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Stage 7 - Izone Industrial Park, Rolleston Selwyn District Council Infrastructure Assessment

June 2009
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Revision A

Document Control



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Rev No	Date	Revision Details	Typist	Author	Verifier	Approver
A	June 2009	Report	RNS	RNS	DW	CHT

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Contents

Section	Page
1. Introduction	1
2. Site Description	2
3. Wastewater Disposal	3
4. Water Supply	4
5. Conclusions	5

Appendix A
Property Plan

Appendix B
Outline Development Plan

Appendix C
Wastewater Concept Plan

Appendix D
High Pressure Water Concept Plan

1. Introduction

This report has been prepared in support of a proposed change to the Selwyn District Plan to allow industrial and commercial zoning (Business 2) of approximately 48ha of land as an extension to the existing Izone Industrial Park at Rolleston.

This report discusses the issues in relation to the disposal of wastewater and the supply of high pressure water to the proposed new development area.

2. Site Description

- 2.1 The Development Area is characterised by land use activities typical of a rural setting, being paddocks demarcated by fencelines and shelterbelts, dwellings and associated accessory buildings and landscaping.
- 2.2 A Property Plan which includes topographical information gathered over the majority of the site is included in Appendix A.
- 2.3 The site has a gentle fall from northwest to the southeast, with total elevation change of approximately 4.5m. The average gradient is approximately 1:200.
- 2.4 To the northeast, northwest and southwest of the subject site, the land is characterised by rural farming activities. Railway Road and the Midlands Railway run along the southwest boundary of the site and Stage 5 of the Izone Industrial Park is currently under construction on the southeast boundary of the site.

3. Wastewater Disposal

Existing Reticulation

- 3.1 Reticulation installed as part of the Stage 5 construction works provides two outfalls for the discharge of sewage from the proposed development site. Those outfalls are:
- i) A 300mm diameter pipe located within the extension of Izone Drive and;
 - ii) A 225mm diameter pipe located within Road B which is in turn is connected to a 300mm diameter pipe in Road A.
- 3.2 The existing Izone wastewater reticulation consists of 225mm diameter and 300mm diameter pipelines which ultimately drain via a 300mm diameter pipeline to a pump station located in George Holmes Road. Wastewater is then pumped via a 300mm diameter rising main to Selwyn District Council's new treatment plant. The capacity of the pipe entering the pump station and the capacity of the pump station itself are possible limiting factors in expansion of the existing network.
- 3.3 Selwyn District Council monitors wastewater flows to the existing pump station on George Holmes Road. The pump station has been designed to be readily upgraded to accommodate larger pumps if required. However, as most of the industry being established within Izone and adjoining area to date is of a 'dry' nature, current wastewater flows have not as yet required any upgrading.

Options Assessment

- 3.4 As indicated above, reticulation exists to both Izone Drive and Road B accessing the site from the southeast.
- 3.5 The depth of the existing wastewater reticulation at both of these points is sufficient to allow the subject land to be serviced by gravity reticulation.
- 3.6 A preliminary assessment of the two possible road layouts for Stage 7 confirms that extension of the gravity network to service the land is feasible. If Road B is not extended, the critical western corner of the site could still be serviced by an extension of the Izone Drive sewer at a minimum grade of 1 in 300 in Izone Drive and 1 in 200 in the future road back towards Railway Road. A wastewater concept plan is attached at Appendix C.
- 3.7 It is understood that future development beyond the area proposed to be rezoned is unlikely to the northwest, but possible to the northeast. Therefore any new reticulation should extend to the northeast boundary of the site along with other infrastructure. Our preliminary assessment indicates that cover in the order of 3.0m is achievable at the northeast end of the proposed future roading network.
- 3.8 Capacity of the existing network to accommodate the additional development is unlikely to be limiting. The reticulation has been conservatively designed and the pump station capacity in George Holmes Road can easily be increased by upgrading pumps if demand requires.
- 3.9 We therefore consider that there are suitable options for the disposal of wastewater from the site.

