ABERLINE TO HORNE GROWTH CORRIDOR

INFRASTRUCTURE/SERVICING ASSESSMENT
FEBRUARY 2025

This report has been prepared by the office of Spiire

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Issue Date	Revision No.	Author	Checked	Approved
Oct 17	A	A. Gorfine	N. Green	N. Green
Feb 18	B	A. Gorfine	N. Green	N. Green
Feb 25	C	C. Walsh	J. King	J. King

Russell Creek, looking northeast from Aberline Road (May 2024)

Contents

1. EXECUTIVE SUMMARY

Spiire Australia Pty Ltd has been engaged by Victorian Planning Authority (VPA) to prepare an Infrastructure/Servicing Assessment Report to inform the servicing requirements of the proposed Aberline to Horne Growth Corridor (AHGC) on the northeast fringe of the Warrnambool Township.

The purpose of this report is to identify the location of existing service infrastructure and discuss how utility services may be provided to facilitate residential development of the land. Services that have been investigated include sewer, potable water, gas reticulation, electricity supply and telecommunications. Detailed assessment of traffic impacts and requirements, as well as drainage and flood modelling, are to be detailed in separate reports, and therefore only briefly commented on in this report.

Each of the respective services has provision within the report to understand the requirements to service the precinct in an economical, efficient and sustainable manner.

Figure 1 – Site Location

1.1 Key Findings

Development within the AHGC area will require key infrastructure including, but not limited to, the following.

Sewer:

- A new sewerage pump station (SPS) likely positioned adjacent to Aberline Rd and Russell Creek.
- A new dedicated rising main to transfer the sewage to the Warrnambool Sewerage Treatment Plant (STP).
- A new sewer trunk main along the Russell Creek corridor, connected to the SPS.

Water:

- Upgrade to Tozer Road Water Pump Station (WPS).
- New water storage tank/tower and network pump station on Wangoom Rd.
- A new roof water harvesting trunk main along the Russell Creek corridor.

Electricity:

- Significant upgrades to the HV and LV electrical network, including likely undergrounding of existing overhead network in surrounding road reserves.
- Installation of kiosk substations throughout the development.

Gas:

- No gas network expected.

Telecommunications:

- Backhaul works undertaken by the authority.
- Installation of underground network as development occurs.

2. BACKGROUND

In 2013 Warrnambool City council prepared a housing strategy that forecasted population growth within the municipality up until 2031. As a result of this it was identified that the population is set to grow from current levels to 44,000 people by 2031. In order to meet the increased demand for housing caused by this population growth approximately 225 new dwellings per year. The Aberline to Horne Corridor has been identified as Councils future urban growth area.

The corridor is bounded by Wangoom Road to the north, Aberline Road to the east, Dales Road to the south, and a stepped eastern boundary east of Horne Road (approximately 200-800m). The site is currently zoned for farming and is rural in nature, with urban residential development to the southwest and the Horne Road Industrial Precinct on the southeast corner of the site. The growth area comprises 407 hectares of land and 27 titles in multiple ownership.

This report has been prepared according to the VPA PSP 2.0 Guidelines and to meet the density target of 20 dwellings per hectare. This report considers servicing requirements to meet various density housing products. The AHGC is expected to generate 5,400 dwellings for approximately 15,000 people.

VPA will undertake community consultation and other supporting studies, such as traffic analysis, flood and stormwater strategy, cultural heritage study, flora and fauna study, public open space strategy and Russells Creek masterplan. Drainage and traffic aspects are only briefly discussed in this report as it is understood that these will be investigated in more detail through a Drainage and Hydraulic Assessment and a Traffic Impact Report.

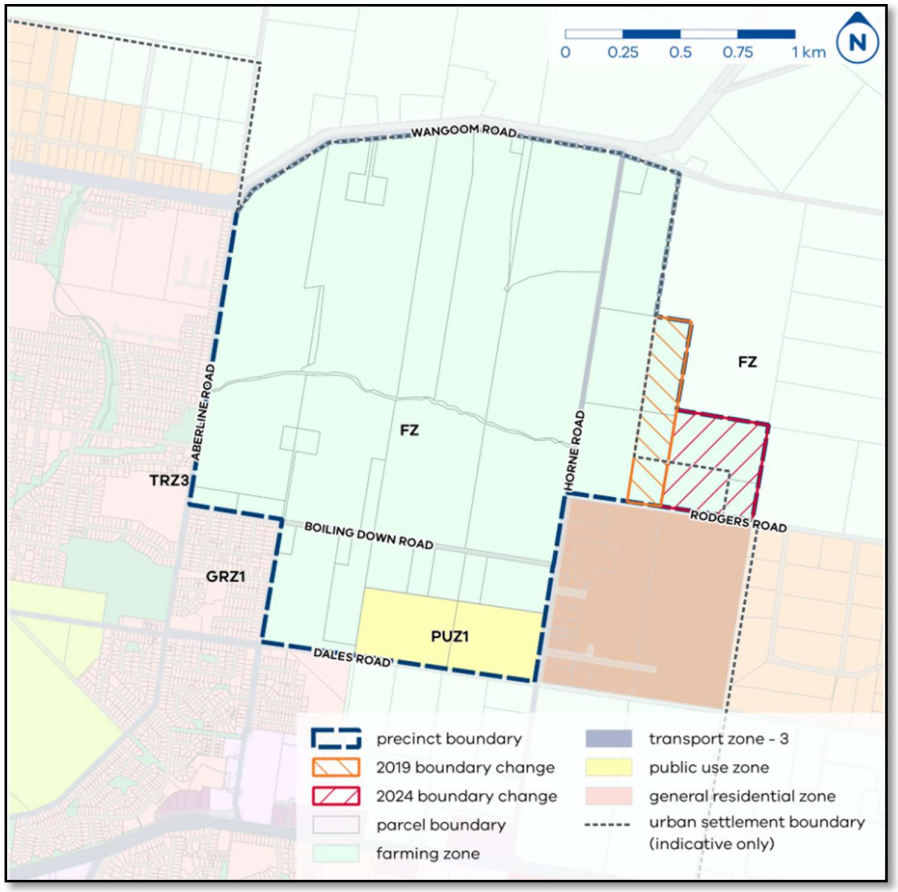


Figure 2 – Growth Area (VPA)

3. EXISTING SITE CONDITIONS

The area is generally bound by the Dales Road to the south, Horne Road to the east, Wangoom Road to the north, and Aberline Road to the west. All roads generally have a rural cross section with sealed pavement and overland drainage.

The land is currently zoned Farming Zone (FZ), with the exception of a small area to the south where two Wannon Water basins are located which is Public Use Zone (PUZ). In the middle of the site from Wangoom Road in the North heading south to Russell Creek is Tozer reserve which is considered to have significant Flora and Fauna values. As such Tozer reserve will be maintained through future development meaning services will need to be constructed around it rather than through.

The area other than Tozer Reserve has been generally utilised for farming purposes and is predominantly cleared of native vegetation. Some native vegetation can be found along the gullies in steeper areas and windrows of exotics exist along some fence lines. There are a few small sites that have previously been used as quarries.

Figure 3 – Looking south from Wangoom Road (May 2024)

4. SERVICE INFRASTRUCTURE

4.1 ROADS

Although not specifically required as a part of this report, the following provides a brief commentary on the existing road access to the area and potential requirements to facilitate urban development in the area. It is anticipated that a detailed traffic report will be undertaken as a separate report.

The Warrnambool City Council is the responsible authority for local road network within the AHGC area, however Wangoom Road is the boundary between Warrnambool City and Moyne Shire and as such responsibility is shared between the two councils.

Wangoom, Aberline and Horne Roads are Transport Zone 3 (TRZ3) roads and are key links in the road hierarchy for this area.

4.1.1 Existing Road Infrastructure

Access to the area currently exists off Aberline Road, Horne Road, Wangoom Road, Dales Road, Boiling Down Road and Gateway Road.

