

# Asset Owner Consultation Report

ARUP

# Document Verification

# ARUP

<b>Job title</b>		Cherry Creek Youth Justice Centre		<b>Job number</b>	
				254999	
<b>Document title</b>		Asset Owner Consultation Report		<b>File reference</b>	
<b>Document ref</b>					
<b>Revision</b>	<b>Date</b>	<b>Filename</b>	Early Works Assessment.docx		
Draft 1	30 May 2017	<b>Description</b>	Asset Owner Consultation Report: Draft Report for DJR review and comment		
			Prepared by	Checked by	Approved by
		<b>Name</b>	Emma Cotching	Claire Quinlan	Claire Quinlan
		<b>Signature</b>			
Final Report [A]	27 June 2017	<b>Filename</b>	Early Works Assessment.docx		
		<b>Description</b>	Asset Owner Consultation Report: Final		
			Prepared by	Checked by	Approved by
		<b>Name</b>	Emma Cotching	Claire Quinlan	Claire Quinlan
		<b>Signature</b>			
		<b>Filename</b>			
		<b>Description</b>			
			Prepared by	Checked by	Approved by
		<b>Name</b>			
		<b>Signature</b>			
		<b>Filename</b>			
		<b>Description</b>			
			Prepared by	Checked by	Approved by
		<b>Name</b>			
		<b>Signature</b>			
Press Control+Shift+D to insert or		Issue Document Verification with Document		<input checked="" type="checkbox"/>	

## Contents

---

	Page
<b>1 Introduction</b>	<b>1</b>
1.1 Background	1
1.2 Methodology	2
<b>2 Government authorities</b>	<b>3</b>
2.1 VicRoads	3
2.2 Wyndham City Council	4
2.3 Public Transport Victoria	5
<b>3 Service authorities</b>	<b>7</b>
3.1 Potable water	7
3.2 Sewer	11
3.3 Gas	15
3.4 Electricity	20
3.5 Telecommunications	24
3.6 Major utilities risks	29
<b>4 Stormwater</b>	<b>29</b>
4.1 Existing stormwater network	29
4.2 Ownership of on-site infrastructure	30
4.3 Design requirements	30
4.4 Approval process	31
<b>5 Conclusion</b>	<b>31</b>

## Appendices

### Appendix A

Site Layout Plan

### Appendix B

Existing Services

### Appendix C

Proposed Services

### Appendix D

Meeting Minutes

# 1 Introduction

---

Department of Justice and Regulation (DJR) have commissioned Arup to commence consultation on their behalf with service asset owners and affected asset owners for the new Youth Justice Centre (YJC). The intent of the works undertaken is to inform asset owners of the future development, identify options to access and service the development and understand the design processes associated with delivering the works in a constrained timeframe.

This report outlines the findings of our initial discussions with service authorities and asset owners affected by the YJC. Discussed in detail is the suitability and capacity of the existing infrastructure to service the facility, the options for extending this infrastructure to the site boundary and the expected approval processes required to facilitate the works. This report also outlines the road and transport options and requirements for providing suitable access to the site.

## 1.1 Background

### 1.1.1 Site location

The 67 ha site is part of a larger 320 ha site located between Werribee and Little River, and owned Melbourne Water. The site is bounded by the Public Acquisition Overlay (PAO) associated with the Metropolitan Outer Ring road / E6 reservation to the east, the future quarry buffer to the west, the Broiler Farm buffer zone to the north and the existing property title boundary to the south. Refer to the site layout plan in Appendix A.

### 1.1.2 Proposed development

Arup understands that initially the YJC will be a 224 bed facility with approximately 150 staff (total) with a total facility size in the order of 19.1 ha. DJR have advised that they may wish to expand the facility in the future to accommodate an additional 72 beds.

It is understood that DJR and Melbourne Water are currently in negotiations regarding the subdivision of the 320 ha Melbourne Water property and the subsequent sale of the 67ha site to DJR.

Based on recent discussions between DJR, Melbourne Water and Wyndham City Council, access to the YJC site will be achieved via a private access road coming off Little River Road. It is expected that the access road will run parallel to the western boundary of the Melbourne Water site and will be approximately 2.5km.

### 1.1.3 Development programme

Arup understands that DJR will seek to engage a Principal Consultant mid-2017 to complete the development works in 2020, such that the YJC is operational by the start of 2021. To ensure timely completion of works, it is expected that enabling works, including the provision for a new access road from Little River

Road to the site and the construction of services along it, will need to commence later this year.

## 1.2 Methodology

The utility, road and transport opportunities, constraints, processes and risks have been assessed using existing information drawn from:

- Information provided directly from servicing asset owners and affected asset owners
- Information provided from or on behalf of DJR
- Publicly available information.

Table 1 broadly characterises the technical methodology adopted during email, phone and face-to-face correspondence.

Table 1 Technical methodological approaches

Stakeholder	Broad Approach
City West Water AusNet Powercor Telstra Melbourne Water	<ul style="list-style-type: none"> <li>• Understand the wider network context, capacity issues and future planning</li> <li>• Determine a high level strategy for servicing the YJC</li> <li>• Understand basis for new connection and infrastructure</li> <li>• Understand ownership and maintenance responsibilities for new infrastructure</li> <li>• Understand Authorities' design, approval and construction requirements</li> <li>• Understand basis of funding of capital works</li> </ul>
Wyndham City Council VicRoads Public Transport Victoria	<ul style="list-style-type: none"> <li>• Understand stakeholder responsibility</li> <li>• Understand stakeholder responsibility and ownership</li> <li>• Understand design, approval and construction process associated with proposed access road</li> <li>• Understand medium and long term plans for local public transport services</li> </ul>

## 2 Government authorities

---

### 2.1 VicRoads

#### 2.1.1 Stakeholder ownership

VicRoads own and manage the section of Little River Road between the Princes Freeway and the Melbourne Water western site boundary, approximately 65m from the Princes Freeway on-ramp. Given this, VicRoads will be the governing road asset owner, responsible for approving the turning arrangement at the proposed YJC access road.

#### 2.1.2 Design, construction and approval processes

##### ***Little River Road / access road intersection***

VicRoads will be responsible for approving the turning arrangement from Little River Road to the proposed YJC access road. The Authority has advised that subject to existing and proposed traffic generation a formal intersection with traffic signals, turning lanes and / or a roundabout may not be required.

The following design approval process is required for the solution at the access road:

1. SIDRA modelling for the existing conditions and the post YJC development condition is required to inform a Traffic Impact Assessment Report. VicRoads and possibly the Regional Review Committee will review the Report to provide comment regarding the type of intersection that might be necessary at this location. VicRoads has advised that provided the modelling and reporting adequately describes the scenarios, the review process should take approximately one week.
2. Should VicRoads deem a formal intersection necessary at the intersection of Little River Road and the proposed access road, the VicRoads External Projects Team will be responsible for approving the proposed intersection design. It is understood that DJR will be required to provide VicRoads with a Functional 2D Design prior to proceeding with detailed or construction documents. It is expected that DJR will engage with VicRoads to determine the most suitable intersection arrangement given the constraints and traffic volumes.

As the asset owner, VicRoads will need to approve Traffic Management Plans for the construction of the intersection. It is noted that Traffic Management Plans will also need to be submitted to VicRoads for approval for the construction of the YJC facility.

##### ***Service works along and beneath Princes Freeway***

VicRoads have advised that works within the road reserve or beneath the Princes Freeway do not require a planning permit. However, for works of this nature, a

Consent of Works approval by VicRoads is required to ensure asset protection and sufficient traffic management procedures are in place.

### **2.1.3 Key risks**

The key risks associated with the road works concerning VicRoads include:

- The outcome of VicRoads review of the Traffic Impact Assessment Report. At this stage it is not understood if the intersection will require no changes to Little River Road or if the intersection works will comprise of widening for additional turning lanes or a five prong roundabout including the Princes Freeway on and off ramps. The cost associated with the various options is considerably different.
- The review time associated with VicRoads reviews and approvals. Should VicRoads require the Regional Review Committee to evaluate the Traffic Impact Assessment Report the response time is expected to be significantly greater than that advised. Similarly, the engagement process with VicRoads to determine the most suitable intersection design may take months pending the availability of critical decision makers at VicRoads.

### **2.1.4 Key recommendations**

It is advised that SIDRA modelling and the accompanying Traffic Impact Assessment Report be undertaken with priority to understand the type of treatment (if any) necessary at the intersection of Little River Road and the proposed YJC access road. As noted above, there is considerable cost difference between the various intersection arrangements that VicRoads may require.

In addition, early engagement with VicRoads is recommended to ensure that the construction of the access road does not hold up other construction works on the YJC site, should the design and approval process be significant.

## **2.2 Wyndham City Council**

### **2.2.1 Stakeholder ownership**

Wyndham City Council (WCC) are the responsible Municipal for the land area encompassing the proposed YJC site and are the road asset owners of Little River Road (north of the section owned by VicRoads). Given that the access road and intersection with Little River Road will be owned and managed by DJR and VicRoads respectively, WCC will have no ownership or authority of the new intersection and access road.

### **2.2.2 Design, construction and approval processes**

As WCC are not the governing road authority, the municipal will not be responsible for approving the access road design or the intersection with Little River Road. However, they will have an interest in and view on the solution

proposed and its impact on Little River Rd users and, therefore, remain a stakeholder who needs to be engaged with as the road design develops.

WCC have advised DJR of their concerns regarding the loss of landscape amenity and any increased traffic volumes along Little River Road. However, DJR are not obliged to adhere to WCC requests and are not required to address their concerns in any planning or approval process.

### ***Utility works along and beneath municipal roads and public land***

It is understood that should utility works be required within the road reserve of WCC owned roads or within public land, Consent of Works approval by WCC will be required to ensure asset protection and adequate traffic management procedures will be enforced.

It is noted that WCC will not be responsible for approving works that impact watercourses or are in areas of environmental significance or cultural heritage sensitivity. It is understood this responsibility will sit with Melbourne Water and state and federal authorities.

## **2.3 Public Transport Victoria**

Public Transport Victoria (PTV) was contacted to discuss and understand the medium and long term plans for local bus services within the City of Wyndham and discuss public access to the YJC. It is noted that while PTV were previously the governing body responsible for public transport network planning and project delivery, Transport for Victoria (TfV) have recently acquired this responsibility. PTV advised that TfV are expected to take a similar approach to PTV in public transport network planning.

### **2.3.1 Existing network**

Wyndham City Council is serviced by Metro and V/Line train services and has extensive bus coverage. The closest railway stations to the YJC site are Little River Railway Station (V/Line) and Werribee Railway station (Metro), which are located approximately 5.5km and 12km from the YJC site. It is noted that Wyndham Vale Railway Station (V/Line) is located approximately 17km from the site.

The closest bus route to the YJC site is the No. 441, which is a 7km loop service between Werribee Railway Station and the Riverwalk Residential Estate near Geelong Road.

### **2.3.2 Planned future expansions and new services**

PTV advised that currently there are no plans to expand the existing bus network to include routes further south-west and closer to the YJC site.

### 2.3.3 Transportation options

It is understood that under the current planning provisions, the YJC will not be directly accessible through public transport modes only.

PTV have advised that based on the commuter data for the bus route introduced to accommodate visitors and staff to the Port Phillip Prison, Dame Phyllis Frost Centre and Metropolitan Remand Centre, there will be little demand to provide public transport to the YJC. Despite this, PTV and DJR realise the social importance in ensuring the facility is accessible for non-motorists. The public transportation options identified in Table 2 should be investigated further to establish the most suitable method of improving site accessibility.

Table 2 Transportation options

Option	Description
<i>Option 1</i> - DJR provide a free shuttle bus	<p>DJR operate (or otherwise outsource) a free express shuttle bus for visitors and staff to run between the existing railway stations (Metro and V/Line routes) and the YJC. It is expected that hourly services could be provided in off-peak periods.</p> <p>DJR would be responsible for funding and managing (unless outsourced) the operation of this service but may be able to utilise PTV buses during off-peak periods. DJR would also be responsible for the operations unless this was outsourced.</p> <p>It is expected that travel time between Werribee Station and YJC will be approximately 15 minutes for this service.</p>
<i>Option 2</i> – Existing bus route No. 441 is modified to travel to the YJC	<p>There is an option to modify the existing bus route No. 411, to loop to the YJC. It would be reasonable to assume that only one service per hour during certain periods during the day would need to be extended.</p> <p>Under this arrangement, the cost of the service would be partially funded by Myki ticketing but it is expected that DJR would also have to partially fund the operation of the modified No. 441 bus route service.</p> <p>It is noted that a bus route connecting V/Line stations to the YJC is less likely. This is assumed on the basis that there are currently no bus routes from Little River Station and the distance between Wyndham Vale Station and the YJC being significant.</p> <p>It is expected that travel time between Werribee Station and YJC will be approximately 25 minutes for this service.</p>

### 2.3.4 Recommendations

Modifying the existing bus network to include a route between Werribee Station and the YJC is understood to be the best option of allowing public access to the

YJC. Under this scenario DJR would not be responsible for the timetabling or operations of the service.

It is recommended that DJR engage with TfV approximately one year from the date of occupation to commence discussions on the provision of public transport to the YJC.

It is understood that there may be a requirement to provide a public access route from V/Line terminals. As noted in Table 2, based on correspondence with PTV, it is expected to be unlikely that TfV will modify their existing network to facilitate this. Accordingly, DJR may need to investigate options to provide a private shuttle service between Little River Station or Wyndham Vale Station to the YJC.

## **3 Service authorities**

---

### **3.1 Potable water**

City West Water (CWW) are the governing water authority for the site area. A meeting was held with CWW on April 19, 2017 to discuss the existing potable water network and the future connection to the development.

#### **3.1.1 Existing network**

A CWW 300mm diameter main fed from the Cowies Hill Zone runs south-west along the southern side of the Princes Freeway and feeds into a 150mm diameter pipe, approximately 3km north-east of the Princes Freeway / Little River Road interchange. The Moubray Lane Pump Station constructed in the late 1990s is located at this pipe transition but has not been utilised and its condition remains unknown. The downstream pipe network from this pump station is referred to herein as the Little River Main Inlet.

Approximately 300m north-east of the Prince Freeway off / on ramps, the Little River Main Inlet upsizes to a 230mm diameter pipe as it crosses under the Princes Freeway before reducing back to a 150mm diameter pipe that continues along the eastern side of Little River Road. The 150mm diameter pipe along Little River Road services the Little River township.

Refer to the layout plan in Appendix B for a schematic of the existing potable water network.

CWW advised that the supply through the Little River Zone Inlet Main is in the order of 7-8 l/s. The Authority noted that the Little River township requires approximately 5 l/s, which is pumped to a header tank located in Little River.

#### **3.1.2 Planned future works**

CWW advised that based on the population forecast for Little River to 2050 there are no plans to augment the potable water network to Little River or modify the servicing agreement.

### 3.1.3 Demand

Initial assessment of the YJC indicates that for an operating occupancy of 224 beds, the peak potable water demand will be approximately 5 litre/second. This is expected to increase to approximately 6.5 litres/second when the facility increases to full capacity (296 beds). The average daily and peak daily demands for the two occupancy scenarios are stated in

Figure 1 Estimated daily water demand

Occupancy	Average Daily Water Demand (kL)	Peak Daily Water Demand (kL)
224 beds	83	207
296 beds	110	274

The average and peak demand estimates have been determined using the average daily water usage per occupancy from prisons across Victoria for the 2016 calendar year. These values will be refined during the design phase when more information become available.

The peak water demand estimate does not include the fire water demand. Fire water infrastructure additional to that discussed in the sections below will be required to service the YJC.

### 3.1.4 Service options

A private YJC potable water main will be required to extend from the CWW infrastructure on the eastern side of Little River Road to the property boundary. It is expected that the new property pipe will run along the proposed access road to the site.

The Little River Zone Inlet Main will be unable to supply the peak demand required by the proposed YJC directly from the main. Three options to provide potable water to the site have been identified and are described in Table 3. Refer to Appendix C for a layout plan of the options identified.

It is noted that the infrastructure options identified do not consider fire water requirements. It is expected in addition to the infrastructure requirements stated in Table 3, fire water storage tanks and fire hydrants will be required on the site.

