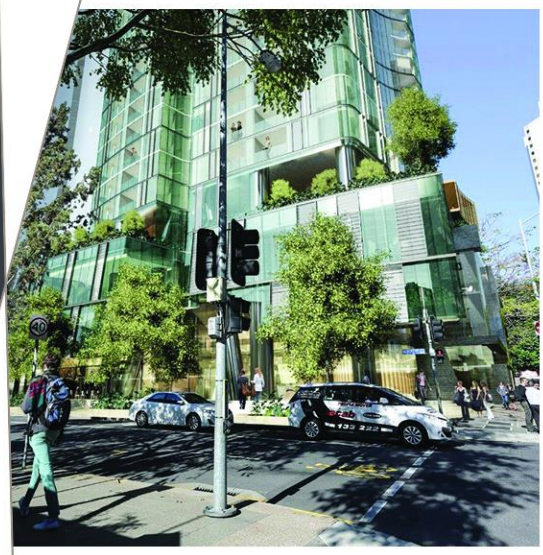
Civil Infrastructure Report

18-40 Anderson Street, Parramatta

80217054



Prepared for
Landream

1 March 2018

Cardno

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1 Introduction

1.1 Overview

This Civil Infrastructure Report has been commissioned by Landream to identify infrastructure required to service the proposed redevelopment of the Holiday Inn site at 18-40 Anderson Street, Parramatta. This Report summarises existing infrastructure in the vicinity of the site, capacity limitations associated with that infrastructure and potential upgrades and/or extension works that will be required to adequately service the proposed redevelopment of the site.

1.2 Site Description

The site is located within the Parramatta local government area (LGA) and comprises Lot 20 of DP792518, which is in the ownership of Aust & NZ International Investment Group (ANZIIG). The site is generally bound by private property to the north (currently a vacant lot), Jubilee Park and an existing open stormwater channel to the east, a three-storey building to the south (directly adjacent to the southern site) boundary and Anderson Street to the west. A Site Plan is presented below as **Figure 1-1**.

Figure 1-1 Site Locality (source: NSW SIX Maps)

1.3 Scope of this Report

This Report has been prepared to accompany a Planning Proposal for the proposed rezoning of the site for redevelopment of a new hotel and mixed use residential and commercial.

Strategies to provide the following services to the site for the proposed development are outlined in this report:

- Potable Water
- Sewerage
- Electricity
- Natural Gas
- Telecommunications

Dial Before You Dig (DBYD) plans have been sourced to identify all existing services in the vicinity of the site. These plans identify services currently within or adjacent to the site and include assets under the ownership of Sydney Water, Endeavour Energy, Jemena, Telstra, Optus and Verizon.

1.4 Related Documents

The following reports shall be read in conjunction with this document:

1. Flood Impact Assessment (Revision 3, dated July 2017), prepared by Cardno.
2. Preliminary Site Investigation (Revision 1, dated February 2018), prepared by Cardno.

2 Rezoning Proposal

A concept for the proposed redevelopment of the site is presented in **Figure 2-1**.