Aberline Road is a designated collector road, zoned Transport Zone 3 and is the responsibility of Warrnambool City Council. The road currently has been upgraded through its southern section adjacent to recent development to the west. It is anticipated that the rest of Aberline Road will be required to be upgraded as part of the development of this area.

Horne Road is a future link road that is zoned Transport Zone 3 and is the responsibility of Warrnambool City Council. The road fully constructed at the southern end of the precinct and partially constructed heading north to Wangoom Road. Upgrades to Horne Road from the Horne Road Industrial Precinct south have already commenced and it is anticipated that remainder will be required to be upgraded as part of the development of this area.

Wangoom Road that abuts the AHGC is zoned Transport Zone 3 and identified as a link road in Council's road hierarchy. Wangoom Road is on the boundary of Warrnambool City and Moyne Shire and as such falls under the joint responsibility of both councils. By agreement it is currently maintained by Moyne Shire.

Dales Road, between Gateway Road and Horne Road, is an unsealed, very low usage road, with limited formal alignment or drainage. As the roundabout at the intersection Gateway Road and Dales Road includes provision for Dales Road towards Horne Road, it is anticipated that the development of this area will continue the formalisation of Dales Road.

Boiling Down Road, east of Gateway Road, was upgraded circa 2013, in conjunction with the adjacent development to include kerb, parking lanes, underground drainage, streetlighting and the roundabout with Gateway Road. The design or Boiling Down Road west of Gateway Road was upgraded in 2019 to a sealed two lane, two-way road, with shoulders of 1.5-2m in width and open drains adjacent. It is anticipated that the development of this area will continue the upgrades to the Boiling Down Road.

Gateway Road, between Dales Road and Boiling Down Road, has been upgraded on the western side in conjunction with the existing development to the west. It includes kerb, parking lanes, underground drainage, streetlighting and a roundabout at either end with Dales Road and Boiling Down Road respectively. It is anticipated that the eastern side of Gateway Road will require upgrades with development of this area and may continue north of Boiling Down Road to provide access into the site.

4.1.2 Proposed Road Infrastructure

It is expected that access to proposed development will come off all roads bounding the site, Aberline Road, Wangoom Road, Horne Road, Gateway Road, Boiling Down Road and Dales Road. The northern and eastern legs of the existing roundabout located at the intersection of Boiling Down Road and Gateway Road also provides a logical access location into the area.

Due to the increase in traffic resulting from the proposed development, road network augmentations external to the site may be necessary. The extent of augmentation will be required to be determined when the arrangement and nature of the development are further understood.

Within Urban Growth Areas, the delivery of significant road infrastructure such as major intersections, signalised intersections, bridges, and upgrades of existing roads are typically delivered through a Developer Contributions Plan (DCP).

The delivery of major road infrastructure identified within a DCP may be provided as “Works in Kind” by the developer, who in turn is provided with credits against DCP liability for their development.

4.1.3 Internal Roads

As the structure plan is refined, specific traffic engineering reporting will be undertaken to inform road cross sectional requirements. Generally, all internal road cross sections will be in accordance with the standards defined in the Infrastructure Design Manual (IDM), and to Warrnambool City Council or Department of Transport and Planning (if applicable) requirements.

4.2 DRAINAGE

Although not specifically required as a part of this report, the following provides a brief commentary on the stormwater drainage and potential requirements to facilitate urban development in the area. It is understood that a detailed stormwater management report and flood assessment will be undertaken as separate report.

The Warrnambool City Council is the responsible authority for drainage for the growth area and the Glenelg Hopkins Catchment Management Authority (GHCMA) is the floodplain management authority for the region.

4.2.1 Existing Drainage Infrastructure

There is little formal drainage infrastructure within the AHGC area. A number of dams provide storage of runoff for agricultural purposes, and pipe culverts are located under Aberline Road and Horne Road at Russell Creek.

Figure 5 – Existing Culvert under Aberline Road

Russell Creek, a tributary of the Merri River, will be the receiving waterway of all stormwater runoff from the development area. The topography within the AHGC provides a reasonably clear indication that all catchments fall towards Russell Creek as shown in Figure 6.

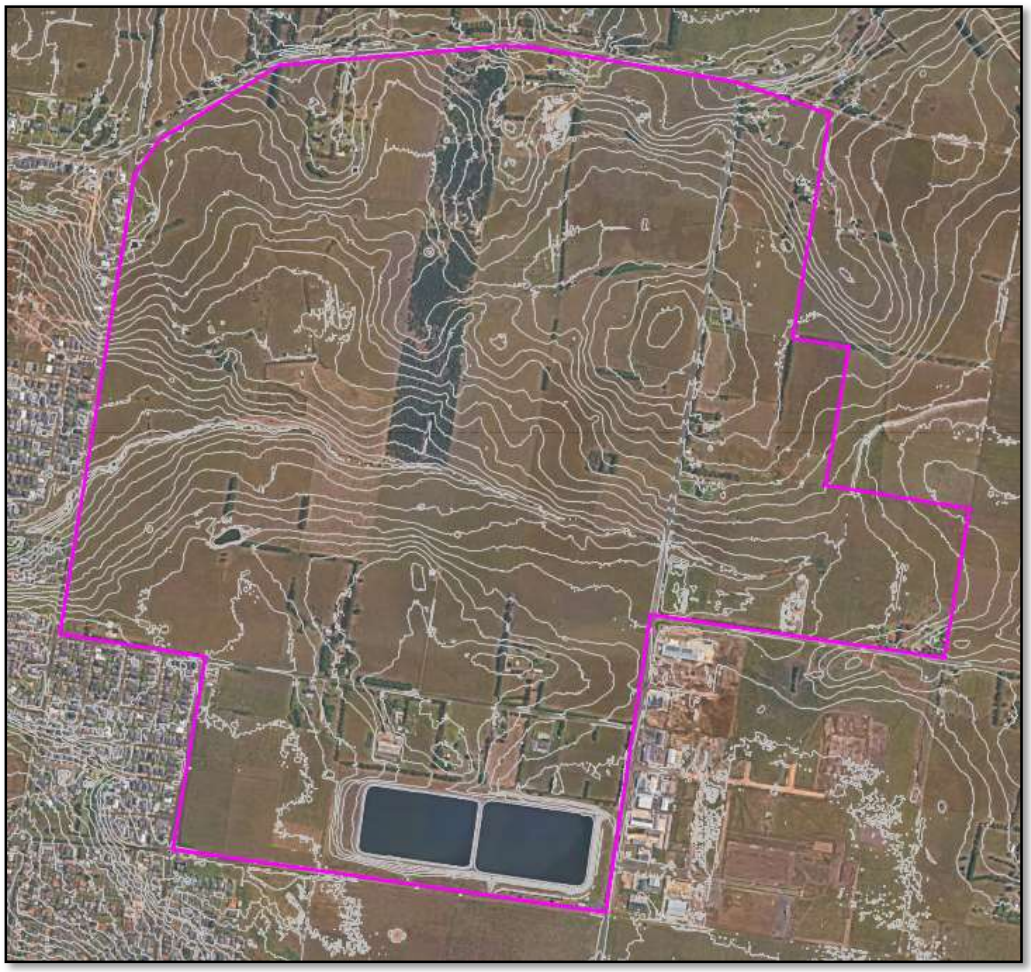


Figure 6 – Growth Area Topography

4.2.2 Proposed Drainage Infrastructure

All drainage assets will be required to be designed and constructed in accordance with Warrnambool City Council requirements at the cost of the developer.

Council indicate that a separate report analysing drainage options and associated infrastructure requirements along with flood modelling and analysis of Russell Creek are being undertaken separately to this report. It is anticipated that these reports will provide information that will be adopted within a Site Stormwater Management Plan (SSMP) for the growth area.

Typical drainage infrastructure for urban development areas will require a combination of minor and major infrastructure. This will include an underground pipe network typically designed for a 5 year ARI event, with roads and drainage reserves being designed to cater for the conveyance of 100 year ARI events in a safe manner.

