80 Thoona Lane, Fyansford
Expert Witness Report

Contract No.: 19675-01

Prepared on behalf of: Context Planning Pty. Ltd.

Date: 6 November 2019

Contents

1 Witness Statement & Qualifications

Name and Address

Name: Leigh Prossor
Company: CardnoTGM Pty Ltd
Level 1, 27 – 31 Myers Street
Geelong VIC 3220
Position: Civil Engineering Manager

Qualifications B. Eng (Hons)

I have 17 years experience in civil engineering and urban development since graduating from Swinburne University with a Bachelor of Engineering in 2002.

I am currently employed as the Civil Engineering Manager of the CardnoTGM Geelong Office and have been employed with CardnoTGM since 2002. I am responsible for overseeing a team of approximately 30 professional staff undertaking master planning, project management, civil design and construction supervision roles on various project types for urban development and infrastructure projects within the Geelong and wider region.

I also work closely with CardnoTGM's survey and planning disciplines to provide civil design solutions for roads, drainage, sewerage, earthworks and water infrastructure for a variety of projects. These projects range from the initial, high level master planning, right through to the detailed design, project delivery and construction phases of projects.

Areas of Expertise

My areas of expertise include:

- Managing the Civil Engineering unit of CardnoTGM Geelong office.
- Engineering advice on infrastructure requirements for the planning, design and delivery on urban development and major infrastructure projects.
- Provision of Civil engineering design solutions to urban developments, Local and State Government projects.
- Stormwater Investigations, Site Stormwater Management Plans (SSMP) and Storm Water system design to Authority requirements
- Preparation of development feasibility studies.
- Provision and coordination of service authority infrastructure requirements for urban developments.
- Contract administration and supervision.
- Project management.

2 Introduction / Instructions

CardnoTGM have been engaged by Context Planning Pty. Ltd. to provide engineering assessment and expert witness advice around the servicing of the proposed development at 80 Thoona Lane, Fyansford (subject property). Specifically we have been asked to advise on;

- Expanding on the advice already provided.
- Opinion in relation to the servicing of the land.
- Opinion in relation to the impact (if any) to the Moorabool River corridor, including drainage outfall.
- Opinion in relation to the benefits/implications of including the land in the 'medium term'. This may include any engineering matters such as drainage, road network, waterway storage, topography, etc.
- Reference to Church Street and advice that (if you agree) that is not required/has no implications to 80 Thoona Lane.
- Advice in relation to the implications (if any), on other land which is located in the in the 'long term' precinct. This may include drainage catchments, basin and outfall locations, etc

3 Scope of Works

This review has been prepared by Leigh Prossor, with the assistance of Ben Johnson at the request of Context Planning to provide an independent assessment of the documents in accordance with the assessment criteria listed.

4 Information Used and Relied Upon

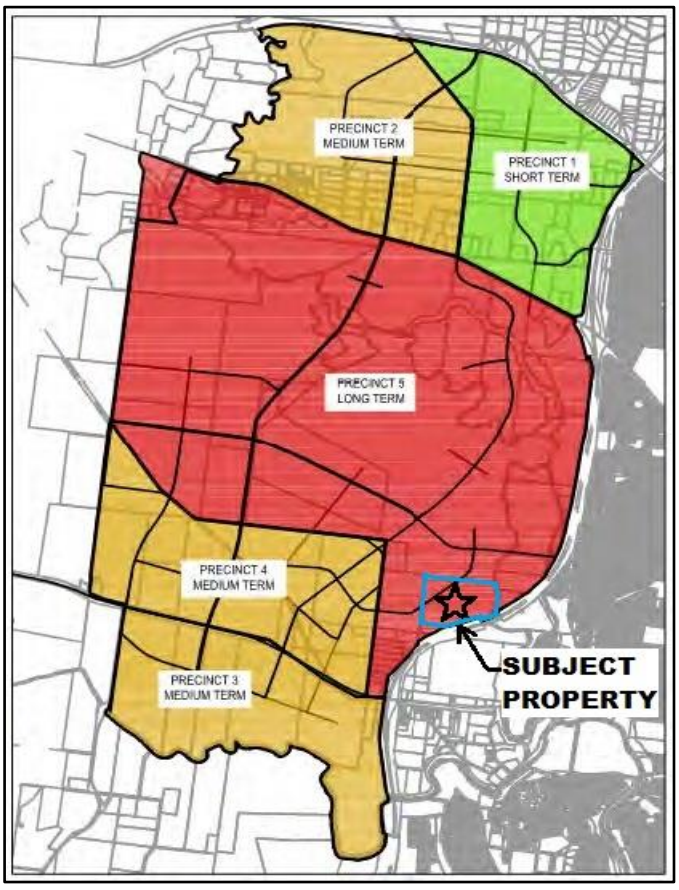
In responding to my instructions. I have relied primarily on;

- The Northern and Western Geelong Growth Areas Framework Plan issued by the City of Greater Geelong in March 2019.
- The Western Geelong Growth Area flood impact assessment and stormwater management strategy, Volume 1 Existing Conditions Report prepared by Water Technology and issued in January 2019.
- The Western Geelong Growth Area Flood Impact Assessment and Stormwater Management Strategy, Volume 2 developed conditions, prepared by Water Technology and issued in May 2019.
- The Northern and Western Geelong Growth Areas, Utility Servicing Strategy prepared by GHD and issued in May 2019.
- The Northern and Western Growth Areas, Movement and Access Report, prepared by GTA Consultants.
- Agenda, Ordinary Meeting of Council, Tuesday, 24 September 2019, Amendment C395 – Settlement Strategy & Northern and Western Geelong Growth Areas Framework Plan – Consideration of Submissions.

5 80 Thoona Lane, Fyansford

The subject property is located within the south eastern corner of the Batesford South Precinct (Precinct 5) of the City of Greater Geelong's Western Geelong Growth Area (WGGA). It is surrounded by the Moorabool River to the east, Geelong Ring Road to the south and rural farmland which is included within the WGGA to the west and north. The property location is detailed in Figure 1 below.

Figure 1: Subject Property



A former basalt quarry is located on the subject property with the base of the quarry being approximately 25m below the surrounding landscape. The former quarry has been filled in an ongoing fashion over the last 10 + years. It is proposed to fill the former quarry with approved fill material with the required testing, in line with Geotechnical advice to allow residential development.

The former quarry site sits generally in the centre of the subject property. The subject property has a relatively gentle slope from west to east, before an extremely steep drop off into the Moorabool River to the east. The slope of the steep escarpment along the river bank is generally steeper than 1:1 and in the order of 17-25m high. Due to this extremely steep embankment, there is extremely limited connectivity between the river and its immediate environs and the site. Figure 2 below shows a photo looking from the top of the escarpment towards the river.

Figure 2: Subject Site

Immediately adjacent to the Geelong Ring Road along the southern boundary of the subject property the neighbouring land is zoned residential and is currently under development as part of the Gen Fyansford development.

> *Expanding on the advice already provided.*

In July 2019, CardnoTGM prepared and issued a technical memorandum to Geelong Solid Waste Material Receival and Processing Centre Pty Ltd outlining servicing and construction advice for the proposed residential subdivision at 80 Thoona lane, Fyansford. I understand that this technical memorandum was included as supporting documentation in the submission by Geelong Solid Waste Material Receival and Processing Centre Pty Ltd to the exhibited framework plan for the WGGA.