Table 3 Options for potable water supply

Option	Description	Advantages of Option	Disadvantages of Option	Estimated CAPEX <sup>1</sup>
<i>Option 1 -</i> Install water storage tanks on-site	This option involves sweating the existing CWW potable water infrastructure to prevent upgrading the existing Little River Zone Inlet Main. A pressure sustaining valve would be installed at the offtake to the YJC private main, which could run along the access road to the property boundary. The maximum flow delivered to the YJC would be 2 l/s (24 hours a day) or 172.8 kL/day. It is noted that in the event that the level in the Little River Tank got too low, flow to the YJC may need to be temporarily reduced to allow greater flow to the Little River tank. To ensure that the water demand can be supplied, water storage tanks would be located within the property boundary. Based on preliminary demand calculations, it is expected that for operation in 2021, 83kL of water storage would be required to supply the average daily demand or 207kL for peak daily demand. More accurate demand calculations are to be undertaken during the design phase.	<p>No upgrades to the existing CWW are required.</p> <p>On-site water storage means that should the CWW network be temporarily off-line, water remains available at the YJC.</p> <p>No approvals other than those required from CWW are required. The design and approval process is expected to be considerably shorter given no upgrades to existing CWW infrastructure.</p> <p>Most likely the least expensive option</p> <p>There is the opportunity to harvest rainwater for reuse in one or more of the tanks further minimising potable water supply requirements.</p> <p>The ability to tank potable water into the site if supply is severely interrupted.</p>	Area for water storage tanks would need to be provided. Preliminary estimates indicate that in 2021, 83kL of water storage would be required to supply the average daily demand or 207kL for peak daily demand.	\$1,125,000
<i>Option 2 -</i> Upgrade the Little River Inlet Main upstream of the YJC	This option involves upgrading approximately 3km of the Little River Inlet Main upstream of the YJC on the southern side of the Princes Freeway, between the Moubray Lane Pump Station and the 230mm diameter pipe that	<p>Potable water storage tanks would not be required on site.</p> <p>Less on-site infrastructure for DJR to maintain.</p>	Should the Little River Inlet Main be off-line there will be no back-up water supply / storage on the site.	

	crosses the Princes Freeway. This existing 150mm diameter section of pipe is located completely within the Melbourne Water Western Treatment Plant site. CWW has advised that upgrading the existing 150mm diameter pipe to a 225mm diameter and 300mm diameter main would allow 12 l/s and 20 l/s of potable water to be supplied to the YJC respectively.		<p>Approvals will be required from CWW, VicRoads and potentially from WCC planning department and state and federal environmental authorities. This will likely result in longer approval time.</p> <p>The works are likely to impact on native vegetation and watercourse and is within an area of aboriginal cultural heritage sensitivity. This is also expected to lengthen approval processes.</p> <p>Most likely the most expensive option.</p>	\$2,625,000
<i>Option 3 - Refurbish the City West Water Moubay Lane Pump Station</i>	The Maubray Lane Pump Station located approximately 3km from the proposed YJC access road is currently not utilised. The pump station could be utilised to increase the capacity in the Little River Inlet Main, such that peak demand could be supplied by the existing Little River Inlet Main. CWW has advised that the pump station would require a major refurbishment if it were to be used to permanently supply the YJC and indicated that this is not a preferred CWW option given the information known to date.	<p>No approvals other than those required from CWW are required.</p> <p>Potable water storage tanks would not be required on site.</p> <p>Less on-site infrastructure for DJR to maintain.</p>	<p>Should the Little River Inlet Main be off-line there will be no back-up water supply / storage on the site.</p> <p>DJR would be required to engage in a Development Deed with CWW.</p> <p>Condition of the pump station is unknown. Considerable works may be required.</p>	\$2,125,000

<sup>1</sup> The estimated CAPEX represents the total capital costs of the augmentation and new works required to supply potable water to the YJC site. It is a high level engineering evaluation, based on the information provided by CWW and our understanding of the works. It is expected that DJR will bear the cost of the infrastructure works and that new customer contribution charges will not be applicable.

### **3.1.5 Design, construction and approval processes**

DJR will be responsible for the design, construction and maintenance of their private potable pipe, which will run from the existing CWW network on Little River Road to the site. DJR will be responsible for obtaining CWW approval for the tapping but will not be required to design the new private assets to CWW standards.

Should the YJC water strategy adopt Options 2 or 3, DJR will be required to engage in a Development Deed with CWW. CWW has advised that under the Deed agreement DJR would be responsible for designing and constructing the upgraded water supply infrastructure in accordance with CWW standards. Design approval from CWW would be required prior to construction. Following completion of the upgrade works DJR would hand the new infrastructure to CWW, who would be owners and responsible for its on-going maintenance.

VicRoads have advised that works within the road reserve or beneath the Princes Freeway for Options 1 and 2 do not require a planning permit but that a Consent of Works approval by VicRoads is required to ensure asset protection and sufficient traffic management procedures are in place.

### **3.1.6 Recommendations**

Based on the information provided by CWW to date, Option 1 is considered to be the most suitable method of supplying potable water to the YJC site. The primary reason is that for all options, a dual water supply cannot be provided.

Option 1 ensures that if there is a disruption to the Little River Inlet Main, potable water remains available on the site. The presence of potable water storage tanks allows water to be brought and stored on the site, should the Little River Inlet Main be disrupted for a prolonged period. Further, Option 1 is expected to be insignificantly less expensive and require the shortest design and construction programme.

## **3.2 Sewer**

City West Water (CWW) are the governing authority responsible for sewer in the areas surrounding the site. A meeting was held with CWW on April 19, 2017 to discuss the existing sewer network and the sewerage options for this development.

### **3.2.1 Existing network**

The existing CWW sewerage network closest to the site finishes in Werribee West, approximately 8-9km from the YJC site. The 450mm diameter sewer main at this location is part of the sewer network in a new residential development.

The proposed YJC is located approximately 8-9km from the Western Trunk Sewer located in the Melbourne Water Western Treatment Plant on the southern side of the Princes Freeway.

Refer to the layout plan in Appendix B for a schematic of the existing sewer network.

CWW have advised that both sewers have capacity for the estimated flows expected to be generated during the operation of the YJC.

### **3.2.2 Planned future works**

CWW advised that there are no plans to extend the CWW sewer network to Little River or along the Princes Freeway west of Werribee Main Road.

It is understood that Wyndham City Council (WCC) has previously shown interest in connecting the adjacent quarry site, located north-east of the YJC site, to the CWW sewer network. It is not known if or when WCC will construct a private rising main to connect into the existing network in the future, but it may be feasible for DJR to engage with WCC to share this asset.

### **3.2.3 Demand**

In the absence of site specific information at this time, the sewerage loading rate equal to the water demand per bed has been assumed. Considering peak dry weather flow and wet weather infiltrating in addition to the load rate, the peak wet weather flow is expected to be approximately 7-8 litres/second for the 2021 occupancy.

### **3.2.4 Service options**

Three sewerage servicing strategies for the YJC development have been identified as part of this initial investigation. These are described in Table 4 below and presented in a layout plan in Appendix C.

Table 4 Options for sewerage servicing

Option	Description	Advantages of Option	Disadvantages of Option	Estimated CAPEX <sup>1</sup>
<i>Option 1 – Private pumping station and rising main to existing CWW network</i>	This option involves constructing a new pumping station on the DJR site and a new rising main (approximately 130-150mm diameter pipe and 11km long) to discharge at a location on the existing CWW network along the 450mm diameter main. DJR will be the owners of the new infrastructure.	Expected to be lower operational costs compared to Option 3.  Design life of rising main is expected to be greater than that of a wastewater treatment plant.	Due to long sewer detention times within the pump station wet well and rising main, odour and corrosion issues are expected. It is noted that the existing CWW 450mm diameter main does not have infrastructure to address odour.  The works are likely to impact on native vegetation and watercourses and is within an area of aboriginal cultural heritage sensitivity. This is also expected to lengthen approval processes.  Approvals will be required from CWW and VicRoads as a minimum.  Upfront costs expected to be significant.	\$3,000,000
<i>Option 2 – Private pumping station and rising main to existing MW network</i>	This option involves constructing a new pumping station on the DJR site and a new rising main (approximately 130-150mm diameter pipe and 11km long) to discharge at a location on the existing MW Western Trunk Sewer. DJR will be the owners of the new infrastructure. It is noted that to discharge directly into the Western Trunk Sewer will require MW agreement.	Expected to be lower operational costs compared to Option 3.  Design life of rising main is expected to be greater than that of a wastewater treatment plant.	Due to long sewer detention times within the pumping station wet well and rising main corrosion issues are expected.  The works are likely to impact on native vegetation and watercourses and is within an area of aboriginal cultural heritage	\$3,200,000

			<p>sensitivity. This is also expected to lengthen approval processes.</p> <p>New rising main will be required to cross the Princes Freeway, resulting in additional VicRoads' processes and potentially additional costs to works.</p> <p>Agreement with MW may result in longer design and approval phases.</p> <p>Approvals will be required from CWW, MW and VicRoads as a minimum.</p>	
<i>Option 3 – On-site wastewater treatment plant</i>	Construct a private wastewater treatment plant on-site.	<p>No approvals from sewer or government authorities will be required.</p> <p>Opportunity to treat and re-use wastewater on-site for irrigation and other purposes.</p>	<p>It is anticipated that maintenance costs will be greater than that for other options identified.</p> <p>Wastewater treatment plant requires significant land area (area required to be confirmed by designer).</p> <p>EPA Works Approval will be required, which is expected to take up to 4 months.</p>	\$2,000,000 - \$2,500,000

<sup>1</sup> The estimated CAPEX represents the total capital costs of the augmentation and new works required to service the YJC sewerage. It is a high level engineering evaluation, based on the information provided by CWW and our understanding of the works. It is expected that DJR will bear the cost of the infrastructure works and that new customer contribution charges will not be applicable.

### 3.2.5 Design, construction and approval processes

For each of the three options, DJR will be responsible for the design, construction and maintenance of all new infrastructure described in Table 4, with no formal input from CWW required.

The connection of a rising main into an existing sewer network will require the approval of a plumbing application by the relevant sewer authority.

Should Option 2 be adopted, the rising main will run within Melbourne Water property, meaning that DJR will be required to engage in an agreement with Melbourne Water for the construction works and also future maintenance access arrangements.

VicRoads have advised that works within the road reserve or beneath the Princes Freeway for Options 1 and 2 do not require a planning permit but that a Consent of Works approval by VicRoads is required to ensure asset protection and sufficient traffic management procedures are in place.

### 3.2.6 Recommendations

Based on the discussions had with City West Water, the construction programme and our understanding that DJR would prefer to re-use as much wastewater on-site as possible, Option 3 appears to be the most suitable option for this site.

As noted in Table 4, the construction of a new sewer rising main is expected to have impacts on waterways and environmentally significant areas, which may require additional state and/or commonwealth approvals. The timing associated with these is not known but may be significant, resulting in delays to the construction programme. Although a new wastewater treatment plant will require EPA approval, there is more certainty surrounding EPA's Works Approval process, such that it is expected to be less risk to the construction programme.

## 3.3 Gas

APA is the major gas distributor and AusNet is the primary gas supplier in the Wyndham City Council area. As such, AusNet are the governing authority responsible for the supply of a gas to the development site. A meeting was held with AusNet on April 27, 2017 to discuss the provision for gas supply to the YJC site in the future.

### 3.3.1 Existing network

APA transmission mains, 350mm diameter and 500mm, run along the southern side of the Princes Freeway and along the western boundary of the Melbourne Water title respectively. The larger of the mains is located in a 20m easement and has a maximum capacity of 10,200 kPa. It is noted that an offset of 571m from the 500mm diameter main to buildings is required. AusNet advised that the smaller main along the Princes Freeway has a maximum capacity of 7,400 kPa but currently the main typically operates at 4,000kPa.

The AusNet Werribee gas network extends west from Werribee along Bulban Road to McGrath Road, approximately 7.5km north-east from the YJC site. The network has capacity to supply gas to the proposed YJC.

The AusNet Avalon high pressure gas networks exists at Avalon Airport, approximately 12km south-west of the YJC site. AusNet advised that this main has ample capacity to supply gas to the proposed YJC.

Refer to Appendix B for schematic plans of the existing gas networks.

### **3.3.2 Planned future works**

AusNet advised that there are no plans to expand the existing Werribee gas network along Bulban Road beyond McGrath Road.

A new Wyndham Gas City Gate off the 500mm diameter APA transmission main at Bulban Road, approximately 4km from the YJC site, is proposed. The proposal for the new Wyndham Gas City Gate, which is intended to service the VPA Precinct Structure Plan, requires approval by the Federal Government before design and construction of the infrastructure can commence. AusNet advised that a draft decision is expected in June/July 2017, which should provide an indication as to whether the city gate will be constructed. It is noted that even if the proposed city gate is approved by the Federal Government, there may not be knowledge or commitment as to when it is constructed.

### **3.3.3 Demand**

In the absence of specific information regarding the uses for gas at the proposed YJC, the demand estimates are based on interpolation of the gas demand at Ravenhall Prison. Using this methodology, a demand of approximately 160 cum/hr and 210 cum/hr is expected for the initial and expanded scenarios respectively. The maximum gas demand should be re-calculated with greater accuracy in the design phase when specific equipment information for the facility is known.

### **3.3.4 Service options**

Three servicing options, described in Table 5, have been identified for the future supply of gas to the YJC site. Refer to Appendix C for a schematic plan of the potential options.

Table 5 Options for gas supply

Option	Description	Advantages of Option	Disadvantages of Option	Estimated CAPEX <sup>1</sup>
<i>Option 1 –</i> Connect to the proposed Wyndham Gas City Gate	Construct a new pipe from the proposed Wyndham Gas City Gate (should it be approved and constructed) to the YJC site. The new gas pipe would be approximately 4km.	Expected to be the least expensive option.  New gas pipe could run within the existing APA easement, thus reducing impact to future development. (Pending design, APA do not foresee as issue with this).  Expected to require the least amount of approvals.	The Federal Government has not approved the proposed City Gate to date and completion and operational dates are not known. There is a risk that the City Gate will not be operational by 2021.  Construction under the existing railway line is required. Approval from VicTrack is expected to be required.	\$1,200,000
Option 2 – Construct a small City Gate	Construct a new smaller city gate off the existing 350mm diameter APA transmission main along the Princes Freeway. Gas would need to be piped approximately 2.5km across the Princes Freeway and up the proposed access road to the YJC site. The city gate would require 50m x 50m of land, which from an AusNet and APA perspective could be feasibly be located on either side of the Princes Freeway.  It is noted that APA have advised that as a high level concept, they do not object to a new small city gate from their existing 350mm diameter main.		The new city gate is likely to impact on native vegetation as it will be within an area of aboriginal cultural heritage sensitivity. May also be located within the Land Subject to Inundation Overlay and face greater design scrutiny. It is expected to lengthen approval processes.  Significant land area required for new small city gate, which will need to be located on MW property. Agreement with MW will be required.  New pipe will be required to cross the Princes Freeway, resulting in additional	\$2,000,000

			VicRoads' processes and expected additional costs to works.	
<i>Option 3 –</i> Connect to the existing Werribee Gas Network	This option involves the construction of a new gas pipe (size to be confirmed during design) from the existing Werribee Gas Network at the intersection of Bulban Road / McGrath Road to the YJC site, approximately 7.5km.	AusNet have advised that with appropriate engagement with stakeholders, the construction works can be completed in time for the 2021 occupancy.	<p>Significant pipework is required along road reserves and in MW owned property (south of Bulban Road).</p> <p>Construction under the existing railway line is required.</p> <p>The pipe would be required to be constructed within the Metropolitan Outer Ring Road Overlay.</p> <p>Approval from VicRoads, MW and VicTrack are expected to be required for new works, which may extend the design and approvals process.</p>	\$2,500,000

<sup>1</sup> The estimated CAPEX represents the total capital costs of the augmentation and new works required to supply gas to the YJC site. It is a high level engineering evaluation, based on the information provided by AusNet and our understanding of the works. It is expected that DJR will bear the cost of the infrastructure works and that development contribution charges will not be applicable. This is to be confirmed with AusNet during the design phase.

### 3.3.5 Design, construction and approval processes

For each of the servicing options, it is expected that a distribution pipe will run to an industrial meter/regulator located on the YJC site boundary. The infrastructure upstream of the industrial meter/regulator would be owned and maintained by the relevant gas authority.

With regards to the design and construction of the new AusNet owned infrastructure, DJR would advise AusNet of the gas demands and site location and AusNet will undertake a high level scope of works based on this information. AusNet will then refer the works to their Contractor Reference Panel for quotation on a Design and Construct contract. It is expected that DJR will bear the cost of the trunk infrastructure works.

AusNet have advised that a minimum of 6 months should be allowed for the design, subject to all information being available.

Each of the options identified are expected to require a number of approvals and agreement from parties other than gas authorities. Based on industry experience it is anticipated that sufficient time be allowed in the design phase to accommodate these approvals.

### 3.3.6 Recommendations

Each of the options identified have significant design and construction complexities. On this basis, should gas supply be required, it is advised that DJR engage in discussions with AusNet as soon as possible to investigate each of the identified options in more detail to determine the most suitable solution given the site specific constraints.

Based on the information available at this time, it is recommended that a decision regarding the most suitable option is delayed until receipt of the draft decision for the proposed Wyndham Gas City Gate from the federal government. Should the draft decision indicate that the proposed city gate will be constructed prior to 2021, it is expected that direct connection to this will be the most suitable option. While the draft decision is expected to be released in July 2017, this date could be extended so it would be prudent to also investigate the other options and plan for one of these as an alternative.

Should DJR wish to eliminate all risk associated with supplying gas from the proposed Wyndham Gas City Gate, it is recommended that DJR engage with Melbourne Water to discuss the feasibility of constructing a smaller city gate on Melbourne Water land. Should Melbourne Water allow a smaller city gate on their property, it is expected that the approvals and subsequent design and construction programme associated with Option 2 will be less than if Option 3 was implemented.

Given the complexities associated with supplying gas to the YJC site, there is an option to run intended gas operations off the internal electrical network, such that a gas supply is not required. The impact of this on the electrical supply network is discussed in the next section of this report.

## 3.4 Electricity

Powercor are the governing authority responsible for the electrical networks within the Wyndham City Council area. A meeting was held with Powercor on May 17, 2017 to discuss the existing HV electrical network and the future HV connection to the site.

### 3.4.1 Existing network

In the section of the Princes Freeway immediately south of the YJC site, two 66kV overhead cables run along the northern side. One of the 66kV cables is not operational currently, but both cables are fed from the Werribee Zone Substation.

Powercor have advised that there is currently sufficient capacity in the existing network to supply HV to the YJC site from the existing 66kV feeder on the Princes Freeway. It is noted that Powercor cannot guarantee that there will be adequate capacity in this cable two or more years from now, on the basis that in the future other developments may require supply off this feeder. It is noted that to Powercor's and DJR's knowledge, no other development in this areas is expected within this period, meaning there is little risk that the existing network will not be able to service the YJC site.

### 3.4.2 Planned future works

Powercor advised that at this time there are no planned expansion or augmentation works to the existing HV network that would affect the supply of HV to the YJC site.

