KELLEY COVEY
GROUP PTY LTD
Consulting Engineers

DETAILED SITE SERVICING STRATEGY

FOR

PROPOSED COMMERCIAL/INDUSTRIAL DEVELOPMENT

AT

LOTS 2 & 3 IN DP1234850, 55 DAMPIER STREET, TAMINDA NSW

FOR

WSP AUSTRALIA PTY LTD

PROJECT NO: T196893

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1. Introduction

This Site Servicing Strategy Report has been prepared by Kelley Covey Group for WSP Australia Pty Ltd to accompany a planning proposal and future development application for the rezoning of Lots 2 & 3 in DP1234850, 21 Wallamore Road and 55 Dampier Street, Taminda. It is proposed to re-zone the site to a mix of IN1 – General Industrial and B5 – Business Development zones to facilitate development of a commercial/industrial business park at the site. The site is currently zoned RU4 – Primary Production Small Lots as per the *Tamworth Regional Local Environment Plan, 2010 (TRLEP).*

This report has been prepared to consolidate and update previous servicing strategy reports, plans and documents prepared by KCG for the site that have been prepared in support of the *Taminda Employment Lands Planning Proposal* originally submitted to Tamworth Regional Council in 2019. It is our understanding that this report is intended to accompany a renewed Planning Proposal application for the same site and generally same development to be submitted to the Department of Planning, Industry and Environment (DPIE).

This report, along with all related reports, plans and strategies, has been prepared in accordance with *Schedule 1 of the Environmental Planning and Assessment Regulation, 2000*, the *Tamworth Regional Development Control Plan, 2010 (TRDCP)* and the *Tamworth Regional Engineering Minimum Standards for Subdivisions and Developments*. Within this report, references to "the site" means Lot 2 & 3 in DP1234850 to which this servicing strategy relates, "the parcel" refers to the Consolidated Chan Abbey Holdings Pty Ltd Lands (described herein) and "Council" refers to Tamworth Regional Council.

2. Description of the Property

2.1 Site Details

- Property Description: Lot 2 & 3 in DP 1234850
  Locality of Taminda
  Parish of Murroon
  County of Parry
- Property Address: 21 Wallamore Road and 55 Dampier Street, Taminda NSW.
- Registered Owner: Chan Abbey Holdings
- Applicant: WSP Australia Pty Ltd
- Local Authority: Tamworth Regional Council
- Total Site Area: 11.34ha
- Zoning: RU4 – Primary Production Small Lots, Minimum Lot Size: 40ha;

2.2 Property Description

The subject property is located on the north-eastern fringe of the Taminda industrial area, approximately 3km west of the Tamworth city centre. The site consists of two lots; Lot 2 on the western side has road frontage to Wallamore Road, whilst Lot 3 on the eastern side has frontage to Dampier Street. The lots are bisected adjacent to their northern boundary by a 40m road reserve for future road construction. The lots are part of a larger parcel of land, known as the Consolidated Chan Abbey Holdings Lands Pty Ltd (the parcel), that also includes Lot 1 in DP 1234850 and Lot 60 in DP1227482, also known as Somerset Farm. For the purpose of this servicing strategy, only Lots 2 & 3 are to be considered, with a total developable area of 8.98ha.

Along the southern boundary of the site are existing small lot light-industrial developments, to the east is the recently expanded Tamworth Lawn Cemetery and to the north and west of the site the land is used for agriculture, in particular irrigated feed crops and some stock grazing.

The site is located within the Wallamore Anabranch flood plain of the Peel River system, and is within the Flood Planning Area as defined in the TRLEP. The site is considered reasonably flat, with a slight grade north towards the Peel River. The natural topography ranges from RL372 to RL373.

The site is virtually undeveloped, with a history of mixed-use farming including crop production and stock grazing. In the south-east corner of the site, an area of approximately 6,500m^2 is currently being used for the storage of miscellaneous items including shipping containers, small transportable buildings and temporary ablutions blocks.

An existing 6m wide easement for the drainage of sewer traverses the site diagonally from the south eastern corner to the north-western corner. The easement contains a 900mm diameter trunk sewer main that conveys flows from a large catchment including South Tamworth, West Tamworth and Taminda and eventually discharges to the Westdale Wastewater Treatment Plant located approximately 2.7km to the west.

There is also a 5m wide easement to drain water that traverses the site north to south along the eastern boundary of Lot 2. A 450mm diameter RCP discharges via a headwall to a channel formed within the easement. A 150mm diameter sewer line is also constructed within this easement, and discharges into the 900mm trunk main.

