hour – Large Crowd

Vehi	n M	ovement	Porfo	rma	nce		-								
Mov		Mov		nand		rival	Dea.	Aver.	Level of	95% B	ack Of	Prop.	Eff.	Aver.	Aver.
ID	Turri	Class	F	lows	F	lows	Satn	Delay	Service	Que		Que	Stop	No. of	Speed
					[Total veh/h		v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	East:	Campbel	(C.2) X	70	ven/m	/0	v/C	360		Ven	111	_	_	_	INT1/11
21	L2	All MCs	94	2.0	94	2.0	0.564	10.7	LOS B	4.0	28.2	0.84	0.93	1.08	48.6
21a	L1	All MCs	91	2.0	91	2.0	0.564	10.5	LOS B	4.0	28.2	0.84	0.93	1.08	48.9
23a	R1	All MCs	91	2.0	91	2.0	0.564	15.3	LOS B	4.0	28.2	0.84	0.93	1.08	48.1
23b	R3	All MCs	87	2.0	87	2.0	0.564	17.7	LOS B	4.0	28.2	0.84	0.93	1.08	48.1
Appro	bach		362	2.0	362	2.0	0.564	13.5	LOS B	4.0	28.2	0.84	0.93	1.08	48.4
East:	Exhib	ition Road	ł												
4b	L3	All MCs	107	2.0	107	2.0	0.549	6.0	LOS A	4.8	34.4	0.82	0.71	0.92	51.8
4a	L1	All MCs	231	2.0	231	2.0	0.549	8.3	LOSA	4.8	34.4	0.82	0.71	0.92	52.3
5	T1	All MCs	185	2.0	185	2.0	0.549	8.7	LOS A	4.8	34.4	0.82	0.71	0.92	52.3
6	R2	All MCs	208	2.0	208	2.0	0.320	13.7	LOS B	1.9	13.4	0.74	0.77	0.74	48.2
Appro	bach		732	2.0	732	2.0	0.549	9.6	LOS A	4.8	34.4	0.80	0.73	0.87	50.9
North	: New	Exhibition	n Road												
7	L2		276	2.0	276	2.0	0.564	20.1	LOS C	4.4	31.0	0.92	0.98	1.26	46.5
7a	L1		 Sources 	2.0	22,21,822	2.0	0.625	15.4	LOS B	6.0	42.7	0.97	1.01	1.40	45.5
9a	R1	All MCs	216		216		0.625	20.3	LOS C	6.0	42.7	0.97	1.01	1.40	44.8
9	R2	All MCs	91	2.0	91	2.0	0.625	21.5	LOS C	6.0	42.7	0.97	1.01	1.40	44.8
Appro	bach		675	2.0	675	2.0	0.625	19.7	LOS B	6.0	42.7	0.95	1.00	1.34	45.5
West	Wand	dal Road													
10		All MCs	102	2.0	102	2.0	0.447	19.2	LOS B	4.0	28.3	1.00	0.92	1.17	45.0
11	T1	All MCs	387	1227504204.	387	COLORADO -	0.877	48.5	LOS D	21.2	150.9	1.00	1.50	2.36	33.4
12a	R1	All MCs	91			2.0	0.877	60.1	LOS E	21.2	150.9	1.00	1.66	2.68	30.9
12b	R3	All MCs	107		107		0.877	62.4	LOS E	21.2	150.9	1.00	1.66	2.68	30.9
Appro			687	2.0	687	2.0	0.877	47.8	LOS D	21.2	150.9	1.00	1.46	2.27	33.9
South	West	Baden P	owell S	treet											
30b		All MCs		2.0	112	2.0	0.182	7.3	LOS A	0.8	5.5	0.62	0.73	0.62	52.2
30a		Contraction of the	240	91015-2	240	100000	0.799	10.5	LOS B	9.0	64.4	0.89	1.02	1.34	48.6
32a	R1	1132947.0015.225	465	2023	465	1007/98	0.799	15.4	LOS B	9.0	64.4	0.89	1.02	1.34	47.8
32		All MCs	91			2.0	0.799	16.6	LOS B	9.0	64.4	0.89	1.02	1.34	47.8
Appro	5 m 10 m 10 m		907	0350030	907		0.799	13.2	LOS B	9.0	64.4	0.85	0.99	1.25	48.5
A#11/	h la la la c		0000	0.0	0000	0.0	0.077	00.0	100.0	01.0	450.0	0.00	4.00	1.00	
All Ve	hicles		3363	2.0	3363	2.0	0.877	20.8	LOS C	21.2	150.9	0.89	1.02	1.38	44.4



Saturday Morning peak hour – Large Crowd

ID			Lo on	and	Ar	rival	Deg.	Aver.	Level of	95% B	ack Of	Prop.	Eff.	Aver.	Aver
		Class		lows		ows	Satn	Delay	Service		eue	Que	Stop	No. of	Speed
					[Total veh/h		v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	East:	Campbell		10											
21	L2	All MCs	91	2.0	91	2.0	0.939	55.6	LOS E	14.8	105.6	1.00	1.63	2.93	30.8
21a	L1	All MCs	91	2.0	91	2.0	0.939	55.3	LOS E	14.8	105.6	1.00	1.63	2.93	30.9
23a	R1	All MCs	98	2.0	98	2.0	0.939	60.2	LOS E	14.8	105.6	1.00	1.63	2.93	30.0
23b	R3	All MCs	88	2.0	88	2.0	0.939	62.6	LOS E	14.8	105.6	1.00	1.63	2.93	30.
Approa	ach		367	2.0	367	2.0	0.939	58.4	LOS E	14.8	105.6	1.00	1.63	2.93	30.
East: F	Exhibi	tion Road	14												
4b	L3	All MCs	97	2.0	97	2.0	0.989	39.7	LOS D	37.5	266.9	1.00	2.00	3.36	34.8
4a	L1	All MCs	482	2.0	482	2.0	0.989	44.0	LOS D	37.5	266.9	1.00	2.00	3.36	35.0
5	T1	All MCs	340	2.0	340	2.0	0.989	44.3	LOS D	37.5	266.9	1.00	2.00	3.36	35.0
6	R2	All MCs	226	2.0	226	2.0	0.403	15.5	LOS B	2.4	17.3	0.77	0.83	0.83	47.
Approa	ach		1145	2.0	1145	2.0	0.989	38.1	LOS D	37.5	266.9	0.95	1.77	2.86	36.
North:	New	Exhibition	Road												
7	L2	All MCs	320	2.0	320	2.0	0.430	9.6	LOS A	2.9	20.4	0.78	0.75	0.84	51.
7a	L1	All MCs	94	2.0	94	2.0	0.468	7.5	LOS A	3.5	25.0	0.80	0.77	0.87	50.
9a	R1	All MCs	237	2.0	237	2.0	0.468	12.4	LOS B	3.5	25.0	0.80	0.77	0.87	49.3
9	R2	All MCs	91	2.0	91	2.0	0.468	13.5	LOS B	3.5	25.0	0.80	0.77	0.87	49.3
Approa	ach		741	2.0	741	2.0	0.468	10.7	LOS B	3.5	25.0	0.79	0.76	0.85	50.4
West:	Wand	lal Road													
10	L2	All MCs	125	2.0	125	2.0	0.214	10.7	LOS B	1.5	10.8	0.88	0.75	0.88	50.
11	T1	All MCs	154	2.0	154	2.0	0.419	9.8	LOS A	3.7	26.5	0.97	0.75	0.97	49.3
12a	R1	All MCs	94	2.0	94	2.0	0.419	14.2	LOS B	3.7	26.5	0.98	0.75	0.98	48.
12b	R3	All MCs	99	2.0	99	2.0	0.419	16.6	LOS B	3.7	26.5	0.98	0.75	0.98	48.
Approa	ach		472	2.0	472	2.0	0.419	12.3	LOS B	3.7	26.5	0.95	0.75	0.95	49.3
South	West:	Baden Po	owell S	treet											
30b	L3	All MCs	108	2.0	108	2.0	0.202	8.2	LOS A	0.9	6.5	0.70	0.78	0.70	51.
30a	L1	All MCs	244	2.0	244	2.0	0.627	8.8	LOS A	5.1	36.7	0.85	0.91	1.09	50.
32a	R1	All MCs	205	2.0	205	2.0	0.627	13.6	LOS B	5.1	36.7	0.85	0.91	1.09	49.
32	R2	All MCs	91	2.0	91	2.0	0.627	14.8	LOS B	5.1	36.7	0.85	0.91	1.09	49.
Approa	ach		648	2.0	648	2.0	0.627	11.0	LOS B	5.1	36.7	0.83	0.89	1.03	50.
All Veł	hicles		3374	2.0	3374	2.0	0.989	25.5	LOS C	37.5	266.9	0.90	1.22	1.81	42.