### 3.4.3 Demand

Preliminary demand calculations based on the expected equipment loading in conjunction with a prorated maximum load at Ravenhall Prison, indicate that the maximum demand for the YJC for operation in 2021 will be approximately 1.0 MVA. The maximum demand for the expanded facility is expected to be approximately 1.4 MVA.

It is expected that should gas not be supplied to the YJC site, the maximum electrical demand will increase to approximately 1.4 MVA for 2021 operations and to approximately 1.9 MVA following YJC maximum expansion.

The load estimates will require refining during the design phase, prior to seeking an Offering from Powercor. There are opportunities to reduce the maximum electrical demands with the application of energy efficient appliances and processes.

### 3.4.4 Service options

Powercor has advised that should the works be undertaken within the next two years there is sufficient capacity in the existing HV network along Princes Freeway, such that augmentation to the existing network will not be required.

Two options have been identified to supply HV to the YJC site. Both options require the extension of new HV infrastructure from the existing network on Princes Freeway.

It is noted that for both servicing options, it is feasible for the HV infrastructure to be constructed underground or overhead. Powercor has advised that there is a significantly greater cost associated with undergrounding HV cables and that this cost would almost certainly be passed onto DJR.

Powercor typically require their underground conduits to be located within a 1.5-2m horizontal easement and their overhead cables within a 10-12m easement.

Additionally, Powercor have recommended that given the estimated maximum load, it is likely that a 7.2m x 7.2m kiosk substation will be required. Kiosk substations of this size typically have capacity for up to 2 MVA. It is noted that increasing the electrical demand to account for the additional demand associated with not supplying gas to the site, is not expected to result in notably higher CAPEX. It would be expected that the additional demand will result in changes to tariffs, which may be explored during the design phase.

Note that should the maximum demand exceed 2 MVA, it is expected that either two 2 MVA kiosk substations or two 2 MVA indoor substations can be installed on the site.

The two servicing options identified are described in Table 6 and are schematic shown in Appendix C.

Table 6 Options for HV servicing

Option	Description	Advantages of Option	Disadvantages of Option	Estimated CAPEX <sup>1</sup>
<i>Option 1 – HV Customer</i>	A 22kV radial feeder (overhead or underground) would be constructed from the existing HV network on the Princes Freeway to a HV meter / cubical located at the Little River Road / access road intersection. Powercor would own and manage these assets. Under this option, DJR would be responsible for the design, construction, ownership and maintenance of the 22kV cable along the access road connecting the HV meter / cubical to the substation (kiosk) located on the YJC site, the switchboard and all internal reticulation infrastructure.	The Powercor Scope and Works and Offering will be substantially less, which may result in a shorter design and construction period (based on the assumption that a DJR appointed contactor will do the design and construction works quicker than Powercor)  The tariff costs are expected to be lower.	DJR would own and be responsible for the design, construction and maintenance of all the electrical infrastructure downstream from the HV meter / cubicle.  The upfront costs attributed to DJR are expected to be greater.	\$2,000,000 (overhead)
<i>Option 2 – LV Customer</i>	A 22kV radial feeder (overhead or underground) would be constructed from the existing HV network on the Princes Freeway, along the access road to a substation located on the YJC site. Powercor would own and manage these assets and as such, 24/7 access to the substation would be required. DJR would be responsible for the reduced voltage infrastructure (switchboard and internal reticulation infrastructure) located on the site.	DJR would not be responsible for any HV infrastructure.  The up-front costs attributed to DJR are likely to be negligible and accounted for in the tariff costs.	Powercor would be responsible for the design and construction of the works to the site, which may take longer than a Contractor.  The tariff costs are expected to be significantly greater than for Option 1.	\$2,000,000 (overhead)

<sup>1</sup> The estimated CAPEX represents the total capital costs of the augmentation and new works required to supply electricity to the YJC site. It is a high level engineering evaluation, based on the information provided by Powercor and our understanding of the works. It is expected that as part of Powercor's Offer, DJR will be required to pay development contribution charges and will not be required to fund all the capital works. Powercor cannot confirm what the development contribution charges will be until they have confirmation of the Scope of Works and undertake a cost assessment.

### 3.4.5 Design, construction and approval processes

The following dot points describe the procedure involved in securing the supply of HV to the site:

1. DJR submit an application to Powercor for a new HV connection, which will include details of the expected maximum demand and proposed substation location.
2. Powercor will develop a Scope of Works for the Powercor owned infrastructure based on the information contained in the application, including DJR's preference for the type of customer agreement. This process typically takes four weeks.
3. Based on the Scope of Works, Powercor will provide an Offer to DJR for the design and construction of the works.
4. Following confirmation of the offer, Powercor will commence designing and constructing all infrastructure owned by them, as stated within the Offer. If approvals from other external stakeholders are required to complete these works, Powercor will be responsible for obtaining these. A minimum of six months should be allowed for the design and construction of new assets.

Powercor have noted that given that this is a green fields site, it is possible for DJR to appoint a Powercor approved contractor to design and construct the HV infrastructure and kiosk substation if Option 2 is adopted. Powercor would then only be responsible for the HV tie in at the HV tee off pole. By engaging a Powercor approved contractor directly, DJR may save time and money.

DJR will be responsible for the design, construction and management of all assets not owned by Powercor. Approvals from Powercor for privately owned infrastructure is not required. Given the DJR electrical works will be limited to the YJC site (Option 1) and possibly their private access road (Option 2) it is not expected that additional approvals outside of those otherwise required for the development will be necessary.

### 3.4.6 Recommendations

It is recommended that DJR engage with Powercor as soon as possible to confirm easement requirements, such that this information can be incorporated into the design of the proposed access road.

In addition, given the process and associated time involved in the construction of new Powercor HV infrastructure, it is recommended that DJR submit an application for a new HV connection with Powercor as soon as possible. This will also enable DJR to understand if an HV Customer or LV Customer Agreement is more appropriate for this development and thus, provide DJR with an understanding of what infrastructure they are responsible for.

## 3.5 Telecommunications

As part of this assessment, Telstra was contacted to discuss the future provision of communications on the YJC site. Developers can choose among competing infrastructure providers, meaning that it is reasonable for the YJC site to be serviced by Telstra, Optus, NBN Co or another provider. For the purpose of this initial assessment, this section of the report discusses all existing communication infrastructure and provides information for the design, construction and approval processes associated with a connection to Telstra assets.

### 3.5.1 Existing network

Telstra and Optus are the primary communication network owners in the areas surrounding the YJC site. Both authorities service infrastructure along the southern side of Princes Freeway. Based on the information made available at this time is not believed that communication assets run along Little River Road.

### 3.5.2 Planned future works

Telstra has not advised of any intention to expand or upgrade their existing network infrastructure in the area surrounding the YJC site.

It is understood that NBN Co have planned for the operation of fixed wireless technology between July and December 2018. Hence, it is reasonable to assume that the YJC facilities can be fitted with rooftop antennas and NBN network devices to connect with this network.

Upgrades to other existing telecommunication networks are not known.

### 3.5.3 Service options

As per the Australian Government's Telecommunications Infrastructure in New Developments Policy, Developers have a choice of network provider in all cases and can purchase network components as they wish. It is noted that under the arrangement a non-NBN provider would be obliged to provide solutions that provide NBN consistent outcomes.

DJR can seek commercial offerings from all network providers for the provision of telecommunications to the YJC site. Given the extent of existing infrastructure it would be expected that applications will be submitted to Telstra and Optus as a minimum.

It is noted that regardless of whether the NBN fixed wireless technology is constructed in this area or not, Telstra will be the Infrastructure Provider of Last Resort (IPOLR) and will be required to provide a commercial offering. In addition, Telstra has an ongoing obligation under law to provide standard telephone servicing on an equitable basis.

There are number of ways that telecommunication can be supplied to the YJC site, as explained in Table 7 and shown in a schematic layout plan in Appendix C.

Table 7 Options for telecommunication servicing

Option	Description	Advantages of Option	Disadvantages of Option	Estimated CAPEX <sup>1</sup>
Option 1 – NBN Fixed Wireless Network	Option relies on data being transmitted via radio signals from a fixed transmission tower / base station to an external antenna and connection box located on the site. It is expected that a fixed (hardwired) internal network would be constructed from the NBN connection box. It is noted that voice services can also be provided using wireless technology.	Other than the installation of an antenna and accompanying connection box, no telecommunications infrastructure is required to be constructed to the site (on-site infrastructure required as with other options). NBN will have already constructed transmission tower / base station.	<p>To be effective there cannot be any obstruction between the fixed transmission towers / base stations and the buildings. YJC antenna will be required to be positioned with careful consideration of YJC outer walls and mature trees to maintain line of sight.</p> <p>Operational cost per Mbps of the bandwidth is generally relatively higher than other forms of broadband.</p> <p>NBN Co. have advised that fixed wireless technology will be operational in advance of the operation of the YJC. However, NBN Co. cannot guarantee this, so there is a risk that connection to this network is not possible at the time of construction.</p>	Unknown <sup>2</sup>
Option 2 – Fixed Copper Connection	Construct new copper infrastructure from the existing telecommunications network along Princes Freeway, along the proposed access road to the YJC site. Approximately 2-3km of new pit and conduit infrastructure is expected to be required. It is expected that a fixed (hardwired) internal network would be constructed from the site connection point.		<p>It is expected that speed over fixed copper connection will be notably lower than fixed wireless given the distance from the exchange.</p> <p>New pipe will be required to cross the Princes Freeway, resulting in additional</p>	\$1,000.000

			VicRoads' processes and expected additional costs to works.	
Option 3 – Combination of Fixed Wireless and Fixed Copper Networks	Infrastructure required for Options 1 and 2 are constructed to provide a flexible telecommunications connections to the site.	Option provides DJR with flexibility to utilise wireless or fixed network types for different purposes (i.e. – internet through fixed wireless and telephones through fixed copper network).  Provides greater confidence that all communications will not be lost should one network be disrupted.	New pipe will be required to cross the Princes Freeway, resulting in additional VicRoads' processes and expected additional costs to works.	Unknown <sup>2</sup>

<sup>1</sup> The estimated CAPEX represents the total capital costs of the augmentation and new works required to connect the YJC site to a telecommunications network. It is a high level engineering evaluation, based on the information provided by Telstra and our understanding of the works. It is expected that as part of the Invoicing Provisioning Agreement, DJR will be required to pay development contribution charges and will not be required to fund all the capital works. This will be the case for both fixed wireless and fixed copper connection options. The value of the development contribution charges will not be known until there is confirmation of the Scope of Works.

<sup>2</sup> The CAPEX costs associated with fixed wireless NBN includes the transmission tower, optical fibre connecting the transmission tower to the main communications server and on-site antenna and connection box. The on-site antenna and connection box is of negligible cost. However, the cost of the transmission tower and optical fibres to the main communications server varies depending on the size of the tower, who else is using the tower and the length of the optical fibres to the main communications server. It is not possible to estimate based on publically available information.



### 3.5.4 Design, construction and approval processes

As per the Australian Government's Telecommunications Infrastructure in New Developments Policy, the standard notice period is six months prior to the development's estimated first occupancy date. Telstra have verified that they will not investigate communication applications prior to this time. Applications submitted prior to 6 months before the estimated first occupancy date will be monitored and put On Hold. Telstra have advised that even though they are expected to be the IPOLR, a new communications connection application should be lodged with NBN Co. as well.

Telstra's application, design and construction processes is detailed below. It is understood that other telecommunication network providers have a similar process.

- DJR will need to submit an application for a new communication connection with Telstra (relevant network provider).
- Six months prior to the estimated first occupancy date and when the internal communication network has been constructed, the application will become Live.
- DJR will be required to provide Telstra with a communication plan, detailing the communication networks on the site and where main distribution frames are required.
- Telstra will enter an Invoicing Provisioning Agreement (IPA) with DJR, which will specify the financial contribution for the provision of communications infrastructure related to their development.
- Following payment receipt from DJR in accordance with the IPA, Telstra will commence designing the new trunk infrastructure. Telstra will commission all works associated with the design and construction of the trunk infrastructure to the YJC site.

VicRoads have advised that works within the road reserve or beneath the Princes Freeway for Options 2 and 3 do not require a planning permit but that a Consent of Works approval by VicRoads is required to ensure asset protection and sufficient traffic management procedures are in place.

### 3.5.5 Recommendations

It is recommended at a new communication application be lodged as soon as possible and updated with the accurate site communications plan as this becomes available. Although applications will not be consider live until the project is within six months of being occupied, Telstra will advise before this date if the information provided in the application is sufficient. Thus, ensuring that when the application does become live, delays to the new infrastructure works can be avoided.

### 3.6 Major utilities risks

The discussions had to date with the relevant service/utility authorities have identified the following factors that are major risks to servicing the YJC site:

- Servicing options identified for most utilities are expected to have impacts to watercourses, environmentally significant areas and/or aboriginal heritage sensitive areas. Should these be encountered there is a risk that additional state and/or commonwealth approvals will be required, resulting in programme delay.
- New infrastructure is required to be constructed within private land, such that approval to complete the works is required by the relevant property owner. There is risk that there will be resistance by the property owner, which may result in additional cost and/or programme delays.
- The design and/or construction programme for the new trunk infrastructure being undertaken by the relevant service authorities is delayed, resulting in delays to DJR's construction programme or resulting in insufficient servicing at the time of YJC occupancy.
- Planned infrastructure upgrades are not constructed as proposed, resulting in YJC programme delays or insufficient servicing at the time of YJC occupancy. In particular, if a timely decision regarding the construction of the proposed Wyndham Gas City Gate is not made, there is a risk that servicing gas off this is not feasible. Similarly, if the NBN programme is not rolled-out in accordance with the current program, the YJC may be required to be serviced by fixed copper rather than by the NBN fixed wireless network.
- The capacity in the existing utility networks at the time of YJC construction is different from that currently, due to other unforeseen major developments affecting these assets. This may result in additional costs and programme delays.

## 4 Stormwater

---

Melbourne Water is the governing authority responsible for approving the stormwater strategy and discharge of stormwater from the site.

### 4.1 Existing stormwater network

There are no underground stormwater drainage assets in the vicinity of the site. Topographical information indicates that the highest section of the site is along the western boundary and that runoff from the site area drains towards the centre of the eastern boundary into the existing watercourses.

Two watercourses run west to east through the site and converge just inside the eastern site boundary. This watercourse flows approximately 3km south-east, under the Princes Freeway to discharge into Lollypop Creek. A schematic sketch indicating the location of these assets is included in Appendix B.

## 4.2 Ownership of on-site infrastructure

Melbourne Water has advised that given the factors listed below, the management and maintenance of all stormwater quality assets will be the responsibility of DJR:

- The YJC site is located outside of a drainage scheme;
- The stormwater assets will service the YJC site exclusively; and
- The developed YJC site catchment will be less than 60 ha.

This approach is the same as that applied at Ravenhall Prison less than two years ago.

However, given the environmental significance and sensitivity associated with the site, DJR may seek to engage Melbourne Water in a Maintenance Agreement. It is reasonable to assume under an Agreement, Melbourne Water will be responsible for the management and maintenance of the stormwater wetland or basin located outside of the YJC walls. It is expected that the YJC security requirements will negate Melbourne Water from gaining access to maintain the stormwater assets within the YJC walls. Accordingly, it is expected that under an Agreement, assets located within the YJC facility will be managed and maintained by DJR.

## 4.3 Design requirements

Melbourne Water has advised that the following key design requirements will need to be incorporated into the Stormwater Management Strategy for the site:

- Stormwater from the development must be retarded back to pre-development rural levels before discharging into the existing watercourses. The size of the retention asset must be sized to detain the difference in the pre and post development 100 year Average Rainfall Intensity (ARI) storm event (72 hours duration).
- Stormwater runoff from the access road must be either retarded back to pre-development levels or drained to the south towards Princes Freeway. It shall not disperse overland as this may affect Paul's Swamp, located approximately 500m south of the YJC site.
- Stormwater from the entire developed site (YJC and access road) must be treated in accordance with CSIRO Best Practice Environmental Management Guidelines (BPEMG).
- The pre-development hydrological conditions, including flow frequency and volume of Paul's Swamp must be maintained to ensure the flow regime is not compromised.

Melbourne Water have advised the climate change impacts do not need to be considered for the post development flows.

It is noted that additional design requirements above those listed above, may be included within the Contact of Sale.

## 4.4 Approval process

A Stormwater Management Strategy, outlining how stormwater drainage and quality requirements will be met, will need to be submitted to Melbourne Water. Melbourne Water's Customer and Planning Services team will manage the assessment of the Stormwater Management Strategy and related models (RORB, MUSIC, etc.). Greater liaison with the Customer and Planning Services team is required to confirm the extent of modelling required for the development of the Stormwater Management Strategy.

A separate approval from Melbourne Water's Asset Services team will be required for the outfall connection into the existing watercourse.

## 5 Conclusion

---

The assessment of assets undertaken as part of this commission has identified a number of risks regarding the provision of access, transport and utility servicing to the YJC site.

Following discussions with VicRoads and WCC, Arup recommends that SIDRA modelling and an accompanying Traffic Impact Assessment Report be undertaken with priority to understand the type of treatment (if any) necessary at the intersection of Little River Road and the proposed YJC access road.

Similarly, given the complexities associated with supplying gas to the YJC site, it is recommended that DJR prioritize early engagement with AusNet and explore all servicing options including scenarios that negate the requirement for gas servicing.

In conclusion, Arup recommends that DJR maintain ongoing and regular communication with key stakeholders to manage expectations and mitigate (or otherwise manage) risks through the project, particularly during the approval processes.