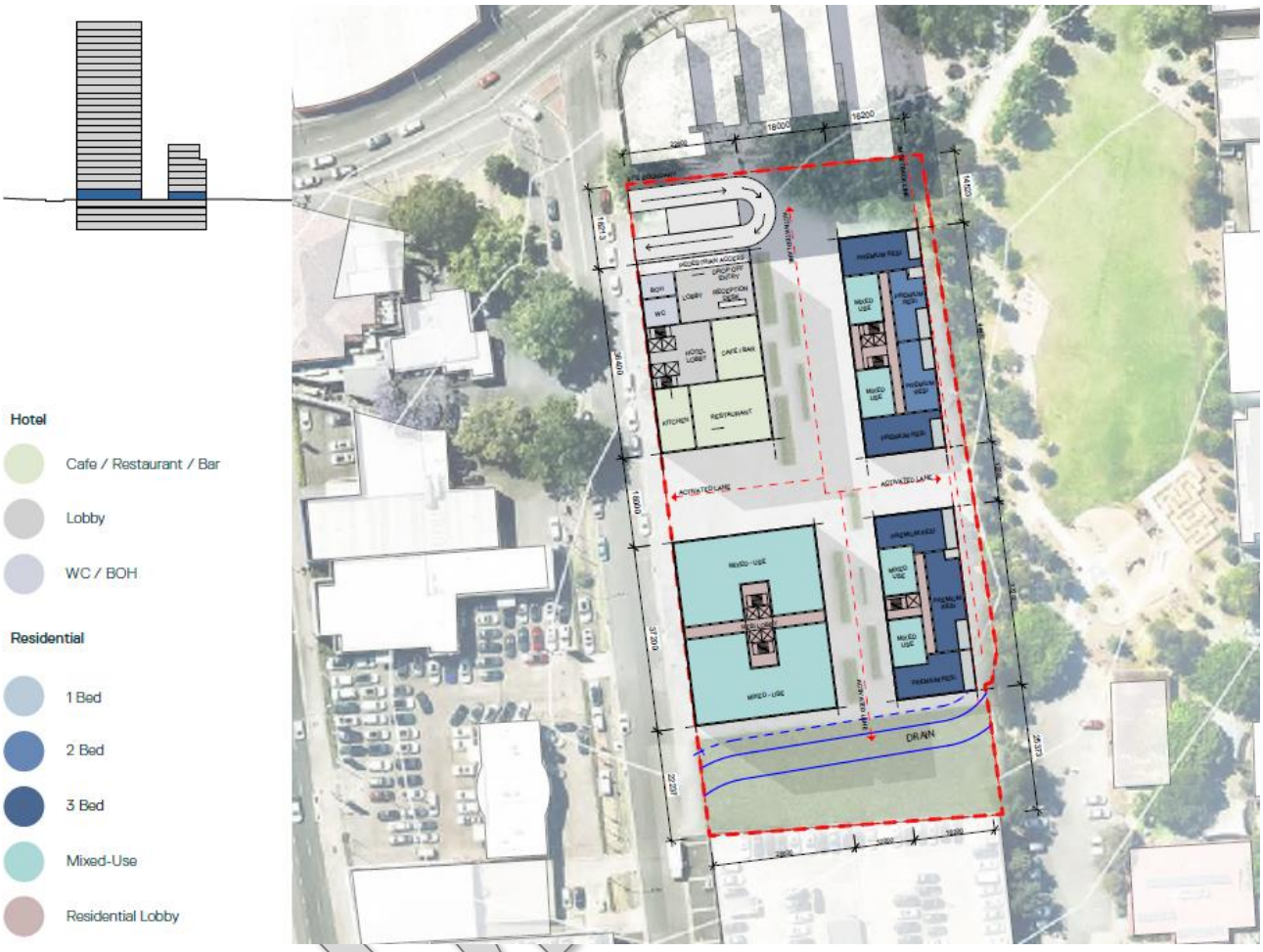


Figure 2-1 Proposed Site Plan (Grimshaw, May 2017)

The proposed redevelopment of the site would generally consist of the following:

- Demolition of the existing hotel structure and car park in the southern portion of the site.
- Construction of basement car parking to accommodate approximately 500 spaces, nominally four (4) levels below ground.
- Construction of two (2) towers adjacent to Anderson Street (western site boundary), up to 25 storeys each, which would accommodate a new hotel (approximately 240 rooms), conference centre, mixed-use and residential apartments.
- Construction of two (2) towers adjacent to the eastern site boundary, up to eight (8) storeys each, which would accommodate serviced apartments and residential apartments.
- Construction of two laneways through the site, one running generally west-east connecting Anderson Street with Jubilee Park, and another generally running north-south to provide street level access to the four proposed towers.
- Construction of a park / green link in the southern portion of the site (in the vicinity of the existing open stormwater channel), which would connect to Jubilee Park.

In total the proposed redevelopment of the site would yield approximately 24 serviced apartments, 60 one-bedroom units, 152 two-bedroom units and 54 three-bedroom units.

3 Existing Services

Existing services within and in the vicinity of the site as shown on DBYD plans received from all the relevant utility authorities are presented on drawing SK001, which is included in **Appendix A**.

This section summarises the extent of existing services within and adjacent to the site.

3.1 Potable Water

A Sydney Water owned and operated watermain is located on the eastern side of Anderson Street, directly adjacent to the site, and extends for the full frontage of the site. The main is a 100mm diameter ductile iron cement line (DICL) pipeline for the majority of the site's frontage to Anderson Street, with the exception of a small section of 150mm diameter cast iron cement lined (CICL) pipeline across the northern section of the site. Sydney Water's DBYD Plan shows a number of watermain fittings including hydrants and stop valves adjacent to the site.

3.2 Sewerage

There are two (2) main sewer lines within the site, both owned and operated by Sydney Water:

1. A 600mm diameter vitrified clay (VC) pipeline that discharges west to east through the southern portion of the site, parallel to the stormwater channel that runs through the existing car park.
2. A 225mm diameter VC pipeline, approximately 30 metres long, which discharges from south to north adjacent to the eastern site boundary.

These two lines discharge towards Parkes Street and ultimately via a network of pumping stations and rising mains towards North Head Sewage Treatment Plant.

3.3 Stormwater Drainage

A Sydney Water owned and operated stormwater channel discharges through the site and adjacent to the eastern site boundary. The channel dimensions are generally 3.76 metres wide by 1.98 metres deep. The channel can be characterised into three distinct sections within and adjacent to the site:

1. An open section, approximately 10 metres long, between the western site boundary and the western edge of the existing two-storey car park.
2. A closed section, approximately 50 metres long, beneath the existing two-storey car park.
3. An open section, approximately 110 metres long, adjacent to the eastern site boundary.

Council owned pit and pipe infrastructure exists on both sides of Anderson Street. This ultimately discharges into the stormwater channel that discharges through the site.

There is a network of local stormwater drainage within the site. This local drainage typically drains to a holding tank in the north-eastern corner of the site, which ultimately discharges into the existing stormwater channel east of the site. The sag point on the eastern side of Anderson Street is situated adjacent to the southern-most driveway, approximately 30 metres north of the open channel.

3.4 Electricity

Existing electrical services within and adjacent to the site are under the ownership and operation of Endeavour Energy. A search of Endeavour Energy's asset database shows the site is currently serviced by a 3 feeder indoor substation, located on the northern side of the existing ground floor car park. Other electrical assets in the vicinity of the site include:

- Low voltage and high voltage reticulation lines within the road reserve on both sides of Anderson Street.
- A high voltage line running through the existing car park, parallel to the closed section of stormwater channel.

> Street lighting on the western side of Anderson Street (none directly adjacent to the site).

3.5 Gas

There are two (2) existing gas main that run along Anderson Street, one on either side of the road reserve. The gas main adjacent to the property is a 50mm diameter low pressure (7 kPa) nylon main inserted into a 100mm diameter cast iron main.

There are no high pressure gas mains in the vicinity of the site.

3.6 Telecommunications

Telstra's DBYD plans show below ground communications conduits on both sides of Anderson Street, which cross under Anderson Street adjacent to the site. The line on the eastern side of Anderson Street is a 100mm diameter asbestos cement (AC) conduit containing two (2) 30-pair cables.

An Optus cable is located on the western side of Anderson Street and runs along the full frontage of the site.

A Vocus Group fibre optic service is located adjacent to the stormwater channel that runs through the site. The DBYD plans do not indicate the exact location of the service relative to the stormwater channel.

4 Future Servicing Requirements

This section indicative future servicing requirements for the proposed redevelopment of the site. The extent of possible service upgrades is presented on drawing SK002, which is included in **Appendix A**.

It is noted that these requirements are based on information available at the time of preparation of this report, and may be subject to change. A detailed service investigation and requirements for any upgrade, augmentation or protection works would be confirmed at subsequent phases of the development.