The stormwater discharge into Russell Creek should be controlled through retardation such that peak flows within Russell Creek are not increased, and that water quality treatment measures are installed such to meet the requirements of best practice.

It is anticipated that developed catchment discharge flows up to Q100 will be required to be retarded back to pre-development conditions through the provision of onsite retention such as retarding basins.

The SSMP will incorporate hydraulic, hydrological and pollutant modelling to determine existing flow conditions and inform conveyance and treatment modelling of developed conditions to determine water quality and retardation requirements.

Due to the slow anticipated development across the AHGC area, the location and nature of the drainage infrastructure adopted should be assessed at a functional level to ensure land area requirements and integration into the urban design can be appropriately and safely managed, and that the designs are cognisant of environmental outcomes such as retention of significant trees and ecological significant areas.

Within Urban Growth Areas, the delivery of major drainage assets such as large culverts, retarding basins, wetlands, floodways and their associated landscape improvements are typically delivered through a Developer Contributions Plan (DCP).

The delivery of major drainage infrastructure with a DCP may be provided as “Works in Kind” by the developer, who in turn is provided with credits against DCP liability for their development.

Roof water harvesting will be implemented throughout the growth area in line with Wannon Water’s future planning requirements. This will need to be accounted for in the SSMP and is discussed in Section 4.5.

4.3 SEWER RETICULATION

Wannon Water is the responsible authority for sewer reticulation within the AHGC area.

4.3.1 Existing Sewer Infrastructure

There is existing reticulated sewer infrastructure adjacent to the AHGC area on the west side of Aberline Road, as well as to the south of Boiling Down Road. A stub has been built across Aberline Road close to the Russell Creek culverts as a part of previous development. Wannon Water advise that the existing sewer network does not have capacity for the proposed development area and will require a new pump station and rising main.

4.3.2 Proposed Sewer Infrastructure

The existing stub across Aberline Road would be the logical place to make the first connection from the development to the existing sewer network. However the existing trunk sewer will not have capacity for the entire growth area. It is recommended that further investigations in conjunction with Wannon Water be undertaken to determine how much, if any, of the development can be connected into this existing network. This will allow timing requirements of new infrastructure to be more accurately determined and planned.

Advice from Wannon Water suggests that there is limited capacity in the existing trunk sewer system and a new rising main to the Warrnambool Water Reclamation Plant will need to be constructed to service the growth area. The alignment of this rising main is yet to be determined but it is recommended that this be determined in conjunction with Wannon Water as early as possible in the planning process.

Development within the AHGC area will require key infrastructure including:

- A new sewerage pump station (SPS) located as shown on Figure 7.
- A new dedicated rising main to transfer the sewage to the Warrnambool Sewerage Treatment Plant (STP). This will need to be staged, Wannon Water will work with the developers on the augmentation strategy.
- A new sewer trunk main along Russell Creek connected to the SPS.

The new SPS will need to be located close to where Russell Creek crosses Aberline Road, and outside the 1%AEP flood envelope. It will need to be sized so that it has the capacity and depth to service the whole growth area. To convey flows through the development to the new SPS, a 225-300dia trunk sewer will need to be constructed along Russell Creek. A key consideration in the design of this Trunk sewer will be the location of crossings of Russell Creek and any significant flora/fauna/Cultural sites that will influence this location. It may be preferable to construct a trunk sewer along each side of the creek and have one crossing close to Aberline Road, as the crossing location will drive the sewer deeper. The site generally grades from east to west so the trunk sewer will follow the natural contours of the land.

4.4 POTABLE WATER

Wannon Water is the responsible authority for potable water supply within the AHGC area.

4.4.1 Existing Potable Water Infrastructure

Currently there are reticulation mains in Aberline Road, Boiling Down Road and the southern section of Horne Road. Wannon Water have indicated that these mains do not have capacity to service the AHGC and new infrastructure will be required. A new water main has recently been constructed along Aberline Road to supply a yet to be constructed water storage and network pumping station on Wangoom Road, east of Aberline Road.

4.4.2 Proposed Potable Water Infrastructure

The existing pumps at the Tozer Road Water Pump Station will need to be upgraded in order to enable transfer water from the Warrnambool Water Treatment Plant the new dedicated water main, water storage and network pumping station. This new storage and pump station is required to provide adequate water supply and pressure in times of peak demand and provide a secure water supply to the area in the AHGC.

The key new water infrastructure required to service the area will include the following:

- Upgrade to Tozer Road Water Pump Station (WPS)
- New water storage and network pump station (highlighted “Water Supply Tank”) on Figure 7

Reticulated water supply will be designed and constructed in accordance with Wannon Water and Water Services Association of Australia standards and requirements, and will be provided by the developer at the time of development. Potable water supply pipelines will be located within road reserves or easements vested to the responsible authority.

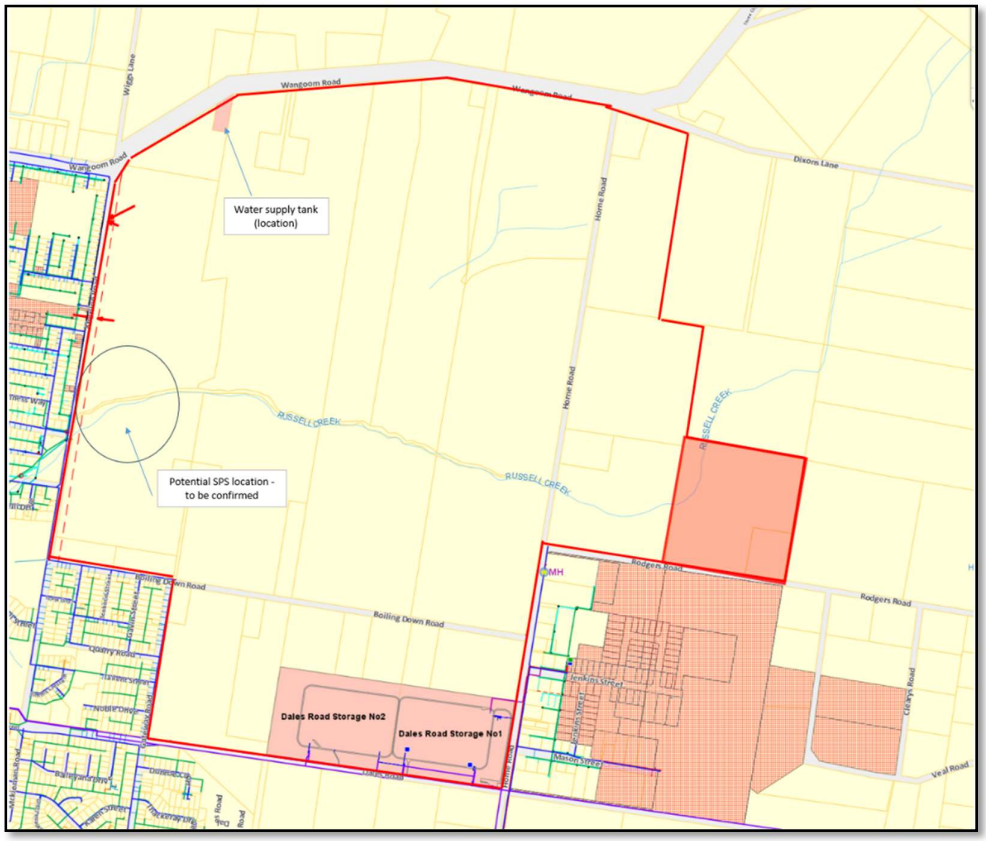


Figure 7 – Major Water and Sewer Infrastructure Requirements (provided by Wannon Water)

4.5 ROOF WATER HARVESTING

Wannon Water is the responsible authority for roof water harvesting within the growth area. Roof water harvesting forms a major part of Wannon Water's future water supply strategy. The main water supply for Warrnambool comes from the Gellibrand River approximately 100 kilometres away in the Otway Ranges. Roof water harvesting has been implemented throughout recent adjacent developments and has proved very successful in making use of locally available water sources and reducing the need to import water from the Gellibrand system.