This report was largely prepared by Ben Johnson who is a Project Manager with CardnoTGM and has some 22 years' experience in the civil engineering and land development industry as a civil draftsman, civil designer and project manager. I oversaw, contributed to, reviewed and approved this memorandum. I confirm that I adopt this earlier report.

A utility servicing strategy has previously been undertaken for the City of Greater Geelong which encompasses the Northern and Western Geelong Growth Areas (GHD – Report for City of Greater Geelong – North and West Geelong Growth Area Service Report, 3136336, May 2019). The subject property is currently located within the south eastern corner of the Batesford South Precinct of the WGGA.

5.1 Drainage

The Western Geelong Growth Area Flood Impact Assessment and Stormwater Management Strategy, Volume 2: Developed Conditions Report (May 2019) has been undertaken by Water Technology for the City of Greater Geelong which outlines the drainage strategy for the WGGA.

The subject land along with neighbouring properties to the immediate west predominately falls eastwards to the Moorabool River which is located on the eastern side of the property. The Water Technology reports support and reflect this in the existing conditions case.

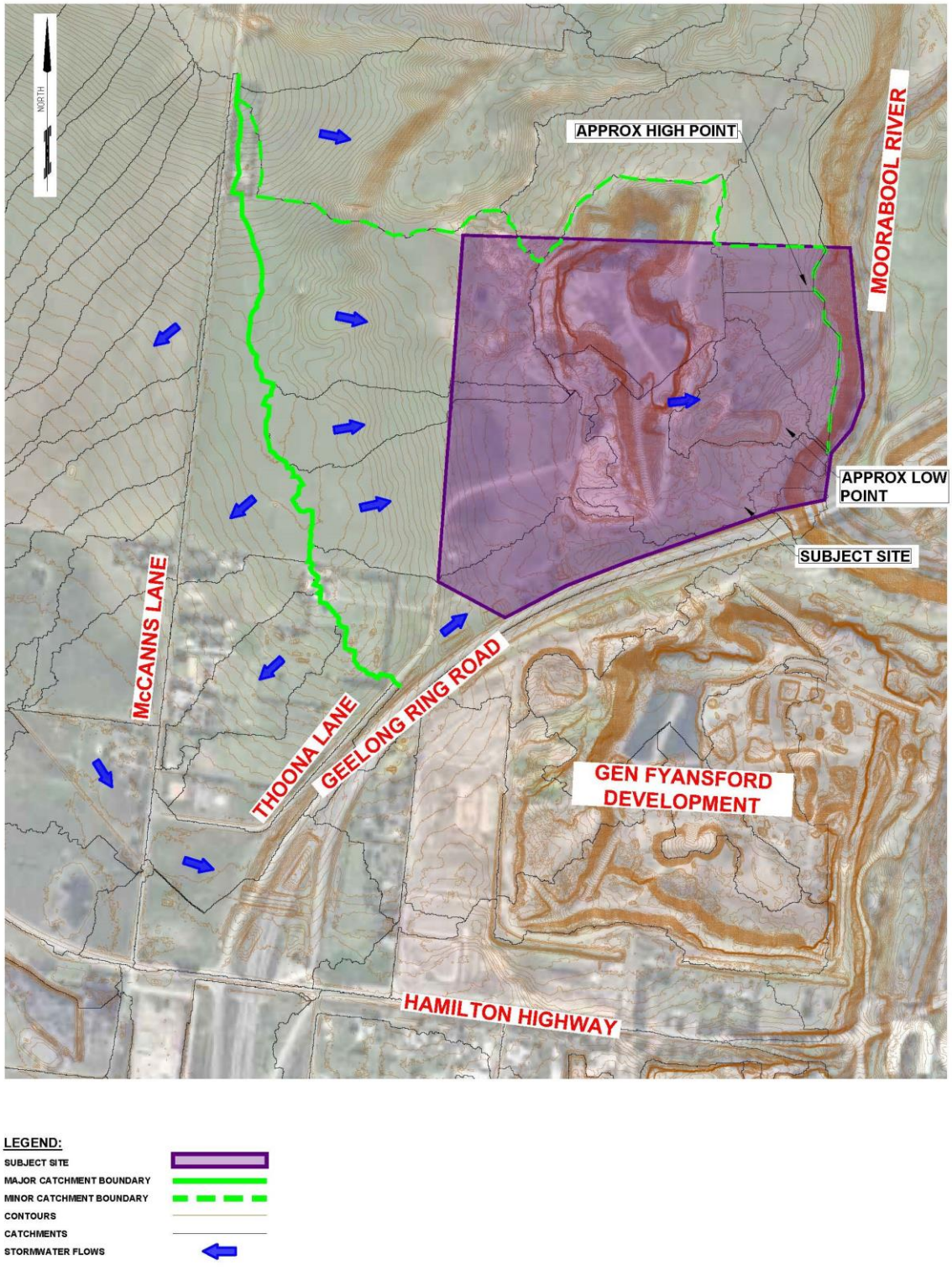
In the developed conditions, the Water Technology report nominates for the western portion of the subject property and the land to the immediate west to drain to a proposed basin (Moorabool WLRB H) located on the subject land with a drainage outfall pipe conveying the 1% AEP flow (detained back to existing conditions) directly connecting to the Moorabool River within the subject property, with the outfall located adjacent to the Geelong Ring Road.

However, in the Water Technologies proposed developed case, the eastern portion of the site is proposed to be conveyed northwards and discharge into the proposed Moorabool WLRB G basin. This approach effectively alters the existing catchment structure and transitions the eastern portion of the site from its existing discharge point into the Moorabool River to an alternate location further north.

This approach would require that the stormwater flows for this eastern area of the subject site be conveyed through a ridgeline that is approximately 6m higher than the existing surface. This high point is generally located along the northern boundary of the subject site.

This catchment arrangement and site location is detailed in Figure 3 below.

Figure 3: Western Growth Area Subject Site



5.2 Sewer

The Northern and Western Geelong Growth Areas, Utility Servicing Strategy prepared by GHD identifies an interim and ultimate strategy for the development of the southern portion of the WGGA. The interim strategy requires two pump stations (BSPS1 & 2) to be constructed in the south east corner of the WGGA with a 6.7km outfall connection back to a transfer pump station constructed in the Creamery Road Precinct. The ultimate strategy proposes that the outfall be connected to the south via a 14.5km pipe and 3 transfer pump stations generally along the Geelong Ring Road to Waurn Ponds and ultimately the Barwon Water Main Outfall Sewer (MOS). These arrangements are detailed in the appendices B and C and are taken from the northern and Western Geelong Growth Areas, Utility Servicing Strategy prepared by GHD.

The sewer strategy suggest that the McCanns Lane and Merrawarp Road Precincts interim sewer works will require a pump station (BSPS2) to be constructed in the vicinity of the intersection between the Hamilton Highway and McCanns Lane connecting to a second pump station (BSPS1) located nominally along the northern boundary of the subject property using the Geelong Ring Road corridor and private property converted to reserves for access. The interim outfall will connect to the north via the Geelong Ring Road corridor.

The subject property could be fully serviced with the construction of the pump station BSPS1 and interim / ultimate outfalls. It is noted that the current servicing strategy suggest that the McCanns Lane and Merrawarp Road Precincts cannot be serviced without the sewer pump station (BSPS1) on or directly adjacent to the subject property. This approach will result in significant infrastructure works in the Batesford South precinct southern section (including the subject site) being required to be delivered early to service the McCanns Lane and Merrawarp Road Precincts.