## Appendix A

### Site Layout Plan

# CHERRY CREEK SITE

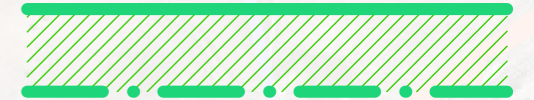
Scale 1:20000



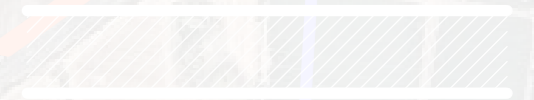
- 1 EXISTING QUARRY BUFFER ZONE - 500 m



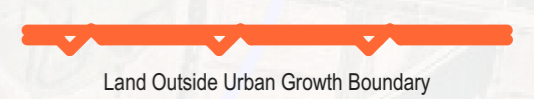
- 2 FUTURE QUARRY BUFFER ZONE - 500 m



- 3 PUBLIC ACQUISITION OVERLAY (PA05) FOR THE FUTURE OUTER METROPOLITAN RING ROAD



- 4 URBAN GROWTH AREA BOUNDARY



Land Outside Urban Growth Boundary

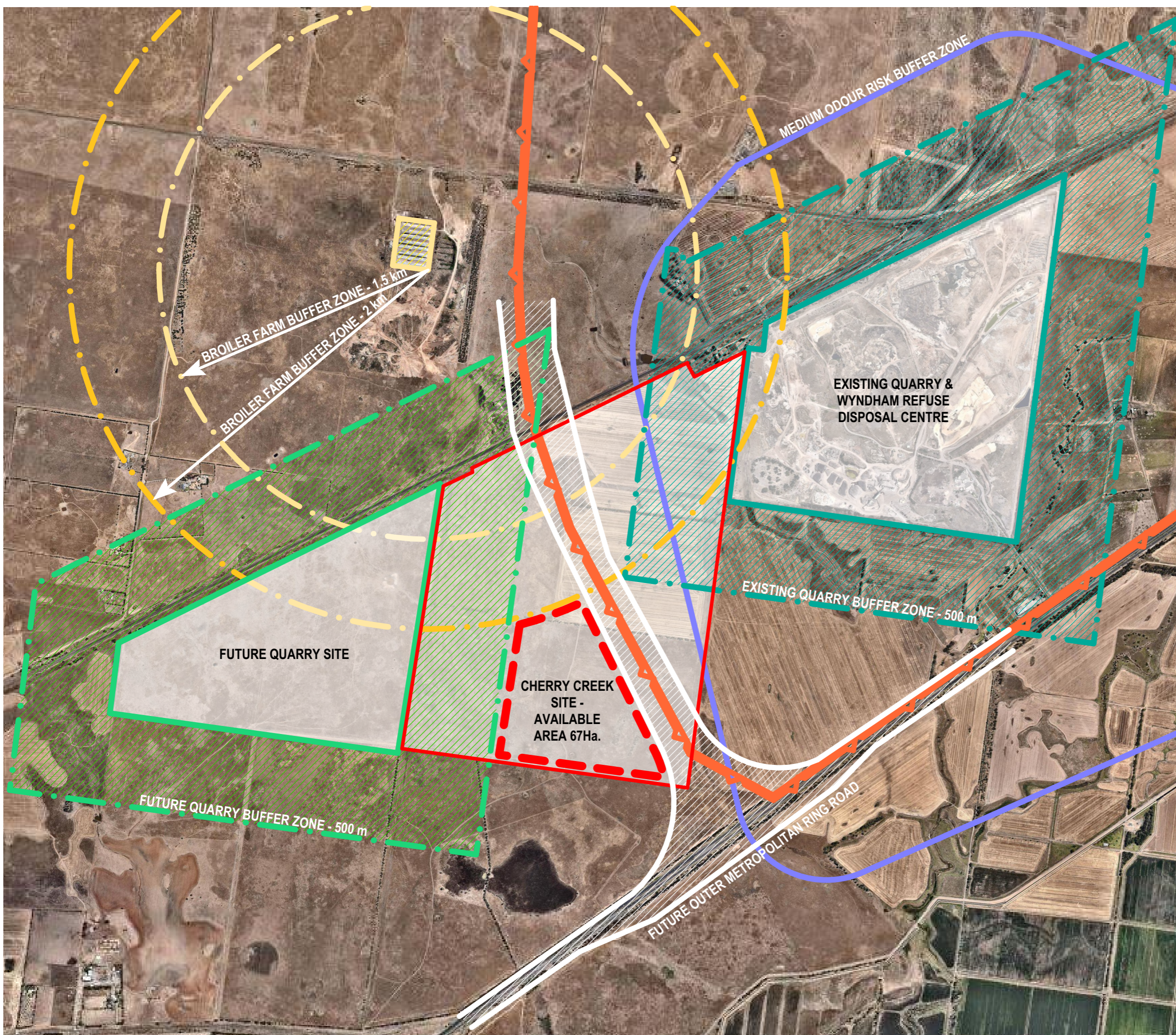
- 5 BROILER FARM BUFFER ZONE - 1.5 km & 2 km



- 6 MEDIUM ODOUR RISK BUFFER

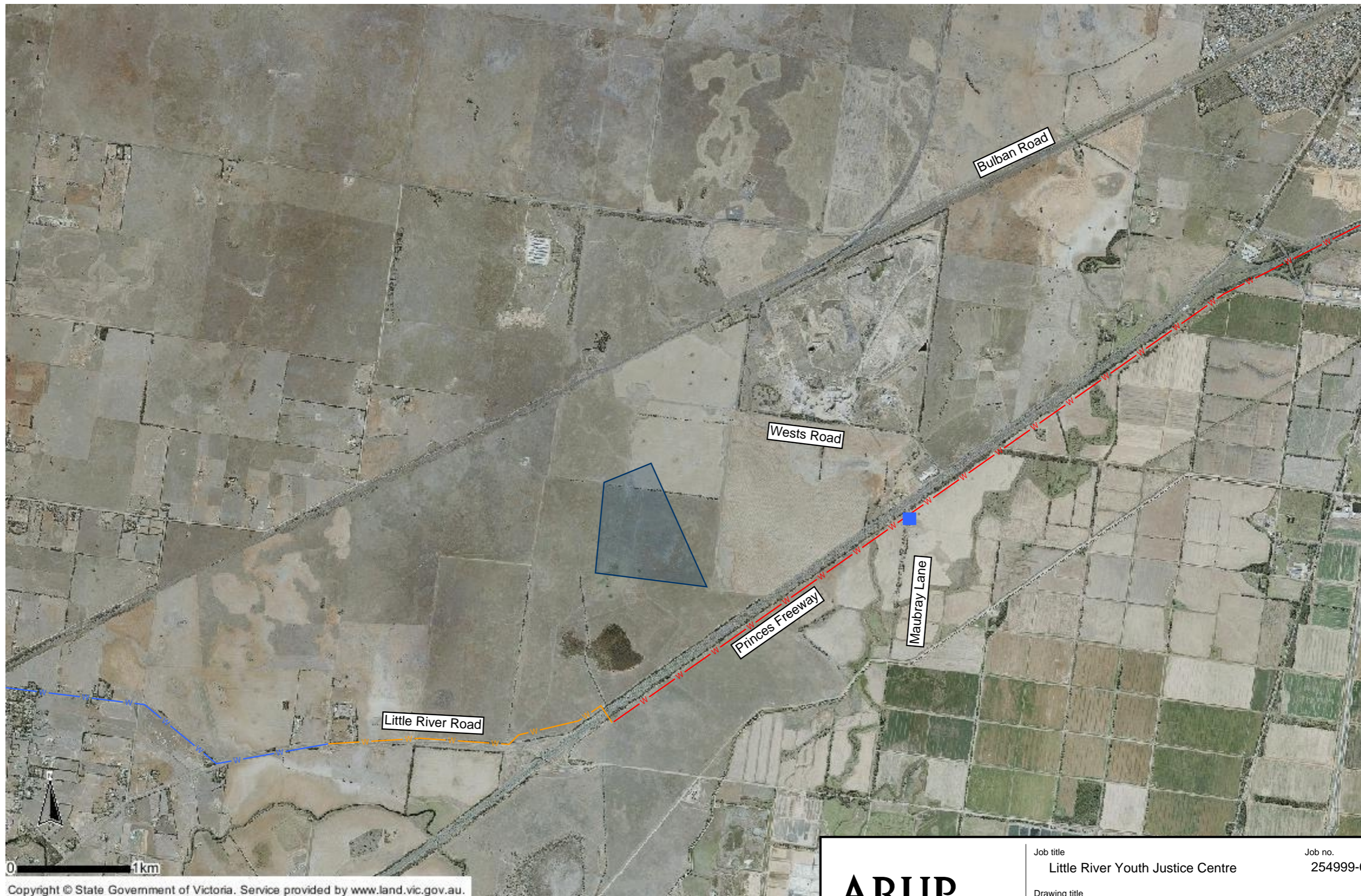







0 m 500 1000 m 1500 m



## Appendix B

### Existing Services



-  Site Boundary
-  Existing City West Water 300mm dia potable water pipe
-  Existing City West Water 225mm dia potable water pipe
-  Existing City West Water 150mm dia potable water pipe
-  Maubray Lane Pump Station

# ARUP

Level 17, 1 Nicholson Street  
Melbourne, Victoria 3000  
Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546  
www.arup.com.au

Job title	Little River Youth Justice Centre			Job no.	254999-00	
Drawing title	Service Location - City West Water Water Supply					
Date	22/05/2017					
Status	For Information Only					
		Drawing no.	254176-C-SK-001		Rev.	[A]



Legend

- Site Boundary
- Existing City West Water sewer manhole
- Existing Melbourne Water sewer manhole

ARUP

Level 17, 1 Nicholson Street  
Melbourne, Victoria 3000  
Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546  
www.arup.com.au

Job title  
Little River Youth Justice Centre

Job no.  
254999-00

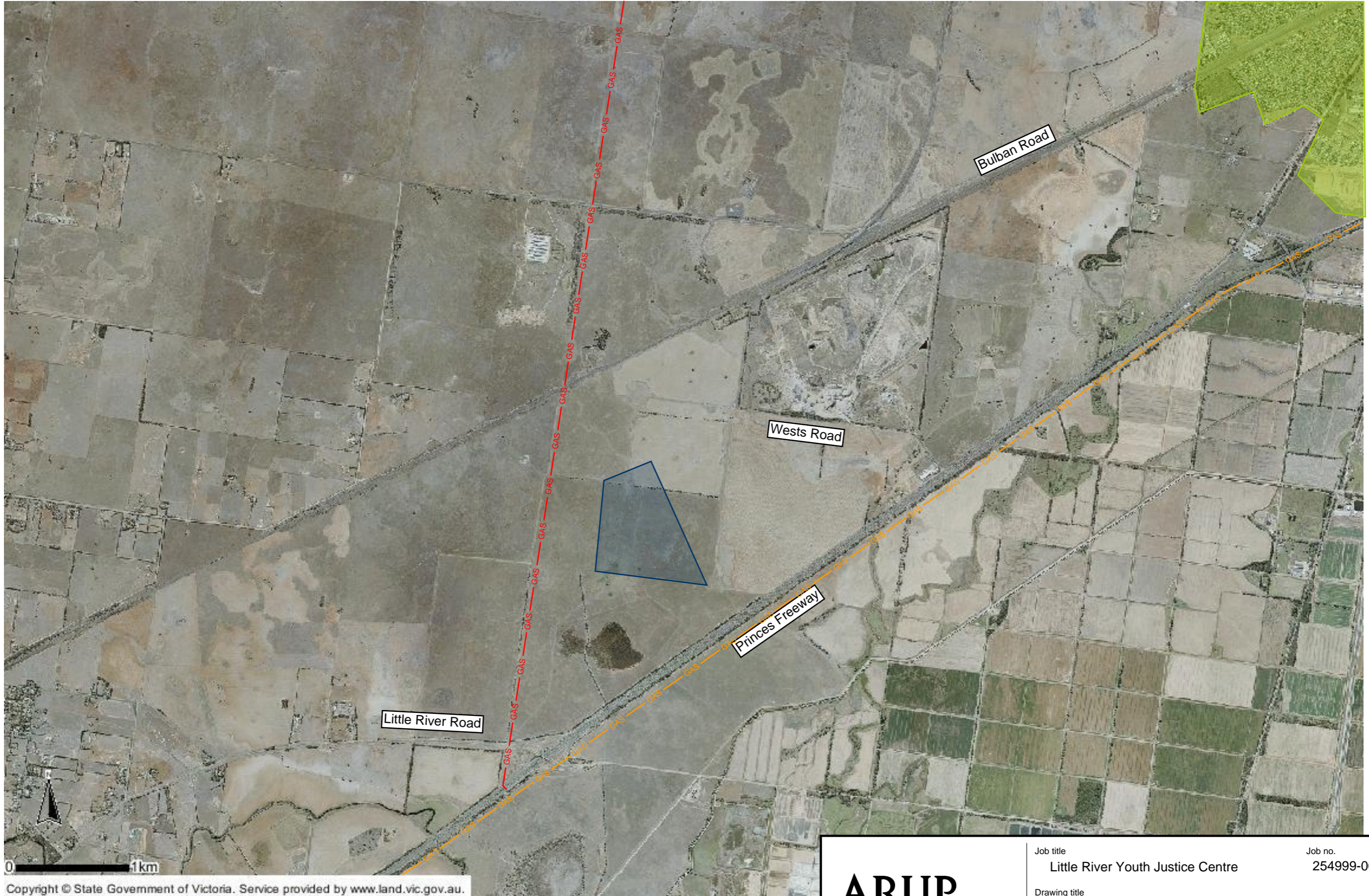
Drawing title  
Service Location - City West Water Sewer Network

Date  
22/05/2017

Status  
For Information Only

Drawing no.  
254999-C-SK-002

Rev.  
[A]



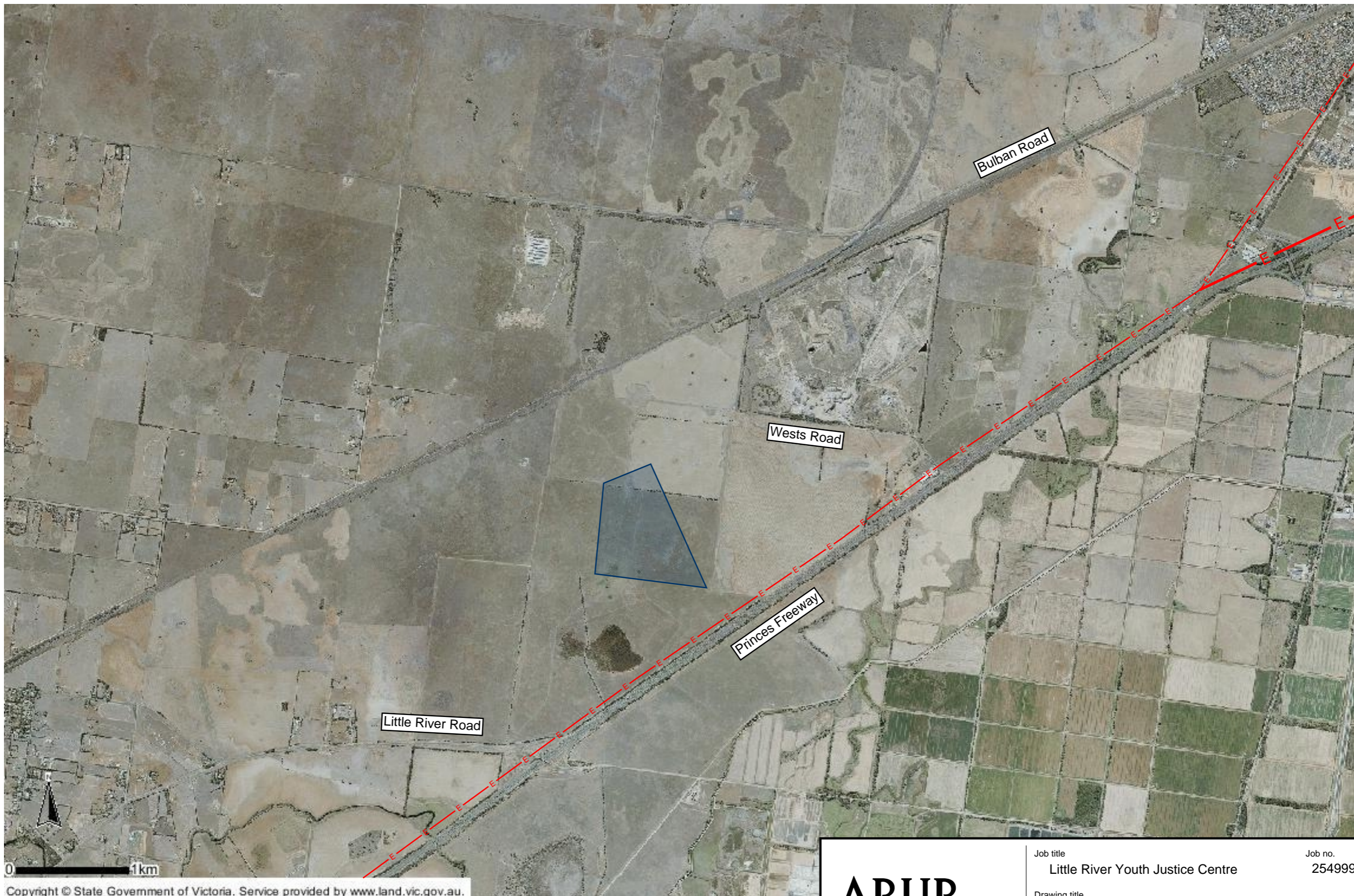
Legend

- |  |  |  |  |   |   |
|--|--|--|--|---|---|
|  | Site Boundary                            |  | Existing APA 350mm dia Transmission Main |  | Existing AusNet Gas Distribution Network (area) |
|  | Existing APA 500mm dia Transmission Main |  |  |   |   |