The harvesting of roof water from all new dwellings (all buildings) is achieved by installing a dedicated pipe network in addition to the conventional stormwater system. This network collects storm water runoff from roof catchments only and is designed to convey all flows up to one in one year rainfall events. Overflows from this system are directed to the conventional stormwater network. Buffer tanks are installed within the subdivision to allow one in one year events to be collected without installing large downstream trunk mains. The location of buffer tanks needs to be determined as part of the development, with the preferred location to be outside of the road pavement to protect the integrity of the pavement and to reduce traffic conflict and disruption when the tanks require inspection, service and maintenance. This will require localised road reserve widening or appropriate other land to be set aside early in the planning process, in consultation with Wannon Water and Warrnambool City Council, to contain these assets and ensure all areas are adequately serviced.

4.5.1 Existing Roof Water Harvesting Infrastructure

Roof water harvesting has been successfully implemented in developments to the west and south of the AHGC area.

A 560mm trunk main runs along the Russell Creek corridor and a stub has been provided on the eastern side of Aberline Road, south of Rawlings Drive. This stub will provide the connection point for the growth area back into the existing network.

Figure 8 identifies the existing roof water pump station (shown in blue), adjacent to the existing SPS (shown in green).

Figure 8 – Roof water pump station shown in blue, adjacent to the existing SPS shown in green (provided by Wannon Water)

4.5.2 Proposed Roof Water Harvesting Infrastructure

The 560mm trunk main will need to be extended along the Russell Creek corridor through the growth area. The site generally slopes towards Russell Creek and as such the roof water harvesting network will follow the natural contours of the land towards the creek where it will be collected in the trunk main, refer to figure 9.

As a part of early development planning the location and number of detention tanks will need to be determined in consultation with Wannon Water to ensure an optimal system design, and with Warrnambool City Council for suitable tank placement.

An important consideration when installing roof water harvesting is ensuring that the system is safe from external contaminants. The system is generally installed within rear easements running parallel to sewer mains. Designers need to take this into consideration when determining system levels and manage the risk accordingly.

Roof water harvesting reticulation within the development, will be required to be designed and constructed in accordance with Wannon Water requirements at the cost of the developer.

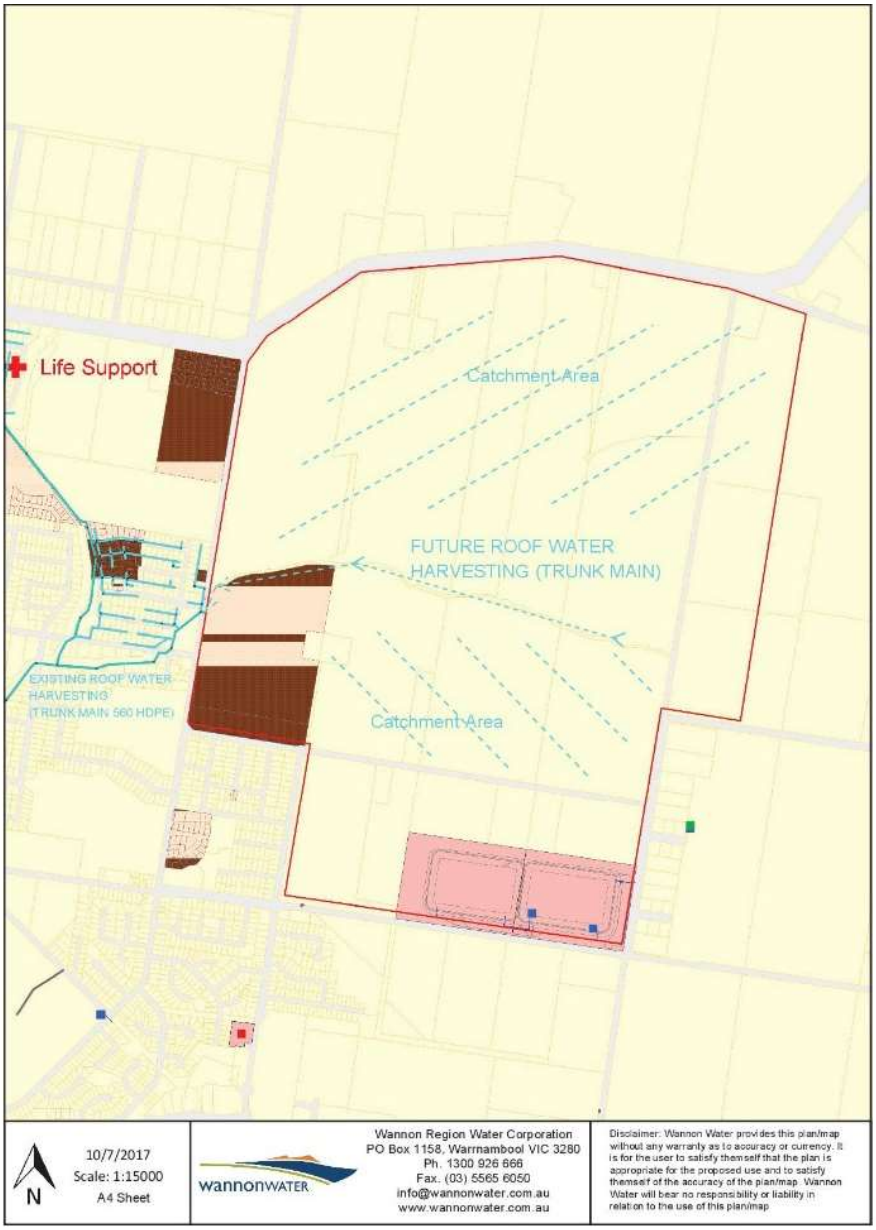


Figure 9 – Roof Water Harvesting Infrastructure Requirements (provided by Wannon Water)

4.6 ELECTRICITY SUPPLY

Powercor is the responsible authority for the electricity supply within the East of Aberline PSP area.

4.6.1 Existing Electricity Infrastructure

Existing 22KV high voltage (HV) underground (UG) cables are located on Aberline Road, with existing overhead (OH) HV lines to the north along Wangoom Rd and to the south along Boiling Down Road and along Rodgers Road to the east. There are also OH 66kV Sub-Transmission lines running north – south along Horne Road and then west along Dales Road.

There are multiple small capacity pole mounted substations supplying properties adjacent, along Boiling Downs Road, Wangoom Road and Rodgers Road.

A review of the Powercor Network portal map indicates there are currently two existing High Voltage (HV) feeder lines within the vicinity of the East of Aberline PSP, the WBL005 feeder line to the north and west, and the WBL002 feeder line to the south and east.

The Warrnambool (WBL) zone substation supplies these 2 feeder lines. 1 of the 3 existing transformers within the Warrnambool (WBL) zone substation was nominated for replacement due to age, in 2024, to ensure ongoing supply into the future for Warrnambool and the surrounding areas. However, the latest Distribution planning report from Powercor has stated the proposed transformer replacement is no longer required and will not be going ahead.