It is considered that the proposed sewer pump station BSPS1 will be sized sufficiently to service not only the immediate environs including the subject site, but also a much wider catchment as per its intended use.

Recent discussions with Barwon Water in October 2019 have advised that this strategy is still considered current, however the ongoing Integrated Water management Plan investigation being led by Barwon Water may ultimately result in alterations to the current strategy. Were this to be the case, it is considered that any alterations to the strategy would be unlikely to impact on the ability to service the subject land at any point in the process.

5.3 Water

The current water servicing strategy outlines that a Pressure Reducing Valve (PRV) to be placed on the existing She Oaks – Montpellier Transfer Main around the existing Hamilton Highway / McCanns Road intersection with water main extensions northwards into the McCanns Lane precinct to service initially the McCanns Lane precinct and later the Batesford South precinct. The subject property can connect into this network of water mains via existing and or proposed road networks on the neighbouring development from the south west as it occurs.

5.4 Electricity

Powercor has highlighted in its servicing strategy a number of upgrades that will be required to their existing network relevant to supply to the WGGA in an interim and full development capacity.
Electricity distribution for development of the subject property can occur with the Powercor upgrades.

The electrical network can be supplied via underground cables located in existing / proposed road reserves and easements and the establishment of new kiosk substations as part of the larger McCanns Lane precinct serves rollout.

5.5 Telecommunications

NBN have advised that telecommunications infrastructure in the WGGA will be deployed using fibre to the node infrastructure with fibre access nodes (FAN) to be located within the WGGA. The telecommunications network can be supplied via underground cable located in existing / proposed road reserves and easements as part of the larger McCanns Lane precinct serves rollout.

5.6 Gas

Gas infrastructure is not an essential service but AusNet have advised that gas would be made available on a connection-by-connection basis as required as part of the larger McCanns Lane precinct serves rollout.

5.7 Access

Access to the subject property can be made from the existing road reserve (Thoona Lane) or through the development of surrounding properties to the west within the McCanns Lane precinct as they are developed.

> *Opinion in relation to the servicing of the land.*

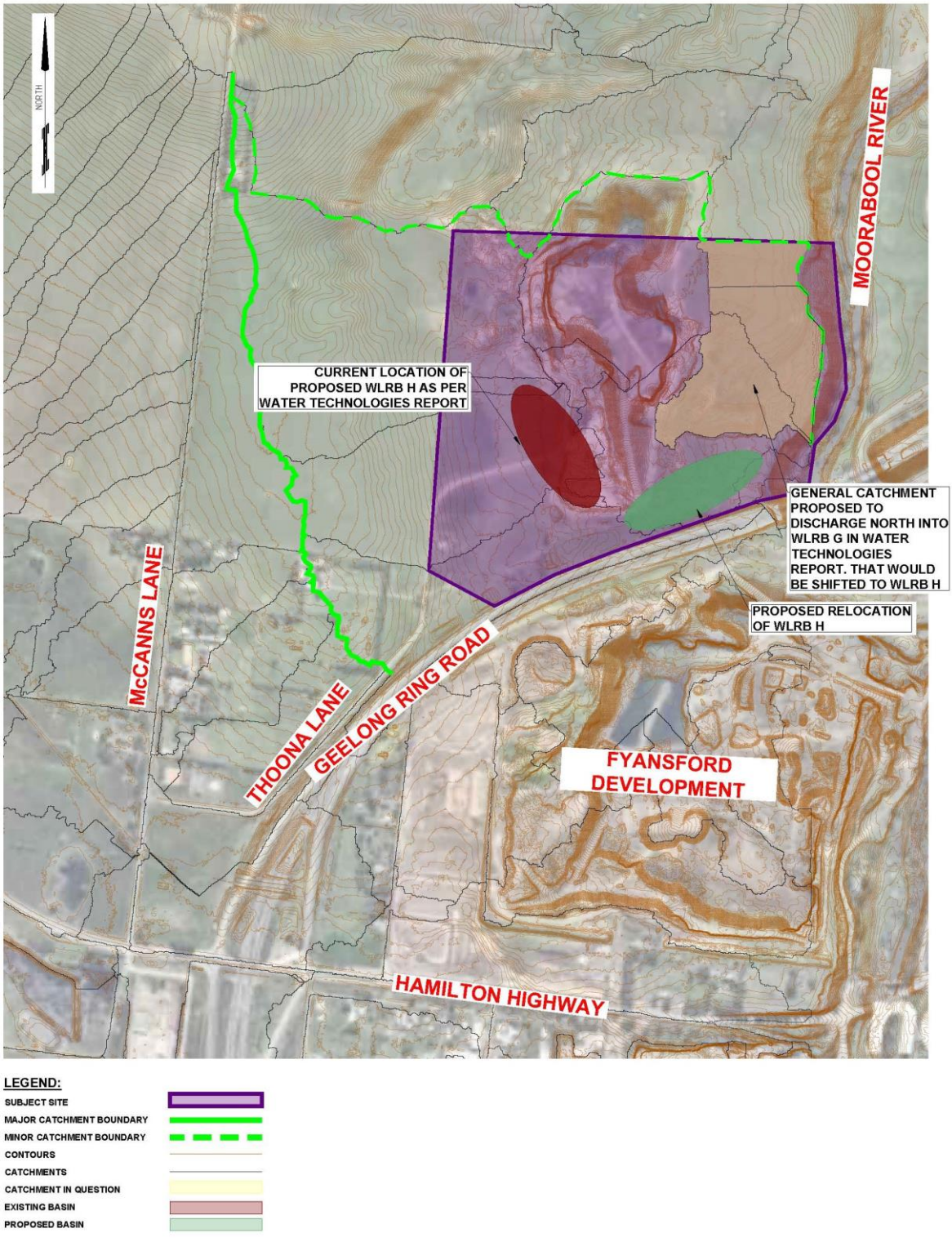
As outlined above in section 5.1 above, the Water Technology report currently documents detail the stormwater generated from the site in the developed case as being served by two separate treatment basins. This approach requires that the existing catchment delineation be altered. It is understood that the level of investigation and documentation taken to date has been at a relatively high level. Further, it is noted that the ongoing filling of the former quarry and some of the residual earthworks from the former quarrying activity at the site confuse both the existing and likely final landform in the area, particularly for a high-level investigation. Regardless of the final landform, this is subject to further change as the PSP process is undertaken, and again as part of the detailed subdivisional design is undertaken.

It is considered that due to the relative height differences between the low point along the eastern side of the property and the ridgeline to its north, the approach of diverting and treating this catchment in basin WLRB G further to the north are unlikely to be technically feasible or cost effective. It is considered that a more practical, cost and space efficient solution would be the slight shifting of the proposed basin WLRB H eastwards closer to the existing low point in the catchment and the outfall to the Moorabool River.

This approach would allow the basin WLRB H to treat all water from the subject property, as well as maintaining to serve it's intended catchment to the west and south west. It is anticipated that the above approach would result in a slight increase to the size of basin WLRB H, with a commensurate decrease to the size of basin WLRB G.

The proposed general arrangement of this concept is detailed in Figure 4 below.