**ARUP**

Level 17, 1 Nicholson Street  
Melbourne, Victoria 3000  
Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546  
www.arup.com.au

Job title	Little River Youth Justice Centre		Job no.	254999-00	
Drawing title	Service Location - Gas Networks				
Date	22/05/2017				
Status	For Information Only		Drawing no.	254999-C-SK-003	Rev. [A]



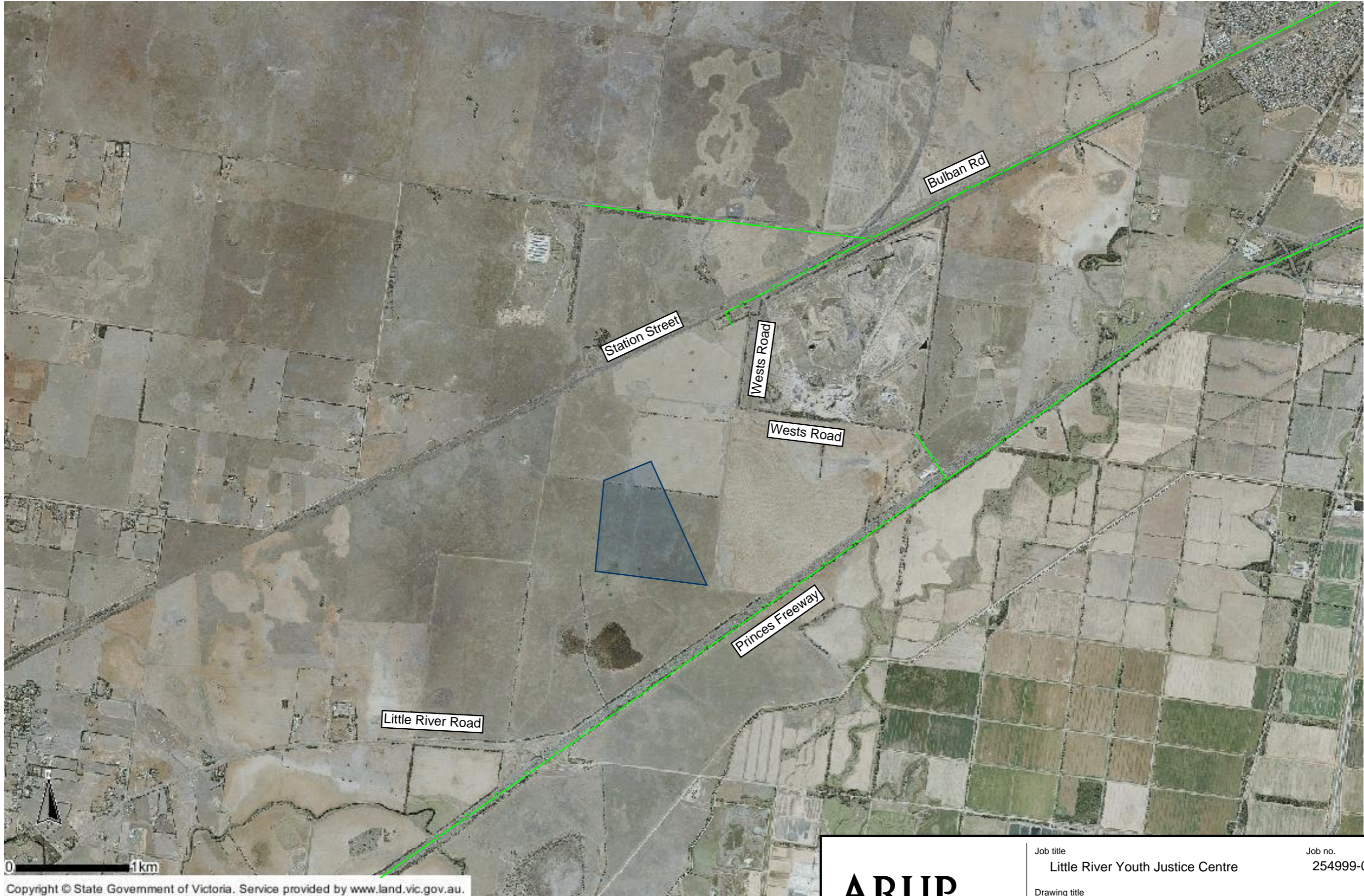
#### Legend

-  Site Boundary
-  Existing Powercor 66kV overhead cable



# ARUP

Level 17, 1 Nicholson Street  
Melbourne, Victoria 3000  
Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546  
www.arup.com.au

Job title	Little River Youth Justice Centre	Job no.	254999-00
Drawing title	Service Location - Powercor HV Network		
Date	22/05/2017		
Status	For Information Only	Drawing no.	254999-C-SK-004
		Rev.	[A]



#### Legend

-  Site Boundary
-  Existing Telstra Communications Conduits

# ARUP

Level 17, 1 Nicholson Street  
Melbourne, Victoria 3000  
Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546  
www.arup.com.au

Job title	Little River Youth Justice Centre			Job no.	254999-00	
Drawing title	Service Location - Telstra (Communications)					
Date	22/05/2017					
Status	For Information Only					
		Drawing no.	254999-C-SK-005		Rev.	[A]



# ARUP

Level 17, 1 Nicholson Street  
Melbourne, Victoria 3000  
Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546  
www.arup.com.au

Job title  
Little River Youth Justice Centre

Job no.  
254999-00

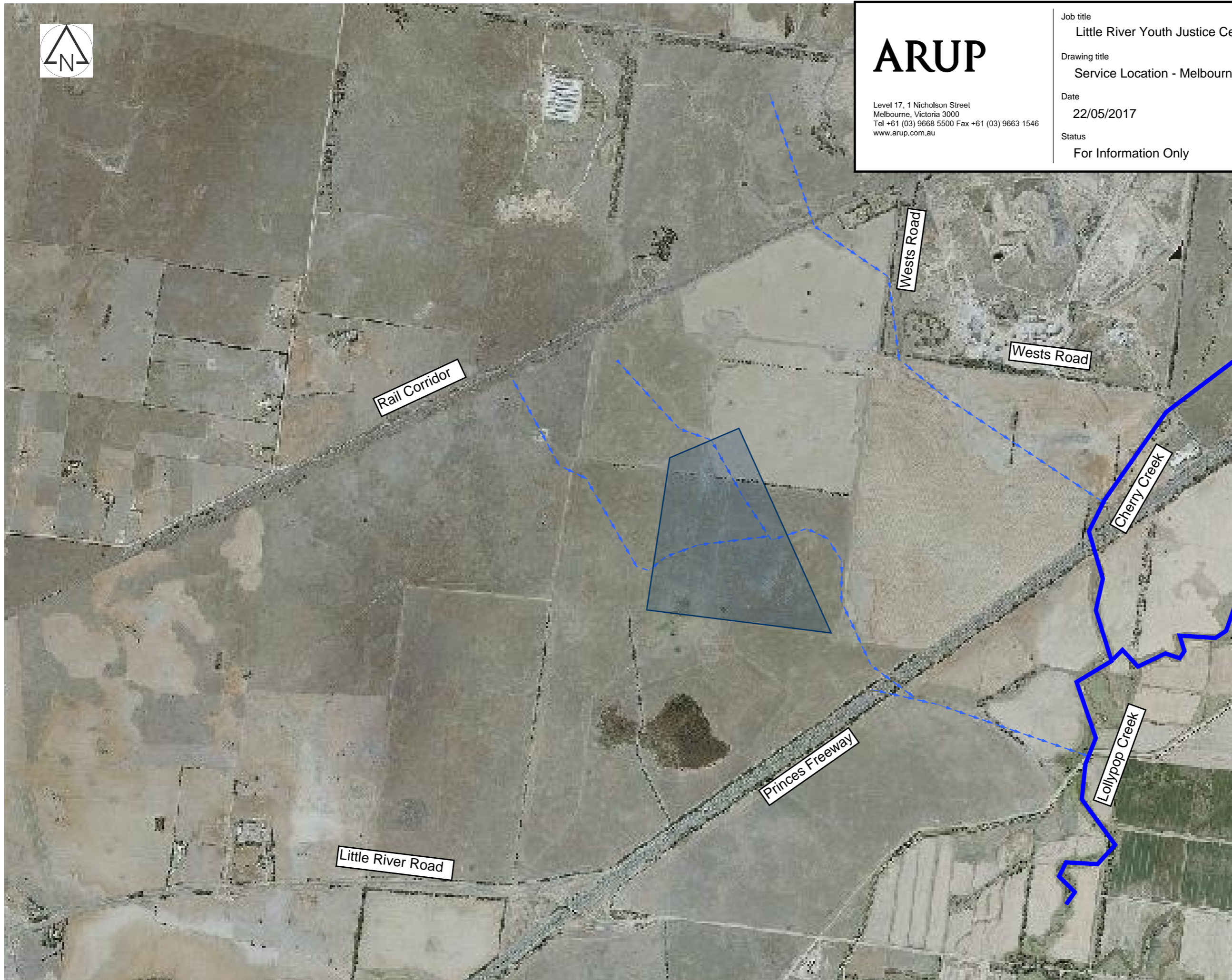
Drawing title  
Service Location - Melbourne Water Stormwater Network

Date  
22/05/2017




Status  
For Information Only

Drawing no.  
254999-C-SK-006

Rev.  
[A]



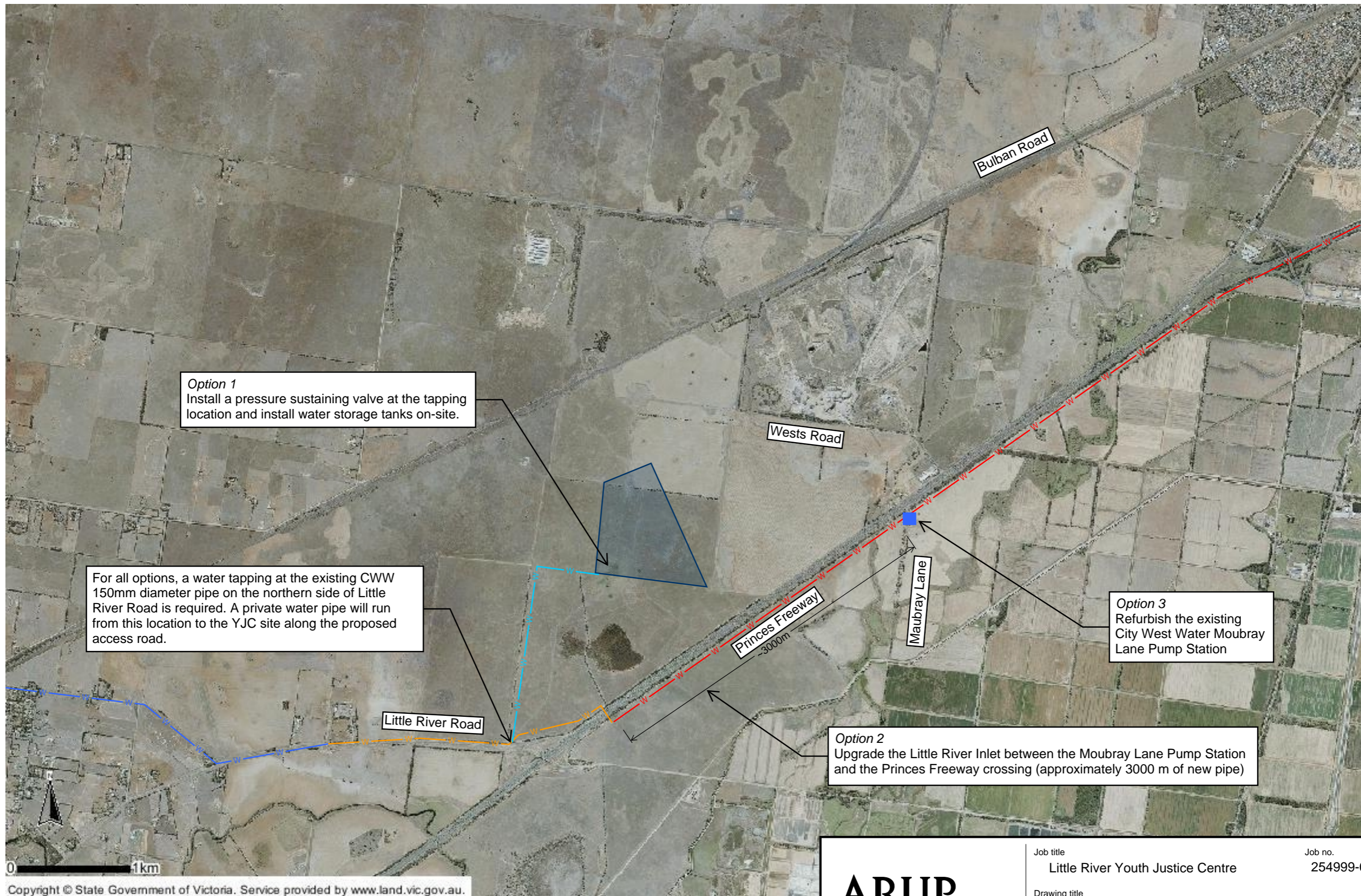
#### Legend

-  Site Boundary
-  Existing Watercourse
-  Existing Creek

For clarity, not all existing watercourses outside the site boundaries are shown.

## Appendix C

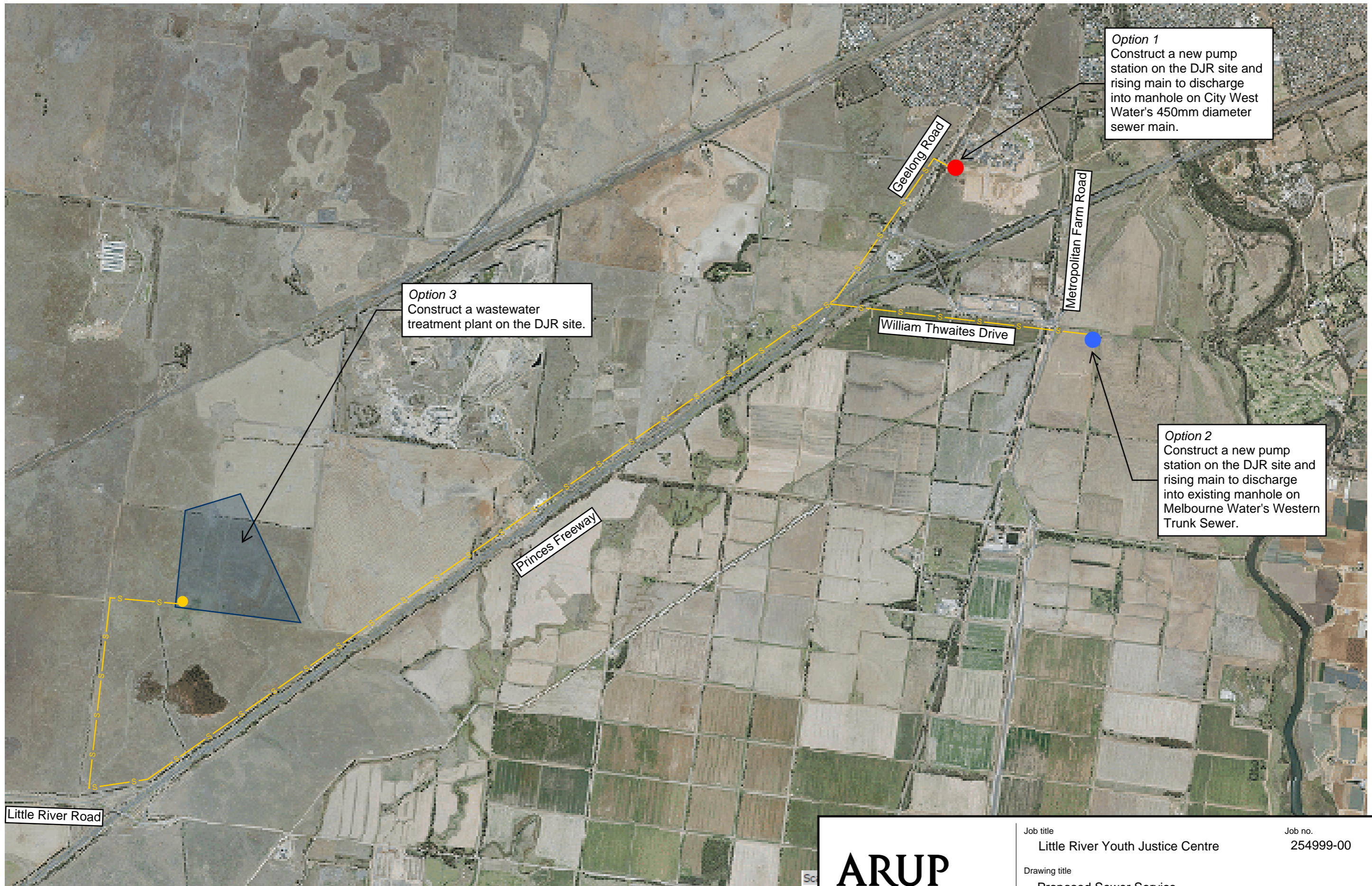
### Proposed Services



**ARUP**

Level 17, 1 Nicholson Street  
Melbourne, Victoria 3000  
Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546  
[www.arup.com.au](http://www.arup.com.au)

Job title	Little River Youth Justice Centre		Job no.	254999-00	
Drawing title	Proposed Potable Water Supply				
Date	22/05/2017				
Status	For Information Only		Drawing no.	254999-C-SK-101	Rev. [A]



Legend



Site Boundary



Existing City West Water sewer manhole



Existing Melbourne Water sewer manhole



Proposed rising main



Proposed pump station

ARUP

Level 17, 1 Nicholson Street  
Melbourne, Victoria 3000  
Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546  
www.arup.com.au

Job title

Little River Youth Justice Centre

Job no.