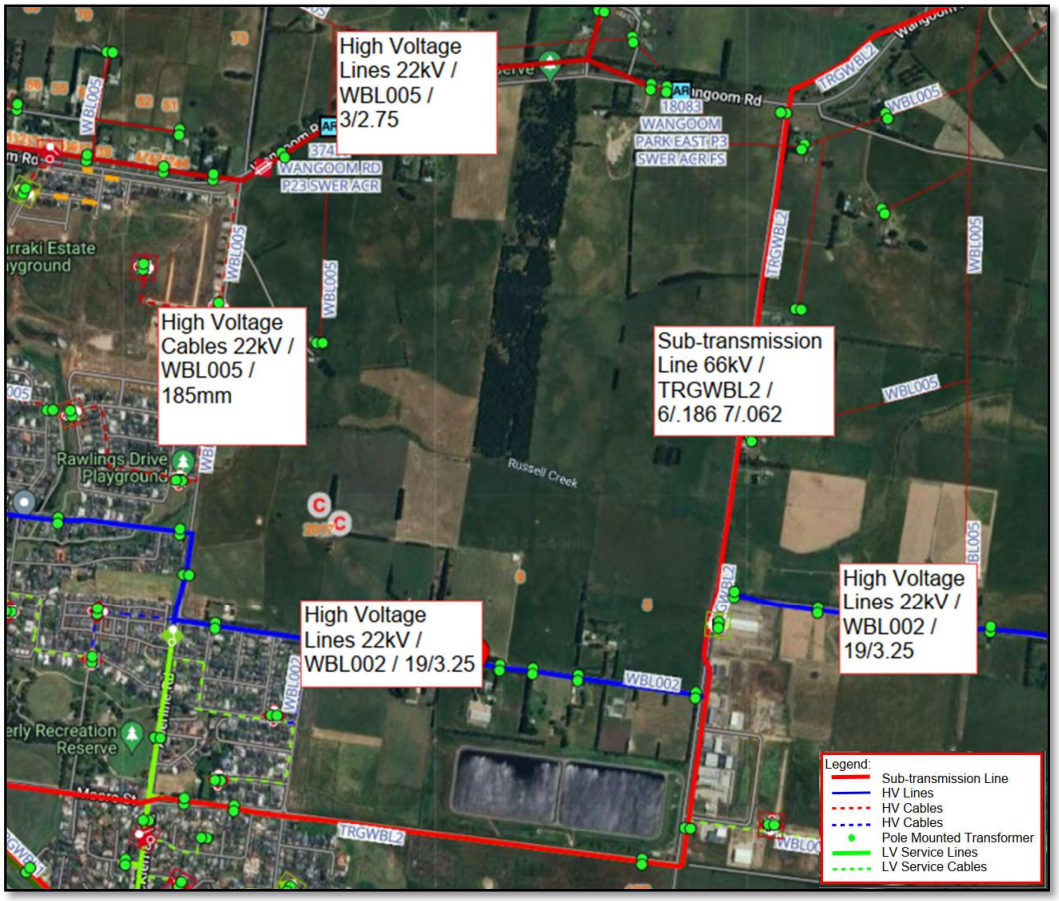


Figure 10 – Existing Electrical Network

4.6.2 Proposed Electricity Infrastructure

As of 1 July 2024, Powercor has revised the ADMD figure for a residential lot (no reticulated gas) in the Warrnambool region from 3.4kVA to 4.9kVA. This amendment to the no-gas ADMD is to account for the anticipated increased uptake in EV charging, based on a University of Melbourne 2021 study into EV charging load profiles.

Powercor's network will need to be significantly upgraded in order to meet this projected load demand. 4.9kVA per lot for 5400 lots equates to approximately 26.5MVA total residential load. This requires the installation of 84x 315kVA, kiosk substations, or a combination of 315kVA and 500kVA kiosk substations, subject to Powercor approval. Current Powercor Masterplanning guidelines allows for a maximum of 1 in 3 kiosk substations to be of a 500kVA type. Therefore, for a 26.5 MVA total load, up to 24 x 500kVA substations could potentially be installed, with the final quantity to be approved by Powercor Network Planning. These numbers do not take into account any proposed commercial / industrial loads in the PSP. As well as kiosk substations, a large HV and LV underground network will need to be installed to service the electrical load.

Application for the provision of electrical supply will be required to be made through Powercor at the time of development. Powercor's preference for connection to the existing network would be to the existing OH HV lines mentioned above that have sufficient spare capacity to provide supply to development. The level of external network infrastructure upgrades will need to be confirmed by Powercor network planning prior during the electrical Masterplan development stage. It is likely that the existing OH lines will require relocation to underground assets.

New underground electrical infrastructure will be required to be provided as part of the development. This will involve the installation of kiosk substations, cables, pits, conduits and public lighting by the developer.

Electrical substations (or kiosks) will be required to be installed throughout a development. As such it is expected that a substation kiosk reserve for each kiosk substation would be required as part of the development of the area.

Electrical infrastructure will be required to be designed, constructed and audited in accordance with Powercor's Technical Standards and VESI requirements at the cost to the developer.

Rebates invoiced back to the developer may be applicable to the development subject to Powercor's financial modelling of its revenue vs cost for the additional loads on the network. If applicable, these rebates will be actioned by Powercor to the developer after tie-in of each development stage to the electrical network.

4.7 GAS SUPPLY

It is assumed with the recent State Government announcements regarding the phase out of gas for new connections that the development will not be connected to gas.

4.8 TELECOMMUNICATIONS NETWORK

The provision of telecommunication infrastructure to development is a commercial decision between development and communications providers. Typically Telstra and NBN Co. have been providers of telecommunications infrastructure, however there are also alternative providers on the market. For the purpose of this servicing assessment, it has been assumed that the development would be serviced by NBN Co. due to the proximity to existing services and the nationwide roll out of the NBN network.

4.8.1 Existing Telecommunications Infrastructure

Existing optic fibre networks exist throughout the Warrnambool Township to the west and south of the growth area. Construction of fibre has also commenced within the Horne Road Industrial Precinct.

Fixed wireless coverage is currently available to the development area. This is where data travels from a transmission tower to the premises via a rooftop antenna that needs to be installed by an approved NBN Co. contractor. This method would likely be the least preferable when fixed line services are available within the area.

4.8.2 Proposed Telecommunications Infrastructure

NBN Co. have rolled out services to surrounding developments and have indicated that the logical start point for development would be the South West corner site as it's the closest to the Fibre Access Node (FAN) and requires the smallest backhaul.

NBN Co. typically require developments to be over 100 lots, however given the proximity to NBN Co. fibre network in adjoining development it is considered that NBN Co. would be the provider of choice and would enable connection to its network. This would be required to be confirmed through formal application to NBN Co.

Under current NBN Co. Policy, the developer is required to provide pit and pipe infrastructure as part of the development of the site, and NBN will provide the cabling at the time of first applications for connection of dwellings to the development. Backhaul charges are a shared cost between the developer and NBN Co.

Backhaul charges apply when the development is more than one kilometre from the nearest Fibre Access Node (FAN). A detailed list of charges and rates can be found on the NBN Co. website as they are reviewed on regular basis. It is assumed that the AHGC will be serviced from the NBN tower on the Wannon Water basin site in the south east corner of the site. Depending on the initial location of development this may exceed the one kilometre threshold.

At the time of this report, fees associated with development of the site include a $600 per lot charge for single dwelling sites and $400/dwelling charge for higher density developments. Backhaul charges may apply, however as the surrounding residential development has service, these charges would be expected to be negligible and should be confirmed at the time of application.

NBN Co. also offer additional services such as cable television service, which may be considered to remove the requirement for roof top antennas within the PSP area.

Wannon Water have made a specific request that telecommunication infrastructure not be located on any of their sites as they have had issues with this previously. It is therefore advised that land within the growth area be set aside early in the planning process if required by NBN Co. to ensure that their assets do not need to be located on Wannon Water sites.

5. CONCLUSION

This report has assessed the availability and requirements for the provision of the following service infrastructure required within the Aberline to Horne Growth Corridor (AHGC) area;

- Sewer reticulation
- Potable water supply
- Roof water harvesting
- Electricity supply
- Gas supply
- Telecommunications network

The growth area has access to the above existing infrastructure, but it is clear that the authorities need to develop detailed strategies for the provision of increased supply to this area to facilitate development. As such, there are limits to the initial development of the area for residential purposes until such time as the authorities identify the layout and requirements of ultimate servicing networks.

The logical staging of development would be from west to east so that trunk gravity infrastructure such as main sewers and outfall drainage are extended upstream with development.