Figure 4: Stormwater Catchment & Proposed WLRB locations



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WESTERN GROWTH AREA
SUBJECT SITE FIGURE 4

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It is noted that further investigation will need to be undertaken into the geotechnical constraints and appropriate setbacks from the river escarpment. The above approach would effectively decouple the site and the land to the west and south west from the drainage assets servicing the wider Batesford South precinct.

With the sewer, the existing servicing strategy explicitly outlines that major assets that are proposed to service the entire southern area of the WGGA will be located on the subject property. It is considered that this approach with the currently proposed precinct boundaries will likely result in difficulties in delivering significant and essential assets required for an earlier sequencing precinct. It is recommended that pushing the precinct boundary for the McCanns Lane precinct further east to the ring road and including this property will eliminate this problem of sequencing.

Should the subject land be developed as part of the McCanns Lane precinct, I see no reason why the land could not be adequately serviced by the infrastructure that will be required for and constructed during the delivery of the McCanns Lane precinct.

> ***Opinion in relation to the impact (if any) to the Moorabool River corridor, including drainage outfall.***

The Council response to the earlier Geelong Solid Waste Materials Receival and Processing Centre P/L submission advised that,

“The subject land is included within the Batesford South PSP in part to undertake the master planning of the Moorabool River corridor in a comprehensive, holistic and singular manner.”

As outlined earlier in this document, while the subject site does have its eastern boundary fronting with the Moorabool River, the physical and visual connectivity between the river and the subject property is extremely constrained due to the significant escarpment along the river bank. This escarpment effectively prevents any interaction between the developable area at the top and the river itself. Apart from opportunity to form part of a larger linear path network, there is extremely limited interaction available with the river at this location due to the topography.

Due to the location of the escarpment, the 1%AEP flood extents for the Moorabool River within this property are constrained to within 5 to 10 meters from the existing river channel location.

The 1% AEP piped drainage outfall proposed in the Water Technology report that is located on the subject property will be technically challenging to design, construct and maintain due to the steep topography at this location. It is considered likely that the outfall will need to be constructed using a series of large drop pits to convey the stormwater to the base of the escarpment and discharge into the river. Care will need to be

taken in the design to control velocities both in the pipes and in the direct outfall to the river itself where rock beaching will be required to control the flow and velocities.

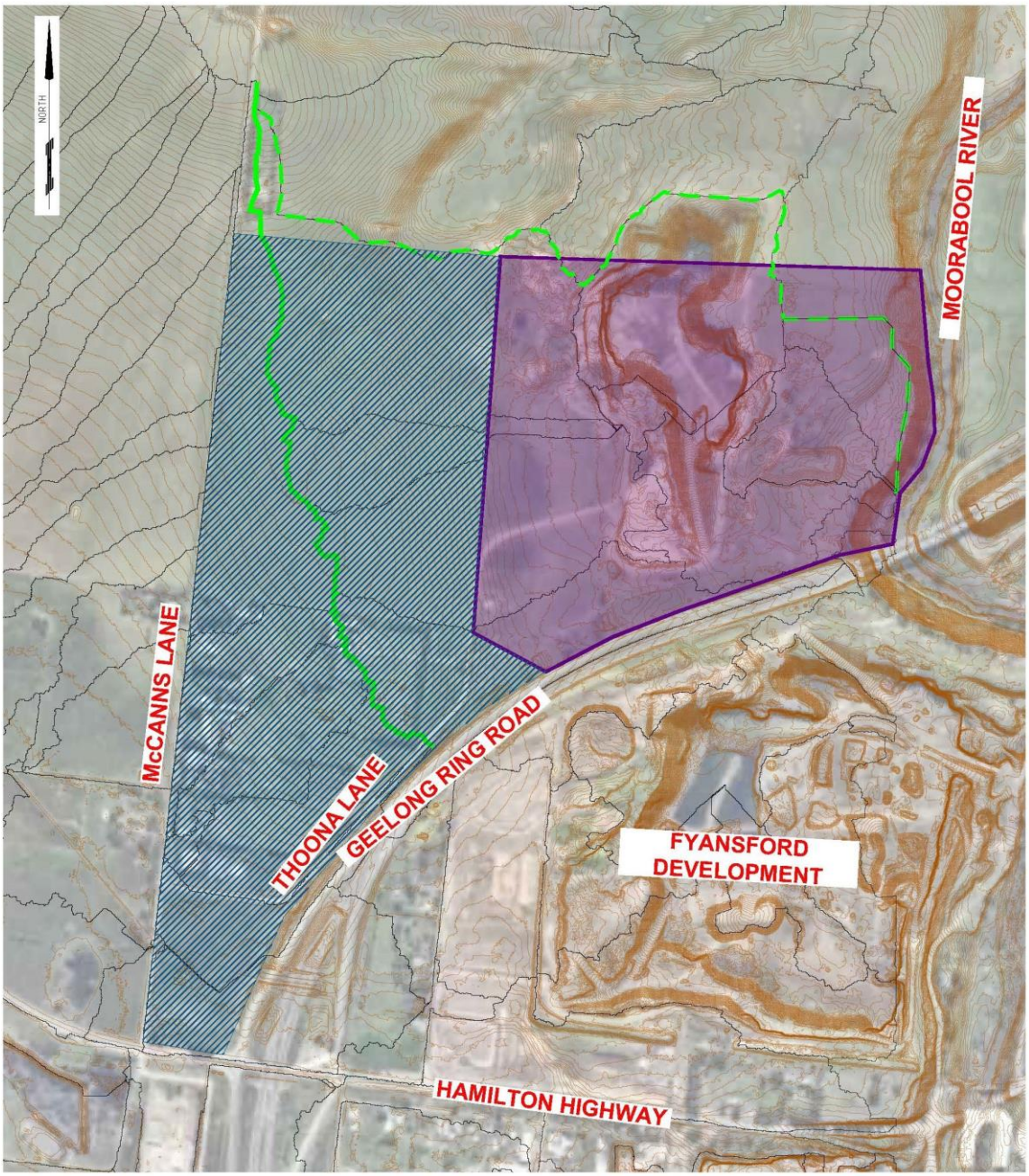
This and similar scenarios have been faced and addressed at several other locations along the Moorabool River and other waterways within the nearby region. It is considered that the impact of the above required works will be very localised in nature and have extremely minimal impact on the broader Moorabool River corridor strategy.

It is considered that with appropriate setback from the river and escarpment for ecological and geotechnical requirements, and with the appropriate planning, design, approvals and permits in place, that there is no reason why the development cannot occur in isolation from the larger master planning of the greater Moorabool River corridor.

> ***Opinion in relation to the benefits/implications of including the land in the 'medium term'. This may include any engineering matters such as drainage, road network, waterway storage, topography, etc.***

It is considered that the inclusion of the subject property and also the land to the west and south west of the subject property that is generally bounded by McCanns Lane and the Geelong Ring Road as depicted in figure 5 below will result in increased efficiencies with the delivery of the sewer and stormwater services that will be required to service the greater McCanns Lane precinct and also the Merrawarp precinct in the case of the sewer.