254999-00

Drawing title

Proposed Sewer Service

Date

27/06/2017

Status

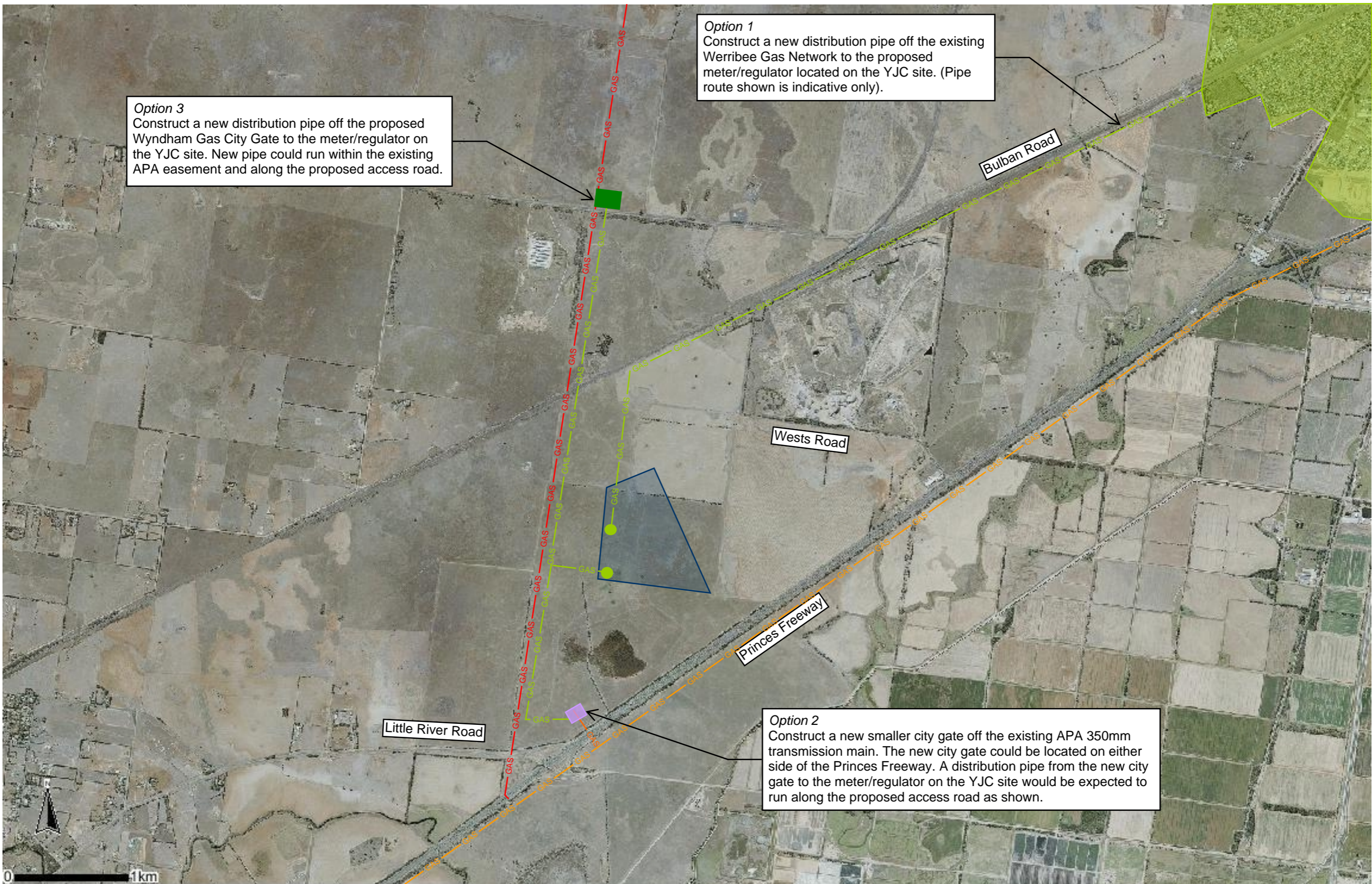
For Information Only

Drawing no.

254999-C-SK-102

Rev.

[B]



**Option 3**  
Construct a new distribution pipe off the proposed Wyndham Gas City Gate to the meter/regulator on the YJC site. New pipe could run within the existing APA easement and along the proposed access road.

**Option 1**  
Construct a new distribution pipe off the existing Werribee Gas Network to the proposed meter/regulator located on the YJC site. (Pipe route shown is indicative only).

**Option 2**  
Construct a new smaller city gate off the existing APA 350mm transmission main. The new city gate could be located on either side of the Princes Freeway. A distribution pipe from the new city gate to the meter/regulator on the YJC site would be expected to run along the proposed access road as shown.

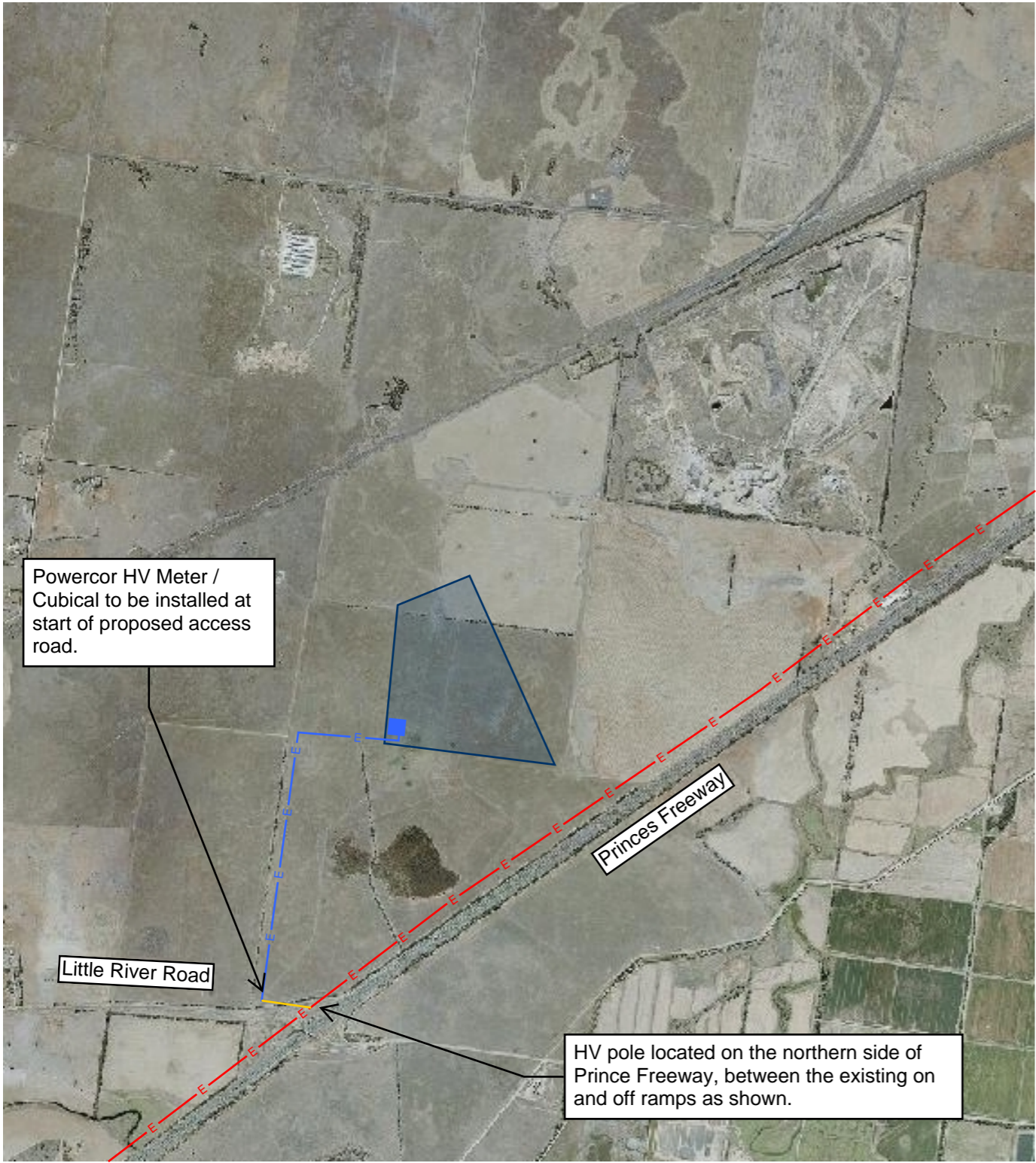
Legend

- Site Boundary
- Existing APA 500mm dia Transmission Main
- Existing APA 350mm dia Transmission Main
- Existing AusNet Gas Distribution Network (area)
- Proposed Gas High Pressure Main
- Proposed AusNet Gas Distribution Pipe
- Proposed Wyndham Gas City Gate (indicative location)
- Proposed Small Gas City Gate
- Proposed Gas Meter / Regulator (on-site)

ARUP

Level 17, 1 Nicholson Street  
Melbourne, Victoria 3000  
Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546  
www.arup.com.au

Job title	Little River Youth Justice Centre		Job no.	254999-00	
Drawing title	Proposed Gas Supply				
Date	22/05/2017				
Status	For Information Only		Drawing no.	254999-C-SK-103	Rev. [A]









Powercor HV Meter /  
Cubical to be installed at  
start of proposed access  
road.

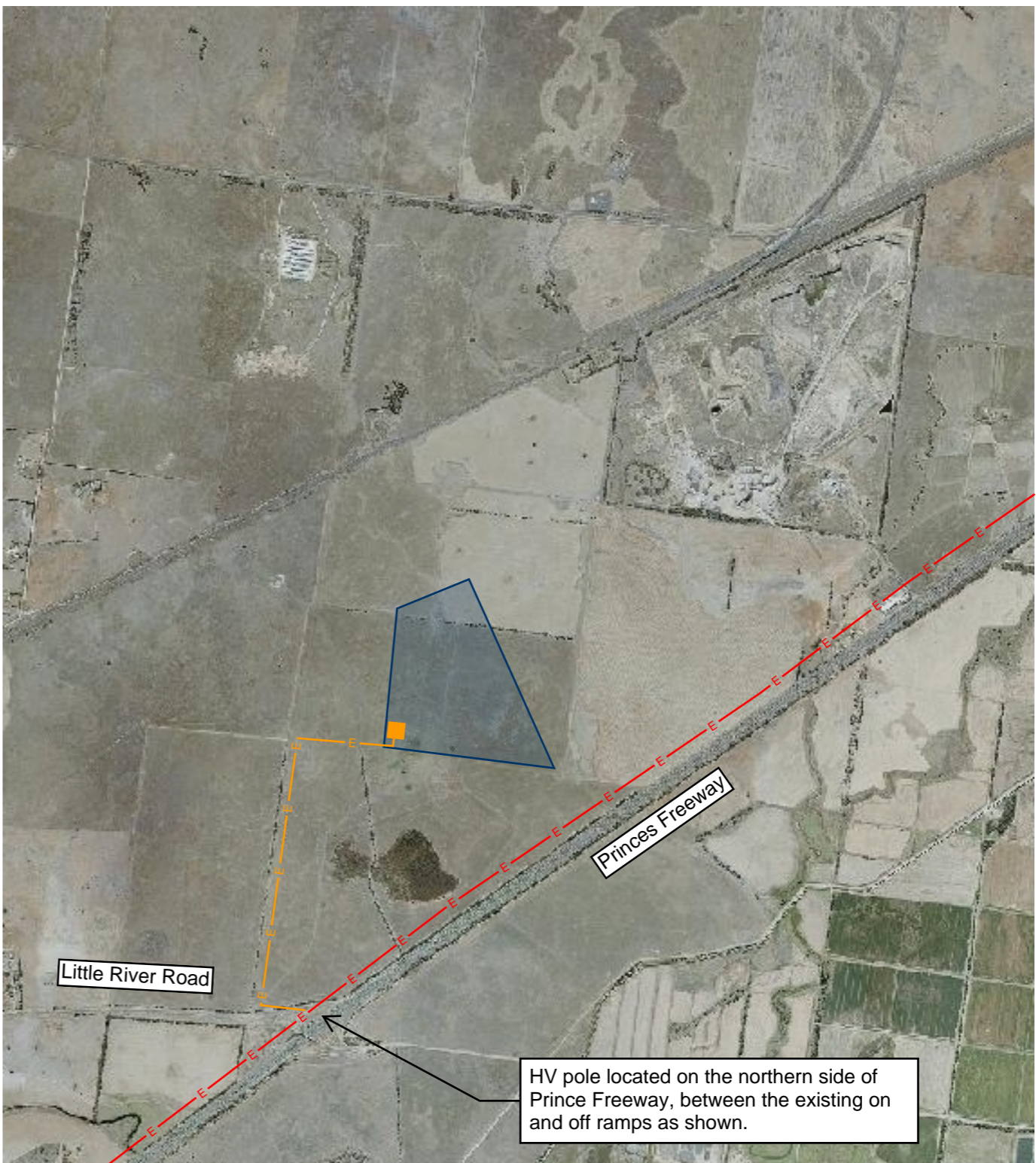
HV pole located on the northern side of  
Prince Freeway, between the existing on  
and off ramps as shown.

Option 1 HV Customer

A HV meter / cubical is constructed at the start of the private access road and all infrastructure located downstream of this is owned and managed by DJR.

- Legend**
- |  |                                       |   |                                    |
|--|---------------------------------------|---|------------------------------------|
|  | Site Boundary                         |  | Proposed DJR 22kV overhead cable   |
|  | Existing Powercor 66kV overhead cable |  | Proposed Powercor Kiosk Substation |
|  | Proposed Powercor 22kV overhead cable |  | Proposed DJR Kiosk Substation      |

Given the location of the site relative to surrounding infrastructure and for cost purposes it is assumed that overhead infrastructure will be constructed rather than underground cables. A conduit and pit network can be constructed along the same route if requested by DJR (for additional cost).




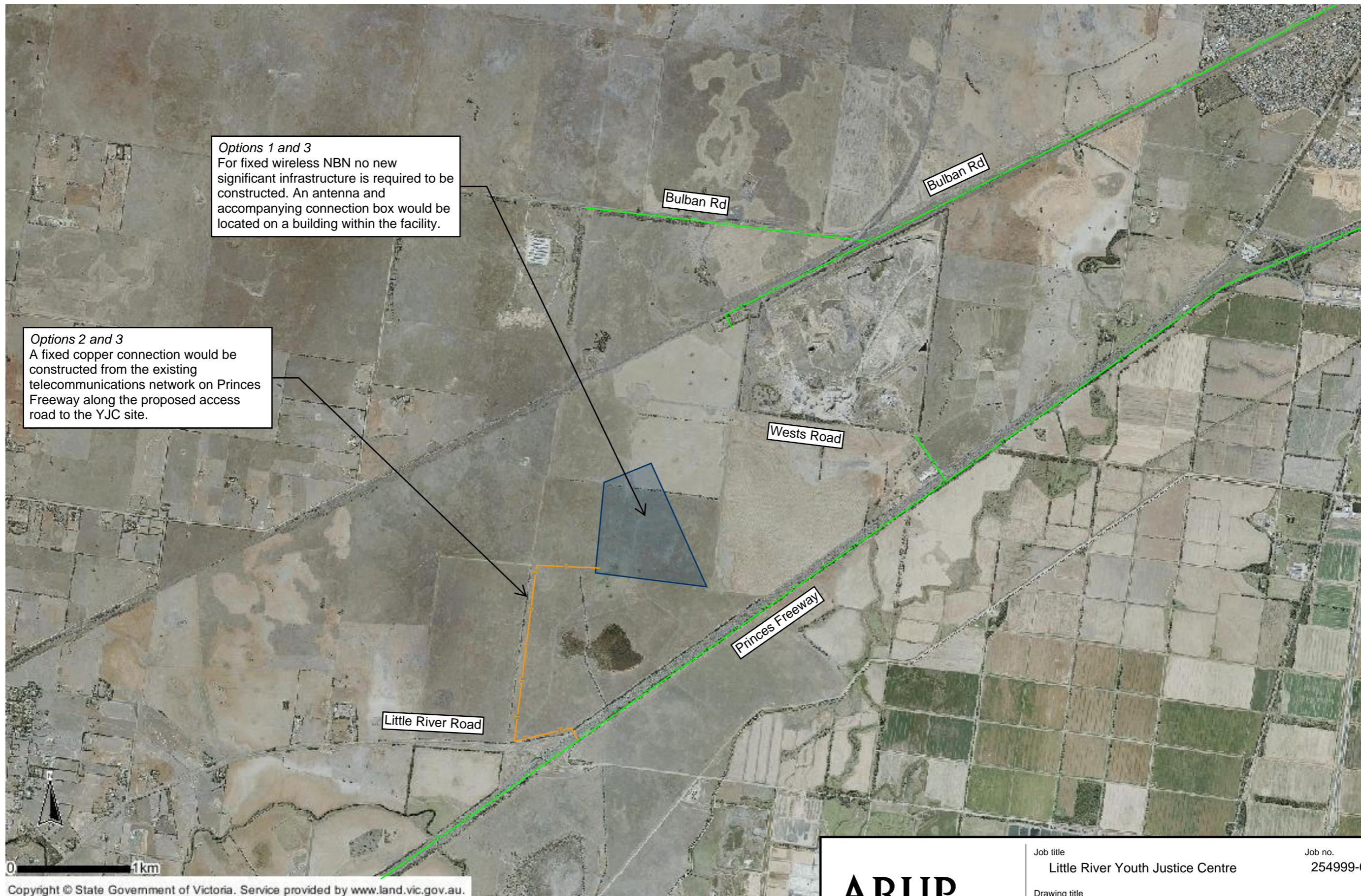
HV pole located on the northern side of  
Prince Freeway, between the existing on  
and off ramps as shown.