The location of trunk service infrastructure should be cognisant of environmental factors such as minimising impact to areas of high ecological value and significant trees for retention. Base drawings indicating tree protection zones and environmentally significant areas should be utilised to inform service infrastructure alignments that minimise impact to these areas. Where services are required to be constructed within these areas construction methodology that minimises impact should be adopted, i.e. boring or directional drilling.

Timing of infrastructure will generally be dependent on the timing of application for staged development within the area. Should applications be “out of sequence” authorities have the ability to provide infrastructure, potentially with additional bring forward charges past on the development applicant.

Costs associated with the provision of infrastructure will generally be borne by the developer, with larger trunk infrastructure being funded under the relevant authorities capital works programs.

The provision of drainage and road infrastructure requires further investigation at this time, however the delivery of major road and drainage infrastructure will likely be via a Development Contributions Plan (DCP) associated with the Precinct Structure Plan.

APPENDIX – FORMAL RESPONSES FROM AUTHORITIES

BARWON WATER

[redacted]

From: [redacted]
Sent: Wednesday, May 22, 2024 4:55 PM
To: [redacted]
Cc: [redacted]
Subject: RE: East of Aberline - Servicing

Hello [redacted]

I have updates below from your document: ABERLINE TO HORNE GROWTH CORRIDOR INFRASTRUCTURE/SERVICING ASSESSMENT, OCTOBER 2017.

4.3 Sewer Reticulation
Wannon Water is the responsible authority for sewer reticulation within the growth corridor area.

4.3.1 Existing Sewer Infrastructure
There is existing reticulated sewer infrastructure adjacent to the growth corridor area on the west side of Aberline Road as well as to the south of Boiling Down Road. A stub has been built across Aberline Road close to the Russell Creek culverts as part of previous development. Wannon Water advise that the existing sewer network does not have capacity for the proposed development area and will require a new pump station and rising main.

4.3.2 Proposed Sewer Infrastructure
The existing stub across Aberline Road would be the logical place to make the first connection from the development to the existing sewer network. However the existing trunk sewer will not have capacity for the entire growth area. It is

recommended that further investigations in conjunction with Wannon Water be undertaken to determine how much if any development can be connected into this existing network. This will allow timing requirements of new infrastructure to be more accurately determined and planned.
Advice from Wannon Water indicates that there will be three new key infrastructure requirements to service the development.

1. A new sewerage pump station (SPS) located as shown on Figure 7. Flood implications and Cultural Heritage need to be considered. *Josh, the location circle should be expanded to either side of Russells Creek – It is not locked in on the south side.*
2. A new dedicated rising main to transfer the sewage to the Warrnambool Sewerage Treatment Plant (STP). This will need to be staged, Wannon Water will work with the developers on the augmentation strategy.
3. A new sewer trunk main along Russell Creek connected to the SPS.

The new SPS will need to be located close to where Russells Creek crosses Aberline Road. It will need to be sized so that it has the capacity and depth to service the whole growth area. To convey flows through the development to the new SPS, a 225-300dia trunk sewer will need to be constructed along Russells Creek. A key consideration in the design of this Trunk sewer will be the location of crossings of Russells Creek and any significant flora/fauna/Cultural sites that will influence this location. It may be preferable to construct a trunk sewer along each side of the creek and have one crossing close to Aberline Road as the crossing location will drive the sewer deeper. The site generally grades from east to west so the trunk sewer will follow the natural contours of the land. Advice from Wannon Water suggests that there is limited capacity in the existing trunk sewer system and a new rising main to the Warrnambool STP will need to be constructed to service the growth area. The optimum location for the SPS and alignment of this rising main is yet to be determined but it is recommended that this be determined in conjunction with Wannon Water as early as possible in the planning process.

4.4 Potable Water Supply

Wannon Water is the responsible authority for potable water supply within the Growth Corridor area.

4.4.1 Existing Potable Water Infrastructure

Currently there are reticulation mains in Aberline Road, Boiling Down Road and the southern section of Horne Road. Wannon Water have indicated that these mains do not have capacity to service the Growth Corridor and new infrastructure will be required. A new water main has recently been constructed along Aberline Road to supply a yet to be constructed water storage and network pumping station on Wangoom Road east of Aberline Road.

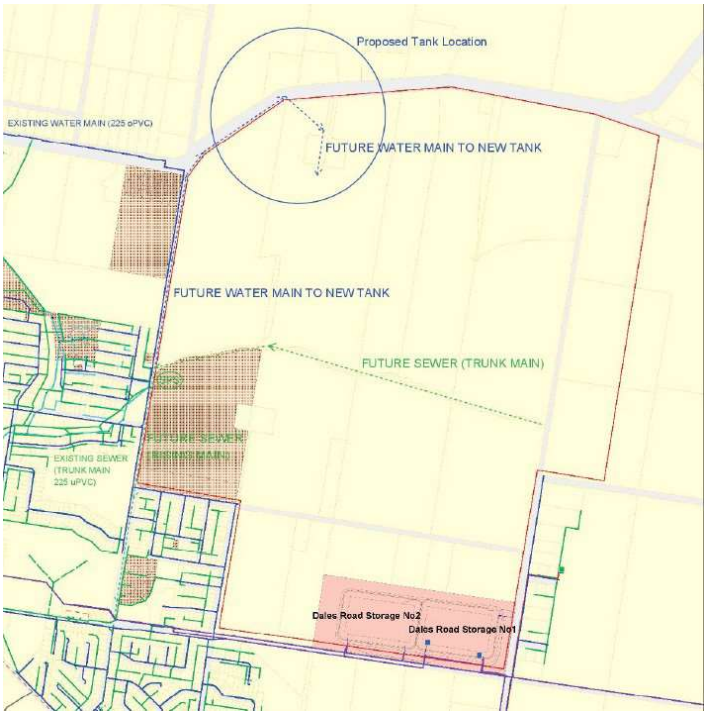
4.4.2 Proposed Potable Water Infrastructure

The existing pumps at the Tozer Road Water Pump Station will need to be upgraded in order to enable transfer water from the Warrnambool Water Treatment Plant via the new dedicated water main, water storage and network pumping station. This new storage and pump station is required to provide adequate water supply and pressure in times of peak demand and provide a secure water supply to the area in the Growth Corridor.

The key new water infrastructure required to service the area will include the following:

1. Upgrade to Tozer Road Water Pump Station (WPS).
2. New water storage and network pump station (highlighted in a blue circle “Proposed Tank Location”) on Figure 7.

Reticulated water supply will be designed and constructed in accordance with Wannon Water and Water Services Association of Australia standards and requirements and will be provided by the developer at the time of development. Potable water supply pipelines will be located within road reserves or easements vested to the responsible authority.



4.5 Roof Water Harvesting

Wannon Water is the responsible authority for roof water harvesting within the growth area. Roof water Harvesting forms a major part of Wannon Water's future water supply strategy. The main water supply for Warrnambool comes from the Gellibrand River system, approximately 100 kilometres away in the Otway Ranges. Roof water harvesting has been implemented throughout recent developments and has proved very successful in making use of locally available water sources and reducing the need to import water from the Gellibrand system.

The harvesting of roof water from all new dwellings (all buildings) is achieved by installing a dedicated pipe network in addition to the conventional stormwater system. This network collects water from roof catchments only (not storm water) and is designed to convey all flows up to 1 in 1 year rainfall events. Overflows from this system are directed to the conventional stormwater network. Buffer tanks are installed within the subdivision to allow 1 in 1 year events to be collected without installing large downstream trunk mains. The location of buffer tanks needs to be determined as part of the development planning process in consultation with Wannon Water to ensure all areas are adequately serviced.

4.5.1 Existing Roof Water Harvesting Infrastructure

Roof water harvesting has been successfully implemented in developments to the west and south of the growth corridor area. A 560mm trunk main runs along the Russell Creek corridor and a stub has been provided on the eastern side of Aberline Road, south of Rawlings Drive. This stub will provide the connection point for the growth area back into the existing network.