Saturday Afternoon peak hour – Large Crowd

Vehi	cle M	ovement	Perfo	rma	nce		-					_			
Mov		Mov		nand		rival	Deg.	Aver.	Level of	95% B	ack Of	Prop.	Eff.	Aver.	Aver
ID		Class		lows	Fi [Total	lows	Satn	Delay	Service	Que [Veh.	eue Dist]	Que	Stop Rate	No. of Cycles	Speed
					veh/h		v/c	sec		veh	m		Nate	Cycles	km/h
South	East:	Campbel	Street												
21	L2	All MCs	91	2.0	91	2.0	0.546	9.4	LOS A	3.6	25.8	0.80	0.90	1.00	49.3
21a	L1	All MCs	91	2.0	91	2.0	0.546	9.1	LOS A	3.6	25.8	0.80	0.90	1.00	49.6
23a	R1	All MCs	100	2.0	100	2.0	0.546	14.0	LOS B	3.6	25.8	0.80	0.90	1.00	48.8
23b	R3	All MCs	102	2.0	102	2.0	0.546	16.4	LOS B	3.6	25.8	0.80	0.90	1.00	48.8
Appro	bach		383	2.0	383	2.0	0.546	12.4	LOS B	3.6	25.8	0.80	0.90	1.00	49.1
East:	Exhibi	ition Road	ł												
4b	L3	All MCs	94	2.0	94	2.0	0.436	5.0	LOS A	3.1	21.8	0.73	0.62	0.73	52.3
4a	L1	All MCs	180	2.0	180	2.0	0.436	6.7	LOS A	3.1	21.8	0.73	0.62	0.73	52.9
5	T1	All MCs	158	2.0	158	2.0	0.436	7.0	LOS A	3.1	21.8	0.73	0.62	0.73	52.9
6	R2	All MCs	237	2.0	237	2.0	0.322	13.1	LOS B	1.9	13.7	0.72	0.75	0.72	48.
Appro	bach		668	2.0	668	2.0	0.436	8.8	LOS A	3.1	21.8	0.72	0.67	0.72	51.
North	: New	Exhibition	n Road												
7	L2	All MCs	244	2.0	244	2.0	0.513	19.2	LOS B	3.7	26.6	0.91	0.95	1.18	47.0
7a	L1	All MCs	94	2.0	94	2.0	0.583	14.6	LOS B	5.3	37.7	0.96	0.98	1.32	46.0
9a	R1	All MCs	180	2.0	180	2.0	0.583	19.5	LOS B	5.3	37.7	0.96	0.98	1.32	45.3
9	R2	All MCs	91	2.0	91	2.0	0.583	20.7	LOS C	5.3	37.7	0.96	0.98	1.32	45.3
Appro	bach		608	2.0	608	2.0	0.583	18.8	LOS B	5.3	37.7	0.94	0.97	1.27	46.0
West	: Wand	al Road													
10	L2	All MCs	114	2.0	114	2.0	0.511	25.2	LOS C	5.0	35.4	1.00	1.00	1.31	42.0
11	T1	All MCs	421	2.0	421	2.0	1.002	92.9	LOS F	39.2	278.9	1.00	2.08	3.68	24.0
12a	R1	All MCs	93	2.0	93	2.0	1.002	113.1	LOS F	39.2	278.9	1.00	2.34	4.26	21.6
12b	R3	All MCs	99	2.0	99	2.0	1.002	115.5	LOS F	39.2	278.9	1.00	2.34	4.26	21.6
Appro	bach		726	2.0	726	2.0	1.002	88.0	LOS F	39.2	278.9	1.00	1.98	3.46	24.9
South	West:	Baden P	owell S	treet											
30b	L3	All MCs	108	2.0	108	2.0	0.177	7.4	LOS A	0.7	5.2	0.61	0.74	0.61	52.
30a	L1	All MCs	274	2.0	274	2.0	0.804	10.7	LOS B	9.1	64.8	0.88	1.04	1.36	48.
32a	R1	All MCs	438	2.0	438	2.0	0.804	15.6	LOS B	9.1	64.8	0.88	1.04	1.36	47.
32	R2	All MCs	91	2.0	91	2.0	0.804	16.8	LOS B	9.1	64.8	0.88	1.04	1.36	47.
Appro	bach		911	2.0	911	2.0	0.804	13.2	LOS B	9.1	64.8	0.85	1.00	1.27	48.
AII \/-	hieles		2207	20	2207	2.0	1 002	20.7	105.0	20.2	279.0	0.97	1 1 2	1.64	40
All VE	hicles		3297	2.0	3297	2.0	1.002	29.7	LOS C	39.2	278.9	0.87	1.13	1.61	40.2