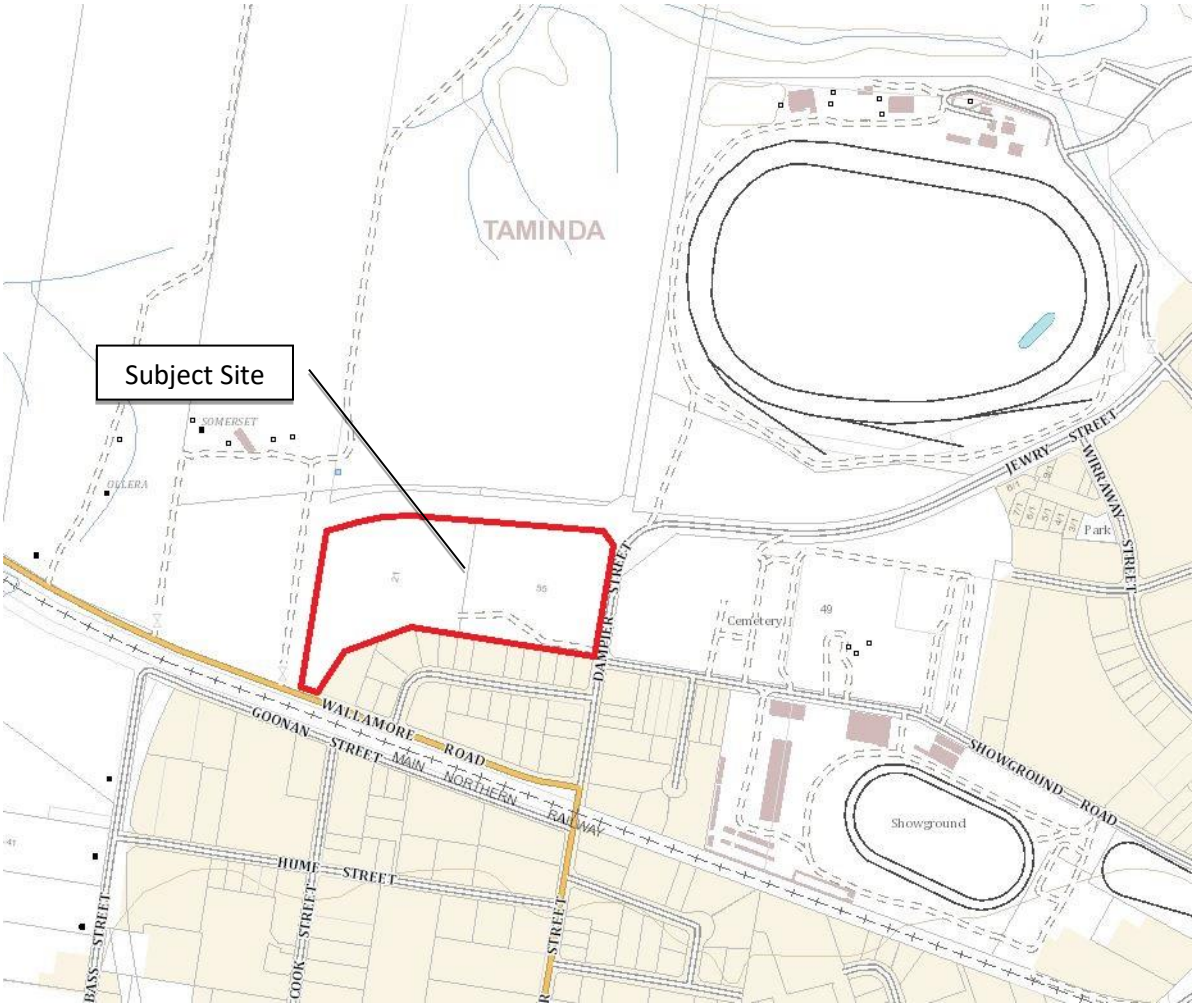


Plate 1. Site Location Plan (*Source: SIX Maps, retrieved 12 August 2019*)

Plate 2. Aerial Photo of Site (*Source: NearMaps, retrieved 11 January 2022*)

3 Existing Services and Utilities

The site benefits from a water service connection from the existing DN100 DICL main located on the northern side of the Wallamore Road reserve. There is sewer infrastructure available to provide connection to the site however there is currently no sewer connection servicing the site.

The site drains as sheet flow north to the Peel River, and the 450mm diameter RCP and headwall located in the drainage easement at the southern boundary of the site discharges runoff from the upstream developed area to the south of the site in Kingsford Smith Street. A stormwater pipe also discharges at the south-eastern boundary of the site in Dampier Street to existing open channels located within the road reserve. There is minimal stormwater drainage infrastructure in Wallamore Road, and flows from the road reserve discharge through roughly formed open swales to a natural watercourse and causeway west of the site, which forms part of the Timbumburi Creek floodplain.

