

# LOTS 507, 526 AND 300 LANCASTER ROAD, MCKAIL

**Engineering Infrastructure Report** 

November 2024

CLIENT: VEGATE PTY LTD C/- ACUMEN

PROJECT: LOTS 507, 526 AND 300 LANCASTER ROAD, MCKAIL

TITLE: LOTS 507, 526 AND 300 LANCASTER ROAD, MCKAIL: ENGINEERING INFRASTRUCTURE REPORT

DOCUMENT REVIEW					
Revision	Date Issued	Written By	Reviewed By	Approved By	
1	31/01/2024	JBSMALL	JBSMALL	CCBITMEAD	
2	12/02/2024	JBSMALL	JBSMALL	CCBITMEAD	
3	03/04/2024	JBSMALL	JBSMALL	CCBITMEAD	
3	11/11/2024	JBSMALL	JBSMALL	CCBITMEAD	

Note:

This report is the property of TABEC Pty Ltd and is solely for the use of the Client identified on the cover sheet for the purpose of which it has been prepared. Any information, assumptions and conclusions contained herein are confidential and should not be relied upon or used for any other purpose.

Copying of this document without the permission of TABEC Pty Ltd or the Client is not permitted.



## TABLE OF CONTENTS

1	INTRODUCTION	
2	THE STUDY AREA	2
	2.1 Landform	3
	2.2 Groundwater	4
	2.3 Acid Sulphate Soils	5
3	SITEWORKS	5
4	EARTHWORKS	6
	4.1 Ground Conditions	6
	4.2 Site Preparation	6
5	ROADWORKS	7
6	STORMWATER DRAINAGE	9
7	WASTEWATER	11
8	WATER SUPPLY	12
9	POWER SUPPLY	13
10	COMMUNICATIONS	15
11	GAS RETICULATION	16
12	CONCLUSION	17
13	REFERENCES	18



#### **1** INTRODUCTION

This report has been prepared by TABEC to provide broad servicing and infrastructure advice for the proposed subdivision of Lots 507, 526 and 300, on Lancaster Road in McKail, which is a suburb to the north-west of Albany in southern Western Australia. The site is therefore located in the City of Albany, approximately 6km from the town centre. The review is based on the subdivision concept plan prepared by Dynamic Planning dated November 2024.

This report addresses the civil engineering aspects required to deliver the proposed residential subdivision and summarises the location and capacity of existing infrastructure in the area.

The investigation and preparation of the report includes the advice from various service authorities, other consultants and includes guidance based on industry experience. The information is subject to update as further detail is resolved during the design phases, though is current as of November 2024.



Figure 1 illustrates the location of the location of Lots 507, 526 and 300 on the aerial image.

Figure 1 – Site location and aerial image (Nearmap)

#### 2 THE STUDY AREA

The proposed development site, in total is 62.74ha across the three lots with most of the site located north of existing Lancaster Road. Only 5.24ha of the total area is south of Lancaster Road. Lot 507 is approximately 900m to the west of Albany Highway, along Gladville Road and is bounded by existing Morgan Road to the east. Lot 526 abuts existing undeveloped lots toward the west. There are 12 existing residential lots, generally about 4,000m2 in size along Lancaster Road which are excluded from this Local Structure Plan. There is also existing residential lots, as seen in Figure 1 over 1ha in size to the immediate north and east of the project area.



There is an existing road reserve with an unmade road providing access into Lot 526, between lots 7 and 8 along Lancaster Road.

Access into Lots 526 and 507, north of Lancaster Road is currently available from Gladville Road at the northern boundary, Morgan Road to the east and Lancaster Road to the south. Lot 300 directly fronts both Lancaster Road and Timewell Road.

The site has previously been largely cleared, however some vegetation remains in the south-western portion of Lot 507. There are also four small dams across the landholding. Similarly, Lot 300 has previously been largely cleared though some vegetation remains in pockets. There are only minor improvements on the site such as small sheds, fencing and other items. There are no houses currently on the site.