Figure 5: Subject Site and Proposed McCanns Lane Precinct Boundaries



LEGEND:

- SUBJECT SITE
- MAJOR CATCHMENT BOUNDARY
- MINOR CATCHMENT BOUNDARY
- CONTOURS
- CATCHMENTS
- LAND PROPOSED TO BE ADDED TO McCANNS LANE PRECINCT

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WESTERN GROWTH AREA
SUBJECT SITE FIGURE 6

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Inclusion of the subject property in the McCanns Lane precinct will allow delivery of the proposed sewer pump station BSPS1 within the precinct that it is proposed to serve. It is considered that this approach will significantly reduce the uncertainties and difficulties in delivering significant and essential sewer pump station and associated assets that are currently proposed to be located in the later sequencing Batesford South precinct that are required to service the earlier sequencing McCanns Lane precinct. It is recommended that pushing the precinct boundary for the McCanns Lane precinct further east to the ring road will eliminate this problem.

The currently proposed precinct boundary running north south along McCanns Lane will result in the drainage outfall for the majority of the McCanns Lane precinct needing to cross a small segment of the Batesford South precinct prior to its outfall under the Geelong Ring Road. In response to earlier submissions, Council has advised that subject to further investigation they are supportive in part of amending this boundary.

The Water Technology Volume 2 report (developed conditions) identifies and acknowledges in section 6.2 that the currently proposed staging arrangements will lead to servicing difficulties that will 'likely require the construction of temporary drainage works', at this exact location.

The proposed amended precinct extents as outlined in figure 5, if adopted will ensure that the proposed major drainage assets required to service the greater McCanns Lane precinct are located entirely within the McCanns Lane precinct and not within the Batesford South Precinct and eliminate this sequencing issue.

It is noted that extending the McCanns Lane precinct further north to incorporate the subject property in line with the recommendations above for the sewer servicing will bring a small isolated stormwater catchment that discharges into the Moorabool River into the McCanns Lane precinct. As discussed earlier in this report, it is considered that this stormwater catchment can be dealt with in a standalone manner as part of a larger McCanns Lane PSP process independently of the larger master planning of the greater Moorabool River corridor.

Accordingly, if the McCanns Lane precinct is extended east of McCanns Lane, generally to the extent outlined in Figure 5, then from a sequencing and logical engineering perspective all land including the subject site needs to be included.

It is considered that the remaining services and access to the land can be provided as part of the development of the greater McCanns Lane precinct without significant implications.

- ***Reference to Church Street and advice that (if you agree) that is not required/has no implications to 80 Thoona Lane.***

The WGGA framework plan proposes that a new arterial road be constructed that links from the west side of the Moorabool River to the east connecting with the Geelong Ring Road and Church Street. The WGGA framework plan proposes that a half diamond interchange with the Geelong Ring Road and a public transport only connection to Church Street be constructed to service the WGGA.

As outlined in the Council summary of responses to the submissions received and also from direct and anecdotal discussions with Council officers and others, it is understood that Council considers that there is still a level of uncertainty about how this connection will be delivered in is final form and has identified that they wish to retain flexibility for future investigation of this transport connection.

The alignment generally outlined in the WGGA framework plan and also the general linear projection of Church Street westwards across the Moorabool River are both located approximately 340m north of the subject property. Given this significant buffer, it is considered that should the development of the subject property be undertaken in an earlier precinct than what the Church Street extension is delivered in is very unlikely to adversely impinge on any investigation into the detailed alignment and delivery of the Church Street extension when it is planned in detail as part of the relevant precinct structure plan.

- ***Advice in relation to the implications (if any), on other land which is located in the in the 'long term' precinct. This may include drainage catchments, basin and outfall locations, etc***

It is considered that if the minor drainage alterations as detailed earlier in the report are adopted, then the servicing of the subject property can essentially be delivered independently and without impact or implication on the planning and delivery of the longer term Batesford South precinct.

6 Conclusion

It is my opinion that;

- The subject land can be serviced if included in the McCanns Lane precinct.
- The inclusion of the subject land and the adjoining land bounded by McCanns Lane and the Geelong Ring Road in the McCanns Lane precinct will be beneficial to the delivery of the sewer and drainage infrastructure required for the McCanns Lane precinct.
- The amendment of the proposed precinct boundary to include the subject land at 80 Thoona Lane in the McCanns Lane precinct will not adversely impact on the planning and delivery of the Batesford South precinct, including the Church Street extension and the Moorabool River masterplan.
- There are no engineering reasons why the subject site and the additional area identified in Figure 5 should be included in the Batesford South Precinct. From an engineering perspective, a more logical approach would result in the subject site being included in the McCanns Lane Precinct.

7 Declaration

I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.

Yours sincerely,

Leigh Prossor
CardnoTGM
Manager – Civil Engineering

APPENDIX A – CardnoTGM Report

Technical Memorandum

Title	**Fyansford Former Quarry – 80 Thoona Lane, Fyansford** **Servicing and Construction Advice for a Residential Subdivision**		
Client	Geelong Solid Waste Material Receival and Processing Centre Pty. Ltd.	**Project No**	19675-01
Date	23 July 2019	**Status**	FINAL
Author	B Johnson	**Discipline**	Civil
Reviewer	L Prossor	**Office**	Geelong

1.1 Purpose

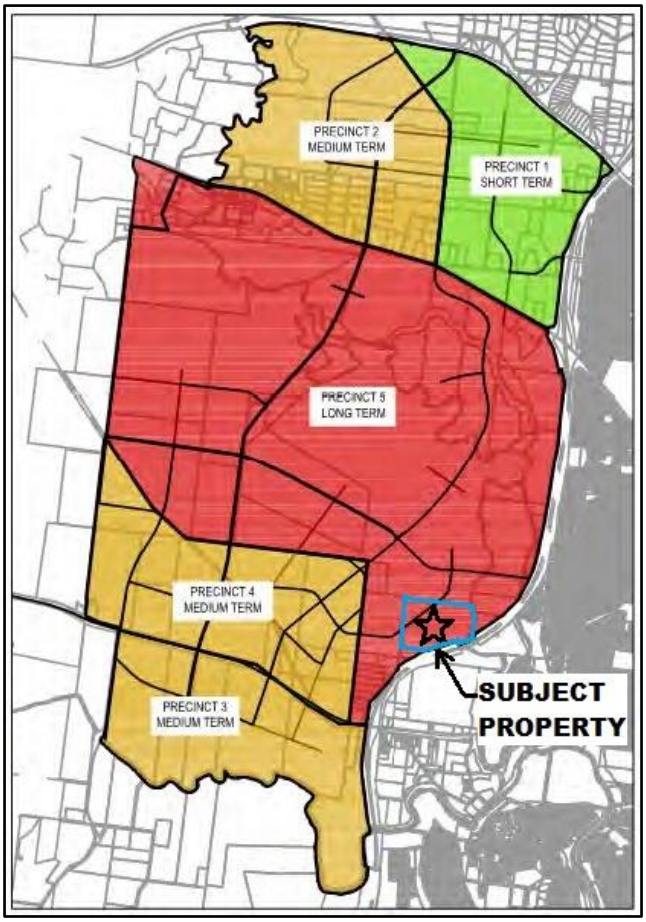
The purpose of this memorandum is to provide a high-level servicing strategy and advise for the former quarry, located at 80 Thoona Lane (subject property), to be transitioned to allow a residential development of the site.

1.2 Background

The site is located within the south eastern corner of the Batesford South Precinct (Precinct 5) of the City of Greater Geelong's Western Geelong Growth Area (WGGA). It is surrounded by the Moorabool River to the east, Geelong Ring Road to the south and rural farmland to the west and north which is included within the WWGA.