4.1 Sydney Water Services

In order to estimate requirements relating to Sydney Water's services with respect to the proposed development, a Feasibility Application was lodged to Sydney Water in March 2017. A response dated 16 May 2017 was received (Case Number 161941) and is contained in **Appendix B**. This Feasibility Letter outlines general requirements that could apply to the development once an application for a Section 73 Certificate is made at a later date.

Possible requirements for Sydney Water's potable water, sewerage and stormwater drainage services are summarised in the following sections.

4.1.1 Potable Water

The Feasibility Letter dated May 2017 indicates that the existing 100mm diameter main in Anderson Street would need to be upgraded to a 200mm diameter main for a length of approximately 250 metres between the intersection of Church Street and Parkes Street and the northern side of the open stormwater channel traversing the site. These upgrade works will include connection to an existing 375mm diameter CICL main (via a new tee) located on the western side of Church Street, and connection to the existing 100mm diameter DICL main (via a taper) on the eastern side of Anderson Street.

The indicative extent of upgrades is presented on Drawing SKC002 in **Appendix A**.

4.1.2 Sewerage

The Feasibility Letter suggests that the existing trunk wastewater system in the vicinity of the site has sufficient capacity to service the proposed development. Sydney Water also noted that detailed planning for the Greater Parramatta and Olympic Peninsula Urban Renewal Area is currently being undertaken, and may identify system upgrades that could be required.

Where any works are proposed near the existing 600mm diameter VC main within the site (in particular basement structural work), they would need to be undertaken in accordance with Sydney Water's Technical Guidelines *Building over and adjacent to pipe assets* (October 2015).

4.1.3 Stormwater Drainage

The Feasibility Letter outlines general requirements relating to the stormwater channel that traverses the site. These requirements include:

- No building or permanent structure (including basement car parking) are to be constructed within 1 metre of the outside wall of any existing or proposed stormwater asset (applicable for unlimited depth and height).
- The applicant is required to submit plans to Sydney Water showing the proposed building works relative to the existing stormwater channel (via a Building Plan Approval) in order to demonstrate the required minimum clearance has been incorporated into the design.
- The applicant is required to submit a Flood Hazard Management Plan, including plans showing flood levels, velocities and hazard.

Requirements for stormwater drainage will be confirmed in conjunction with Sydney Water at the Development Application phase, and will consider the need for additional trunk drainage infrastructure and overland flow paths through the site.

It is noted that no works are proposed to be constructed over or under the existing stormwater channel within or adjacent to the site. All proposed works, including basement and building structures, will be constructed outside existing easements and at least 1 metre from the outside walls of the existing stormwater channel. Specific requirements for protection of the stormwater channel will be confirmed upon receipt of a response to a Section 73 application, but may include the following:

- Detailed survey of the stormwater channel to confirm its location and depth relative to the site boundary and proposed extent of work.
- Preparation and submission of a specialist engineering assessment detailing the proposed development work and construction methodology.
- Preparation of a work method statement.
- Preparation of a plan detailing proposed asset protection works (temporary and permanent), such a ground anchors or deep piling to shore any basement excavation.
- Preparation of monitoring and contingency plans, which would need to be implemented for the duration of construction works.

4.2 Local Stormwater Drainage

The proposed development layout has been created such that it would allow the passage of overland flow west to east from Anderson Street through the site and towards the open stormwater channel. These overland flow paths are proposed to be supplemented with subsurface drainage (concrete box culverts or large diameter pipes) and high capacity inlets on Anderson Street (grated kerb inlet pits with lintels).

The Flood Impact Assessment prepared for the site (Cardno, May 2017) analysed the 1% Annual Exceedance Probability (AEP) flood extent based on a post-development scenario with three (3) 1200mm wide by 1000mm high box culverts discharging through the site (Planning Option 1). The Assessment concluded that Planning Option 1, if implemented, would satisfy the requirements of the *Parramatta Development Control Plan 2011* (DCP) in terms of flood risk management.

A second option (Planning Option 2) whereby the proposed development would be elevated to allow the passage of overland flow between the ground surface and the proposed podium structures was also analysed in the Flood Impact Assessment. This option was also found to satisfy the DCP requirements.

At the Development Application phase of the project, design requirements for local stormwater drainage requirements would be confirmed, including:

- Required capacity of subsurface drainage pipes and/or culverts (primarily governed by size and gradient).
- Required inlet capacity on both sides of Anderson Street to convey surface runoff towards subsurface drainage (i.e. number of drainage grates and/or lintels).
- Connection details to the existing open stormwater channel east of the site.
- Coordination of the proposed subsurface drainage and inlet pit(s) with the design of the built form (buildings and basement structure) and public domain on Anderson Street and through the site.

4.3 Electricity

To supply the anticipated electrical demands associated with the proposed development of the site, it is estimated that two or three new indoor substations will be required within the development site.

At the Development Application phase of the project, Endeavour Energy will need to be consulted to confirm the extent of infrastructure required to service the development. In addition, an application to connect to Endeavour Energy's network will need to be lodged, to which Endeavour Energy will issue a Design Brief outlining requirements to service the development.

4.4 Gas

In order to provide gas supply to the site, connection to the existing reticulated gas network in Anderson Street would be required.

The feasibility of connection to Jemena's existing system would be subject to confirmation after a Commercial Connection Application has been processed by Jemena. This would need to be undertaken at the Development Application phase of the project.

4.5 Telecommunications

Telecommunications services would be provided to the proposed development site by Telstra under the Universal Service Obligation arrangement referenced under the *Telecommunications Act 1997*.

A search on NBN Co.'s website indicated that rollout of National Broadband Network (NBN) infrastructure is planned to be available between July and December 2019 (subject to change). To confirm NBN Co. will service the site, it will be necessary to register the proposed development with NBN Co. as soon as possible. Upon registration of the Site Masterplan to NBN Co., they will assess the application for service and issue a Developer Agreement to confirm the servicing requirements for the site.

