ARUP

Cook Cove Inlet Pty Ltd

Cooks Cove Planning Proposal (PP-2022-1748) Concept Infrastructure Design

Servicing and Utilities Infrastructure Strategy Report

Reference: Revision 2

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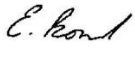
		Signature			
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1. Executive Summary

This report has been prepared, on behalf of Cook Cove Inlet Pty Ltd, to support the public exhibition and assessment of the Cooks Cove Planning Proposal (PP-2022-1748) which was issued a Gateway Determination by the Department of Planning and Environment on 5 August 2022. The Planning Proposal seeks to amend *Bayside Local Environmental Plan 2021* (BLEP 2021) to rezone and insert planning controls for certain land known as Cook Cove, within the BLEP 2021.

The Cooks Cove Planning Proposal is supported by long term and ongoing coordination with Sydney Desalination Plant, Sydney Water, Ausgrid, NBN Co, APA Group and Jemena with respect to servicing requirements and aims to facilitate the long-planned transformation of 36.2 ha of underutilised and strategically important land at Arncliffe, located to the north of the M5 Motorway and adjacent the western foreshore of the Cooks River. The project seeks a renewed focus on delivering a contemporary logistics and warehousing precinct within a well-connected location, surrounded by enhanced open space provisions. The site forms part of the broader Bayside West 2036 Precinct and generally comprises the footprint of the Kogarah Golf Club.

This report addresses servicing and utility infrastructure impacts at the proposed development site. The following utilities have been evaluated as part of this report: stormwater drainage, sewerage, water supply, electricity, telecommunications, gas, the Moomba-Sydney High Pressure Ethane Pipeline, and the Sydney Desalination Plant Pipeline.

The site is generally free of public utilities as it is currently a golf club. However, there are two large utilities that traverse the site in a north-south direction that impact on the developable site area, these being the Moomba-Sydney High Pressure Ethane Pipeline and the Sydney Desalination Pipeline. An existing 225mm diameter Sydney Water Corporation (SWC) sewer services the existing Golf Club house in the northeast corner of the site. This sewer was designed to service the golf club only. It is understood that the sewer will have minimal capacity for the future development and may only have capacity to serve Block 1 of the Planning Proposal Scheme, which is the land located north of Marsh Street. All other utilities are outside of the proposed development site area.

The works proposed would require the following augmentations for each utility:

Drainage: A new drainage network will need to be constructed across the site with water quality treatment measures included in association with the road construction.

Sewerage: In coordination with the precinct Water Service Coordinator (WSC) and Sydney Water Corporation (SWC), a feasibility study for a new gravity sewerage reticulation network with either a sewage pumping station or a pressure sewer system, and a sewage pressure main with the potential to connect to the SWC Southern and Western Suburbs Ocean Outfall Sewer (SWSOOS) to the south of the development, is currently being investigated. If the feasibility design for a new sewage pumping station is ultimately adopted, an area of land approximately 35m by 35m would be provided for the pumping station plot with all-weather semi-trailer road access.

Water supply: Also, in coordination with the WSC and SWC, a feasibility study for two new lead-in water supply reticulation pipelines is being investigated. The pipelines would need to be installed north of the site to bring water to the development from the existing SWC 500mm diameter and 750mm diameter trunk water mains along the Princes Highway from two separate locations. A new looped reticulation network would need to be constructed within the development.

Electricity: In coordination with the precinct Electrical Services Strategy Consultant (TRACA Engineering Group), coordination is currently ongoing with Ausgrid to confirm how the development

will be provided with an electricity supply. Depending on the final loading, timing, and staging of the development, investigations are currently being undertaken to determine whether a new zone substation will need to be established, or alternatively, whether high voltage feeders can be provided to supply the development from a single or multiple zone substation within the area.

If a new zone substation option is adopted for the development, Ausgrid requires an area of approximately 2,000m^2 in size, depending on the shape and location, with all-weather access. A new electrical reticulation network will need to be constructed within the development.

Telecommunication: Telstra infrastructure exists in the area. Due to the size of the development, NBN Co were approached and advised that optical fibre services can be provided to the site and reticulated though the development. The revised precinct scheme has been provided to the NBN Co Case Manager and coordination with NBN Co will continue as the project progresses.