There is overhead electrical power in both Wallamore Road and Dampier Street as well as underground telecommunications and natural gas connections. The site is within the NBN-ready area of Tamworth.

4 Proposed Development

It is proposed to re-zone part of the site from RU4 – Primary Production Small Lots to a mix of IN1 – General Industrial and B5 – Business Development, with the long term objective to develop part of the site as a mixed use commercial/industrial business park consisting of up to 41 Business Development sites and 14 General Industrial sites, as well as internal roads, car parking and landscaped areas. The potential site layout consists of a main site access road intersecting with Dampier Street and a number of internal roads connecting to this main access as required. Connectivity to the proposed Jewry Street ring road connection will not be provided and is not deemed

necessary for the function of the proposed development, as per advice received from Tamworth Regional Council.

The industrial sites will generally occupy the southern half of the site, with the business development sites to occupy the remaining northern half of the site approximately east of the existing sewer easement. The final layout for the proposed development is still to be finalised, and the mixture and quantum of business types that may occupy the site is presently at a very preliminary stage, however the following areas are considered a reasonable estimation of the proposed land use for the site (as taken from the TRLEP permitted uses for land use tables);

- B5 – Business Development; 1.55ha Gross Floor Area (GFA). Potential business types could include, but not to be limited to, the following;

  Centre-based child care facilities; Garden centres; Hardware and building supplies; Landscaping material supplies; Light industries; Liquid fuel depots; Oyster aquaculture; Passenger transport facilities; Respite day care centres; Self-storage units; Shop top housing; Specialised retail premises; Tank-based aquaculture; Warehouse or distribution centres;

- IN1 – General Industrial; 3.55ha Gross Floor Area (GFA). Potential business types could include, but not to be limited to, the following;

  *Depots; Freight transport facilities; Garden centres; General industries (**general industry** means a building or place (other than a heavy industry or light industry) that is used to carry out an industrial activity); Hardware and building supplies; Industrial training facilities; Landscaping material supplies; Light industries; Liquid fuel depots; Neighbourhood shops; Oyster aquaculture; Places of public worship; Plant nurseries; Rural supplies; Shop top housing; Take away food and drink premises; Tank-based aquaculture; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres;*

Despite the flexibility in land uses permissible under the TRLEP, our understanding is that the development is envisaged to include low-impact, low scale commercial and light industrial/storage businesses.

The legal framework defining the development and individual sites (ie. Torrens Title lots, Strata Title or Community Title) is yet to be determined and will be decided following rezoning and consultation between the owners and potential purchasers as part of future development applications for the site. The proposed development can and is expected to operate independently without external intervention or management, particularly by Council, and for the purposes of this strategy the legal framework of the development is not considered critical.

5 Site Servicing Strategies

This report is limited to the consideration of servicing of the site with water and sewer utilities only. Strategies for stormwater drainage, electrical and telecommunications utilities, road and pedestrian access and traffic management have been prepared by others and are not included in this report.

Each of the utilities designed (water and sewer) will comply with the design requirements of Council's *Engineering Guidelines for Subdivisions and Developments* (the Guidelines) and *the Tamworth Regional Development Control Plan, 2010 (DCP),* and as such can be relied upon for assessment and on-going detailed design development as part of future planning applications.

6 Background and Previous Applications, Investigations and Strategies

The *Taminda Employment Lands Planning Proposal* was lodged with Tamworth Regional Council in 2019. The planning proposal requested the amendment of the Tamworth Local Environment Plan, 2010 (TRLEP 2010) Land Zoning Map to include 2.34ha of the site in the B5 – Business Development zone and 6.66ha in the IN1 – General Industrial zone. The balance of the lots and the adjacent road reserve were to remain in the existing RU4 – Primary Production Zone.

As part of the Planning Proposal application, KCG were engaged to prepare a servicing strategy for water and sewer connections demonstrating that the site and any potential future development could be adequately serviced. Preparation of the strategy involved consultation with Council, particularly

with regard to sewer servicing, and involved the consideration of several options for servicing of the site.