An extract from the current Subdivision Concept Plan is included in Figure 2. The current maximum estimated yield for the total development is up to approximately 570 lots, plus a POS, Primary School and District Oval. The lot mix includes R2.5 lots south of Lancaster Road and north of Lancaster Road zoning varying across R5 to R25. The majority of the yield is proposed as R15. It is noted the final lot yield is subject to progression of the planning and engineering design.



Figure 2 – Subdivision Concept Plan (Dynamic Planning)

#### 2.1 Landform

Contour info has been sourced at 1.0m internals across the development area. The existing surface elevations shown as contour banding included in Figure 3.



The image shows the development site as generally being split into two catchments, with the northern portion of the site grading toward the north-east. And the southern portion of the site grading toward the existing unmade road between lots on Lancaster Road, and the Lot 300 then falls further toward the south-west.

There is a high-point on the site along the western boundary of Lot 526 at approximate elevation of 69.0mAHD. The lowest point in the landholding north of Lancaster Road is approximately 53.0mAHD, near where the POS has been proposed on the Subdivision Concept Plan, which is logical for drainage purposes. At the other natural low point in the north-eastern corner of Lot 507, the ground levels are about 58.0mAHD. The low points are not trapped lows, and the terrain remains 'on-grade' at these locations, further falling beyond the LSP boundaries. While the grades across the central and northern portions of Lots 507 and 526 are quite gentle, the steeper sections, as seen in Figure 3, natural grades closer to Lancaster Road exceed 6%.

In Lot 300, south of Lancaster Road, levels fall from Timewell Road, toward the west at a grade of approximately 5% from a high of 66.0mAHD down to 42mAHD.



Figure 3 – Existing surface levels and contour banding (TABEC)

#### 2.2 Groundwater

Groundwater monitoring has been undertaken by Bio Diverse Solutions with ten monitoring bores measured over an ongoing period.

Notwithstanding the site is elevated, and had quite reasonable natural grades, the results of the groundwater monitoring detailed in the Local Water Management Strategy (LWMS) outline that groundwater is close to the surface across the whole site, though fluctuates with seasonal rainfall.



It is recognised this is perched groundwater, resulting from the geology and soil systems as the ground conditions include silty sand topsoil over sandy gravel and sandy clay.

Due to the shallow perched groundwater water table at the top of the sandy clay layer, permeability over the site is also quite restricted.

Ordinarily, fill would be required to raise levels above groundwater levels, and subsoil drains included to provide protection to future developments. Further detailed assessments are therefore required to confirm how clearances to perched water will be achieved and managed.

#### 2.3 Acid Sulphate Soils

The site is mapped as having no known risk of encountering potential acid sulphate soils. As indicated by Figure 4, higher risk areas are associated with lower-lying wetland types areas and mapping does not identify either Lots 507, 526 or 300.

Acid Sulfate Soils Dewatering Management Plans are therefore not anticipated.



Figure 4 – Acid sulfate soil risk map (MNG Access)

#### **3** SITEWORKS

To inform the site preparation requirements for intended urban development, Great Southern Geotechnics undertook a site investigation in July 2023, and assessment of the ground conditions by excavating a number of test pits.

It is reported that topsoil across the site varies in depth, and was recorded as being about 150mm depth on average, though varies between 80mm and 180mm. The topsoil will be stripped to remove any shallow organic and root matter from the site, as part of initial siteworks. Where necessary, areas will also be cleared of existing vegetation with grubbing out of the roots. Existing vegetation may be protected and retained where abutting existing residence at the site boundaries.



#### 4 EARTHWORKS

#### 4.1 Ground Conditions

Based on the geotechnical investigation, the ground conditions contain sand with silt, sandy gravels and sandy clays.

Generally, sandy silts occur near the surface up to about 400mm depth and are loose to medium dense. This overlies the sandy gravel which is generally medium dense generally up to about 700mm on average. Sandy clay is generally found beneath that depth.