The final arrangement of telecommunications providers would be established during the Development Application and detailed design stages of the project.

5 Conclusion

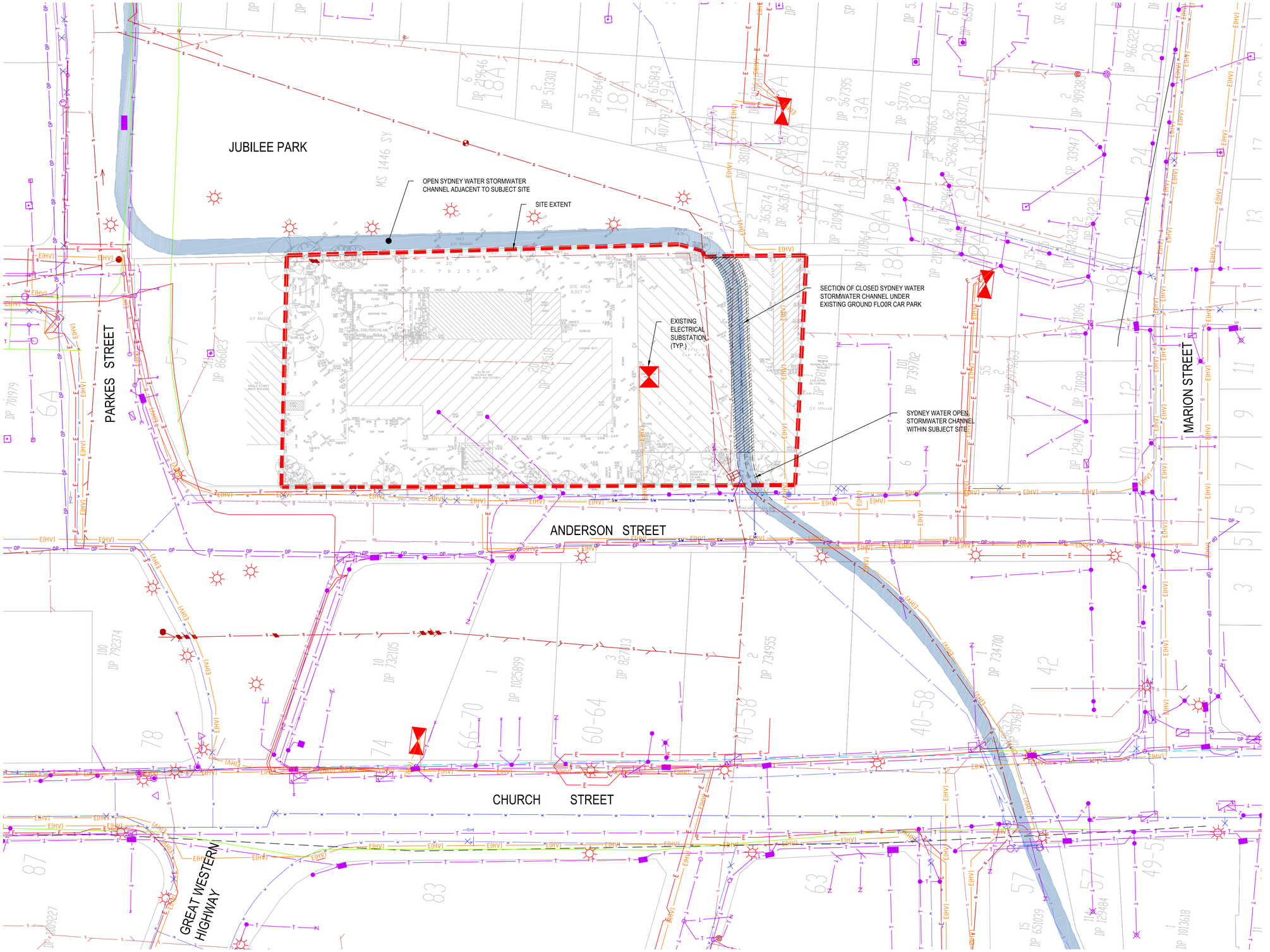
This report summarises infrastructure servicing requirements for the proposed redevelopment of the site at 18-40 Anderson Street, Parramatta. Preliminary requirements are presented for the provision of utility services including potable water, sewerage, trunk stormwater drainage, electricity, natural gas and telecommunications.

Final development servicing requirements will be determined at the Development Application phase of the project and in consultation with all respective utility authorities including Sydney Water, Endeavour Energy, Jemena, Telstra and NBN Co.

18-40 Anderson Street, Parramatta

APPENDIX A

DRAWINGS



LEGEND

- EXISTING TELSTRA CABLE
- EXISTING SEWER
- EXISTING WATER MAIN
- EXISTING STORMWATER PIPE / CULVERT
- EXISTING STORMWATER CHANNEL
- EXISTING AAPT DUCT
- EXISTING NON-AAPT DUCT
- EXISTING TELECOM CABLE
- EXISTING PIPE NETWORK DUCT
- EXISTING LOW VOLTAGE ELECTRICAL CABLE
- EXISTING HIGH VOLTAGE ELECTRICAL CABLE
- EXISTING NEXTGEN CABLE
- EXISTING OPTUS CABLE
- EXISTING UECOM CABLE
- EXISTING VZP FIBRE CABLE
- EXISTING WC FIBRE CABLE
- EXISTING GAS MAIN
- STREET LIGHT
- COMMUNICATION BOX

NOTES

NB: LOCATION OF SERVICES SHOWN ON THIS PLAN BASED ON PLANS SOURCED FROM DIAL BEFORE YOU DIG. CONFIRMATION OF EXACT SERVICE LOCATION IS SUBJECT TO COMPLETION OF PHYSICAL LOCATION.