Option 2 LV Customer

All HV infrastructure from the HV tee off pole to and including the kiosk substation is owned and managed by Powercor.






 <small>Level 17, 1 Nicholson Street Melbourne, Victoria 3000 Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546 www.arup.com.au</small>	Job title <b>Little River Youth Justice Centre</b>	Job no. <b>254999-00</b>
	Drawing title <b>Proposed HV Supply</b>	
	Date <b>22/05/2017</b>	
	Status <b>For Information Only</b>	Drawing no. <b>254999-C-SK-104</b>
		Rev. <b>[A]</b>



*Options 1 and 3*  
For fixed wireless NBN no new significant infrastructure is required to be constructed. An antenna and accompanying connection box would be located on a building within the facility.

*Options 2 and 3*  
A fixed copper connection would be constructed from the existing telecommunications network on Princes Freeway along the proposed access road to the YJC site.

Legend

-  Site Boundary
-  Existing Telstra Communications Conduits
-  Proposed Telstra Copper Cable

**ARUP**

Level 17, 1 Nicholson Street  
Melbourne, Victoria 3000  
Tel +61 (03) 9668 5500 Fax +61 (03) 9663 1546  
www.arup.com.au

Job title	Little River Youth Justice Centre	Job no.	254999-00
Drawing title	Proposed Communications Supply		
Date	22/05/2017		
Status	For Information Only	Drawing no.	254999-C-SK-105
		Rev.	[A]

## Appendix D

### Meeting Minutes

Project title	Cherry Creek Youth Justice Centre	Job number 254999
Meeting name and number	Youth Justice Centre - water supply and sewer connection	File reference
Location	City West Water - 1 McNab Avenue Footscray - 6.11 ICC MTG	Time and date 11am 19 April 2017
Purpose of meeting	To discuss works associated with supplying water and possibly constructing a sewer connection to the proposed Youth Justice Centre from the City West Water network.	
Present	Richard Wittmack (DJR) Jacob Green (CWW) John Kirkbride (CWW) Russell Collier (ISG Projects) Claire Quinlan (Arup)	Dijana Dragovic (DJR) Stefan Kreegher (CWW) Andrew Hickey (CWW) Matthew Joy (ISG Projects) Emma Cotching (Arup)
Apologies		
Circulation	Those present	

## Action

### 1. Project Overview

- DJR confirmed development specific information:
    - 224 inmates for 2021 with capacity for 296 inmates
    - Private access road to site (at this staged based on discussions with VicRoads)
    - Construction Programme – Early Works to commence later this year. Facility operational by start of 2021.
- Project Team and CWW (if necessary) to be advised of changes to factors influencing the design by the relevant party.

### 2. Water Servicing Strategy

- CWW presented location and capacity information about the existing water supply network along Princes Freeway and Little River Road.
  - 300mm main along the southern side of the Princes Freeway feeds into 150mm pipe approximately 3km north of Princes Freeway / Little River intersection. A 230mm pipe crosses

Prepared by Emma Cotching

Date of circulation

Date of next meeting

# Minutes

Project title	Job number	Date of Meeting
Cherry Creek Youth Justice Centre	254999	19 April 2017

## Action

under the Princes Freeway connecting to a 150mm pipe which runs along Little River road to service the Little River township. The capacity of this main is in the order of 7-8l/s with the township requiring approximately 5l/s which is pumped to a header tank to provide adequate pressure to the township.

- There is an existing booster at the start of the 150mm pipe on Princes Freeway. Booster was constructed in the late 1990s, is not currently used and condition unknown.
- There is approximately 2l/s capacity in the 150mm pipe at Little River Road, which can be utilised if suitable for the development.
- There are no plans for growth in Little River or changing the water servicing arrangement given forecast estimates to 2050.
- Arup noted that without undertaking detailed analysis, a peak demand of 5-6l/s is assumed, equal to approximately 390l/bed/day (excluding fire water requirements). CWW are not in a position to verify this peak demand estimate with the information provided to date.
- DJR advised that potable water would not be used for irrigation purposes.
- CWW presented three options that may be investigated further to supply potable water to the site:
  1. Supply the YJC via the existing 150mm main on Little River Road. CWW would require a pressure sustaining valve (PSV) to be installed at the offtake to the YJC private main. The PSV would limit flows to the YJC is the level in the Little River Tank got too low. CWW expect that 2 l/s would be available 24 hours most days, but it cannot be guaranteed.
  2. Upgrade the Little River inlet main upstream of the YJC. Upsize the existing 150mm pipe on the south side of Princes Freeway, between the existing pump station and the Princes Freeway road crossing, to either 225mm or 300mm (approximately 3km of pipe). It is estimated that site could draw up to 12l/s for a 225mm main and 20l/s for a 300mm main, such that no water tanks (excluding those for fire water) would be required on site. This main is located completely within the Melbourne Water Western Treatment Plant site boundary but may have impacts on native vegetation and

DJR to provide water usage information for similar sized prisons.

CWW to investigate the three options further and provide advice to the Project Team accordingly.

# Minutes

Project title	Job number	Date of Meeting
Cherry Creek Youth Justice Centre	254999	19 April 2017

## Action

watercourses and is within an area of aboriginal cultural heritage sensitivity. Approval would be required from Melbourne Water. CWW suggested that the approval process may take 12 months, but noted that the approval processes for Ravenhall has taken 18 months. Works estimated as being \$450-500/m (~\$1.5M) for pipe construction costs.

3. Utilise the CWW Moubay Lane Pump Station (WPS176). CWW have a pump station that is currently not in use approximately 3km upstream of the proposed YJC access road. The existing pump station would require a major refurbishment to ensure permanent water supply to YJC. This option would enable the peak demand to be supplied without upgrading the existing 150mm pipe and storage tanks would not be required on site. The scope and cost of refurbishment works is not known at this stage. It is noted that this is not a preferred option from a CWW perspective.
- CWW advised that for Options 2 and 3 CWW and DJR would engage in a Development Deed, whereby DJR would be responsible for designing and constructing the water supply infrastructure (in accordance with CWW requirements) and hand it back to CWW. DJR would be responsible for the design, construction, management and maintenance of the DJR owned water supply assets within the private roadway and on site. Refer to the CWW Land Development Manual for further information.
- CWW commented that while they will not be responsible for the design and construction, they are willing to assist and provide guidance and advice where possible.
- DJR queried whether options 2 or 3 would provide improvements to Little River supply. CWW confirmed there would be negligible change.

CWW to provide Arup with CWW GIS data for their existing network.

### 3. Sewer Servicing Strategy

- CWW presented information about the existing sewer networks closest to the site.
  - CWW network for residential development on Werribee Main Road (approximately 8-9km from the site), north of Princes Freeway.

CWW to provide further advice regarding the two options feasible to inform DJR and enable the most appropriate action to be taken.

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

19 April 2017

---

Action

- MW network (major sewer approximately 8-9km from the site), south of Princes Freeway on MW land.
- CWW presented three options, with two to be investigated further to cater for sewerage generated on the site.
  1. Pump with rising main to CWW network. Construct a private 130-150mm (indicative estimate only) rising main from the site pump station to MW WTS 1 on the Western Trunk Sewer (approximately 8km). CWW noted that sewerage is expected to be in private network (pump station wet well and rising main) for approximately 40 hours. This network has infrastructure to deal with odour. As with the CWW option for upgrading the water main alongside the Princes Freeway, this option is likely to impact on native vegetation and watercourses and is within an area of aboriginal cultural heritage sensitivity as well as require approval from Melbourne Water and VicRoads (as the affected landowners). Melbourne Water would also need to approve DJR discharging directly into the Western Trunk Sewer.
  2. Similar to Option 1 but connection is instead made into CWW 450mm pipe in Werribee West (approximately 8km from the site). CWW noted that this option is not preferable given the long sewerage detention time with the pump station wet well and rising main and associated odour and corrosion issues. The 450mm sewer is routed along a prime area of active open space.
  3. Construct a private wastewater treatment plant (WWTP) on site to treat all wastewater.
- CWW advised that for all options DJR would be responsible for designing, constructing, managing and owning the private infrastructure with no formal input from CWW required. For Option 1, DJR would submit plumbing application to CWW for sewer connection.
- CWW advised that the maintenance and operations of the WWTP may be able to be outsourced to CWW if agreed by all parties. CWW advised that if requested they would work with DJR to look at alternative uses for treated water.
- DJR advised that recycling treated wastewater on-site is preferable if environmentally and financially feasible.

# Minutes

Project title	Job number	Date of Meeting
Cherry Creek Youth Justice Centre	254999	19 April 2017

		Action
<ul style="list-style-type: none"><li>CWW commented that while they will not be responsible for the design and construction, they are willing to assist and provide guidance and advice where possible.</li><li>CWW advised that Wyndham City Council have previously contacted CWW with regards to connecting the adjacent quarry site to the sewer network and that DJR may wish to discuss sharing the cost of a new rising main with WCC.</li><li>There were no plans for Little River to move from septic tanks onto mains sewer.</li></ul>		CWW to provide details of WCC contact regarding possible sewer connection

Project title	Cherry Creek Youth Justice Centre	Job number 254999
Meeting name and number	Youth Justice Centre - Access road and intersection requirements to YJC from Little River Road	File reference
Location	WCC - Council chamber/Function room entrance	Time and date 9am 20 April 2017
Purpose of meeting	To discuss a new intersection / roundabout at Little River Road to allow access to the YJC.	
Present	Natalie Walker (WCC) Claire Quinlan (Arup)	Nitin Gupta (WCC) Emma Cotching (Arup)
Apologies		
Circulation	Those present, Richard Wittmack (DJR), Dijana Dragovic (DJR), Russell Collier (ISG), Matthew Joy (ISG)	

Action

## 1. Project Background

- Arup confirmed current understanding of the location of the access road and previous discussions with VicRoads:
  - Private access road to site from Little River Road
  - VicRoads have indicated that a roundabout would be appropriate at this location with reduced speed limits leading up to the intersection
  - Access road to run along the western perimeter of the site
  - Construction Programme – Early Works to commence later this year. Facility operational by start of 2021.

## 2. Wyndham City Council Design Requirements and Approvals Process

- WCC advised that this intersection would be owned and managed by VicRoads, given its proximity to the Princes Freeway on/off ramps. Thus, while WCC will not be responsible for the approval on the intersection they are happy

Prepared by Emma Cotching

Date of circulation

Date of next meeting

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

20 April 2017

Action

to provide advice as they do own Little River Road and want the best outcome for Little River and WCC residents.

- It is noted that WCC will be responsible for approving Traffic Management and Construction Plans for construction works.
- WCC advised that the loss of landscape amenity is of concern to WCC. Accordingly WCC request that the existing row of trees along the site boundary be retained and that the access road be offset from these. In addition, WCC wish to limit directional signage regarding the location of the YJC to a minimum.
- WCC advised that they do not outwardly object to a roundabout at this location but require further inputs to confirm this view. Traffic modelling indicating the impacts to Little River Road during construction and post-construction phases should be provided to WCC so that they can provide advice on the intersection solution proposed. Information and modelling should include:
  - Expected increase in usage of Little River Road
  - Which direction staff and visitors will come from
  - Which direction construction vehicles will come from (Geelong or Werribee)
  - Impacts to the vegetation in the road reserve
  - Intersection arrangement for construction and post-construction phases.
- Arup and WCC discussed the feasibility of temporarily widening Little River Road to allow for a right turn lane into the access road during construction only. WCC advised that they do not outwardly object to this but will need to approve the design and Traffic Management Plans based on the traffic modelling information provided.
- WCC advised that they can provide existing information regarding the following to Arup:
  - Traffic volumes along Little River Road (\*post meeting note – available in a couple of weeks)
  - Conditions assessment of Little River Road (late April/May)
  - The extent of the Little River Road reserve (today)
  - Cross section of the proposed Outer Ring Road (today)

Designer to provide traffic modelling information to WCC to review

WCC to provide Arup with existing traffic and road information.

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

20 April 2017

---

Action

- WCC advised that they do not want Little River to be used as a thorough-fair for vehicles during construction. Rather, construction vehicles should access the site from Little River Road from the Princes Freeway off-ramps.
- WCC advised that they expect that visitors will be bussed to the YJC from Little River Station (visitors from Geelong and west coast of Victoria), not only Werribee Station. They noted that pending traffic modelling outcomes, upgrades to River Little Road may be required.

Project title	Cherry Creek Youth Justice Centre	Job number 254999
Meeting name and number	Youth Justice Centre – gas supply and connection	File reference
Location	Level 17, 1 Nicholson Street, East Melbourne	Time and date 2pm 27 April 2017
Purpose of meeting	To discuss works associated with supplying gas to the proposed Youth Justice Centre from the AusNet network.	
Present	Mark Baker (AusNet) Russell Collier (ISG Projects) Barry Steinmeyer (Arup)	Myra Horomidis (AusNet) Matthew Joy (ISG Projects) Emma Cotching (Arup)
Apologies	Richard Wittmack (DJR) Claire Quinlan (Arup)	Dijana Dragovic (DJR)
Circulation	Those present, Richard Wittmack (DJR), Dijana Dragovic (DJR) and Claire Quinlan (Arup)	

## Action

### 1. Project Overview

- ISG Projects confirmed development specific information:
  - 224 Clients for 2021 with capacity for 296 Clients
  - Private access road to site (at this staged based on discussions with VicRoads)
  - Site location limitations – adjacent quarries, boiler farm, APA pipeline and Outer Metropolitan Ring Road Overlay
  - Construction Programme – Early Works to commence later this year. Facility operational by start of 2021.

Project Team and AusNet (if necessary) to be advised of changes to factors influencing the design by the relevant party.

### 2. Gas Servicing Strategy

- Arup noted that analysis of the gas demands for the new facility has not been undertaken. However, assuming the demand at Ravenhall can be prorated for this facility, a demand of 200-300 cum/hr is assumed. AusNet verified this assumption pending further analysis during design phases, given the Ravenhall

Prepared by Emma Cotching

Date of circulation

Date of next meeting

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

27 April 2017

---

Action

demand is approximately 700 cum/hr for approximately 1000 Clients.

- AusNet presented location and capacity information about the existing APA and AusNet Infrastructure within reasonable proximity of the site:
  - 500mm transmission main (APA) runs north-south from Princes Freeway along the western site boundary. Maximum capacity 10,200 kPa.
  - 350mm transmission main (APA) runs along the southern side of Princes Freeway. Maximum capacity 7,400 kPa, typically operates currently at 4000 kPa.
  - Werribee gas network extends along Bulban Road to McGrath Road. This is appropriately 7.5km from the site (confirmed later by mapping)
  - Avalon high pressure gas network exists at Avalon Airport, approximately 12km south-west of the site.
- AusNet stated that based on the initial estimated demand, each of the above networks / infrastructure had capacity to service the site.
- AusNet provided information regarding the status of the proposed Wyndham Gas City Gate on Bulban Road.
  - Proposed City Gate is to be located off existing APA 500mm main, near existing Broiler Farm (approximately 4km from the site)
  - The proposal for the City Gate requires approval by the federal government. A draft decision is expected in June/July 2017, which should provide indication of whether it will be constructed.
  - Confirmation of the construction time of the proposed city gate, should it be approved is not confirmed. Planned for 2019 but this may not eventuate.
  - Wyndham City Gate proposed for the purpose of servicing the VPA Precinct Structure Plan.
- AusNet presented three options that may be investigated further to supply gas to the site:
  1. Connect into the existing Werribee gas network at Bulban Road / McGrath Road. A larger gas pipe would be required to

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

27 April 2017

Action

extend approximately 7.5km to the site. AusNet would be the owners of the distribution main and industrial meter/regulator, most likely located on the DJR site for this scenario. Works estimated as being approximately \$2.25 million (~\$300/m) excluding additional costs associated with works under railway line.