Campbell Street / North Street

Weekday Morning pea k hour – Typical Crowd

Vehio	cle Mo	ovement	Perfo	rmai	nce										
Mov ID	Turn	Mov Class		lows	F	rival lows	Deg. Satn	Aver. Delay	Level of Service	Qu	ack Of	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h		[Total veh/h	HV] %		sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	: Nortl	n Street													
1	L2	All MCs	134	2.0	134	2.0	0.666	8.7	LOS A	7.3	51.8	0.82	0.73	0.95	50.8
2	T1	All MCs	445	2.0	445	2.0	0.666	8.9	LOS A	7.3	51.8	0.82	0.73	0.95	51.1
3	R2	All MCs	93	2.0	93	2.0	0.666	13.5	LOS B	7.3	51.8	0.82	0.73	0.95	50.3
Appro	bach		672	2.0	672	2.0	0.666	9.5	LOS A	7.3	51.8	0.82	0.73	0.95	50.9
East:	Camp	bell Stree	et												
4	L2	All MCs	146	2.0	146	2.0	0.422	5.8	LOS A	3.0	21.3	0.60	0.57	0.60	52.3
5	T1	All MCs	280	2.0	280	2.0	0.422	6.0	LOS A	3.0	21.3	0.60	0.57	0.60	52.6
6	R2	All MCs	24	2.0	24	2.0	0.422	10.7	LOS B	3.0	21.3	0.60	0.57	0.60	51.8
Appro	bach		451	2.0	451	2.0	0.422	6.2	LOS A	3.0	21.3	0.60	0.57	0.60	52.5
North	: North	n Street													
7	L2	All MCs	26	2.0	26	2.0	0.265	6.2	LOS A	1.7	12.0	0.61	0.61	0.61	51.6
8	T1	All MCs	168	2.0	168	2.0	0.265	6.4	LOS A	1.7	12.0	0.61	0.61	0.61	52.0
9	R2	All MCs	58	2.0	58	2.0	0.265	11.0	LOS B	1.7	12.0	0.61	0.61	0.61	51.1
Appro	bach		253	2.0	253	2.0	0.265	7.4	LOS A	1.7	12.0	0.61	0.61	0.61	51.7
West:	Camp	bell Stree	et												
10	L2	All MCs	45	2.0	45	2.0	0.432	7.9	LOS A	3.2	22.9	0.81	0.71	0.82	50.8
11	T1	All MCs	234	2.0	234	2.0	0.432	8.1	LOS A	3.2	22.9	0.81	0.71	0.82	51.2
12	R2	All MCs	60	2.0	60	2.0	0.432	12.7	LOS B	3.2	22.9	0.81	0.71	0.82	50.3
Appro	bach		339	2.0	339	2.0	0.432	8.9	LOS A	3.2	22.9	0.81	0.71	0.82	51.0
All Ve	hicles		1714	2.0	1714	2.0	0.666	8.2	LOS A	7.3	51.8	0.73	0.67	0.78	51.4

Weekday Afternoon peak hour – Typical Crowd

Vehi	cle Mo	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	F			rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Ba Que [Veh. veh		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/ł
South	n: Norti	n Street													
1	L2	All MCs	61	2.0	61	2.0	0.578	6.2	LOS A	5.0	35.4	0.69	0.59	0.70	51.0
2	T1	All MCs	501	2.0	501	2.0	0.578	6.3	LOS A	5.0	35.4	0.69	0.59	0.70	51.
3	R2	All MCs	72	2.0	72	2.0	0.578	11.0	LOS B	5.0	35.4	0.69	0.59	0.70	51.
Appro	oach		634	2.0	634	2.0	0.578	6.8	LOS A	5.0	35.4	0.69	0.59	0.70	51.
East:	Camp	bell Stree	ət												
4	L2	All MCs	159	2.0	159	2.0	0.404	6.4	LOS A	2.8	19.9	0.65	0.61	0.65	52.
5	T1	All MCs	200	2.0	200	2.0	0.404	6.6	LOS A	2.8	19.9	0.65	0.61	0.65	52.
6	R2	All MCs	36	2.0	36	2.0	0.404	11.2	LOS B	2.8	19.9	0.65	0.61	0.65	51.
Appro	oach		395	2.0	395	2.0	0.404	6.9	LOS A	2.8	19.9	0.65	0.61	0.65	52.
North	: North	Street													
7	L2	All MCs	28	2.0	28	2.0	0.350	7.3	LOS A	2.5	17.6	0.77	0.68	0.77	51.
8	T1	All MCs	216	2.0	216	2.0	0.350	7.5	LOS A	2.5	17.6	0.77	0.68	0.77	51.
9	R2	All MCs	38	2.0	38	2.0	0.350	12.2	LOS B	2.5	17.6	0.77	0.68	0.77	50.
Appro	oach		282	2.0	282	2.0	0.350	8.1	LOS A	2.5	17.6	0.77	0.68	0.77	51.
West	: Camp	bell Stre	et												
10	L2	All MCs	73	2.0	73	2.0	0.694	13.4	LOS B	8.1	57.8	0.96	0.93	1.31	47.
11	T1	All MCs	344	2.0	344	2.0	0.694	13.6	LOS B	8.1	57.8	0.96	0.93	1.31	47.
12	R2	All MCs	115	2.0	115	2.0	0.694	18.2	LOS B	8.1	57.8	0.96	0.93	1.31	47.
Appro	bach		532	2.0	532	2.0	0.694	14.6	LOS B	8.1	57.8	0.96	0.93	1.31	47.
All Ve	ehicles		1842	2.0	1842	2.0	0.694	9.3	LOS A	8.1	57.8	0.77	0.71	0.87	50.

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Saturday Morning peak hour – Typical Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class		ows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		Back Of ueue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	n: Nortl	h Street													
1	L2	All MCs	117	2.0	117	2.0	0.435	6.5	LOS A	3.1	21.8	0.66	0.62	0.66	51.8
2	T1	All MCs	271	2.0	271	2.0	0.435	6.7	LOS A	3.1	21.8	0.66	0.62	0.66	52.2
3	R2	All MCs	42	2.0	42	2.0	0.435	11.3	LOS B	3.1	21.8	0.66	0.62	0.66	51.3
Appro	bach		429	2.0	429	2.0	0.435	7.1	LOS A	3.1	21.8	0.66	0.62	0.66	52.0
East:	Camp	bell Stree	t												
4	L2	All MCs	117	2.0	117	2.0	0.390	5.5	LOS A	2.7	18.9	0.54	0.54	0.54	52.4
5	T1	All MCs	292	2.0	292	2.0	0.390	5.7	LOS A	2.7	18.9	0.54	0.54	0.54	52.8
6	R2	All MCs	26	2.0	26	2.0	0.390	10.4	LOS B	2.7	18.9	0.54	0.54	0.54	51.9
Appro	bach		435	2.0	435	2.0	0.390	5.9	LOS A	2.7	18.9	0.54	0.54	0.54	52.6
North	: North	n Street													
7	L2	All MCs	23	2.0	23	2.0	0.208	5.5	LOS A	1.2	8.8	0.51	0.57	0.51	52.0
8	T1	All MCs	141	2.0	141	2.0	0.208	5.7	LOS A	1.2	8.8	0.51	0.57	0.51	52.4
9	R2	All MCs	53	2.0	53	2.0	0.208	10.3	LOS B	1.2	8.8	0.51	0.57	0.51	51.5
Appro	bach		217	2.0	217	2.0	0.208	6.8	LOS A	1.2	8.8	0.51	0.57	0.51	52.1
West	: Camp	bell Stree	ət												
10	L2	All MCs	64	2.0	64	2.0	0.319	6.0	LOS A	2.1	15.0	0.60	0.59	0.60	51.9
11	T1	All MCs	198	2.0	198	2.0	0.319	6.2	LOS A	2.1	15.0	0.60	0.59	0.60	52.2
12	R2	All MCs	57	2.0	57	2.0	0.319	10.8	LOS B	2.1	15.0	0.60	0.59	0.60	51.4
Appro	bach		319	2.0	319	2.0	0.319	7.0	LOS A	2.1	15.0	0.60	0.59	0.60	52.0
All Ve	hicles		1400	2.0	1400	2.0	0.435	6.7	LOS A	3.1	21.8	0.59	0.58	0.59	52.2