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CONFIRMED				
SELF CHECK				

Drawn YNL	Date 22.02.2018
Checked	Date
Designed	Date
Verified	Date
Approved	

Client: LANDREAM

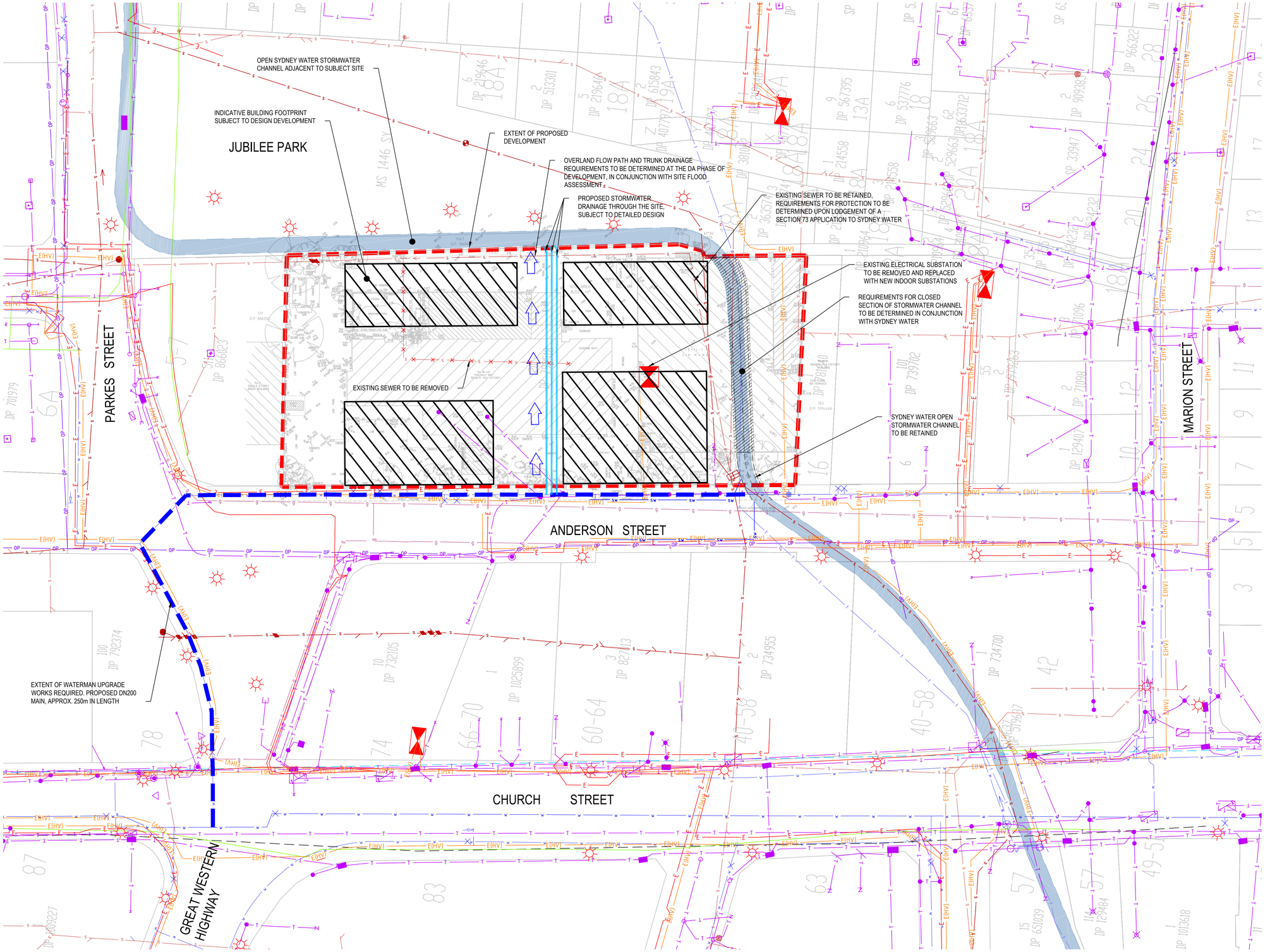
Project: 18-40 ANDERSON STREET PARRAMATTA
PLANNING PROPOSAL

Title: EXISTING SERVICES PLAN

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Scale: 1:500 | Size: A1

Drawing Number: 80217054-SK001 | Revision: A



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SELF CHECK				

Drawn YNL	Date 22.02.2018
Checked	Date
Designed	Date
Verified	Date
Approved	

Client: LANDREAM

Project: 18-40 ANDERSON STREET PARRAMATTA
PLANNING PROPOSAL

Title: PROPOSED SERVICES PLAN

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Scale: 1:500 | Size: A1

Drawing Number: 80217054-SK002 | Revision: A

18-40 Anderson Street, Parramatta

APPENDIX B

SYDNEY WATER FEASIBILITY LETTER (MAY 2017)

Case Number: 161941

16 May 2017

Mark Girgis
c/- Cardno (NSW/ACT) Pty Ltd

FEASIBILITY LETTER

Developer:	**Mark Girgis**
Your reference:	**80217054**
Development:	**Lot 20 DP792518 18-40 Anderson St, Parramatta**
Development Description:	**Site is currently a hotel and Efata Church. The proposed development plan is to build two 72 meter towers with extensive basement works. This will likely interfere with the existing DN600 WW and Storm Water channel that traverse the site.**
Your application date:	**22 March 2017**

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Developer Works Deed (Deed) or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

- if you change your proposed development eg the development description or the plan/

site layout, after today, the requirements in this Letter could change when you submit your new application; and

- if you decide to do your development in stages then you must submit a new application (and pay another application fee) for each stage.

You have made an application for specific information. Sydney Water's possible requirements are:

What You Must Do To Get A Section 73 Certificate In The Future.

To get a Section 73 Certificate you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Plumbing, building & developing > Developing > Land development.

1. **Obtain Development Consent from the consent authority for your development proposal.**

2. **Engage a Water Servicing Coordinator (Coordinator).**

   You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

   For a list of authorised Coordinators, either visit www.sydneywater.com.au > Plumbing, building & developing > Developing > Providers > Lists or call **13 20 92.**

   The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. **Developer Works Deed**

   After the Coordinator has submitted your new application, they will receive the Sydney Water Notice and Developer Works Deed. You and your accredited Developer Infrastructure Providers (Providers) will need to sign and lodge both copies of the Deed with your nominated Coordinator. After Sydney Water has signed the documents, one copy will be returned to the Coordinator.