A former basalt quarry is located on the site with the base being approximately 25m below the surrounding landscape. It is proposed to fill the former quarry with approved fill material and the required testing in line with Geotechnical advice to allow residential development.

Figure 1-1 Proposed WGGA Sequencing Diagram



1.3 Servicing Strategy

A utility servicing strategy has previously been undertaken for the City of Greater Geelong which encompasses the Northern and Western Geelong Growth Areas (GHD – Report for City of Greater Geelong – North and West Geelong Growth Area Service Report, 3136336, May 2019). As mentioned previously the subject property is located within the south eastern corner of the Batesford South Precinct of the WGGA.

Refer to Appendix A for GHD's WGGA Proposed Trunk Servicing (Indicative) Plan.

1.3.1 Drainage

A Western Geelong Growth Area Flood Impact Assessment and Stormwater Management Strategy, Volume2: Developed Conditions Report (May 2019) has been undertaken by Water Technology for the City of Greater Geelong which outlines the drainage strategy for the WGGA.

The subject land along with neighbouring properties to the west predominately falls to the Moorabool River located on the eastern side of the property, allowing for a direct outfall location. The Water Technology report nominates for land to the west to drain to a proposed basin located on the subject land with a drainage outfall pipe connecting to the river. It is considered that this outfall will have minimal impact and footprint within the Moorabool River environment and that, subject to all required approvals and permits being in place, this pipe could be provided in isolation from the overall river precinct works.

The report identifies that several drainage catchments within the currently proposed precinct 4 have drainage assets and outfalls located to the east of McCanns Lane including the subject property.

It is considered that this approach will likely result in difficulties in delivering significant and essential assets required for an earlier sequencing precinct. It is recommended that pushing the precinct boundary for precinct 4 further east to the ring road will eliminate this problem.

1.3.2 Sewer

The Barwon Water Servicing Strategy identifies an interim and ultimate strategy for the development of the WGGA. The interim strategy requires two pump stations (BSPS1 & 2) to be constructed in the south east corner of the WGGA with a 6.7km outfall connection back to a transfer pump station constructed in Precinct 1. The ultimate strategy requires the outfall to be connected to the south via a 14.5km pipe and 3 transfer pump stations to Barwon Water Main Outfall Sewer (MOS).

Precinct 3 & 4 interim sewer works will require a pump station (BSPS2) to be constructed along Hamilton Highway connecting to a second pump station (BSPS1) located around the rear of the subject property using the Geelong Ring Road corridor and private property converted to reserves. The outfall will connect to the north back via the Geelong Ring Road corridor.

The Precinct 3 & 4 pump station requirements will allow for a small section north of the Hamilton Highway and just west of the Geelong Ring Road to be serviceable. The subject property could be fully serviced with the construction of the pump station BSPS1 and interim / ultimate outfalls and has the potential to be developed early on as infrastructure and access will be present. It is noted that portions of the current Precinct 3 & 4 cannot be serviced without the sewer pump station (BSPS1) on this land. This approach will result in significant works in Precinct 5 being required to be delivered to service Precinct 3 & 4.

It is considered that this approach will likely result in difficulties in delivering significant and essential assets required for an earlier sequencing precinct. It is recommended that pushing the precinct boundary for precinct 4 further east to the ring road will eliminate this problem.

1.3.3 Water

Previous precinct works will require a Pressure Reducing Valve (PRV) is to be placed on the existing She Oaks – Montpellier Transfer Main around the existing Hamilton Highway / McCanns Road intersection with water main extension into these precincts. The subject property can connect into this PRV and water mains via existing road networks or proposed road / reserves on neighbouring development as it occurs.

1.3.4 Electricity

Powercor highlighted in its servicing strategy a number of upgrades that will be required to their existing network relevant to supply to the WGGA in an interim and full development capacity.

Electricity distribution for development of the subject property can occur with the Powercor upgrades. The electrical network can be supplied via underground cables located in existing / proposed road reserves and easements and the establishment of new kiosk substations.

1.3.5 Telecommunications

NBN have advised that telecommunications infrastructure in the WGGA will be deployed using fibre to the node infrastructure with fibre access nodes (FAN) to be located within the WGGA. The telecommunications network can be supplied via underground cable located in existing / proposed road reserves and easements.

1.3.6 Gas

Gas infrastructure is not an essential service but AusNet have advised that gas would be made available on a connection-by-connection basis as required.

1.3.7 Access

Access to the subject property can be made form the existing road reserve (Thoona Lane) or through the development of surrounding properties as the connect.

1.4 Former Quarry

As previously noted there is a former basalt quarry located on the subject site. Previous documents produced for the City of Greater Geelong on the WGGA have noted that their assumptions are based on the former quarry being filled back to the surrounding natural surface levels. Our client has engaged Geotesta to provide a geotechnical assessment of the former quarry confirming that it can be filled to accommodate urban development within the former quarry footprint, refer appendix B.

If you have any queries or wish to further discuss the proposal please don't hesitate to contact Leigh Prossor on (03) 5202 4600.

Yours sincerely,

Leigh Prossor
Engineering Manager, Geelong
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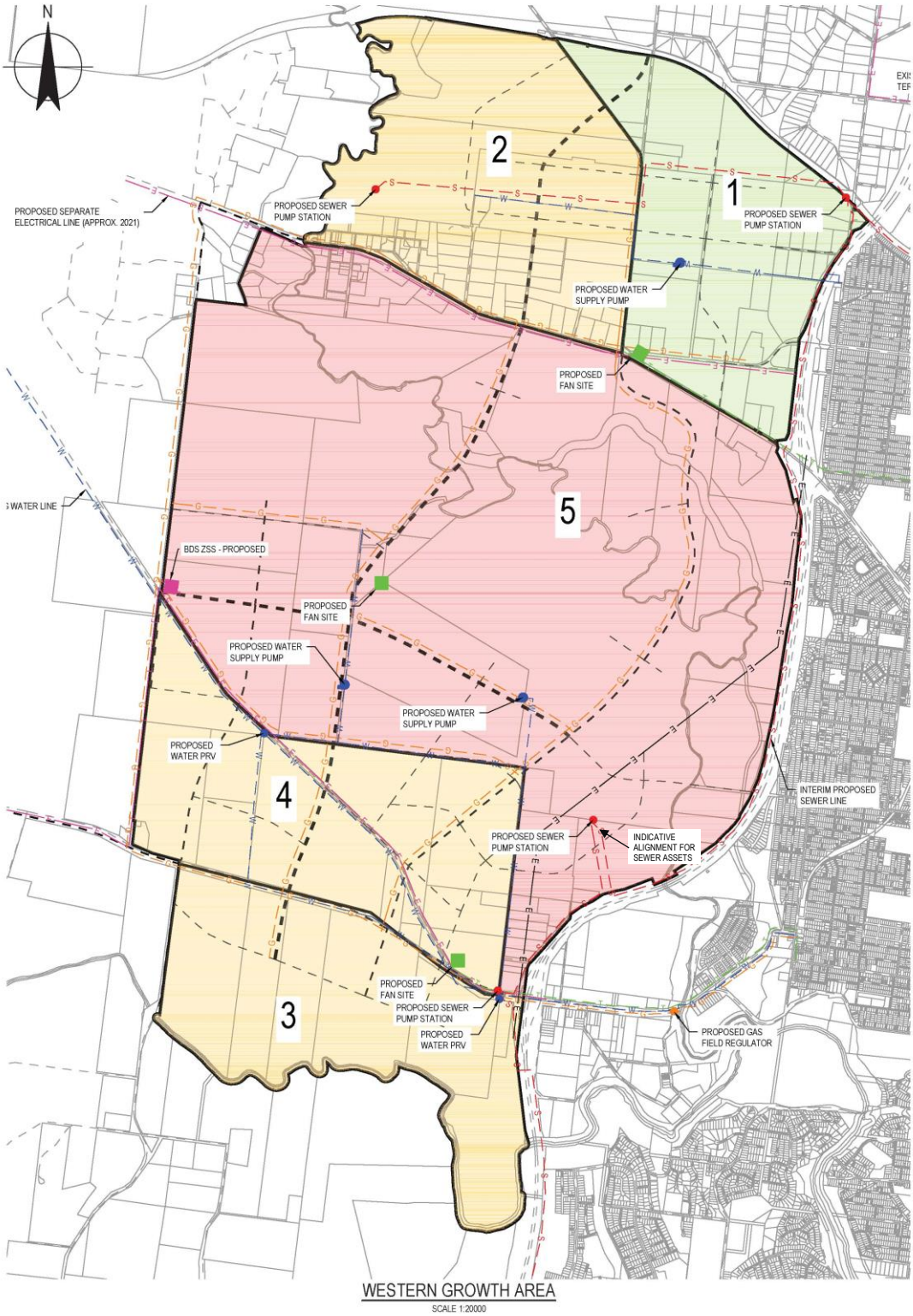
Phone: (03) 52024600
Email: leigh.prossor@cardno.com.au