Saturday Afternoon peak hour – Typical Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Que [Veh. veh		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	n: North	n Street	ven/n	/0	ven/m	/0	v/C	Sec	_	ven	111				K11/11
1	L2	All MCs	67	2.0	67	2.0	0.314	4.9	LOS A	2.0	14.4	0.42	0.49	0.42	52.8
2	T1	All MCs	276	2.0	276	2.0	0.314	5.1	LOS A	2.0	14.4	0.42	0.49	0.42	53.1
3	R2	All MCs	38	2.0	38	2.0	0.314	9.7	LOS A	2.0	14.4	0.42	0.49	0.42	52.2
Appro	bach		381	2.0	381	2.0	0.314	5.5	LOS A	2.0	14.4	0.42	0.49	0.42	53.0
East:	Camp	bell Stree	t												
4	L2	All MCs	78	2.0	78	2.0	0.201	4.9	LOS A	1.2	8.2	0.41	0.50	0.41	52.9
5	T1	All MCs	132	2.0	132	2.0	0.201	5.1	LOS A	1.2	8.2	0.41	0.50	0.41	53.3
6	R2	All MCs	21	2.0	21	2.0	0.201	9.8	LOS A	1.2	8.2	0.41	0.50	0.41	52.4
Appro	bach		231	2.0	231	2.0	0.201	5.5	LOS A	1.2	8.2	0.41	0.50	0.41	53.1
North	: North	Street													
7	L2	All MCs	16	2.0	16	2.0	0.153	6.3	LOS A	0.9	6.5	0.61	0.61	0.61	51.9
8	T1	All MCs	106	2.0	106	2.0	0.153	6.5	LOS A	0.9	6.5	0.61	0.61	0.61	52.2
9	R2	All MCs	16	2.0	16	2.0	0.153	11.1	LOS B	0.9	6.5	0.61	0.61	0.61	51.4
Appro	bach		138	2.0	138	2.0	0.153	7.0	LOS A	0.9	6.5	0.61	0.61	0.61	52.1
West	Camp	bell Stree	et												
10	L2	All MCs	126	2.0	126	2.0	0.518	6.4	LOS A	3.9	27.9	0.68	0.61	0.68	51.7
11	T1	All MCs	339	2.0	339	2.0	0.518	6.6	LOS A	3.9	27.9	0.68	0.61	0.68	52.1
12	R2	All MCs	71	2.0	71	2.0	0.518	11.3	LOS B	3.9	27.9	0.68	0.61	0.68	51.2
Appro	bach		536	2.0	536	2.0	0.518	7.2	LOS A	3.9	27.9	0.68	0.61	0.68	51.9
All Ve	hicles		1285	2.0	1285	2.0	0.518	6.4	LOS A	3.9	27.9	0.55	0.56	0.55	52.4



Weekday Morning peak hour – Large Crowd

Mov	Turn	Mov	Dem	and	٨٣	rival	Deq.	Aver.	Level of	0.50/ 5	ack Of	Prop.	Eff.	Aver.	Aver
ID	Turn	Class		ows HV]	FI	ows	Deg. Satn v/c	Aver. Delay sec	Service		eue Dist] m	Que	Stop Rate	No. of Cycles	Aver Speed km/ł
South	: North	n Street	ven/n	/0	ven/m	/0	V/C	360		Ven		_	_	_	N11/1
1	L2	All MCs	286	2.0	286	2.0	1.545	510.5	LOS F	193.0	1374.4	1.00	6.56	15.49	6.4
2	T1	All MCs	445	2.0	445	2.0	1.545	510.7	LOS F	193.0	1374.4	1.00	6.56	15.49	6.4
3	R2	All MCs	93	2.0	93	2.0	1.545	515.3	LOS F	193.0	1374.4	1.00	6.56	15.49	6.4
Appro	ach		824	2.0	824	2.0	1.545	511.1	LOS F	193.0	1374.4	1.00	6.56	15.49	6.4
East:	Camp	bell Stree	t												
4	L2	All MCs	146	2.0	146	2.0	0.888	21.7	LOS C	18.4	131.0	1.00	1.25	1.88	43.
5	T1	All MCs	585	2.0	585	2.0	0.888	21.8	LOS C	18.4	131.0	1.00	1.25	1.88	43.
6	R2	All MCs	24	2.0	24	2.0	0.888	26.5	LOS C	18.4	131.0	1.00	1.25	1.88	43.
Appro	ach		756	2.0	756	2.0	0.888	22.0	LOS C	18.4	131.0	1.00	1.25	1.88	43.
North	: North	Street													
7	L2	All MCs	26	2.0	26	2.0	0.488	6.5	LOS A	3.7	26.0	0.69	0.66	0.69	50.
8	T1	All MCs	168	2.0	168	2.0	0.488	6.7	LOS A	3.7	26.0	0.69	0.66	0.69	50.9
9	R2	All MCs	287	2.0	287	2.0	0.488	11.3	LOS B	3.7	26.0	0.69	0.66	0.69	50.
Appro	ach		482	2.0	482	2.0	0.488	9.4	LOS A	3.7	26.0	0.69	0.66	0.69	50.3
West:	Camp	bell Stree	ət												
10	L2	All MCs	45	2.0	45	2.0	0.368	6.3	LOS A	2.6	18.6	0.69	0.62	0.69	51.
11	T1	All MCs	234	2.0	234	2.0	0.368	6.5	LOS A	2.6	18.6	0.69	0.62	0.69	51.9
12	R2	All MCs	60	2.0	60	2.0	0.368	11.1	LOS B	2.6	18.6	0.69	0.62	0.69	51.
Appro	ach		339	2.0	339	2.0	0.368	7.3	LOS A	2.6	18.6	0.69	0.62	0.69	51.
All Ve	hicles		2401	2.0	2401	2.0	1.545	185.3	LOS F	193.0	1374.4	0.89	2.87	6.15	14.