   The Deed sets out for this project:

   - your responsibilities;
   - Sydney Water's responsibilities; and
   - the Provider's responsibilities.

   You must do all the things that we ask you to do in that Deed. This is because your development does not have water services and you must construct and pay for the following works extensions under this Deed to provide these services.

   Note: The Coordinator must be fully authorised by us for the whole time of the agreement.

4. **Water and Sewer Works**

   4.1 **Water**

   Your development must have a frontage to a water main that is the right size and can be used for connection.

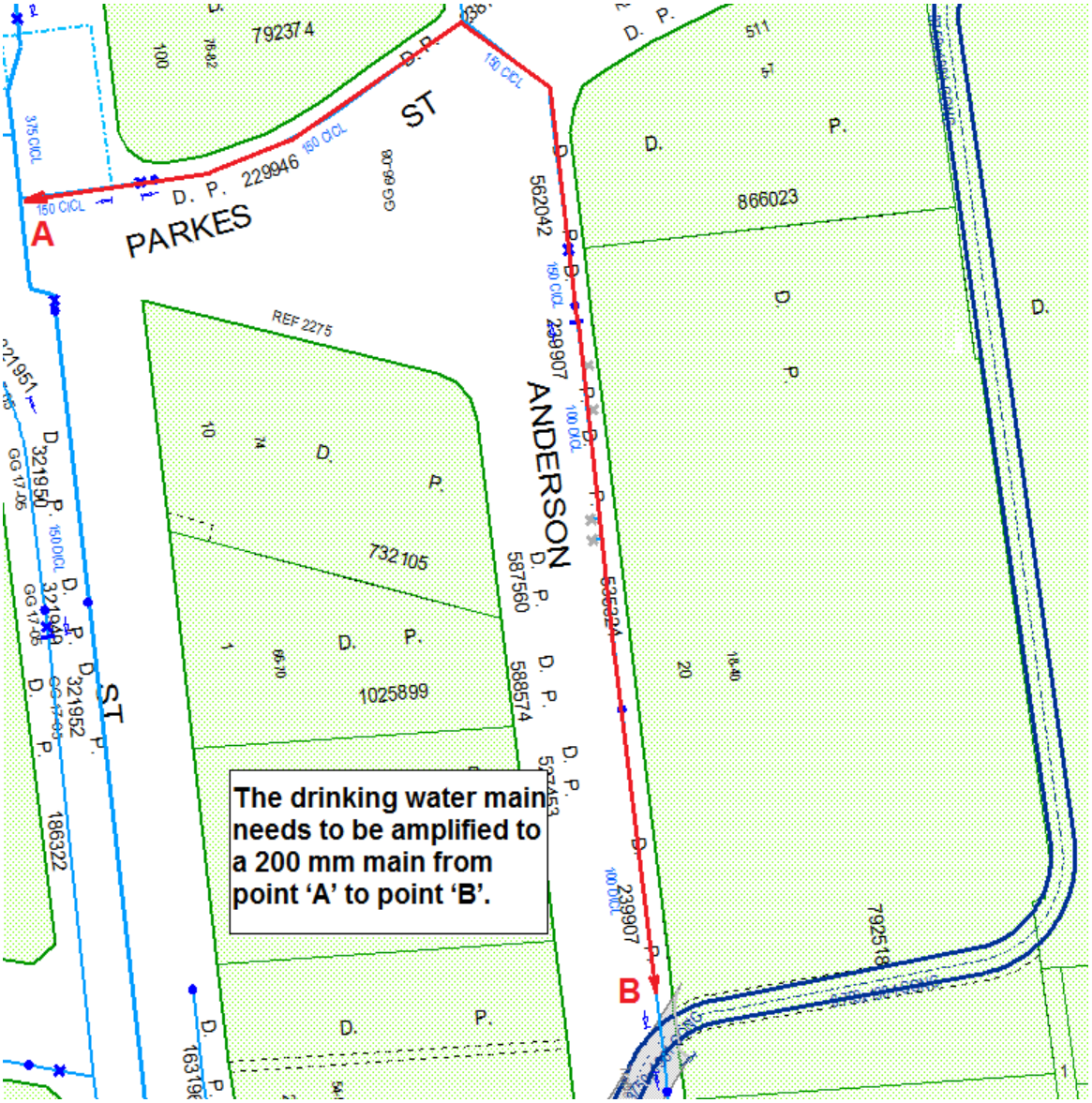
Sydney Water has assessed your application and found that:

The following information is provided to assist in planning the servicing needs of the development, based on the information supplied:

A hydraulic review of the existing reticulation supply main servicing the proposed development in the area indicates that the immediate amplification will be required.

The existing 100 mm in Anderson street will need to be amplified to a 200 mm main as shown on concept plan below. All works are to be constructed in accordance with the Water Supply Code of Australia WSA 03-2011-3.1 (Sydney Water Edition - 2012)

This advice is not a formal approval of our servicing requirements. Further requirements will be determined as part of the Section 73 application phase which will be assessed based on your connection points and corresponding discharge. More information is available on our web page in the Land Development Manual.



4.2 Sewer

Your development must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within your development's boundaries.

Sydney Water has assessed your application and found that:

Strategic investigation shows that the trunk wastewater system currently has adequate capacity to service this development. Amplifications of the system may be required subject to detailed planning as part of the GPOP (Greater Parramatta and the Olympic Peninsula) Urban Renewal area.