Sandy-clay material is typically considered to be medium plasticity and contains cohesive soil properties. Given these ground conditions, further assessment of the California Bearing Ratios (CBR) at later design stage may be appropriate to ensure the pavements are adequately designed.

The sandy gravel material is expected to provide an adequate sub-base for road and services installation, potential weaker sandy-clay will have very low CBR value, and may be unsuitable for a road subgrade, service trench bedding or backfill material. In which case, adequate bedding and sub-base material would need to be included in the civil works construction.

A low CBR is not unexpected for clayey materials and options to increase the road subgrade strength will need to be considered. This may include importing gravels, over-excavating the clayey material and replacement with backfilling of structurally suitable sand for an improved compacted subbase, or increasing the pavement thickness to improve the strength over clay materials. Similarly, sand may need to be used for service trench backfilling to provide suitable compaction and pipe support, especially in trafficable locations.

Sandy clay generally has low permeability and infiltration will be restricted on this development site.

A concept earthworks design has been prepared, to address the proposed development form. Figure 5 illustrates the proposed depths of cut and fill.

#### 4.2 Site Preparation

Other than the R20 lots fronting the primary school, the majority of proposed lots are R10, with a strip of R5 lots along Lancaster Road. To deliver 500m2 to 1,000m2 lots, recontouring of the site will be necessary to terrace the site and support the intended development form. In addition, urban road reserves will require shaping with standard verge grading throughout.

Generally, earthworks in the northern portion of the site will be minimised, given the naturally occurring landform has more gentles slopes. As seen in Figure 5, the proposed extent cut and fill is limited to about 1.0m in this area. A larger earthworks depression will be constructed in the central POS, to create a collection point for a drainage function.

Earthworks for lots south of Lancaster Road will be limited, with no major recontouring required and the natural fall of the land to remain.

Subject to further refinement in the geotechnical advice in relation to site preparation and intended lot classifications (in accordance with AS 2870-2011), sand may be imported over the lots to create stable building pads. A refinement to the earthworks design will be necessary, however the broad terracing of the site and consequent catchments boundaries that have been proposed, will remain.



It is anticipated that a depth of 0.5 m of medium dense or denser sand will be required below the below subgrade level for the road network. A compaction level of not less than 8 blows per 300 mm Perth sand penetrometer (PSP) penetration at least to a depth of 0.5m below standard pavements is a general recommendation. Due to the known presence of sandy clay material onsite, any areas that show signs of excessive deformation during compaction should be compacted until deformation ceases or, alternatively, the poor-quality material should be excavated and replaced with suitable structural filling and compacted.



Figure 5 – Proposed Depths of Cut and Fill (TABEC)

## 5 ROADWORKS

Currently, access is available to the development site from Gladville Road to the north, and Morgan Road at the east which are both considered Access Roads. Lancaster Road at the south is a Local Distributor, which also provides access to Lot 300. Both Gladville Road and Lancaster Road connect directly to Albany Highway, and are unkerbed with gravel shoulders, and provide access to existing landowners in the surrounding area.

The Subdivision Concept Plan proposes two access points onto Gladville Road and two points of access onto Lancaster Road. A road connection is also proposed with Morgan Road. The proposed road network to service the subdivision is illustrated in Figure 2, which contains 15m wide road reserves throughout, except for the north-south road along the western boundary of the primary school, which is shown with a 20m wide reserve.



There are two 4-way intersections shown on the Concept Plan, and controls are proposed by PJA, who has completed a Traffic Impact Assessment (TIA) in support of the development. Notwithstanding, the longer sections of road may include traffic calming devices mid-block.

At the 4-way intersection located in the northern portion of the LSP area, a restricted 4-way intersection is proposed which may include stop or give way signage. This would be subject to Main Roads WA signage and line marking approval. At the more southern 4-way intersection, as indicated in Figure 6, a roundabout may be considered, based on a turning movement demand analysis. As also advised in the TIA, there is no public transport route proposed within the development area.



An extract from the TIA, showing the proposed intersection controls is shown below in Figure 6.