2. Construct a new smaller 'city gate' and to service the YJC off the existing APA 350mm transmission main along Princes Freeway. Gas would need to be piped approximately 2km across the Freeway and up the new access road. It is noted that the smaller city gate would be approximately 40m x 40m (requiring 50m x 50m of land approximately), which could feasibly be located on either site on the Princes Freeway, AusNet have contacted APA regarding this solution, and advised that APA in principle do not object this a connection at Prince Freeway. Preference would be locate the distribution main within the private access road, such that the industrial meter / regulator would be located on or as close to the site boundary as feasible. If not possible, the meter / regulator could be located at the private access road, such that AusNet's ownership would terminate at the commencement of the private access road. AusNet estimate the works to be approximately \$2 million.
  3. Construct a new pipe from the proposed Wyndham Gas City Gate (should it be approved and constructed). The new pipe would extend approximately 4km to the site. AusNet would be the owners of the distribution main and industrial meter/regulator, most likely located on the DJR site for this scenario. Works estimated as being approximately \$1.2 million (~\$300/m) excluding additional costs associated with works under the railway line.
- AusNet, ISG Projects and Arup discussed the options identified and noted the following concerns and risks associated with each option:
    1. (Option 1)
      - Pipe would be required to be constructed below the existing railway line
      - Pipe would need to be constructed within the Overlay for the Outer Ring Road

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

27 April 2017

Action

- Pipe may need to be constructed in private land south of Bulban Road
  - 1. (Option 2)
    - Pipe would need to extend across Princes Freeway, requiring additional approval from VicRoads
    - Large footprint required for smaller city gate. Additional land would be required, which may be subject to cultural heritage, inundation and environmental overlays.
  - 2. (Option 3)
    - Significant risk is that this proposed Wyndham Gas City Gate is not approved by the government
    - Pipe would need to be constructed below the existing railway line.
  - AusNet noted that given the information known to date, from their perspective Option 2 is most preferable followed by Option 3 and then Option 1.
  - With regards to new AusNet owned infrastructure, AusNet would undertake a high level scope of works and would refer the works to their Contractor Reference panel for quotation on Design and Construct. AusNet advised that following going out to tender for Design and Construct, a minimum of 6 months should be allowed for the design, subject to all information being available.
  - AusNet commented that they are willing to assist and provide guidance and advice where possible to ensure that the best solution for the project constraints and objectives is achieved. AusNet will share existing location information regarding the proposed Wyndham Gas City Gate and existing Werribee gas network.
- AusNet to provide map indicating the extent of the existing Werribee gas network and location of proposed Wyndham Gas City Gate

Project title	Cherry Creek Youth Justice Centre	Job number 254999
Meeting name and number	Youth Justice Centre - Access road and intersection requirements to YJC from Little River Road	File reference
Location		Time and date 12pm 27 April 2017
Purpose of meeting	To discuss a new intersection / roundabout at Little River Road to allow access to the YJC.	
Present	Stan Januskiewicz (VicRoads) Russell Collier (ISG Projects) Barry Steinmeyer (Arup)	Simon Basic (VicRoads) Matthew Joy (ISG Projects) Emma Cotching (Arup)
Apologies	Claire Quinlan (Arup)	
Circulation	Those present, Richard Wittmack (DJR), Dijana Dragovic (DJR) and Claire Quinlan (Arup)	

## Action

### 1. Project Background

- Arup and ISG Projects confirmed current understanding of the location of the access road and previous discussions with VicRoads and Wyndham City Council (WCC):
  - Private access road to site from Little River Road
  - Access road to run along the western perimeter of the site
  - WCC advised that given the proximity of the proposed access road to the Princes Freeway on/off ramps (owned by VicRoads) they understand that VicRoads will approve the proposed intersection arrangement.
  - WCC advised that they do not have existing traffic data for Little River Road or Princes Freeway.
  - Construction Programme – Early Works to commence later this year. Facility operational by start of 2021.
- Arup and ISG Projects confirmed inmate and staffing information known to date:

Prepared by Emma Cotching

Date of circulation

Date of next meeting

# Minutes

Project title	Job number	Date of Meeting
Cherry Creek Youth Justice Centre	254999	27 April 2017

## Action

- 224 clients in 2021 with potential for 296
- 150 staff (total)
- Understood to be 3 shifts for staff but this needs to be confirmed following completion of operations review by DJR
- Intended to run a bus from Werribee to the facility for visitors.

## 2. VicRoads Design Requirements and Approvals Process

- VicRoads noted that Little River Road is owned and managed by WCC but that they own and manage the Princes Freeway on / off ramps.
- ISG Projects advised that a Planning Permit from WCC was not required for this project and thus, VicRoads would be the governing road asset owner, responsible for approving the intersection arrangement at the proposed access road.
- It is noted that WCC and VicRoads will be responsible for approving Temporary Traffic Management Plans both during the construction of the intersection and during construction of the facility.
- VicRoads noted that before advice and comment regarding the type of intersection (signalised, roundabout, unsignalised T-intersection, etc.) could be provided, a Traffic Impact Assessment Report needs to be provided to VicRoads. This should include impacts during construction and post-development.
- VicRoads noted that they do not believe that they have existing traffic data for Princes Freeway on / off ramps and that a traffic count would be required to inform the modelling required for the Traffic Impact Assessment. VicRoads advised that the traffic count should be undertaken on Tuesday or Wednesday over a 12 hour period. It was noted by Arup that the YJC may experience more visitors over the weekend and the question posed, should traffic counts be undertaken on a Saturday instead. VicRoads advised that it would be expected that daily traffic volumes along Little River Road would be reasonably constant and therefore weekday counting would be sufficient.

VicRoads to provide maps indicating the delineation of assets along Little River Road

Designer / DJR to provide Traffic Impact Assessment Report to review

DJR to provide design team with

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

27 April 2017

---

## Action

- VicRoads noted that SIDRA modelling for a 10 year period would be sufficient for this scenario and that trip generation inputs should include:
  - Number of staff, visitors and delivery vehicles accessing the YJC
  - Which direction staff, visitors and delivery vehicles are coming from (Geelong, Werribee, Little River)
  - Which direction construction vehicles will come from (Geelong or Werribee)
  - Types of vehicles requiring access
- It was noted that information from DJR would be required to inform trip generation. Either staffing and visitor information specific to this facility or prorated information from other Victorian prisons.
- VicRoads advised the steps that need to be taken to resolve treatment / solution is required at the access road:
  1. Traffic Impact Assessment Report to be provided to VicRoads. VicRoads and the Regional Review Committee (if deemed appropriate) will review the report to determine if a formal intersection is required at this location. Provided the SIDRA modelling is undertaken and all information is adequately presented, the review and decision process should take approximately 1 week. Is it advised that the Traffic Impact Assessment Report be conducted with priority to understand of what type of intersection is required is established.
  2. Should VicRoads deem that an intersection is necessary at this location, designers should engage with the VicRoads External Projects Team (Simon Basic) to determine what solution is most appropriate at this location. The designers will then produce a Functional 2D Design for VicRoads approval prior to construction.
  3. Following approval of the Functional Design, designers will be responsible for the preparation of For Construction documents.
  4. VicRoads will need to approve Traffic Management Plans for the construction of both the new access road and the facility itself.

relevant staff, visitor and delivery data projected for the YJC and operating prisons

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

27 April 2017

---

Action

- Arup questioned if an intersection would be required or changes to the posted speed limit would be required if insufficient sight distance could be achieved. VicRoads advised that reporting on sight safety distances and the condition of the existing pavement did not need to be conducted for the initial decision of whether a formal intersection would be required at the proposed access road. VicRoads noted that these would be assessed as part of a Road Safety Audit that would be undertaken in Detailed Design.
- VicRoads noted that should traffic volumes on Little River Road not exceed 2000 vehicles / day, a formal intersection would probably not be required.
- VicRoads advised that for service works under Princes Freeway, a planning permit from VicRoads is not required. However, a Consent for Works would be required to ensure asset protection and sufficient traffic management procedures are in place. Mike Kiranis should be contacted with regards to this matter.

Project title	Cherry Creek Youth Justice Centre	Job number 254999
Meeting name and number	Youth Justice Centre – Melbourne Water stormwater approvals and processes	File reference
Location		Time and date 9am 2 May 2017
Purpose of meeting	To discuss the Melbourne Water stormwater approval requirements and processes relevant to this site.	
Present	Kate Matthews (Melbourne Water) Chloe Johnston (Melbourne Water) Claire Quinlan (Arup)	Erin Millard (Melbourne Water) Russell Collier (ISG Projects) Emma Cotching (Arup)
Apologies		
Circulation	Those present, Richard Wittmack (DJR), Dijana Dragovic (DJR) and Matthew Joy (ISG Projects)	

Action

## 1. Project Introductions

- Attendees introduces themselves and their position:
  - Russell Collier – Project Manager for the development, from ISG Projects working for DJR
  - Kate Matthews – Planner in Urban Growth Services at Melbourne Water, responsible for implementing drainage schemes
  - Erin Millard – Waterways Officer in Waterways and Land team (service delivery), responsible for waterways health
  - Chloe Johnston – Planner in Customer and Planning Services at Melbourne Water, responsible for non-scheme approvals
  - Claire Quinlan – Arup Associate (civil engineer) working for DJR
  - Emma Cotching – Arup Civil Engineer working for DJR

Prepared by Emma Cotching

Date of circulation

Date of next meeting

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

2 May 2017

Action

## 2. Project Background

- Arup and ISG Projects confirmed current understanding of the site, property title and works completed to date:
  - Site location limitations – adjacent quarries, broiler farm, APA pipeline and Outer Metropolitan Ring Road Overlay. 67-69 ha left for possible development of YJC.
  - Subdivision is about to be completed and it is intended that the land will be re-zoned.
  - Contract of Sale with MW being discussed and expected to be finalised shortly.
  - Vegetation survey completed – environmentally sensitive site.
  - Construction Programme – Principal Consultant tender for design of facility to be issued in a matter of weeks. Construction works to be completed by 2020 with the facility to be operational by start of 2021.

## 3. Discussion on Stormwater Strategy and Design Requirements

- Arup provided high level description of the key concepts of the drainage strategy:
  - On-site stormwater network to consist of swales and detention basin / bio retention basin. Underground pipe and pit network not suitable.
  - Detention basin will be sized to detain the difference in the pre and post development 100 year storm event (72 hours duration).
  - Swales will be constructed to allow flows from the basin to discharge into the nearby creek.
- MW provided high level advice on what design measures would likely need to be implemented (subject to Contract of Sale and subdivision agreements):
  - The existing flow regime into the basin south of the site is to be maintained.
  - Climate change impacts do not need to be considered for post development flows.

# Minutes

Project title	Job number	Date of Meeting
Cherry Creek Youth Justice Centre	254999	2 May 2017

	Action
<p><b>4. Melbourne Water Approval Process</b></p> <ul style="list-style-type: none"> <li>MW advised that the Customer and Planning Services team would be responsible for the approvals associated with the stormwater strategy proposed for this site. MW advised that they need to have internal discussions to confirm what approvals and design requirements will be required and will provide feedback following these.</li> <li>MW advised that some approvals and design requirements will be guided by requirements that are included in the Contract of Sale or re-zoning agreements (MW may be noted at a statutory referral authority). Note that Contract of Sale, sub-division and re-zoning agreements have not been finalised to date.</li> <li>The issues regarding ownership and the consequent responsibilities of design and maintenance of the on-site basin requires further discussion and negotiation between DJR and MW. Factors to consider include: <ul style="list-style-type: none"> <li>The basin may be classed as either Private (DJR) or Public (WCC / MW). Typically Melbourne water will only own and take responsibility if the asset is Public and greater than 60 ha.</li> <li>Given the size and location of the basin (on DJR land) it is prudent to assume that the basin will be privately owned. This means that the basin needs to be designed and managed by DJR.</li> <li>However, given the environmentally sensitive issues associated with the site, DJR may engage MW in a Maintenance Agreement. It is assumed that under the agreement, MW would be responsible for the maintenance of the basin.</li> <li>If DJR and MW engage in a Maintenance Agreement, the basin will need to be designed in accordance with MW design standards and MW approval of the design of the basin will be required. It is noted that should MW not be responsible for the maintenance of the basin, MW approval of the basin design will not be required (unless noted otherwise in the Contract of Sale, sub-division or re-zoning agreements).</li> </ul> </li> <li>Separate MW approval will needed for the discharge of development flows into the existing waterway.</li> </ul>	<p>MW to provide project team with details of the design requirements and approval processes relevant to development on this site.</p> <p>Arup to provide MW with proposed modelling and design methodology expected to be satisfactory for this project. MW to provide comment on the proposed methodology to enable formal agreement.</p>

Project title	Cherry Creek Youth Justice Centre	Job number 254999
Meeting name and number	Youth Justice Centre – HV supply and connection	File reference
Location	740-742 Ballarat Road Ardeer	Time and date 10am 17 May 2017
Purpose of meeting	To discuss works associated with connecting the proposed Youth Justice Centre to Powercor's HV network.	
Present	Peter Chew (Powercor) Angelo Vingas (Powercor) Emma Cotching (Arup)	Darko Raickovic (Powercor) Patrick Danaher (Powercor)
Apologies	Richard Wittmack (DJR) Russell Collier (ISG Projects) Claire Quinlan (Arup)	Dijana Dragovic (DJR) Matthew Joy (ISG Projects)
Circulation	Those present and noted as apologies.	

## Action

### 1. Project Overview

- Arup advised the purpose of this meeting is to understand Powercor's existing network, understand potential connection options and understand the design and construction processes related to each option.
- Arup confirmed development specific information:
  - 224 Clients for 2021 with future expansion capacity for 296 Clients
  - Private access road (approximately 2.5km) to site off Little River Road
  - Site location limitations – adjacent quarries, broiler farm, APA pipeline and Outer Metropolitan Ring Road Overlay
  - Construction Programme – Early Works to commence later this year. Facility operational by start of 2021.

Project Team and Powercor (if necessary) to be advised of changes to factors influencing the design by the relevant party.

Prepared by Emma Cotching

Date of circulation

Date of next meeting

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

17 May 2017

---

Action

## 2. HV Servicing Strategy

- Arup noted that analysis of the electrical demands for the new facility has not been undertaken. However, assuming the demand at Ravenhall can be prorated for this facility, a maximum demand of 1 MVA (initially) to 1.5 MVA (future) is assumed. Peak demand and loading will be calculated in the design phase of the project to more accurately determine these factors.
- Powercor asked whether Builder's Temporary Supply had been considered. Arup noted that they did not have information regarding whether the construction works would seek to use the HV supply for the ultimate post development case or run off generators. This is something to be investigated and discussed by the design team.
- Powercor presented location and capacity information about their existing infrastructure:
  - The Werribee Zone Substation feeds the HV network along the Princes Freeway. There are two 66kV overhead cables that run along the northern side of the Princes Freeway. One of the 66kV is not currently operational.
  - The existing network facilitates radial supply rather than dual supply. Dual supply will be notably expensive and requires significant design consideration.
  - The existing HV network along the Princes Freeway has adequate capacity for the estimated peak demand. Powercor noted that this capacity cannot be guaranteed should the electrical works for the YJC site be postponed two years to 2019.
- Powercor presented two options that may be investigated further relating to the supply of HV to the site:

### 1. Option 1 – HV customer

A 22kV feeder (overhead or underground) would be constructed from the existing HV network on the Princes Freeway to a HV meter / cubical located at the Little River Road / access road intersection. Powercor would own and manage these assets. Under this option, DJR would be responsible for the design, construction, ownership and maintenance of the 22kV cable along the access road connecting the HV meter / cubical to the substation (kiosk)

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

17 May 2017

---

Action

located on the YJC site, the switchboard and all internal reticulation infrastructure. There will be no HV cable from the substation back to the existing Powercor network.

## 2. *Option 2* – LV customer

A 22kV radial feeder (overhead or underground) would be constructed from the existing HV network on the Princes Freeway, along the access road to a kiosk substation located on the YJC site. Powercor would own and manage these assets and as such, 24/7 access to the substation would be required. DJR would be responsible for the low voltage infrastructure (switchboard and internal reticulation infrastructure) located on the site.

- Powercor advised that for both options, augmentation to the existing HV network along the Princes Freeway would not be required and that only extension works to the site are required (for construction within the next two years).
  - Powercor advised that there are options to locate cables overhead (significantly less expensive) or underground. These alternatives can be discussed during design. For an underground solution, Powercor have advised that it would be expected that 3 x 150mm diameter conduits would be installed along the access road with one conduit containing a 22kV cable. Others are spares for future expansions.
  - Powercor advised that the size of the on-site substation would be approximately 7.2m x 7.2m.
  - Powercor advised that their HV cables require the following easements:
    - 10-12m for overhead cables
    - 1.5-2m for underground cables
  - Powercor commented on the design and construction process associated with new connections.
1. Following receipt of the maximum demand and load details, the site layout (notably where the substation will be located) and backup generator information (if applicable), Powercor will review HV and LV customer options and overhead and underground infrastructure. It is expected that Powercor will liaise with DJR to understand the best solution for the site limitations and priorities. Powercor will develop and Scope of Works for the Powercor owned infrastructure based on the

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

17 May 2017

Action

information provided by DJR. This processes typically takes 4 weeks.

2. Based on the developed Scope of Works, Powercor will undergo a costing assessment and provide an offer to DJR. Powercor advised that costing is typically based on revenue over a fifteen year period.
  3. Following acceptance of the offer, Powercor will commence designing and then constructing the infrastructure defined in the Scope of Works and Offer. A minimum of 6 months should be allowed for the design and construction of infrastructure but timing will pending primarily on the amount of new Powercor infrastructure required.
- DJR will be responsible for the design and construction of infrastructure they own and will not require Powercor's approval for this infrastructure.
  - Powercor noted that since this is a green fields site, for Option 2, DJR can opt to appoint a Powercor approved contractor to design and construct the HV infrastructure and kiosk substation rather than have Powercor design and construct these assets. Powercor would then only be responsible for the HV tie in at the HV tee off pole. By doing the works in this way, DJR may save time and cost.
  - Powercor advised that electrical consultant typically over estimate peak demands and loads. To avoid constructing oversized infrastructure, Powercor advised DJR to provide Powercor with a list of equipment that is expected to be used when they provide the demand estimates. Powercor can then use this information to more accurately determine the maximum load and thus provide a more equitable Scope of Works and Offer.
  - Powercor and Arup discussed the options identified and noted the following pros and cons associated with each option:
    1. *Option 1 – HV customer*
      - Possibly less expensive in terms of tariff but higher up-front construction costs for DJR
      - Fewer infrastructure for Powercor to design and construct. Possible that a shorter construction period is achieved.

# Minutes

Project title

Cherry Creek Youth Justice Centre

Job number

254999

Date of Meeting

17 May 2017

---

Action

- DJR are responsible for the maintenance of all infrastructure along the access road and on the site.
- 1. *Option 2 – LV customer*
  - DJR would not be responsible for the maintenance of HV infrastructure along the access road or the substation.
  - Possibly more expensive in terms of tariff but lower in terms of up-front construction costs for DJR.
  - Design and construction of major assets is expected to take longer as Powercor would be responsible for these.
- Powercor advised that the full tariff cost would be charged from the moment that the Powercor works are completed. This means that should the HV infrastructure be constructed in late 2017 / early 2018 so that it can be utilised by the Contractors on-site, DJR will be required to start paying Powercor for this.