Weekday Afternoon peak hour – Large Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	F			rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		lack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Avei Speed km/l
South	n: Nortl	n Street													
1	L2	All MCs	61	2.0	61	2.0	0.580	6.2	LOS A	5.1	36.0	0.70	0.59	0.70	51.
2	T1	All MCs	501	2.0	501	2.0	0.580	6.4	LOS A	5.1	36.0	0.70	0.59	0.70	51.
3	R2	All MCs	72	2.0	72	2.0	0.580	11.0	LOS B	5.1	36.0	0.70	0.59	0.70	51.
Appro	bach		634	2.0	634	2.0	0.580	6.9	LOS A	5.1	36.0	0.70	0.59	0.70	51.
East:	Camp	bell Stree	ŧ												
4	L2	All MCs	159	2.0	159	2.0	0.427	6.8	LOS A	3.0	21.2	0.70	0.64	0.70	51.
5	T1	All MCs	200	2.0	200	2.0	0.427	7.0	LOS A	3.0	21.2	0.70	0.64	0.70	52.
6	R2	All MCs	36	2.0	36	2.0	0.427	11.7	LOS B	3.0	21.2	0.70	0.64	0.70	51.
Appro	bach		395	2.0	395	2.0	0.427	7.4	LOS A	3.0	21.2	0.70	0.64	0.70	51.
North	: North	Street													
7	L2	All MCs	28	2.0	28	2.0	0.421	8.8	LOS A	3.2	22.7	0.88	0.75	0.90	50.
8	T1	All MCs	216	2.0	216	2.0	0.421	9.0	LOS A	3.2	22.7	0.88	0.75	0.90	50.
9	R2	All MCs	38	2.0	38	2.0	0.421	13.6	LOS B	3.2	22.7	0.88	0.75	0.90	50.
Appro	bach		282	2.0	282	2.0	0.421	9.6	LOS A	3.2	22.7	0.88	0.75	0.90	50.
West	: Camp	bell Stree	ət												
10	L2	All MCs	301	2.0	301	2.0	1.559	516.4	LOS F	285.0	2029.1	1.00	8.34	18.58	6.
11	T1	All MCs	649	2.0	649	2.0	1.559	516.6	LOS F	285.0	2029.1	1.00	8.34	18.58	6.
12	R2	All MCs	267	2.0	267	2.0	1.559	521.2	LOS F	285.0	2029.1	1.00	8.34	18.58	6.
Appro	bach		1218	2.0	1218	2.0	1.559	517.6	LOS F	285.0	2029.1	1.00	8.34	18.58	6.
All Ve	hicles		2528	2.0	2528	2.0	1.559	253.2	LOS F	285.0	2029.1	0.86	4.35	9.34	11.



Saturday Morning peak hour – Large Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival ows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service		ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	: North	h Street													
1	L2	All MCs	269	2.0	269	2.0	1.104	137.8	LOS F	54.5	388.0	1.00	2.96	6.10	18.3
2	T1	All MCs	271	2.0	271	2.0	1.104	138.0	LOS F	54.5	388.0	1.00	2.96	6.10	18.4
3	R2	All MCs	42	2.0	42	2.0	1.104	142.6	LOS F	54.5	388.0	1.00	2.96	6.10	18.2
Appro	bach		582	2.0	582	2.0	1.104	138.2	LOS F	54.5	388.0	1.00	2.96	6.10	18.3
East:	Camp	bell Stree	et												
4	L2	All MCs	117	2.0	117	2.0	0.826	15.8	LOS B	13.7	97.8	1.00	1.03	1.54	46.5
5	T1	All MCs	596	2.0	596	2.0	0.826	16.0	LOS B	13.7	97.8	1.00	1.03	1.54	46.8
6	R2	All MCs	26	2.0	26	2.0	0.826	20.6	LOS C	13.7	97.8	1.00	1.03	1.54	46.1
Appro	bach		739	2.0	739	2.0	0.826	16.1	LOS B	13.7	97.8	1.00	1.03	1.54	46.7
North	: North	n Street													
7	L2	All MCs	23	2.0	23	2.0	0.423	5.9	LOS A	3.0	21.5	0.61	0.63	0.61	50.8
8	T1	All MCs	141	2.0	141	2.0	0.423	6.1	LOS A	3.0	21.5	0.61	0.63	0.61	51.1
9	R2	All MCs	281	2.0	281	2.0	0.423	10.7	LOS B	3.0	21.5	0.61	0.63	0.61	50.3
Appro	bach		445	2.0	445	2.0	0.423	9.0	LOS A	3.0	21.5	0.61	0.63	0.61	50.6
West	Camp	bell Stree	et												
10	L2	All MCs	64	2.0	64	2.0	0.323	5.8	LOS A	2.2	15.9	0.61	0.59	0.61	51.9
11	T1	All MCs	198	2.0	198	2.0	0.323	6.0	LOS A	2.2	15.9	0.61	0.59	0.61	52.2
12	R2	All MCs	57	2.0	57	2.0	0.323	10.6	LOS B	2.2	15.9	0.61	0.59	0.61	51.3
Appro	bach		319	2.0	319	2.0	0.323	6.8	LOS A	2.2	15.9	0.61	0.59	0.61	52.0
All Ve	hicles		2085	2.0	2085	2.0	1.104	47.2	LOS D	54.5	388.0	0.86	1.41	2.47	33.4

Saturday Afternoon peak hour – Large Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Que [Veh. veh		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	n: North	n Street													
1	L2	All MCs	67	2.0	67	2.0	0.314	4.9	LOS A	2.1	14.9	0.43	0.49	0.43	52.7
2	T1	All MCs	276	2.0	276	2.0	0.314	5.1	LOS A	2.1	14.9	0.43	0.49	0.43	53.1
3	R2	All MCs	38	2.0	38	2.0	0.314	9.7	LOS A	2.1	14.9	0.43	0.49	0.43	52.2
Appro	bach		381	2.0	381	2.0	0.314	5.5	LOS A	2.1	14.9	0.43	0.49	0.43	52.9
East:	Camp	bell Stree	et												
4	L2	All MCs	78	2.0	78	2.0	0.230	5.7	LOS A	1.4	10.0	0.55	0.57	0.55	52.4
5	T1	All MCs	132	2.0	132	2.0	0.230	5.9	LOS A	1.4	10.0	0.55	0.57	0.55	52.7
6	R2	All MCs	21	2.0	21	2.0	0.230	10.5	LOS B	1.4	10.0	0.55	0.57	0.55	51.8
Appro	bach		231	2.0	231	2.0	0.230	6.3	LOS A	1.4	10.0	0.55	0.57	0.55	52.5
North	: North	Street													
7	L2	All MCs	16	2.0	16	2.0	0.262	9.6	LOS A	1.9	13.4	0.91	0.76	0.91	50.2
8	T1	All MCs	106	2.0	106	2.0	0.262	9.8	LOS A	1.9	13.4	0.91	0.76	0.91	50.5
9	R2	All MCs	16	2.0	16	2.0	0.262	14.5	LOS B	1.9	13.4	0.91	0.76	0.91	49.7
Appro	bach		138	2.0	138	2.0	0.262	10.3	LOS B	1.9	13.4	0.91	0.76	0.91	50.4
West	Camp	bell Stree	et												
10	L2	All MCs	356	2.0	356	2.0	1.124	127.9	LOS F	109.1	776.8	1.00	3.67	6.40	19.3
11	T1	All MCs	644	2.0	644	2.0	1.124	128.1	LOS F	109.1	776.8	1.00	3.67	6.40	19.3
12	R2	All MCs	223	2.0	223	2.0	1.124	132.7	LOS F	109.1	776.8	1.00	3.67	6.40	19.2
Appro	bach		1223	2.0	1223	2.0	1.124	128.9	LOS F	109.1	776.8	1.00	3.67	6.40	19.3
All Ve	hicles		1973	2.0	1973	2.0	1.124	82.4	LOS F	109.1	776.8	0.83	2.49	4.18	25.4