Figure 6 – Proposed Intersection Controls (PJA)

Based on traffic modelling, the intersection formats and existing roads can cater for the expected traffic flows generated by the proposed development. In addition, the existing intersections with Albany Highway are not required to be upgraded. This is aided by the Albany Ring Road project which is expected to reduce the number of RAVs and heavy vehicles on Lancaster Road and the surrounding road network.

While there are no footpaths in the surrounding streets, the TIA recommends that footpaths be initially constructed around the school site, and provision be made for future 1.5m minimum width footpaths throughout the development, with pram ramps at intersections. Footpaths would cater for pedestrian traffic only, not cyclists.

Roads will be paved with asphalt and kerbed in accordance with the City of Albany and Institute of Public Works Engineers Australasia specifications. Alternate treatments, particularly at entry statements may be included in the engineering design. Construction of the roads will follow logical sequencing of the staging,



to ensure lots are provided with a full road frontage, and temporary facilities such as turning bulbs and access tracks may be constructed, as required.

#### 6 STORMWATER DRAINAGE

Based on the concept earthworks plan which generally maintains the natural form of the site, the development area north of Lancaster Road will broadly be separated into two catchments, which are illustrated in Figure 7. Lot 300, south of Lancaster Road, will form a separate, smaller catchment.



Figure 7 – Stormwater Drainage Catchment Plan (TABEC)

Since urban style roads are proposed, which includes kerbing, pit and piped drainage systems are proposed to capture and convey stormwater to low-points within each catchment. By collecting and conveying stormwater, formalised drainage basins will be required as part of the civil works to receive and detain flows. These drainage facilities will be constructed to City of Albany engineering requirements who will ultimately take ownership of the assets.

As identified in the LWMS, the pit and pipe network installed within the road reserve will be sized to convey runoff up to the critical 10%AEP. The ultimate low points, however, will be sized to cater for storm events up to the peak 1%AEP utilizing overland flow paths.

Modelling has been undertaken and documented by Bio Diverse Solutions which identifies the intended development area and in addition, also accommodates catchment areas beyond the site boundary which have a current contributing flow toward the proposed low points. Noting however that any future



stormwater flows discharging into the development site, shall be attenuated to pre-development conditions.



Figure 8 – LWMS Stormwater Modelling (Bio Diverse Solutions)

As identified in the LWMS, there is opportunity in the POS to the south of Lancaster Road (in Lot 300), for establishment of a living stream, in keeping with Water Sensitive Urban Design (WSUD) outcomes and maintaining upper reaches of the existing creek line, at that location. Overland flows generated from within Lot 300, is proposed to continue to grade toward the low point at the western boundary of Lot 300, unattenuated, as currently occurs. This is relevant given the majority of the lot areas will remain grassed or vegetated, similar to current conditions.

Drainage basins are not proposed to include separate bio-retention basins, given the low permeability of the natural soils at McKail, and rather, attenuation of minor events will be achieved within the larger basin facility. This is intended to produce a lower maintenance outcome for the City of Albany. The drainage basins will attenuate flows, and volumes through solutions such as either weirs or a perforated orifice plate, which is further described in the LWMS. The basins will still be constructed to manage outflows to the pre-development level. Bio Diverse Solutions has completed modelling and sized the drainage basins at maximum 900mm depths. These are illustrated in Figure 8.

Overflows from the drainage basins will be directed to the existing roadside swale in Gladville Road and the existing creek line/proposed living stream south of Lancaster Road for the northern and southern catchments respectively.



Within the proposed residential lots, soakwells will be utilised where there is adequate separate to the peak water table, and where ground conditions allow suitable infiltration. Localised infiltration is therefore a likely constraint, and detailed assessments of inclusion of on-lot attenuation basins or potentially lot connection pits may be necessary.

Biodiverse Solutions has undertaken preliminary hydrological modelling and provide advice on the likely sizing of these stormwater drainage facilities. Further information, to accompany detailed design will be included in an Urban Water Management Plan in due course.