Sydney Water is currently progressing strategic planning for this corridor, with a target completion date of September 2016. The outcome of this project will be an integrated long-term servicing strategy for the corridor that includes drinking water, wastewater, recycled water and stormwater services.
Where proposed works are near a Sydney Water wastewater asset, the developer may be required to carry out additional works to facilitate their development and protect the wastewater main. Subject to the scope of development, servicing options may involve adjustment/deviation and or compliance with the Guidelines for building over/adjacent to Sydney Water assets. Refer to your WSC for details of requirements.

Further detailed planning is required to confirm the timeframe and extent of system amplifications. Formal requirements for servicing the developments will be determined as part of the Section 73 application phase. More information about the Section 73 application process is available on our web page in the Land Development Manual.

Storm Water Advice

Sydney Water would object to any proposal if it does not comply with its building over and adjacent to stormwater assets.

Building over or adjacent to stormwater assets

Sydney Water's guidelines for building over or adjacent to stormwater assets outline the process and design requirements for such activities. As per the guidelines, the applicant is advised of the following:

No building or permanent structure is to be constructed within **1m** from the outside wall of the stormwater asset. Permanent structures include (but are not limited to) basement car park, hanging balcony, roof eves, hanging stairs, elevated driveway, basement access, stormwater pits, stormwater pipes etc. This clearance requirement would apply for unlimited depth and height.

The applicant is required to submit the elevation drawings with the stormwater channel, to ensure that the proposed buildings and permanent structures are 1m away from the outside face of the stormwater channel.

If the proposed two towers and other associated building works does not comply with the above clearance requirements then the proposal need to be revised to ensure that the revised drawing satisfy the above requirements.

Deviation of the Stormwater Channel

The proponent may investigate the possibility of deviating the stormwater channel at no cost to Sydney Water, if such a proposal provide better financial outcome. The size of the pipe is to be based on the Flood Study and the available overland flow path. As the proposed development site is located within major city premise, at least the capacity of the new stormwater channel is to be 20 year ARI.

No building or permanent structures would be permitted along the new Sydney Water's stormwater channel or within 1m from the outside face of the new stormwater assets. An easement is to be created which is 2m wider than the new stormwater culvert /Pipe (1m either side). You may use this easement as a driveway on the existing ground level. No elevated driveway or basement access is permitted within this easement boundary. This easement is also to be act as major overland flow path.

Flood impact assessment

The applicant is required to submit a Flood Hazard Management Plan as per Floodplain Development Manual. The flood models need to assess 5, 20, 100 and 100 year plus climate change year storm events.

Sydney Water requires the models to be 1D/2D models. Models should be simple and easy to read illustrating in maps:

- Flood levels
- Velocities
- Hazards

Sydney Water needs to ensure that developments do not adversely impact on people, properties and infrastructure.

Overland Flow Path

A sufficient overland flow path is to be provided through the development site based on the Flood Impact Assessment even if the development provide 100 year stormwater system. The overland flow is to be a failsafe overland flow path in the event the main stormwater channel blocked. Providing second set of stormwater culvert would not be considered as failsafe overland flow path.

Dilapidation Survey Report

The proponent is required to undertake a dilapidation survey report / CCTV report of the Sydney Water's stormwater channel prior to commencement of any work on the site. This report should extent at least 10m upstream and downstream from the property boundary. A copy of this dilapidation report is to be provided to Sydney Water.

This dilapidation survey report/ CCTV Report is to be carried out again upon completion of the all construction work.

Deviation Proposal

If the proponent wish to proceed with deviation proposal then following requirements would apply:

Size of the new culverts

Size of the new deviated culvert is to be according to the Flood Study

Location of Stormwater culvert

The alignment of the new culvert is to be such a way that 1m set back from the Sydney Water's new stormwater asset is achievable for the proposed new buildings.

Design and Construction

Design and construction of the work is to be according to the Sewerage Code of Australia, Sydney Water's Technical Specification Part 1 Civil Works / AUS-SPEC as appropriate.

Design of the proposed stormwater culvert

Design of the proposed stormwater culvert is to be carried out by a qualified structural engineer who has the relevant experience in designing large stormwater pipe/ channel. A copy of the structural engineer's certificate is to be attached with the design drawing.

Structural details of the deviation of the stormwater channel are to be submitted with the design drawings and would be referred to Sydney Water's Engineering Services for comments. Any requirements as determined by Engineering Services must be complied with.

Construction of the Stormwater work

Construction of the stormwater work is to be carried out by the company which has relevant experience in working with large pipes. The nominated constructor need to provide a job specific set of Construction Specifications based on Sewerage Code of Australia, Sydney Water's Technical Specification Part 1 Civil Works / AUS-SPEC as appropriate. A copy of the Construction Specification must be submitted to Sydney Water for review and comments prior to commencement of any work.

If you nominate a Sydney Water's accredited constructor then they must be possessed the capability of S2, W2 or W3.

If the nominated constructor is not a Sydney Water accredited constructor then that company

need to submit the following documents

- Certificates of Currency for Public Liability Insurance (to the value of at least $20 million) and Workers Compensation Insurance.

Direct Stormwater Connection

If direct stormwater connections are required to the new culvert, then the connection details should also be included in the design drawings and need to be designed by a qualified structural engineer.

Disconnected Culvert

Disconnected stormwater culvert is to be completely removed.

Stormwater Design Drawings

Stormwater design drawings are to be drawn in the AutoCad format and give to the Water Servicing Coordinator. Water Servicing Coordinator is required to transfer these drawings on to the Sydney Water's template prior to submit as design drawings.

Bond Money

Bond Money is required for the proposed work. The amount of bond money is based on the total construction cost of the upstream transition connection and downstream transition connection including but not limited to the traffic management, project management and site restoration costs. Your nominated constructor is required to provide the estimated cost for this work to determine the amount of bond money.

Please note that the laying of new pipe/ culvert is to be finalised prior to construct the transitions structures on upstream and downstream.

Crossing the Services

Any service crossing across the Sydney Water's stormwater culvert/ pipe is to be perpendicular to the stormwater culvert/ pipe and must have minimum 500mm vertical clearance between the services and Sydney Water's stormwater assets.