The servicing strategy (Ref: 52286rpt Issue B, August 2019, see Appendix C) concluded that;

> *"A preliminary feasibility analysis to determine the potential for sewer and water serviceability of the site, in the context of the proposed lot layout, has been undertaken to ensure the development can be adequately serviced by each. The preliminary analysis has been undertaken in accordance with the Tamworth Regional Council Engineering Guidelines for Subdivisions and Developments, other applicable standards and design specifications and in consultation with Council officers. The detailed design of each of the services will be completed as part of future development applications.*
>
> *In our opinion, the preliminary investigation of each of the abovementioned services and utilities indicates that the satisfactory provision of suitable sewer and water infrastructure to the site and proposed development can be achieved, however the technical and financial feasibility of any proposed servicing design, particularly with respect to sewer, will need to be carefully considered as part of further detailed investigations. Additionally, detailed analysis of the existing supply networks for water and sewer, as well as adoption of best-practice demand figures for both water and sewer utilities will be required to determine the requirements for adequate servicing."*

At its Ordinary Meeting of 22 October 2019, Council resolved to forward the *Taminda Employment Lands Planning Proposal* to DPIE requesting a Gateway Determination to proceed to public exhibition (Min No. 373/19). The Gateway Determination was received on 12 December 2019, advising Council that the proposal could commence public exhibition once certain conditions had been met, such as a requirement for "*nomination of the sewer servicing approach in relation to the Planning Proposal*".

Following extensive consultation with Council, a supplementary Sewer Servicing Strategy was prepared by KCG (Ref: 52749rpt Rev D, July 2020, See Appendix D) to satisfy the Gateway Determination conditions by nominating a preferred sewer servicing option. The strategy concluded the following;

> *"A feasibility analysis to determine the potential for sewer serviceability of the site has been prepared based on a direction from Tamworth Regional Council that the site must ultimately be serviced by a conventional gravity fed system discharging to the existing sewer network.*
>
> *Site investigations and preliminary design work revealed opportunities and constraints within the site and the existing sewer network, and as the project is currently at re-zoning stage there is insufficient data to enable a detailed design to be completed. However, a gravity based sewer network discharging to the existing DN900 main, facilitated by filling the site to provide the minimum cover and depth of grade required, is confirmed as feasible based on the preliminary design work completed. In the short-term, and until the Plain Street Pump Station upgrade is complete, the network will discharge to a temporary pump station and off-line storage system that will have a timed discharge to the existing DN900. In the long-term, the gravity based network will discharge to each of the three existing manholes on the DN900.*
>
> *The investigative work undertaken in this servicing strategy has confirmed three important servicing requirements;*
>
> 1. *The site can be serviced by an ultimately gravity fed network provided the site is filled to the required level;*
> 2. *The gravity based network can be connected in the short-term to a temporary pump station and off-line storage system;*
> 3. *Vehicular access and stormwater drainage requirements are able to be satisfactorily achieved with a filled site strategy.*
>
> *In our opinion, a sewer servicing strategy comprising an ultimately gravity fed network discharging to the existing DN900 main, complemented by a short-term pump station and off-line delayed discharge storage system, is achievable in both the short-term and long-term*

situations, and does not prevent the satisfactory design of vehicular access or stormwater drainage networks to the site."

It is important to note that the direction of the strategy and the selection of the preferred servicing methodology was based on a direction from Council that only a conventional gravity fed system discharging to the existing network would be ***the only*** acceptable long-term solution to servicing the site. There are, in our opinion, other servicing options available, which will be discussed further in this report (See Section 10).

A preliminary sewer network design was prepared to accompany the strategy, along with a cut/fill plan, earthworks quantity estimates and provisional access arrangements. These are included in Appendix A for reference.

With all conditions being met, public exhibition of the *Taminda Employment Lands Planning Proposal* occurred between August and September of 2020. Council received several submissions during the period from both government Agencies and the general public, principally in relation to flooding and the potential impact on flood behaviour as a result of the site filling required to provide flood immunity and adequate sewer servicing of the site.

In March 2021 a meeting between Council, the applicant and their consultants (including KCG) was held in an effort to resolve the issues raised in the submissions and to enable the Gateway determination to be finalised. As part of that process, and in response to a request from Council, KCG prepared drawings including site sections demonstrating the bulk and scale of the development in the context of the surrounding environment. The site sections included potential building locations and heights, and landscaping options to mitigate the visual impact of filling the site. These sections are included in Appendix B. It is noted that following the presentation of the site section drawings there were no objections or contentions from Council that the proposed design and scale of fill required would have an unacceptable impact.

Further negotiation between Council and the applicant continued throughout 2021, until a report was tabled at the Ordinary Council meeting of 10 August recommending that Council "*determine not to make the Local Environmental Plan pursuant to Section 3.36 of the Environmental Planning and Assessment Act 1979",* effectively rejecting the planning proposal application. The report cited unresolved flood mitigation issues, specifically the registration of an easement connecting the subject land to a proposed flood mitigation channel, as the main reason to reject the proposal.