4. Water Supply

Existing Reticulation

- 4.1 As with Sewage, existing water reticulation constructed in Stage 5 provides two points of connection for the subject site. Those connections are:
- iii) A 300mm diameter main located within the extension of Izone Drive and;
 - iv) A 225mm diameter main located within Road B which is in turn connected to a 300mm diameter pipe in Road A.
- 4.2 Resource Consent (CRC050888) authorised Selwyn District Council to install up to 5 bores to within the overall area of Izone Industrial Park and take a total of 300litres/second of groundwater for town water supply purposes. One of the bores authorised by the above consent is established with a second planned to be installed in the near future.
- 4.3 Although the above bores will be installed within the Izone site, they will feed the Rolleston public water supply along with other already established bores. The additional bores are planned to meet expected growth in demand from Izone and Rolleston Township.
- 4.4 Selwyn District Council monitor performance of the water supply and have planned new bores and upgrading works to be completed as demand increases.
- 4.5 The capacity of the existing network and authorised allocation of water are not expected to constrain the proposed development.

Options/Assessment

- 4.6 As indicated above, reticulation exists in both Izone Drive and Road B southwest of the subject land.
- 4.7 Options for extension to service the subject land include extending one or both of the water mains, depending on whether Road B is extended to form part of the internal roading network within the area to be rezoned.
- 4.8 It is understood that future development beyond the area proposed to be rezoned is unlikely to the northwest, but possible to the northeast. Therefore any new reticulation should extend to the northeast boundary of the site along with other infrastructure.
- 4.9 It is desirable for water mains to be looped where possible. Among other benefits, this provides improved security of supply. Should extension of Road B not proceed, the rezoned land would only be feed from one point of supply at the Izone Drive and Road A intersection. This situation would remain until the land to the northeast was developed and the reticulation could be linked back to the Stage 6 reticulation. Alternatively, a link could be provided along Railway Road, however this is not desired from the applicants perspective.
- 4.10 If the single point of supply scenario was to proceed, the 300mm diameter main in Izone Drive is considered to be capable of providing sufficient supply the subject land for the anticipated land use. Although there would be a small increase in risk in the short term by supplying the area from only one point, this is not considered to be an obstacle to the proposed development.
- 4.11 We therefore consider that there are suitable options for high pressure water to the subject site. Additional bores are planned to meet demand as the development proceed.

5. Conclusions

- 5.1 Water supply and wastewater services can be provided to service the proposed development.
- 5.2 The preferred option would be extension of both Izone Drive and Road B and their associated services. However, if Road B is not extended, extension of services along Izone Drive will still provide acceptable options for servicing the site from a wastewater and potable water supply perspective.
- 5.3 Possible future development of to the northeast can be provided for by extending services to the northeast boundary of the site.
- 5.4 No significant wastewater or water supply issues have been identified that could unduly constrain the proposed development.

Appendix A

Contour Plan



A2

SCALE 1:1000

LEGEND	
	TELECOM BOX
	POWER POLE
	OVERHEAD POWERLINES
	FENCE
	MAJOR CONTOUR (1m)
	MINOR CONTOUR (0.25m)

DATA QUALITY STATEMENTS	
PROPERTY DATA	The property data has been sourced from Land Information New Zealand (LINZ) and is current as at August 2008.
SURVEYED DATA	Surveyed data has been captured using survey equipment, to a relative accuracy within approximately 30mm (horizontal and vertical).
DIGITAL TERRAIN MODEL (DTM)	The DTM is shown by contours at 0.25m intervals. The contours have been calculated from spot heights obtained by field survey. The accuracy of the Digital Terrain Model is estimated to be within 0.1m.
SURVEY ORIGIN DATA	Vertical elevations are in terms of Mean Sea Level. The Origin of Levels is MAA 3 DP 388634 RL 60.500 On Lin. Dike
AERIAL PHOTO	The age of the aerial photo image is unknown, and may not therefore represent the current landform features.