4.5.2 Proposed Roof Water Harvesting Infrastructure

The 560mm trunk main will need to be extended along the Russell Creek corridor through the growth area. The site generally slopes towards Russell Creek and as such the roof water harvesting network will follow the natural contours of the land towards the creek where it will be collected in the trunk main, refer to figure 8 *(Josh, Spiire have an updated catchment map – see Alan Davidson, send to Wannon Water for approval).*

As a part of early development planning the location and number of detention tanks needs to be determined with Wannon Water to ensure an optimal system design. An important consideration when installing roof water harvesting is ensuring that the system is safe from external contaminants. The system is generally installed within rear easements running parallel to sewer mains. Designers need to take this into consideration when determining system levels and manage the risk accordingly. Roof water harvesting reticulation within the development, will be required to be designed and constructed in accordance with Wannon Water requirements at the cost of the developer.

Please be in touch with any queries,

Kind regards,

[redacted]

Manager Asset Planning

[redacted]
wannonwater.com.au

I acknowledge Aboriginal and Torres Strait Islander people as the First Peoples and original custodians of Australia's lands and waters and honour their Elders past, present and emerging. I acknowledge and respect the continuing deep spiritual connection that Aboriginal and Torres Strait Islander people have to Country.

[redacted]

POWERCOR

[redacted]

From: [redacted]
Sent: Wednesday, 2 August 2017 11:41 AM
To: [redacted]
Subject: RE: Warrnambool Growth Area Servicing Advice

[redacted],

Our existing infrastructure would not be able to cope with this load. Some serious augmentation work would be required to supply a development of this size (irrelevant of location).
If there are 5000 lots (assuming all residential) and we allowed 4kVA per lot this would equate to 20MVA of Load. Powercor's network would need to be upgraded in order to support this. This development would equate to approximately 20 x 1000kVA kiosks to be installed along with a large High voltage and low voltage underground network.

We can do some detailed investigations to determine what needs to occur to supply this load growth however we would charge you a fee to cover our costs and have you sign a confidentiality agreement.
If you would like to proceed with a more detailed investigation please let me know.

Regards,

[redacted]
Team Leader Rural Projects Warrnambool/Horsham
Program Design and Delivery
Powercor Network Services | CitiPower Pty & Powercor Australia Ltd
7 Stong Street, Warrnambool, VIC 3280
[redacted]

From: ruralprojectswarrnambool
Sent: Tuesday, 1 August 2017 15:11
To: [redacted]
Subject: RE: Warrnambool Growth Area Servicing Advice

Hi [redacted],

I have received your application and would like to discuss with you.
Please give me a call when you have the opportunity.

Regards,

[redacted]
Team Leader Rural Projects Warrnambool/Horsham
Program Design and Delivery
Powercor Network Services | CitiPower Pty & Powercor Australia Ltd
7 Strong Street, Warrnambool, VIC 3280
[redacted]

From: Customer Requests Rural
Sent: Tuesday, 25 July 2017 16:32
To: ruralprojectswarrnambool
Subject: FW: Warrnambool Growth Area Servicing Advice

From: [redacted]
Sent: Tuesday, 25 July 2017 14:55
To: CRR
Subject: Warrnambool Growth Area Servicing Advice

Hi,

Please see attached letter requesting servicing advice for Warrnambool City Councils proposed new urban growth area.

If you have any questions or queries please give me a call on [redacted].

Thanks, [redacted].

[redacted]
Professional
Civil Engineering

spiire

Level 2 | 10 Moorabool Street Geelong VIC 3220
PO Box 4032 Geelong VIC 3220

[redacted]
spiire.com.au

NBN Co.

Aberline to Horne Growth Corridor

nbn-Confidential: Commercial | <BMSXXXXXX> | Rev 0.1 | <DD MMM YY>
Owner: Tailesh Patel

Strategic notes for Aberline to Horne Growth Corridor

Scope

Provide input identifying any key issues related to the initial planning assisting in creation of a Precinct Structure Plan.

Existing Network

This area is within the Non-Fixed Line footprint of the NBN network.
Currently NBN fixed wireless/Satellite network exists in the identified area. The area currently does not support FTTP Technology

Proposed network upgrades

Currently there are no plans to install or upgrade any infrastructure within this precinct. NBN do not foresee any constraints or issues with future standard infrastructure installation. There are no plans to extend the network inside precinct area unless there is any new development demands or any upgrade requests arises.
Overall, NBN Co consider it highly unlikely the need to implement any new key infrastructure.

Servicing the precinct area.

Any upgrade of the existing footprint encompassing Aberline to Horne Growth Corridor will connect to the NBN co-located FAN site in 116-117 Koroit St, Warrnambool. The FAN site currently has capacity to service the Precinct.
Servicing of the Precinct would be planned on a case-by-case application basis and driven primarily by customer-initiated demand. New infrastructure would be deployed utilising a mixture of existing Telstra duct and new NBN build also developer supplied & shared trenching arrangements. Any new build (multiple conduit) inside this precinct will be needed on Arterial or Major roads of the Precinct. It is envisioned that new pit & pipe infrastructure is required within the entire precinct.

Opportunities

NBN Co is open to working with the other Utility Service Providers (USPs), governments and other entities to cater for growth in the Precinct. NBN would also consider significant one-off investments if deemed necessary to accommodate future growth. Opportunities may arise to facilitate possible trench sharing opportunities either with Council/Road Authorities or other Utilities.
NBN are constrained by boundaries such as railways, freeways, and watercourses, so any additional crossings enable NBN to increase the robustness of the network.
NBN Co considers its best planning approach to cater for growth is a consistent staged rollout in a direction, e.g. out from the FAN site, and are interested in any future planning that takes place so that we can plan works on the network accordingly.

Some of the opportunities that would benefit NBN are:

- working with other USPs when working on additional crossings of freeways, waterways, and railways
- encouraging additional space in any road restructuring and widening to enable future telecommunications work.
- installing additional conduits and ducts for future cables where possible.