In November 2021 KCG were requested by WSM Australia to prepare updated servicing strategies for the site to accompany a renewed Planning Proposal application. The proposal has not changed in any significant way that would affect the previous servicing strategy recommendations, and therefore they are considered relevant and applicable.

7 Stakeholder Liaison

As detailed above, extensive consultation with Tamworth Regional Council has been undertaken since 2019, including formal and informal meetings, e-mail and telephone correspondence, and submission/review of potential servicing solutions. The following is a brief summary of the outcome of that liaison as of January 2022;

- The site is located within the Peel River Floodplain, and local topography and existing infrastructure locations and depths necessitate relatively extensive filling of the site in order to adopt a traditional gravity sewer system to discharge to the existing network.
- An existing 900mm sewer trunk main that traverses the site has capacity issues during wet weather and is unable to receive any additional flows during storm events;
- The existing 900mm trunk main is relatively shallow, and is unable to service the footprint of the proposed development with current topography and site levels;
- The planned upgrade of the existing Plain Street Pump Station (budget allocation in 2021/2022) will alleviate the capacity issues in the existing 900mm trunk main. The upgrade will likely consist of a duplicated pump station and rising main to be activated during wet weather to provide

additional capacity during storm events. This type of upgrade will potentially benefit the development site, as capacity constraints are only relevant during wet weather;

- As part of discussions with Council throughout 2019/20, we were directed that that the only sewer servicing solution deemed acceptable to Council is for the site to be designed to ultimately allow for gravity feed to the existing 900mm trunk main, with a short-term pumping station and timed-discharge system to the existing sewer main provided until the Plain Street Pump Station upgrade is complete and the wet weather capacity constraint is removed.
- The upgrade of the Plain Street Pump Station has been allocated a budget of approximately $7,500,000 in the 2021/22 Annual Operational Plan, and it is the intention of Council to complete the design and construction of the upgrade in this financial year.
- A conventional on site and site-specific pump station providing the long-term servicing solution for the site will not be permitted by Council, nor will a low-pressure sewer system.
- Council will not take ownership or operational control of a temporary proposed pump station system, and as such any pump station infrastructure is to be managed and maintained by future private entities.
- Servicing of the site with reticulated water is considered relatively straight-forward and is able to be achieved with conventional extensions and connections to the existing reticulated water network.
- The extension of Jewry Street to Wallamore Road around the northern boundary of the site is currently being designed as part of the Tamworth Global Gateway Park and Intermodal Hub projects. Preliminary designs provided by Council in 2019 indicated the formation of the road extension to be similar in height and geometry to that of the Taminda Levee, consisting of a four-lane road constructed on top of a flood mitigation levee, with levels at the top of the kerb generally equal to the 100-year ARI flood event.

  However, 50% design drawings provided by Council in late 2021 indicate a change in design philosophy, with the road to be built on-grade with levels matching that of the existing topography – indicating an acceptance that the road will be subject to flood inundation in moderate flood events.
- The development is considered independent of the Jewry Street ring road and the design, construction and operation of the road does not impact the viability or serviceability of the development site.

8 Consideration of Alternative Solutions

8.1 Sewer

In 2019/20 the only sewer servicing option Council deemed as an acceptable solution was a conventional gravity fed system discharging to the existing sewer main in the long-term, whilst in the short-term discharging to a pump station with additional delayed detention storage capacity, which is to be operational until the Plain Street Pump Station upgrade is complete and the wet weather capacity constraint is removed.

Previous studies completed by KCG (See Appendix C&D) identified other potential solutions, including

1. A permanent pump station and rising main discharging effluent from the development footprint to the existing 900mm trunk main;
2. A low-pressure sewer system similar to the solution approved, designed and successfully constructed and operated at the nearby Federation Park Industrial Area development.

Each of these solutions require the completion of the Plain Street Pump Station upgrade to be completed to alleviate capacity constraints in the receiving line, and may also still require some site filling to comply with flood planning requirements – although the extent of site filling will likely be considerably less than that required to achieve a gravity sewer solution at the site.

In our opinion, based on our expertise in wastewater design and experience with similar development types;

> ***the adoption of a sewer pump system either with a single, centralised pump station or a network of smaller, individual pump stations that make up a low-pressure sewer system, would be preferable in terms of capital cost and improvements in visual amenity compared to the considerable amount of site filling required to achieve a gravity fed system***.