#### 7 WASTEWATER

Currently, there are no existing wastewater reticulation assets within the proposed development, or at the immediate site boundaries. There is however a gravity reticulation network approximately 360m to the east of Lot 507, servicing existing urban development fronting the southern side of Lancaster Road.

That area, as part of the Lancaster Green development falls into a sewer catchment, serviced by an existing Waste Water Pump Station (WWPS) located a further 500m to the east along Lancaster Road.

Existing residential properties along Gladville Road, Morgan Road and the existing properties at the southern boundary of Lot 526 are not serviced with a reticulated sewer connection and therefore have onsite treatment.

Within the proposed development site, there is an existing DN375mm Water Corporation pressure main, conveying treated wastewater along the eastern boundary of Lot 507, which is identified as the Timewell Road pressure main. This pressure main will need to be accommodated and protected within the subdivision plan and therefore easements will be necessary where it is not located in proposed road reserves.

Water Corporation has prepared scheme planning to demonstrate servicing strategies over the development site. An extract from the planning is demonstrated in Figure 9. Broadly following the natural catchments over the site, a Type 10 WWPS is proposed in the north-east of Lot 507, identified as Willyung PS C. An additional pump station is proposed in the south-west of Lot 300 to service the southern catchments of Lots 507, 526 and Lot 300, which is Type 40, identified as Willyung PS A.

The scheme planning also shows the northern portion of Lot 526 as being serviced by a third WWPS, proposed to be located at the northern boundary of Lot 124 (Willyung PS B). Based on the Subdivision Concept Plan, the full extent of Lot 526 is however able to be graded toward the north-east of Lot 507 and therefore the subdivision is not reliant on a third WWPS.

Currently, the scheme planning shows an ultimate scenario where the northern Willyung PS C, pumps to the central highpoint on Lot 526, before gravity feeding down to the Willyung PS A. Wastewater flows are then transferred to the Waste Water Treatment Plan on Timewell Road.

Based on intended development staging, if subdivision works commence along Gladville Road, a solution where flows are redirected to avoid Willyung PS A should be sought. In this case, a pressure main may be constructed from the north-east of Lot 507, south, to Lancaster Road where the high point in elevation of approximately 68mAHD. A gravity sewer could then be constructed to the WWTP on Timewell Road.

In the future, Willyung PS A, could be delivered independently to service southern catchment of the development plan, and would pump to a discharge location on Timewell Road.



WWPS sites will need to be accommodated in the subdivision plan, which will require vehicle access. The WWPS will typically carry a 30m buffer from the centre of the wet-well to residential lot boundaries. Given the land immediately south of Lot 300 is currently owned by Water Corporation, it is proposed that Willyung PS A be relocated to Lot 301 to avoid encumbering Lot 300 with various easements.

Water Corporation should be consulted on the proposed update to scheme planning to suit the ultimate development intentions.

Given the sewer strategy intends to deliver ultimate pump stations which conform to the scheme planning, it is intended that an application be made to Water Corporation, for inclusion in the 5-year capital works program for development reimbursements.

As development occurs, reticulated gravity mains will be constructed to provide lot connections throughout and the developer will be responsible for funding all construction works. Standard Water Corporation headworks contributions per lot will also apply.



Figure 9 – Waste Water Planning (Water Corporation)

## 8 WATER SUPPLY

Currently, there are existing Water Corporation assets at the boundaries of the development sites. This includes a DN100mm main in the northern verge of Gladville Road, a small DN589mm main in the southern verge of Morgan Road and a DN200mm main in the southern verge of Lancaster Road. The water main in Lancaster Road converts to a DN100mm main, west of unmade road at the location of existing Lot 7. There is also an existing DN100mm main in the western verge of Timewell Road.

The existing water main in Gladville Road does not extend along the full boundary of Lot 507, as existing lots west of Imperial Street are serviced from a separate water main, further north in Federal Street.