Rev.	Date	By
B	22.5.9	MINOR CHANGES
A	5.09	ISSUE

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IZONE INDUSTRIAL PARK
ROLLESTON
EXPANSION PLAN CHANGE

PROPERTY PLAN
PROPOSED PROPERTY PLAN
(RAILWAY ROAD)

COMPRISED IN: Cst CB470/993 & 313177 (PART)
TOTAL AREA: 48.8Ha
PREPARED BY: C.H. Thompson
Registration Professional Surveyor
MAY 2009

Survived	Signed	HW	Date	4.09
Designed	Signed	Date		
Drawn	Signed	RD	Date	5.09
Verified	Signed	HW	Date	5.09
Approved	Signed	CHT	Date	05.09

CW Project No.	41375
Scale	1:3000@A2
Drawing No.	SU 01
Rev.	B

Appendix B

Outline Development Plan



- * AMENITY HUB OPTIONS
- HOSKYN'S ROAD UPGRADE (RULE 24.1.3.15)
- ADDITIONAL CONNECTION IF POSSIBLE
- POTENTIAL RAIL CROSSINGS
- BALANCE HOSKYN'S ROAD UPGRADE (RULE 24.1.3.17)
- HOSKYN'S/MADDISON'S ROADS INTERSECTION UPGRADE (RULE 24.1.3.18)
- JONES / HOSKYN'S ROADS INTERSECTION UPGRADE (RULE 24.1.3.20)

NOTE: LOTS ABUTTING HOSKYN'S ROAD SHOULD FRONT ON TO AND ACCESS HOSKYN'S ROAD - REFER RULE 24.1.3.11

Rev.	Date	Revision Details	By
G	14.10.9	MINOR ADJUSTMENTS	RS
F	14.9.9	MINOR ADJUSTMENTS	RS
E	26.8.9	MINOR ADJUSTMENTS	RS
D	26.6.9	OUTLINE DEV AREA ADJUSTED	RS
C	15.6.9	MINOR ADJUSTMENTS	RS
B	22.5.9	AMENDMENTS FROM H & G	RS
A	05.09	ISSUE	RS

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Project

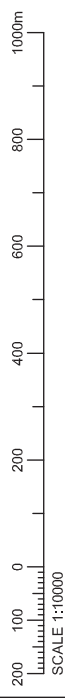


Drawing Title:
OUTLINE DEVELOPMENT PLAN
BUSINESS 2A ZONE

PROPERTY DATA

The property data has been sourced from Land Information New Zealand (LINZ) and is current as at January 2009.
AERIAL PHOTO
The aerial photography was flown in January 2009 at a scale of approximately 1:27,500 & supplied courtesy of Selwyn District Council.
The image has been orthorectified at ground level to a low order and aligned with surveyed features. The image will still be subject to some distortion.

Surveyed	Designed	Drawn	Verified	Approved
Signd	Signd	Signd	Signd	Signd
Date	Date	Date	Date	Date
05.09	05.09	05.09	05.09	05.09
DT	RS	MA	GD	GD
Scale	1:10 000@A3			
Rev.	PL 01			
G				



SCALE 1:10000

Appendix C

Sewage Concept Plan



Time (min)	Control (1st stage)	Treated (1st stage)
0	0	0
80	10	5
160	20	10
240	35	15
320	50	20
400	75	25

SCALE 1:4000

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Rev.	Date	Revision

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NOTES:

CONCEPT PLAN ONLY



Drawing Title:

STAGE 7 WASTEWATER CONCEPT PLAN

Surveyed	Signed	Date	CW Project No.
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Designed	Signed DSW	Date 05.09.13
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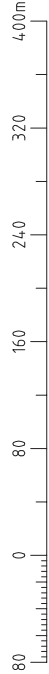
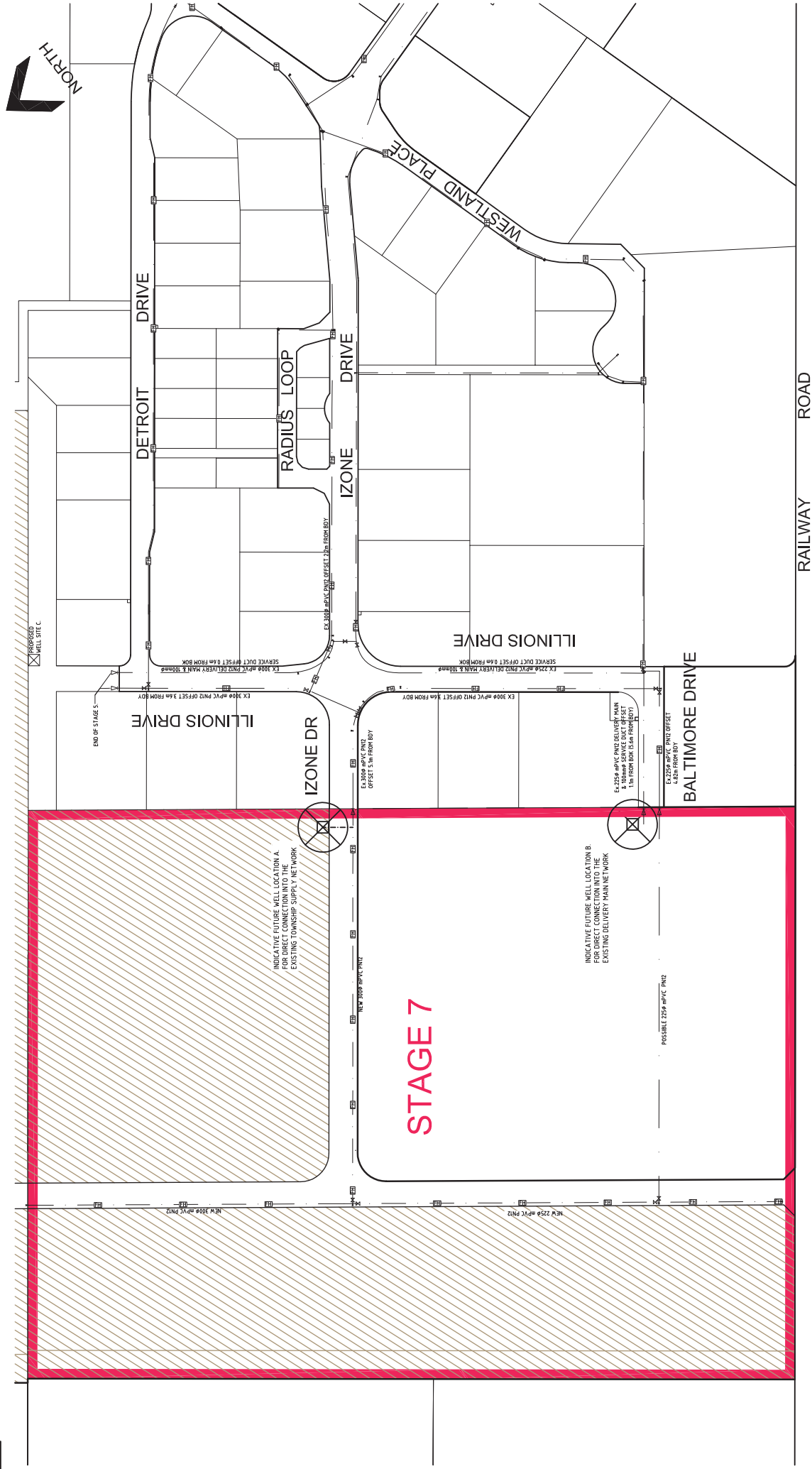
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Verified	Signed DSW	Date 05.09	Drawing No.
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Approved	Signed RNS	Date 05.09	SU200.1
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Appendix D

High Pressure Water Concept Plan



CONCEPTUAL

										<div><div></div><div><div>I ZONE</div><div>SOUTHERN BUSINESS HUB</div></div></div>										Project:										Drawing Title:									
										NOTES:										STAGE 7 HP WATER CONCEPT PLAN																			
										CONCEPT PLAN ONLY																													
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										JLR DSW RNS																													
										By: Ver: App:																													
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										A 05.09 ISSUE																													