Each of these systems can be designed, constructed and operated as private systems/schemes without any capital or operational commitment or burden placed on Council or other water authorities. Completion of the Plain Street Pump Station upgrade further increases the viability of each of these servicing methods.

8.2. Water Reticulation

The servicing of the site with water reticulation is considered relatively straight-forward and achievable using conventional connections to the existing reticulated water network. The evaluation of alternative solutions for water servicing is therefore not considered necessary.

9 TRC 2021/2022 Annual Operational Plan – Plain Street Pump Station

A significant component of the preferred sewer servicing strategy (as nominated by Council) is for a temporary pump station with off-line storage to be constructed until such time as the Plain Street Pump Station upgrade is complete, removing the capacity constraints in the existing 900mm trunk main during wet weather.

The 2021/2022 Annual Operational Plan contains a list of Capital Works planned and budgeted for in the current financial year. Included in the plan are the following;

1. Sewer – New rising main from SPS8 (Plain Street Pump Station) to Westdale WWTP;
2. Sewer – SPS8 – Construct Storm Flow Station (new pump system);
3. Sewer – SPS8 – 4,250m DN525 Parallel Main.

These three items collectively achieve the Plain Street Pump Station Upgrade mentioned earlier in this report. The combined budget for these items allocated in the current financial year is $7,501,500.

Tamworth Regional Council have confirmed (*Ref: verbal confirmation from Nathan Morgan 12 January 2021*) that the works are indeed in the planning/design development stage, and it is Council's intention to commence construction this financial year.

If the upgrade is completed as planned (or even in the 2022/23 financial year), the off-line storage component of the strategy will no longer be necessary, and the need for a pump station at the site may be eliminated as well (depending on the adopted servicing strategy), thereby significantly reducing the cost involved in servicing the site. The completion of the upgrade would also improve the technical and financial feasibility of the alternative options discussed in Section 8, including a conventional pump station or a low-pressure sewer network.

10 Evaluation of Design Components for Gravity Fed Sewer Strategy

The individual design components of the gravity-fed strategy, including pump station details and connection details to the existing mains, are considered in detail in previous strategies and are not required to be repeated here. Refer to the previous strategies included in Appendix C&D for details.

11 Vehicular Access

The site section plans prepared in March 2021 (see Appendix B), demonstrated that vehicular access to a filled site could easily be achieved from either Jewry Street, Dampier Street or Wallamore Road. Detailed access and traffic arrangements are the subject of a separate report prepared by others and are not discussed in detail here.

12 Stormwater Drainage

Council have previously advised (as per Jewry Street preliminary design plans (Ref: SK1098-001) that the preferred location for stormwater drainage is to follow the existing drainage line that runs north-south approximately midway through the site, and to run beneath the extended Jewry Street roadway and then east to the existing fully along the western side of the Tamworth Racecourse.

The filled site levels for sewer servicing provide a suitable landform to enable this to be achieved – the site slopes towards the centre from high points in the south-west and north-east corners towards a low point along the northern boundary mid-block – almost exactly in the location of the proposed stormwater drainage line identified by Council. Achieving 1% grade along roadways and kerb lines is achievable from a design perspective and will approximately replicate the required 1.25% sewer grades.