Risks-Issues

Commercial Assessments
Heritage - Environmental overlays

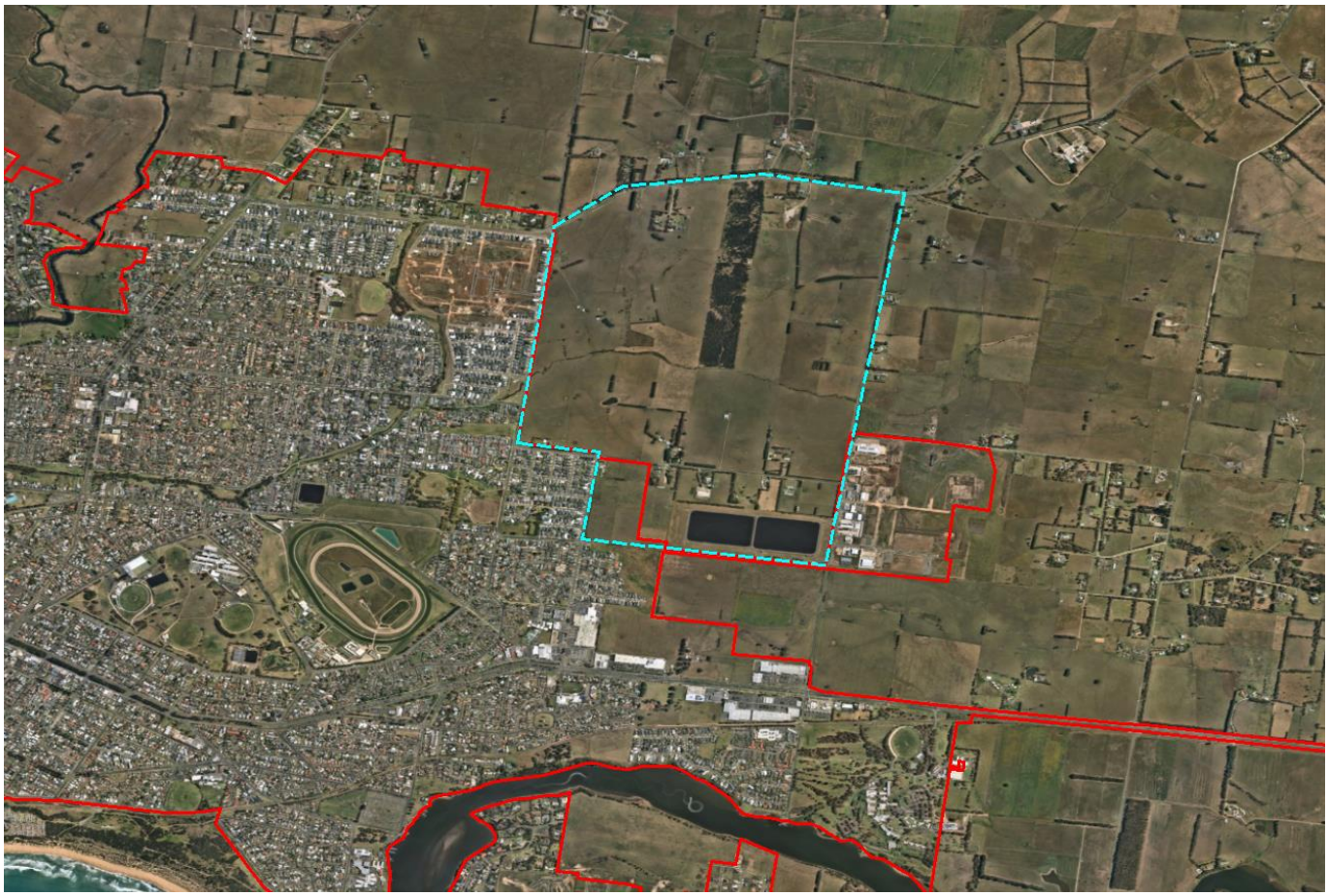


Figure 1. NBN Service area-rollout map showing Aberline to Horne Growth Corridor.

Figure 2. NBN Service Fixed Line map

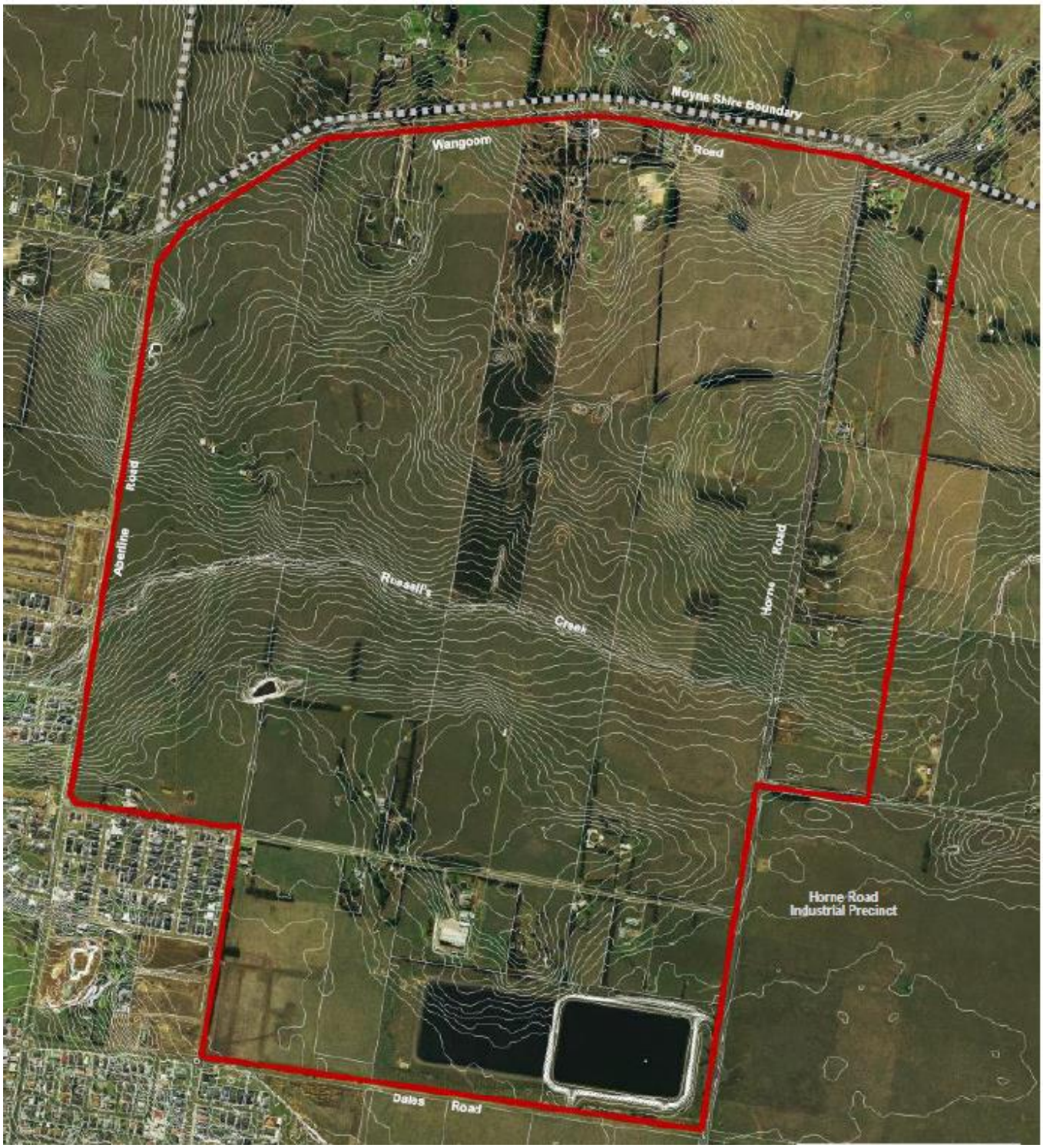


Figure 3. Site Context Plan

AUSNET (GAS)

[redacted]

From: [redacted]
Sent: Tuesday, 29 August 2017 11:27 AM
To: [redacted]
Cc: Gas New Estates
Subject: FW: Warrnambool Growth Area Servicing Advice
Attachments: R07 001 Servicing Advice Request Ausnet Services.pdf; 20170829_103440.pdf

Hi [redacted],

The proposed development is in close proximity of our gas main & supply should be available to the initial till the middle stages of the development.
After this, a further evaluation will have to be undertaken to consider other developments also happening in the area.

I have attached a plan showing exisitng gas main adjacent to your proposed development.

With regards to other details being sought in your letter, namely:

1. Capacity of existing infrastructure: We don't provide this information but if you can tell us your expected gas consumption we will advise you of what is required to meet this.
2. Preferred location of initial stages of development: We'll only provide you with locations of our gas mains & we leave it to the Developer to make their staging plan.
3. Infrastructure required to service development of the growth area: We will provide this once you have given us your staging/ development plans.
4. Approximate cost: We can provide an indicative cost once staging plan has been provided to us.

.

[redacted]
Project Manager/ Estimator

AusNet Services
308 Hyde Street
Yarraville Victoria 3013 Australia
[redacted]
www.ausnetservices.com.au

From: [redacted]
Sent: Wednesday, 23 August 2017 10:36 AM
To: [redacted]
Cc: [redacted]
Subject: RE: Warrnambool Growth Area Servicing Advice
Importance: High

Hi,

I was just wondering if anyone has looked at my previous request for information. As it currently stands the servicing report only has information about typical internal gas reticulation and the existing gas infrastructure identified in a dial before you dig request.

It would be beneficial to identify any external works that will need to be undertaken to service the area.

If this could be treated as urgent that would be great as the draft report is due early next week.

Look forward to hearing a response ASAP.

Thanks, [redacted].

[redacted]
Professional
Civil Engineering

spiire

Level 2 | 10 Moorabool Street Geelong VIC 3220
PO Box 4032 Geelong VIC 3220

[redacted]
spiire.com.au