Weekday Morning peak hour – Sensitivity (2,000 patrons)

Vehic	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Que [Veh. veh		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	: North	n Street													
1	L2	All MCs	199	2.0	199	2.0	0.930	30.9	LOS C	23.2	164.9	1.00	1.51	2.40	38.9
2	T1	All MCs	445	2.0	445	2.0	0.930	31.1	LOS C	23.2	164.9	1.00	1.51	2.40	39.1
3	R2	All MCs	93	2.0	93	2.0	0.930	35.7	LOS D	23.2	164.9	1.00	1.51	2.40	38.6
Appro	ach		737	2.0	737	2.0	0.930	31.6	LOS C	23.2	164.9	1.00	1.51	2.40	39.0
East:	Camp	bell Stree	t												
4	L2	All MCs	146	2.0	146	2.0	0.598	8.0	LOS A	5.6	40.2	0.78	0.70	0.87	51.3
5	T1	All MCs	411	2.0	411	2.0	0.598	8.2	LOS A	5.6	40.2	0.78	0.70	0.87	51.7
6	R2	All MCs	24	2.0	24	2.0	0.598	12.8	LOS B	5.6	40.2	0.78	0.70	0.87	50.8
Appro	ach		581	2.0	581	2.0	0.598	8.3	LOS A	5.6	40.2	0.78	0.70	0.87	51.5
North	: North	Street													
7	L2	All MCs	26	2.0	26	2.0	0.369	6.4	LOS A	2.5	18.0	0.66	0.65	0.66	50.9
8	T1	All MCs	168	2.0	168	2.0	0.369	6.6	LOS A	2.5	18.0	0.66	0.65	0.66	51.3
9	R2	All MCs	156	2.0	156	2.0	0.369	11.2	LOS B	2.5	18.0	0.66	0.65	0.66	50.5
Appro	ach		351	2.0	351	2.0	0.369	8.6	LOS A	2.5	18.0	0.66	0.65	0.66	50.9
West:	Camp	bell Stree	ət												
10	L2	All MCs	45	2.0	45	2.0	0.446	8.1	LOS A	3.5	24.9	0.84	0.72	0.87	50.7
11	T1	All MCs	234	2.0	234	2.0	0.446	8.2	LOS A	3.5	24.9	0.84	0.72	0.87	51.0
12	R2	All MCs	60	2.0	60	2.0	0.446	12.9	LOS B	3.5	24.9	0.84	0.72	0.87	50.2
Appro	ach		339	2.0	339	2.0	0.446	9.0	LOS A	3.5	24.9	0.84	0.72	0.87	50.9
All Ve	hicles		2007	2.0	2007	2.0	0.930	17.1	LOS B	23.2	164.9	0.85	0.99	1.40	45.9

Weekday Afternoon peak hour – Sensitivity (1,000 patrons)

Vehi	cle Mo	ovement	i Perfo	rma	nce										
Mov	Turn	Mov	Dem			rival	Deg.	Aver.	Level of	95% Ba		Prop.	Eff.	Aver.	Aver.
ID		Class		lows		lows	Satn	Delay	Service	Que		Que	Stop	No. of	Speed
			[Total veh/h		veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	n: Nortl	h Street													
1	L2	All MCs	61	2.0	61	2.0	0.578	6.2	LOS A	5.0	35.6	0.69	0.59	0.70	51.6
2	T1	All MCs	501	2.0	501	2.0	0.578	6.3	LOS A	5.0	35.6	0.69	0.59	0.70	51.9
3	R2	All MCs	72	2.0	72	2.0	0.578	11.0	LOS B	5.0	35.6	0.69	0.59	0.70	51.1
Appro	bach		634	2.0	634	2.0	0.578	6.8	LOS A	5.0	35.6	0.69	0.59	0.70	51.8
East:	Camp	bell Stree	et												
4	L2	All MCs	159	2.0	159	2.0	0.412	6.6	LOS A	2.9	20.4	0.67	0.62	0.67	51.9
5	T1	All MCs	200	2.0	200	2.0	0.412	6.7	LOS A	2.9	20.4	0.67	0.62	0.67	52.3
6	R2	All MCs	36	2.0	36	2.0	0.412	11.4	LOS B	2.9	20.4	0.67	0.62	0.67	51.4
Appro	bach		395	2.0	395	2.0	0.412	7.1	LOS A	2.9	20.4	0.67	0.62	0.67	52.1
North	: North	Street													
7	L2	All MCs	28	2.0	28	2.0	0.381	7.9	LOS A	2.8	19.8	0.82	0.71	0.82	50.9
8	T1	All MCs	216	2.0	216	2.0	0.381	8.1	LOS A	2.8	19.8	0.82	0.71	0.82	51.2
9	R2	All MCs	38	2.0	38	2.0	0.381	12.7	LOS B	2.8	19.8	0.82	0.71	0.82	50.4
Appro	bach		282	2.0	282	2.0	0.381	8.7	LOS A	2.8	19.8	0.82	0.71	0.82	51.1
West	Camp	bell Stree	et												
10	L2	All MCs	105	2.0	105	2.0	0.823	19.1	LOS B	13.2	94.2	1.00	1.13	1.69	44.2
11	T1	All MCs	388	2.0	388	2.0	0.823	19.3	LOS B	13.2	94.2	1.00	1.13	1.69	44.5
12	R2	All MCs	137	2.0	137	2.0	0.823	24.0	LOS C	13.2	94.2	1.00	1.13	1.69	43.9
Appro	bach		631	2.0	631	2.0	0.823	20.3	LOS C	13.2	94.2	1.00	1.13	1.69	44.3
All Ve	hicles		1941	2.0	1941	2.0	0.823	11.5	LOS B	13.2	94.2	0.81	0.79	1.03	49.1