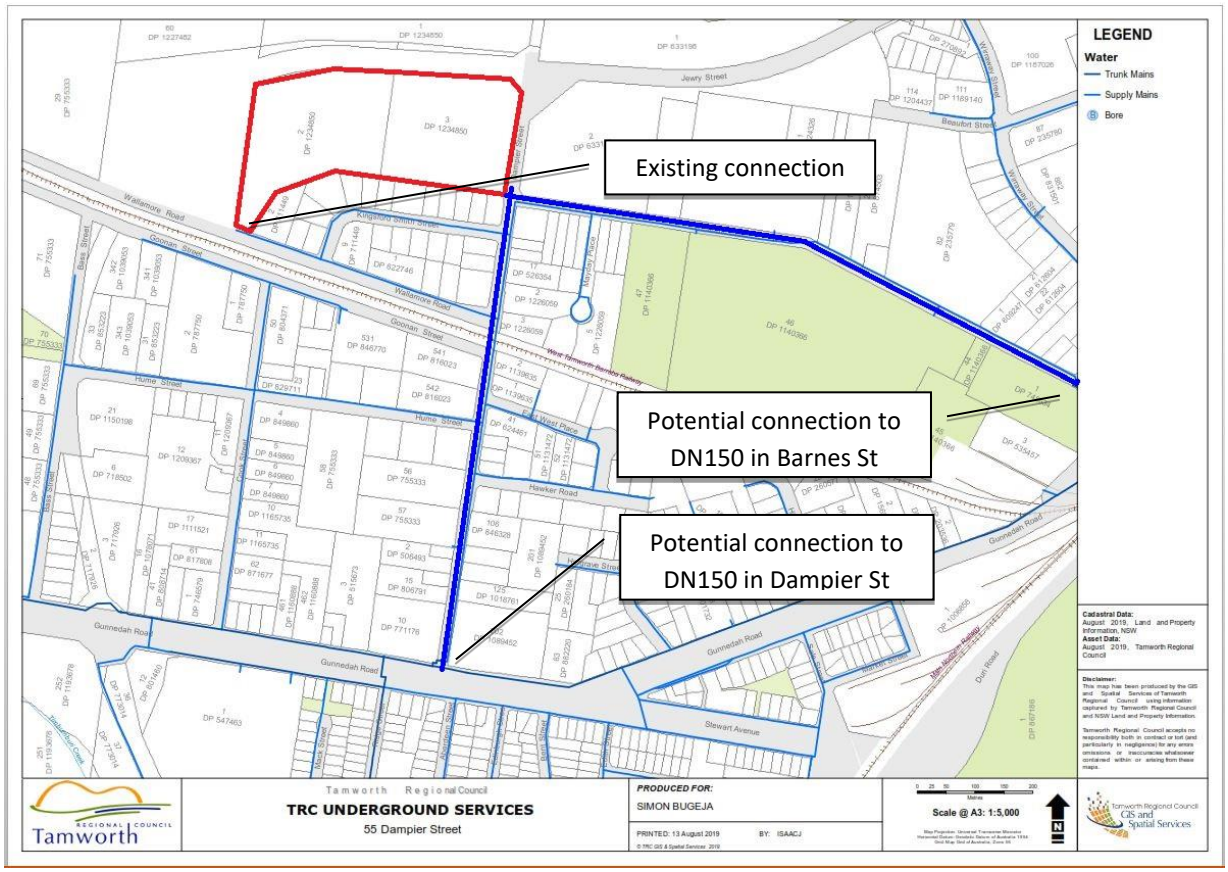
In that regard, a satisfactory stormwater drainage strategy is considered easily achievable and further detailed stormwater drainage analysis is not considered necessary at this time.

13 Water Reticulation

As previously reported, the site is serviced by a water connection from the existing 100mm diameter main in Wallamore Road. The development will require reticulation of a minimum 150mm main (as per Clause 4.5.6 of The Guidelines) to provide adequate service and fire-fighting capabilities. As there are no suitable mains within the vicinity of the development, extension of an existing main is required. Analysis of GIS data of the existing water network indicates that the two closest 150mm mains are located at the following, and as shown below;

- The intersection of Dampier Street and Gunnedah Road (Oxley Highway), approximately 850m south. Whilst the extension of this main seems relatively straight-forward, the road reserve verges in Dampier St are known to be congested with existing and redundant infrastructure, and a subterranean crossing of an active railway line (the Main Northern Railway) will be required, which can be problematic from a regulatory and administration perspective.
- The intersection of Barnes Street and Showground Road, approximately 1,050m east. Despite being a further distance, this route may be more desirable as the road verges in Showground Road are wider than those of Dampier Street, and re-instatement costs will be lower as Showground Road has unsealed shoulders without kerb and gutter.

The most appropriate route for the extension of the 150mm water main to the site should be determined following detailed survey of the proposed routes and consultation with all regulatory authorities, including Council, John Holland (for the railway crossing) and other asset owners.



GIS Water Information (*Source: Tamworth Regional Council , retrieved 12 August 2019*)

Following the extension of the 150mm water main to the site, the reticulation of the water supply within the development is considered relatively simple. The main will be required to loop through the site (most likely from Dampier Street) and connect to the existing 100mm main in Wallamore Road to provide continuity of supply and eliminate dead ends, and individual service connections will need to be provided to each development lot.

Council have advised that the suitability of supply from a pressure and flow perspective will unlikely be a constraint. The legal framework of the development will have an impact on the metering arrangement for the site – Torrens title lots will each have individual water meters whilst a strata or community title development will have a single meter at the connection to the main with individual sub-meters for the development lots. However, these matters are operational and market driven and the preparation of this servicing/feasibility strategy is not reliant on legal ownership arrangements.