Figure 10 – Existing Water Supply Services (Water Corporation)

The DN200mm main in Lancaster Road was constructed in 1976. Previous advice from Water Corporation is that an in order to service the development site, the water main in Lancaster Road would require an upgrade to a DN250mm, from the site boundary back to Albany Highway which is approximately 1.7km. However, that previous advice was based on a higher development yield.

In view of the updated development plan, and reduced yields, updated planning advice has been requested. This should also consider the proposed staging, as it is likely development will commence at the northern boundary of the site, with access from Gladville Road. It would be appropriate to consider the likely development timing in relation to offsite water main upgrades and extensions.

Water mains within the proposed subdivision are to be designed and constructed according to the Water Corporation specifications with installation funded by the developer based on the staged delivery of the subdivision. Standard infrastructure contributions will also be included.

Figure 10 shows the location of the existing water mains in relation to the development site.

#### 9 POWER SUPPLY

Currently, there are two existing overhead Western Power feeders aligned north-south across Lot 507.

One is aligned on the eastern boundary, shown through the future District Oval, proposed road reserve and future Lots in the south-eastern corner. This line has a single phase HV tee-off, that runs east along Morgan Road and services a single-phase transformer and various houses. There are also three underground cables along the eastern boundary. These below-ground cables could remain in place, subject to City of Albany approval in the District Open Space through a 4m wide PAW to contain existing HV equipment to avoid relocation from future lots and District Oval.



The second line is shown through the future primary school, with an extension from Imperial Road through to Timewell Road. As this is shown through a future primary school, it will require relocation to align with new internal roads through the development. The existing overhead lines in Gladville Road would also be removed west of the proposed primary school.

Both existing overhead lines are arterial HV feeders, providing power from the existing zone substation, located on Federal Street, into the Albany townsite.

It is anticipated that two new underground power cables would be laid through initial stages of subdivision, before the existing overheads are removed.

Regarding the eastern overhead line and existing connection to Morgan Road, it would be advantageous to locate a new transformer and switchgear in the south-east corner of the District Open Space, to reconnect the Morgan HV supply. As part of interfacing with existing assets at Morgan Road, a new stay-pole in the front of existing Lot 38 will be required.

On Lancaster Road, there is a single-phase overhead spur line in the northern verge. Given the proposed lots fronting Lancaster Road are considered rural-residential, the developer is not compelled to remove the existing overheads because the frontages are greater than 30m.



Figure 11 – Western Power Network Capacity Mapping Tool (Western Power)

A SWGR will also be required near the southern boundary of the project to supply single phase power back to the existing single phase.

To sufficiently service the proposed development, including the primary school site, HV power assets will require up to 4 transforms and 3 switchgears will be collated where appropriate. The total load expected to service the development will be in the order of 1.9MVA.



The Western Power network capacity mapping tool, as indicated in Figure 11, indicates a forecast available capacity of 5-10 MVA. Therefore, there are no capacity issues envisaged given, particularly given the proximity to the zone substation, on Federal Street.

Soil testing and Earth Potential Rise studies may be required to ensure risks are adequately mitigated. This would assess the existing and proposed HV equipment and consider all surrounding assets.

The subdivision will be serviced with underground power supplies to each lot, and street lighting to meet City of Albany's requirements will also be provided. Given the soil conditions, it is expected that sand bedding and backfill will be required for service trenches.

Lots over 1,000m2 are not covered by the HV pool, meaning the developer will ordinarily not be subject to the kVA charge and not be eligible for refund of the HV equipment installed.

To mitigate current Western Power time frames, it is recommended that a Design Information Package request be submitted to Western Power as early as possible, as this may take up to 12 months to receive.

#### **10 COMMUNICATIONS**

The proposed subdivision falls within NBN's rollout footprint. It is therefore expected NBN Co will extend its fixed line footprint to cover the proposed development providing Fibre to the Premises (FTTP) infrastructure. This will be resolved when a Developer Agreement application is submitted to NBN Co for detailed assessment.

In any case, the developer will be responsible for the installation of a fibre-ready pit and pipe system which is suitable and compliant with the NBN Co policy and design requirements.