Discharged Stormwater Quality Targets

Stormwater run-off from the site should be of appropriate quality before discharged into a Sydney Water asset or system. Developments must demonstrate stormwater quality

improvement measures that meet the following specified stormwater pollutant reductions:

Pollutant	Pollutant load reduction objective (%)
Gross Pollutants (>5mm)	90
Total Suspended Solids	85
Total Phosphorus	65
Total Nitrogen	45

You may use our tool, through the website below, to determine whether your development is Deemed to Comply. In some cases though, we may request an eWater MUSIC model before approving your connection.

5. Ancillary Matters

5.1 Asset adjustments

After Sydney Water issues this Notice (and more detailed designs are available), Sydney Water may require that the water main/sewer main/stormwater located in the footway/your property needs to be adjusted/deviated. If this happens, you will need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can issue the Certificate**. Sydney Water will need to see the completed designs for the work and we will require you to lodge a security. The security will be refunded once the work is completed.

5.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

5.3 Costs

Construction of these **future** works will require you to pay project management, survey, design and construction costs **directly to your suppliers**. Additional costs payable to Sydney Water may include:

- water main shutdown and disinfection;
- connection of new water mains to Sydney Water system(s);
- design and construction audit fees;
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation;

- creation or alteration of easements etc; and
- water usage charges where water has been supplied for building activity purposes prior to disinfection of a newly constructed water main.

Note: Payment for any Goods and Services (including Customer Redress) provided by Sydney Water will be required prior to the issue of the Section 73 Certificate or release of the Bank Guarantee or Cash Bond.

Your Coordinator can tell you about these costs.

6. Approval of your Building Plans

You must have your building plans approved **before the Certificate can be issued. Building construction work MUST NOT commence until Sydney Water has granted approval.** Approval is needed because construction/building works may affect Sydney Water's assets (e.g. water and sewer mains).

Your Coordinator can tell you about the approval process including:

- Your provision, if required, of a "Services Protection Report" (also known as a "pegout"). This is needed to check whether the building and engineering plans show accurately where Sydney Water's assets are located in relation to your proposed building work. Your Coordinator will then either approve the plans or make requirements to protect those assets before approving the plans;
- Possible requirements;
- Costs; and
- Timeframes.

You can also find information about this process (including technical specifications) if you either:

- visit www.sydneywater.com.au > Plumbing, building & developing > Building > Building over or next to assets. Here you can find Sydney Water's *Technical guidelines - Building over and adjacent to pipe assets*; or
- call 13 20 92.

Notes:

- **The Certificate will not be issued until the plans have been approved and, if required, Sydney Water's assets are altered or deviated;**
- **You can only remove, deviate or replace any of Sydney Water's pipes using temporary pipework if you have written approval from Sydney Water's Urban Growth Business. You must engage your Coordinator to arrange this approval; and**
- **You must obtain our written approval before you do any work on Sydney Water's systems. Sydney Water will take action to have work stopped on the site if you do not have that approval. We will apply Section 44 of the *Sydney Water Act 1994*.**

7. Special Requirements

Multi-level individual metering requirements

Your development must either allow for or provide individual metering. This means that you must:

1. comply at all times and in all respects with the requirements of Sydney Water's "*Multi-level Individual Metering Guide*" (version 6 dated 1 July 2015);

2. provide and install plumbing and space for individual metering in accordance with Sydney Water's "*Multi-level Individual Metering Guide*";

3. if and when you implement a strata/ stratum plan (or strata/ stratum subdivide) you must:
    a. engage an Accredited Metering Supplier ("**AMS**") to provide individual metering in accordance with the "*Multi-level Individual Metering Guide"* and meet the cost of the meters and metering system;
    b. transfer the meters and metering system to Sydney Water once the Testing Certificate has been issued by Sydney Water to the AMS and the AMS has confirmed that payment for the meters and metering system has been paid in full.

Before the Section 73 Certificate can be issued, you will be required to sign an undertaking to show that you understand and accept these metering requirements and associated costs.

Visit www.sydneywater.com.au > Plumbing, Building & Developing > Plumbing > Meters & metered standpipes to see the *Multi-level individual metering guide* and find out more.

OTHER THINGS YOU MAY NEED TO DO

Shown below are other things you need to do that are NOT a requirement for the Certificate. They may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. You must read them before you go any further.

Disused Sewerage Service Sealing

Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to a Sydney Water sewer main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Soffit Requirements

Please be aware that floor levels must be able to meet Sydney Water's soffit requirements for

property connection and drainage.

Fire Fighting

Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of Sydney Water's system to provide that flow in an emergency. Sydney Water's Operating Licence directs that Sydney Water's mains are only required to provide domestic supply at a minimum pressure of 15 m head.

A report supplying modelled pressures called the Statement of Available pressure can be purchased through Sydney Water Tap in™ and may be of some assistance when defining the fire fighting system. The Statement of Available pressure, may advise flow limits that relate to system capacity or diameter of the main and pressure limits according to pressure management initiatives. If mains are required for fire fighting purposes, the mains shall be arranged through the water main extension process and not the Section 73 process.

Large Water Service Connection

A water main will be available, once you have completed your drinking water main construction to provide your development with a domestic supply. The size of your development means that you will need a connection larger than the standard domestic 20 mm size.

To get approval for your connection, you will need to lodge an application with Sydney Water Tap in™. You, or your hydraulic consultant, may need to supply the following:

- A plan of the hydraulic layout;
- A list of all the fixtures/fittings within the property;
- A copy of the fireflow pressure inquiry issued by Sydney Water;
- A pump application form (if a pump is required);
- All pump details (if a pump is required).

You will have to pay an application fee.

Sydney Water does not consider whether a water main is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed plumber. The licensed plumber must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Other fees and requirements

The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- plumbing and drainage inspection costs;
- the installation of backflow prevention devices;
- trade waste requirements;
- large water connections and
- council fire fighting requirements. (It will help you to know what the fire fighting requirements are for your development as soon as possible. Your hydraulic consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END