Appendix A – GHD WGGA Proposed Trunk Servicing (Indicative) Plan



LEGEND

- PROPOSED PRECINCT BOUNDARY
- PROPOSED ROAD NETWORK
- EXISTING PROPERTIES
- PROPOSED GAS
- PROPOSED ELECTRICAL
- PROPOSED TELECOMMUNICATION
- PROPOSED WATER
- PROPOSED SEWER
- EXISTING APA GAS MAIN
- EXISTING HIGH VOLTAGE ELECTRICAL
- PROPOSED SEWER PUMP STATION
- PROPOSED WATER SUPPLY PUMP
- PROPOSED ELECTRICAL ASSET
- PROPOSED FAN SITE
- PROPOSED FIELD REGULATOR
- SHORT TERM PRECINCT
- MEDIUM TERM PRECINCT
- LONG TERM PRECINCT

NOTES:

1. THIS PLAN SHOWS A POTENTIAL INDICATIVE GAS NETWORK AS PART OF ENVIRONMENTALLY SUSTAINABLE DESIGN OPPORTUNITIES IN THE DETAILED DESIGN STAGE, CoGG ARE INVESTIGATING WHETHER GAS WILL BE PROVIDED. REFER TO SECTION 3.4 OF NWGGA UTILITY SERVICING STRATEGY FOR FURTHER DISCUSSION.
2. REFER TO APPENDIX B FOR SEWER/WATER AUGMENTATION WORKS.
3. SERVICE ALIGNMENTS SUBJECT TO CHANGE UPON DETAILED DESIGN OF SERVICES, SEQUENCING OF STAGES AND ALIGNMENTS OF ROADS.
4. MOBILE TELECOMS TOWERS NOT SHOWN.

Appendix B – Geotesta Letter

23 July 2019

CardnoTGM
Level 1, 27-31 Myers St
Geelong, VIC 3220

Attn.: Ben Johnson – Project Manager

Dear Ben,

PROJECT: FYANSFORD FORMER QUARRY – PRELIMINARY ASSESMENT

A preliminary geotechnical assessment of the filling methodology and proposed investigation and monitoring for a site north of the Geelong Ring road in Fyansford, where there is an former basalt quarry, was commissioned by CardnoTGM on behalf of Geelong Solid Waste Materials Receival and Processing Centre Pty Ltd. The report (GE6578) provided a high-level assessment of the geotechnical considerations and potential fill methodology that would need to be addressed if the former quarry were to be filled and turned into a development site.

It is understood that the existing site is a former basalt quarry which has been used in recent times to stockpile fill material. Based on a recent LIDAR survey, the base of the former quarry is approximately 25m below the surrounding landscape. The former quarry is approximately 60,000m^2. It is proposed to carry out earthworks to fill the former quarry to the existing surrounding surface level and convert the site into urban development.

The considerations highlighted within the report include:

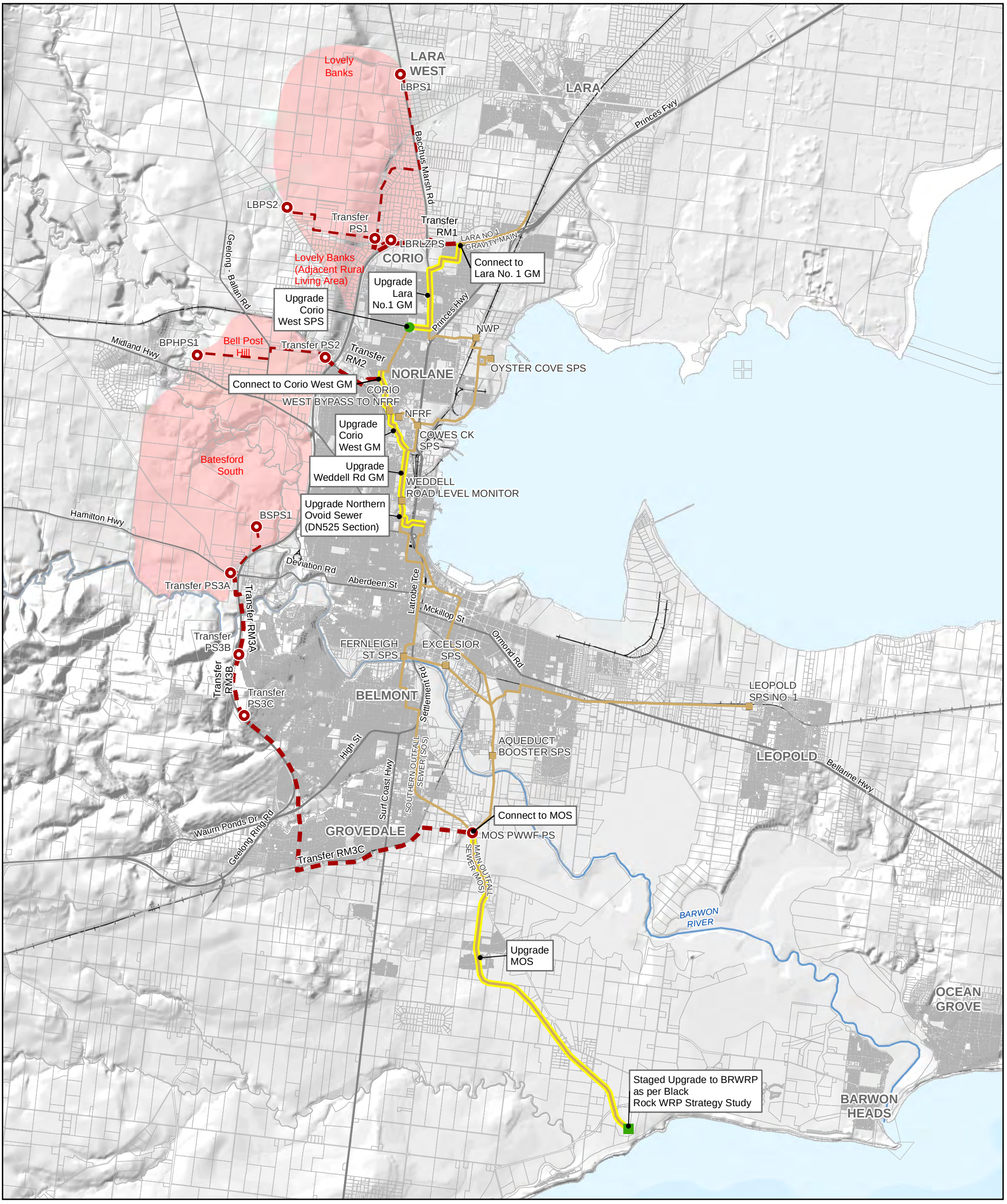
- Settlement in existing fill and long-term subsidence
- Dewatering the former quarry; and
- A settlement monitoring program