Figure 12 – NBN Rollout Map for Denmark (NBN website)

As shown in Figure 12 above, the NBN rollout has substantially commenced in McKail.



NBN Co levy two infrastructure charges, a Deployment Charge of \$600/dwelling for single residential services and often, a backhaul charge where there is insufficient infrastructure. Backhaul charges are not anticipated for the subdivision, given the proximity of existing network.

As part of the developer agreement conditions, NBN will take over ownership of the assets upon completion and ensure that fibre is ready 3 months prior to the first occupancy for a new development.

#### **11 GAS RETICULATION**

There are existing medium pressure gas mains in the vicinity of the site, as illustrated in Figure 13, approximately 350m east of the development boundary in Lancaster Road reserve. There are no existing gas mains in Morgan Road, or at the northern boundary of the site, in Gladville Road.

There is therefore a mix with some, though not all existing residents surrounding the site having access to reticulated gas supplies.



Figure 13 – Albany LPG Gas Distribution (ATCO)

If reticulated gas supplies to each lot are intended to be delivered by the developer, gas reticulation would be installed during subdivision works, with gas mains installed during the common trenching. This ordinarily incurs no cost to the developer, however off-site extensions may be required to connect to existing assets.



If staging were to commence at the northern boundary of the development along Gladville Road, a significant offsite extension would be necessary to provide reticulated gas supplies. Exploring the opportunity with ATCO for a cost share contribution may be considered. If staging commenced near the southern portions of the site, a connection to existing networks would be more readily achieved.

## 12 CONCLUSION

Based on the above review, there do not appear to be engineering related constraints which prevent development of the Lots 507, 526 and 300 Lancaster Road, McKail. There are servicing strategies over the site which support proposed urban development however, these will need to be updated to suit confirmed staging, and negotiated solutions confirmed which of the servicing Authorities.

Further refinement of the earthworks and ground preparation requirements, together with the drainage strategies will be a key consideration, given the clayey soils and low permeability onsite.

Following the submission of the Local Structure Plan, subdivision approval will be sought from the Western Australian Planning Commission. Formal detailed engineering design and approvals will be completed in order to satisfy the subdivision conditions that are anticipated to be issued.

As this report is based on the preliminary servicing advice and investigations completed to date, it is recommended that each Authority be kept informed as the planning progresses and concept engineering designs are refined. Communicating the proposed timeframes for the staged development is also important to inform and coordinate designs and approvals from all relevant Authorities.



#### **13 REFERENCES**

- ATCO Gas, Albany LPG Gas Distribution. January 2024
- Dynamic Planning, Subdivision Concept Plan, Lots 1-13, 507, 526 and 300 Lancaster Road, McKAil. November 2024
- Biodiverse Solutions, Local Water Management Strategy, Version 2. October 2024
- Great Southern Geotechnics. Site Investigation Report 8146/1. July 2023
- MNG Access, online map viewer. January 2024
- NBN Rollout Map, online Map Viewer. January 2024
- TABEC, Lots 507, 526 and 300, Lancaster Road, McKail. Existing Surface Elevation. 2532-SK-004 Revision D. November 2024
- TABEC, Lots 507, 526 and 300, Lancaster Road, McKail. Stormwater Drainage Catchments. 2532-SK-006 Revision A. June 2024
- TABEC, Lots 507, 526 and 300, Lancaster Road, McKail. Cut to Fill Depth Range. 2532-SK-007 Revision A. June 2024
- TABEC, Lots 507, 526 and 300, Lancaster Road, McKail. Earthworks Strategy. 2532-SK-008 Revision A. June 2024
- PJA, Lots 507, 526 and 300 Lancaster Road, McKail. Traffic Impact Assessment. Rev E. August 2024
- UPD, McKail Servicing Advice. December 2023
- WAPC, Liveable Neighbourhoods, Draft. 2015
- Water Corporation, ESInet mapping. January 2024
- Water Corporation, planning and infrastructure mapping. May 2023
- Western Power, Network Capacity Mapping Tool. January 2024