Albert Street / Campbell Street

Weekday Morning peak hour – Typical Crowd

Vehi	cle Mo	ovement	t Perfo	rmai	nce										
Mov ID	Turn	Mov Class	[Total	lows HV]	Fi [Total		Deg. Satn	Aver. Delay	Level of Service	95% B Que [Veh.	eue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
South	East:	Campbel	veh/h I Street	%	veh/h	%	v/c	sec	_	veh	m	_	_	_	km/h
21	L2	All MCs	17	2.0	17	2.0	0.061	37.7	LOS D	0.6	4.1	0.89	0.69	0.89	36.1
22	T1	All MCs	82	2.0	82	2.0	*0.284	33.7	LOS C	2.9	21.0	0.93	0.72	0.93	38.7
23	R2	All MCs	26	2.0	26	2.0	0.096	38.0	LOS D	0.9	6.5	0.89	0.71	0.89	36.1
Appro	bach		125	2.0	125	2.0	0.284	35.1	LOS D	2.9	21.0	0.91	0.71	0.91	37.8
North	East: /	Albert Stre	eet												
24	L2	All MCs	19	2.0	19	2.0	0.770	35.1	LOS D	17.5	124.7	0.97	0.90	1.05	39.2
25	T1	All MCs	906	2.0	906	2.0	*0.770	29.5	LOS C	17.5	124.9	0.97	0.90	1.05	40.4
26	R2	All MCs	116	2.0	116	2.0	*0.723	48.4	LOS D	4.9	34.7	1.00	0.87	1.19	32.8
Appro	bach		1041	2.0	1041	2.0	0.770	31.7	LOS C	17.5	124.9	0.97	0.90	1.06	39.4
North	West:	Campbel	I Street												
27	L2	All MCs	18	2.0	18	2.0	0.065	37.7	LOS D	0.6	4.4	0.89	0.69	0.89	36.1
28	T1	All MCs	137	2.0	137	2.0	*0.474	34.9	LOS C	5.1	36.3	0.96	0.77	0.96	38.2
29	R2	All MCs	35	2.0	35	2.0	0.126	38.3	LOS D	1.2	8.6	0.90	0.72	0.90	36.0
Appro	bach		189	2.0	189	2.0	0.474	35.8	LOS D	5.1	36.3	0.94	0.75	0.94	37.6
South	West:	Albert St	reet												
30	L2	All MCs	23	2.0	23	2.0	0.573	30.7	LOS C	11.4	81.1	0.89	0.77	0.89	41.1
31	T1	All MCs	656	2.0	656	2.0	0.573	32.9	LOS C	11.4	81.1	0.89	0.76	0.89	42.5
32	R2	All MCs	13	2.0	13	2.0	0.079	58.7	LOS E	0.5	3.4	0.95	0.68	0.95	34.3
Appro	bach		692	2.0	692	2.0	0.573	33.3	LOS C	11.4	81.1	0.89	0.76	0.89	38.8
All Ve	hicles		2047	2.0	2047	2.0	0.770	32.9	LOS C	17.5	124.9	0.94	0.83	0.99	38.9

Weekday Afternoon peak hour – Typical Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	F				Deg. Satn v/c	Aver. Delay sec	Level of Service		ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	East:	Campbell	Street												
21	L2	All MCs	6	2.0	6	2.0	0.124	43.6	LOS D	1.3	8.9	0.91	0.68	0.91	35.6
22	T1	All MCs	184	2.0	184	2.0	*0.620	41.1	LOS D	6.9	49.3	0.98	0.79	1.01	35.8
23	R2	All MCs	56	2.0	56	2.0	0.229	44.5	LOS D	2.3	16.1	0.93	0.74	0.93	34.0
Appro	bach		246	2.0	246	2.0	0.620	42.0	LOS D	6.9	49.3	0.97	0.78	0.99	35.4
North	East: A	Albert Stre	eet												
24	L2	All MCs	45	2.0	45	2.0	0.658	32.0	LOS C	16.7	118.8	0.90	0.79	0.90	40.4
25	T1	All MCs	854	2.0	854	2.0	0.658	26.4	LOS C	16.8	119.4	0.90	0.79	0.90	41.8
26	R2	All MCs	153	2.0	153	2.0	*0.750	51.9	LOS D	7.1	50.7	1.00	0.90	1.18	31.8
Appro	bach		1052	2.0	1052	2.0	0.750	30.4	LOS C	16.8	119.4	0.91	0.80	0.94	39.9
North	West:	Campbel	l Street												
27	L2	All MCs	51	2.0	51	2.0	0.207	44.3	LOS D	2.0	14.6	0.93	0.74	0.93	33.9
28	T1	All MCs	95	2.0	95	2.0	* 0.369	39.7	LOS D	3.9	28.0	0.95	0.74	0.95	36.4
29	R2	All MCs	39	2.0	39	2.0	0.160	43.9	LOS D	1.6	11.1	0.92	0.73	0.92	34.1
Appro	bach		184	2.0	184	2.0	0.369	41.8	LOS D	3.9	28.0	0.94	0.74	0.94	35.2
South	West:	Albert St	reet												
30	L2	All MCs	32	2.0	32	2.0	0.812	37.8	LOS D	23.9	170.4	0.97	0.93	1.06	38.1
31	T1	All MCs	1062	2.0	1062	2.0	*0.812	43.3	LOS D	23.9	170.4	0.97	0.93	1.07	39.2
32	R2	All MCs	18	2.0	18	2.0	0.088	67.2	LOS E	0.7	5.2	0.93	0.69	0.93	33.7
Appro	bach		1112	2.0	1112	2.0	0.812	43.6	LOS D	23.9	170.4	0.97	0.93	1.06	35.0
All Ve	hicles		2594	2.0	2594	2.0	0.812	37.9	LOS D	23.9	170.4	0.95	0.85	1.00	36.9

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Weekday Morning peak hour – Large Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	F			rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Qui [Veh. veh	ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/h
South	East:	Campbell	Street												
21	L2	All MCs	93	2.0	93	2.0	*0.337	39.7	LOS D	3.4	24.0	0.94	0.77	0.94	35.4
22	T1	All MCs	82	2.0	82	2.0	0.284	33.7	LOS C	2.9	21.0	0.93	0.72	0.93	38.7
23	R2	All MCs	26	2.0	26	2.0	0.096	38.0	LOS D	0.9	6.5	0.89	0.71	0.89	36.1
Appro	ach		201	2.0	201	2.0	0.337	37.0	LOS D	3.4	24.0	0.93	0.74	0.93	36.8
North	East: /	Albert Stre	eet												
24	L2	All MCs	19	2.0	19	2.0	0.862	41.0	LOS D	23.1	164.8	1.00	1.03	1.21	36.9
25	T1	All MCs	1059	2.0	1059	2.0	*0.862	35.4	LOS D	23.2	165.0	1.00	1.03	1.21	38.0
26	R2	All MCs	116	2.0	116	2.0	*0.843	52.9	LOS D	5.2	36.9	1.00	0.96	1.43	31.5
Appro	ach		1194	2.0	1194	2.0	0.862	37.2	LOS D	23.2	165.0	1.00	1.02	1.23	37.2
North	West:	Campbel	Street												
27	L2	All MCs	18	2.0	18	2.0	0.065	37.7	LOS D	0.6	4.4	0.89	0.69	0.89	36.1
28	T1	All MCs	137	2.0	137	2.0	*0.474	34.9	LOS C	5.1	36.3	0.96	0.77	0.96	38.2
29	R2	All MCs	112	2.0	112	2.0	0.406	40.1	LOS D	4.1	29.3	0.95	0.78	0.95	35.3
Appro	ach		266	2.0	266	2.0	0.474	37.3	LOS D	5.1	36.3	0.95	0.77	0.95	36.8
South	West:	Albert St	reet												
30	L2	All MCs	23	2.0	23	2.0	0.551	29.8	LOS C	11.2	79.5	0.88	0.75	0.88	41.8
31	T1	All MCs	656	2.0	656	2.0	0.551	31.6	LOS C	11.2	79.5	0.88	0.75	0.88	42.9
32	R2	All MCs	13	2.0	13	2.0	0.092	59.4	LOS E	0.5	3.5	0.96	0.68	0.96	33.9
Appro	ach		692	2.0	692	2.0	0.551	32.1	LOS C	11.2	79.5	0.88	0.75	0.88	39.3
All Ve	hicles		2353	2.0	2353	2.0	0.862	35.7	LOS D	23.2	165.0	0.95	0.89	1.07	37.7