If the former quarry is to be filled in line with a Geotechnical Engineers recommendations and testing requirements then the land is expected to be suitable to transition to an urban development site.

Yours Sincerely,

Stephen Darmawan
BEng MEng MIEAust CPEng
Principal Geotechnical Engineer

APPENDIX B – GHD Sewer Servicing Strategy



LEGEND

- Existing Sewer Pump Station for Upgrade
- Existing Water Reclamation Plant for Upgrade
- Existing Sewer Infrastructure
- Proposed Pump Stations

Proposed Sewer Network

- Internal FIA Rising Main
- Transfer Rising Main
- Existing Trunk Main for Upgrade
- Trunk sewer network
- Existing parcels
- Study Area
- Rail

Paper Size A3

0 650 1,300 2,600 3,900 5,200

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

GHD Barwon Water

Barwon Water
G21 RGP - FIA Servicing Strategy

Sewer Servicing Strategy Overview

Job Number 31-32334
Revision 1
Date 10 Feb 2016

Figure 12

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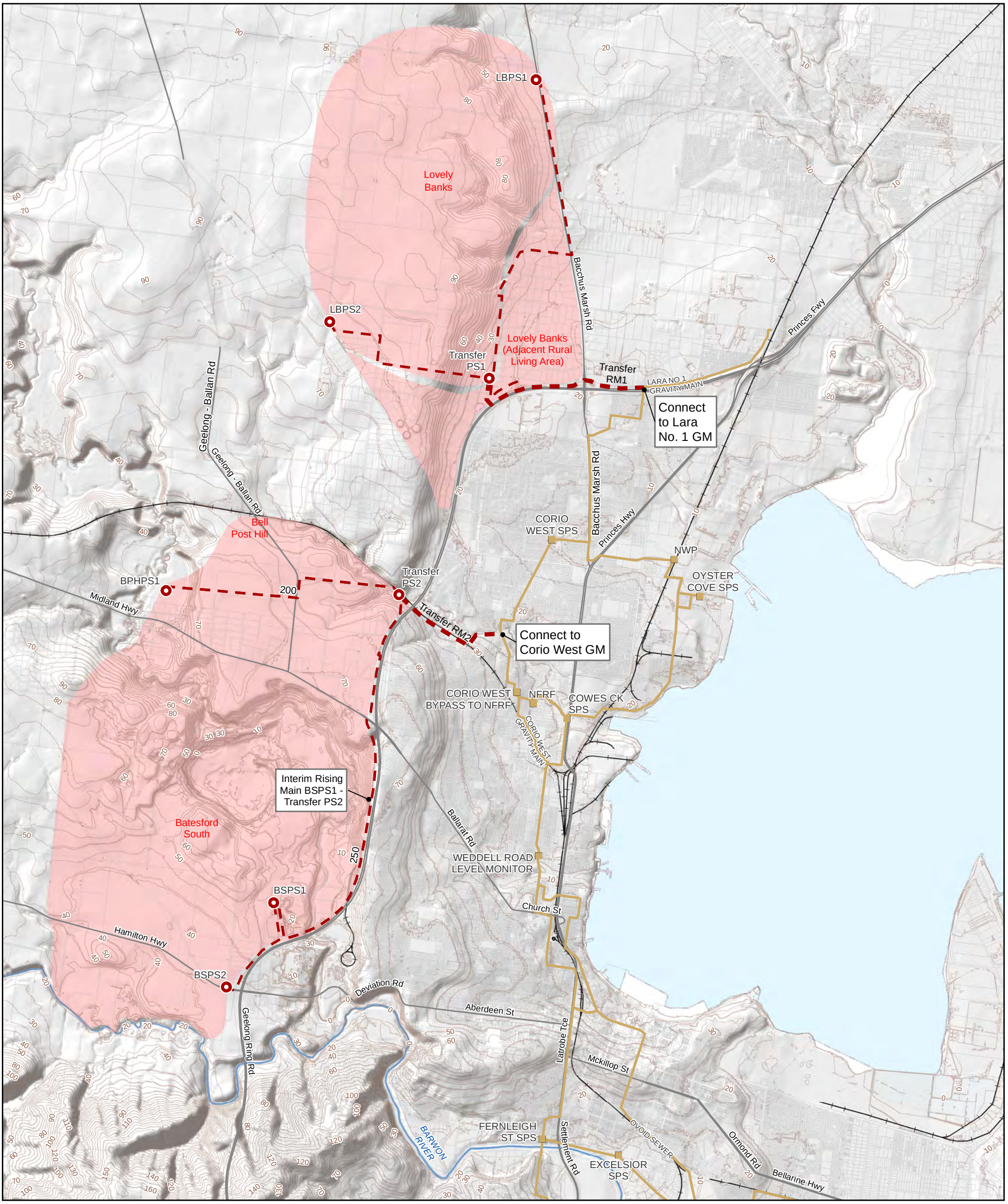
180 Lonsdale Street Melbourne VIC 3000 Australia T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com W www.ghd.com

Data source: Barwon Water, Trunk Sewer Network, Growth Areas, 2014; DEPI, VicMap, 2015. GHD, Proposed Sewers, 2015. Created by: NKostraby

APPENDIX C – 2 No Sewer Servicing Plans Interim and Ultimate



LEGEND

- Proposed Pump Stations
- Existing Sewer Infrastructure
- Existing parcels
- **Proposed Sewer Network**
- Trunk sewer network
- Study Area
- Internal FIA Rising Main
- Interim Rising Main
- Rail
- Transfer Rising Main
- Contour (5m)

Paper Size A3

0 360 720 1,440 2,160 2,880

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

Barwon Water
G21 RGP - FIA Servicing Strategy

Sewer Servicing Strategy Interim Connections

Job Number	31-32334
Revision	1
Date	10 Feb 2016

Figure 13

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180 Lonsdale Street Melbourne VIC 3000 Australia **T** 61 3 8687 8000 **F** 61 3 8687 8111 **E** melmail@ghd.com **W** www.ghd.com

Data source: Barwon Water, Trunk Sewer Network, Growth Areas, 2014; DEPI, VicMap, 2015. GHD, Proposed Sewers, 2015. Created by: NKostraby