14 Recommendations for Detailed Design

The detailed design of the site servicing systems will be dependent on the finalisation of several critical design criteria, including the following;

- Final site layout including, if available, expected site usage and tenancies;
- The selection of a preferred sewer servicing option – See Section 10.
- Re-evaluation of Equivalent Population (EP) for both water and sewer based on revised site usage data to determine more accurate design flows at the time of DA/development;
- Confirmation of the proposed site floor levels to be adopted;
- Analysis and modelling results of the capacity of the existing 900mm sewer main (the receiving main), including dry and wet weather flows and capacity, diurnal patterns, and time-based flow characteristics during and after rainfall events. Liaison with Tamworth Regional Council will be required to obtain this information, including the receipt of flow meter data;
- Continued collaboration with TRC and confirmation, if available, of the timing of the Plain Street Pump Station Upgrade.

At present, as the project is at the early stages of re-zoning, there is insufficient design input data to undertake a detailed utilities design for the site, nor is it necessary to undertake such design work at

this planning phase. Information required for detailed design includes determination of the size, geometry and pump requirements for a sewer pump station (if required). Following confirmation of the design inputs identified above a more robust design and cost estimate, including life cycle costing, can be developed. However, this report has identified the options explored and the viability of the options that confirm potential serviceability of the proposed development.

15 Summary

The proposal consists of a re-zoning of two existing lots in Taminda from RU4 – Primary Production Small Lots to a mixture of B5 – Business Development and IN1 – General Industrial, with the intention of developing the site into a mixed business/industrial development consisting of 41 business site and 14 industrial sites.

Site servicing strategies for both water and sewer utilities for the site, including consideration of alternative servicing options, have been prepared for the original *Taminda Employment Lands Planning Proposal* based on extensive consultation with Council and these are considered valid for the current planning proposal.

The previously prepared strategy for sewer servicing is based on an instruction from Council in 2019/20 that the site must ultimately be serviced by a conventional gravity fed system discharging to the existing sewer network. However, it is our opinion that both a conventional pump station system or a low-pressure sewer system could also adequately service the site, particularly if the capacity constraints of the receiving line are removed by the upgrade of the Plain Street Pump station (which has a budget allocation in this financial year and is in the planning/design phase). It is confirmed that the Plain Street Pump Station upgrade has funding allocated in the current Annual Operational Plan and is currently at the planning/design development stage.

A gravity-based sewer network discharging to the existing DN900 main, facilitated by filling the site to provide the minimum cover and depth of grade required, is confirmed as feasible based on the preliminary design work completed. In the short-term, and if the development is to proceed before the Plain Street Pump Station upgrade is complete, the network will discharge to a temporary pump station and off-line storage system that will have a timed discharge to the existing DN900. In the long-term, the gravity-based network will discharge to each of the three existing manholes on the DN900. The level of fill required is able to be managed and its impacts demonstrated to be acceptable, however there are at least two feasible and commonly adopted alternative solutions that can significantly reduce the scale of site filling required, and each of these can be designed and operated as site specific stand-alone systems that do not require any investment or management from Council.

The investigative work undertaken thus far regarding servicing the site has confirmed the following;

1. The site can be serviced by an ultimately gravity fed network provided the site is filled to the required level;
2. The gravity-based network can be connected in the short-term to a temporary pump station and off-line storage system;
3. A conventional pump station, as well as a low-pressure sewer system, are also feasible servicing options for sewer;
4. Adoption of a solution using pump systems will significantly reduce the amount of site filling required compared to a gravity based system;
5. Servicing of the site with reticulated water is considered feasible and relatively easy to achieve;
6. Vehicular access and stormwater drainage requirements can be satisfactorily achieved with a filled site strategy.

16 Limitations of This Report

This report has been tailored to investigate sewer servicing issues in the area of interest, being 21 Wallamore Road and 55 Dampier Street, Taminda (Lots 2 & 3 in DP1234850).

We consider that the report accurately reflects the conditions for the area of interest at the time the report was prepared (with updates as noted within this report). The results of this assessment should

be reviewed if conditions change in the future. This report has been prepared using information provided to Kelley Covey Group from multiple sources. The accuracy of the information provided will determine the accuracy of the report findings. Kelley Covey Group holds no responsibility for the accuracy of the supplied information and data.

All life cycle cost estimates are provided for estimating and preliminary design purposes only and cannot be considered to be representative of the actual costs of the final adopted and design system.

Notwithstanding the above, this report has been undertaken for the specific purposes of WSM Australia Pty Ltd, and is solely for the use of them.

This report should only be used in full, including all supplementary reports and appendices, and may not be used to support objectives other than those set out herein, except where written approval with comments are provided by Kelley Covey Group.

Appendix A – Adopted Sewer Servicing Strategy 2020

Appendix B – Preliminary Site Sections

Appendix C – Development Site Servicing Strategy 2019

Appendix D – Detailed Sewer Servicing Strategy 2020