Weekday Afternoon peak hour – Large Crowd

Vehi	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	F			rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Ba Que [Veh. veh		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/h
South	nEast:	Campbell	Street												
21	L2	All MCs	6	2.0	6	2.0	0.165	73.2	LOS E	2.1	15.3	0.95	0.70	0.95	27.7
22	T1	All MCs	184	2.0	184	2.0	*0.826	76.9	LOS E	12.3	87.9	0.99	0.91	1.15	26.6
23	R2	All MCs	56	2.0	56	2.0	0.305	74.7	LOS E	3.9	27.6	0.97	0.75	0.97	26.6
Appro	oach		246	2.0	246	2.0	0.826	76.3	LOS E	12.3	87.9	0.99	0.87	1.11	26.6
North	East: A	Albert Stre	eet												
24	L2	All MCs	45	2.0	45	2.0	0.585	43.0	LOS D	25.3	180.4	0.84	0.75	0.84	36.0
25	T1	All MCs	854	2.0	854	2.0	0.585	37.4	LOS D	25.5	181.4	0.84	0.75	0.84	37.2
26	R2	All MCs	153	2.0	153	2.0	0.347	56.3	LOS E	9.2	65.7	0.88	0.79	0.88	30.6
Appro	oach		1052	2.0	1052	2.0	0.585	40.4	LOS D	25.5	181.4	0.85	0.75	0.85	36.0
North	West:	Campbel	Street												
27	L2	All MCs	1	2.0	1	2.0	0.006	70.5	LOS E	0.1	0.5	0.92	0.60	0.92	27.2
28	T1	All MCs	95	2.0	95	2.0	*0.492	70.6	LOS E	6.7	48.0	0.99	0.78	0.99	27.9
29	R2	All MCs	39	2.0	39	2.0	0.213	73.8	LOS E	2.7	19.0	0.96	0.74	0.96	26.7
Appro	oach		135	2.0	135	2.0	0.492	71.5	LOS E	6.7	48.0	0.98	0.76	0.98	27.8
South	nWest:	Albert St	reet												
30	L2	All MCs	94	2.0	94	2.0	0.920	65.1	LOS E	55.5	395.0	1.00	1.03	1.13	29.6
31	T1	All MCs	1215	2.0	1215	2.0	*0.920	80.2	LOS F	55.5	395.0	1.00	1.04	1.15	30.0
32	R2	All MCs	108	2.0	108	2.0	*0.931	141.8	LOS F	10.1	71.6	1.00	1.06	1.51	22.0
Appro	oach		1417	2.0	1417	2.0	0.931	83.9	LOS F	55.5	395.0	1.00	1.04	1.18	25.3
All Ve	ehicles		2849	2.0	2849	2.0	0.931	66.6	LOS E	55.5	395.0	0.94	0.91	1.04	28.7



Weekday Afternoon peak hour – Sensitivity (3,000 patrons)

Vehi	cle Mo	ovemen	i Perfo	rmai	nce										
Mov ID	Turn	Mov Class		lows HV]		rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Ba Que [Veh. veh		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver Speed km/h
South	East:	Campbel	Street												
21	L2	All MCs	6	2.0	6	2.0	0.127	47.9	LOS D	1.4	9.9	0.92	0.68	0.92	34.2
22	T1	All MCs	184	2.0	184	2.0	* 0 .636	45.9	LOS D	7.7	54.8	0.99	0.80	1.01	34.3
23	R2	All MCs	56	2.0	56	2.0	0.234	48.9	LOS D	2.5	17.9	0.94	0.74	0.94	32.6
Appro	bach		246	2.0	246	2.0	0.636	46.7	LOS D	7.7	54.8	0.97	0.79	0.99	33.9
North	East: /	Albert Stre	eet												
24	L2	All MCs	45	2.0	45	2.0	0.585	30.8	LOS C	17.1	121.9	0.84	0.75	0.84	40.9
25	T1	All MCs	854	2.0	854	2.0	0.585	25.3	LOS C	17.2	122.5	0.84	0.74	0.84	42.4
26	R2	All MCs	153	2.0	153	2.0	*0.834	60.8	LOS E	8.2	58.7	1.00	0.96	1.30	29.5
Appro	bach		1052	2.0	1052	2.0	0.834	30.7	LOS C	17.2	122.5	0.86	0.77	0.91	39.8
North	West:	Campbel	Street												
27	L2	All MCs	51	2.0	51	2.0	0.212	48.7	LOS D	2.3	16.2	0.93	0.74	0.93	32.5
28	T1	All MCs	95	2.0	95	2.0	* 0.379	44.3	LOS D	4.4	31.1	0.96	0.75	0.96	34.8
29	R2	All MCs	39	2.0	39	2.0	0.164	48.4	LOS D	1.7	12.4	0.92	0.73	0.92	32.8
Appro	bach		184	2.0	184	2.0	0.379	46.4	LOS D	4.4	31.1	0.94	0.74	0.94	33.7
South	West:	Albert St	reet												
30	L2	All MCs	86	2.0	86	2.0	0.862	42.2	LOS D	33.1	236.0	0.99	0.98	1.11	36.2
31	T1	All MCs	1172	2.0	1172	2.0	* 0 .862	49.1	LOS D	33.1	236.0	0.99	0.99	1.12	37.2
32	R2	All MCs	72	2.0	72	2.0	0.391	76.6	LOS E	3.4	24.4	0.98	0.76	0.98	31.5
Appro	bach		1329	2.0	1329	2.0	0.862	50.2	LOS D	33.1	236.0	0.98	0.97	1.11	32.9
All Ve	hicles		2812	2.0	2812	2.0	0.862	42.3	LOS D	33.1	236.0	0.94	0.87	1.01	35.3