Gas: Jemena advised that gas would be supplied off a high pressure 1050kPa gas main at Marsh Street. To facilitate a suitable supply, pressure reduction of this high-pressure supply will be via a below ground pressure reduction station to be accommodated within the development site. A site approximately 6m long by 3m wide will need to be allocated for this device. From this device, a suitable medium pressure 210kPa plastic pipe network can be reticulated through the site for retail/commercial applications. A new reticulation network will need to be constructed within the development.

Moomba-Sydney High Pressure Ethane Pipeline: A Safety Management Study (SMS) was undertaken to document the considerations of all stakeholders in relation to this pipeline. Since the initial consultations with APA Group (APA) which sought a staged relocation of the pipeline, ongoing consultation with APA and ongoing site development refinements have led to the development of a Master Plan with a lot and road network that avoids direct impact to this pipeline. Localised protection measures to the requirements of APA will need to be implemented where working within the minimum setback/easement requirements to the pipeline. Cook Cove Inlet Pty Ltd are in ongoing consultation with APA with respect to the development of suitable pipeline protection measures and obtain APA approval.

Sydney Desalination Plant Pipeline: Following a meeting with the Sydney Desalination Plant Pty Ltd, it was proposed that the Sydney Desalination Plant Pipeline should not be moved and any works above the pipeline be outside the existing easement. An air release valve and cathodic protection pit for the pipeline exists in the middle of the site and access is to be provided for maintenance of the valve and cathodic protection equipment at all times. Additionally, should the cathodic protection equipment require replacement, the location of the power source is to be confirmed.

In summary: The site can be serviced by all utilities required for the proposed development. As the rezoning application progresses and the design advances, it is recommended that utilities planning continues to be coordinated with relevant utilities, especially where relocations and lead-in works are required to service the site which can have long lead times and the potential to result in delays.

2. Introduction

This report has been prepared, on behalf of Cook Cove Inlet Pty Ltd, to support the public exhibition and assessment of the Cooks Cove Planning Proposal (PP-2022-1748), which was issued a Gateway Determination by the Department of Planning and Environment on 5 August 2022. The proposal seeks to amend Bayside Local Environmental Plan 2021 (BLEP 2021) to rezone and insert planning controls for certain land known as Cooks Cove within the BLEP 2021.

The Cooks Cove Planning Proposal aims to facilitate the long-planned transformation of 36.2ha of underutilised and strategically important land at Arncliffe, located to the north of the M5 Motorway and adjacent the western foreshore of the Cooks River. The project seeks a renewed focus on delivering a contemporary logistics and warehousing precinct within a well-connected location, surrounded by enhanced open space provisions. The site forms part of the broader Bayside West 2036 Precincts and generally comprises the footprint of the former Kogarah Golf Club, now in part occupied by a temporary M6 Stage 1 construction compound.

2.1 Report Scope

This report addresses the provision of utilities to the site and the management of existing utilities that pass through the site for the works relating to the Cooks Cove Planning Proposal only.

2.2 Consultation

This strategy has been developed in close consultation with key utility stakeholders such as APA Group, Sydney Water Corporation (SWC), Sydney Desalination Plant Pty Ltd, Ausgrid, NBN Co and Jemena, over a consultation period dating back to 2016, and in coordination with an accredited Water Service Coordinator (WSC) and an Accredited Service Provider Level 3 (ASP3) Electrical Services Strategy Consultant. A summary of the most recent consultation undertaken is provided in Table 1.

Table 1: Summary of most recent stakeholder consultation

Agency/Stakeholder	Date	Method of Correspondence	Parties Involved	Discussion Details/ Response/Outcome
APA Group	15/12/2022	Meeting	APA Group, Arup, Cook Cove Inlet Pty Ltd, Arup, Ethos Urban	Meeting held with APA Group to confirm the engineering feasibility and commercial assessment of the Moomba-Sydney Ethane pipeline works in relation to the proposed master plan.
Sydney Water Corporation	29/11/2022	Feasibility Application via portal submission	Application made by RARi on behalf of Cook Cove Inlet Pty Ltd	Following initial consultations with Sydney Water Corporation and refinements to the proposed Cooks Cove Proposal, a formal application had been lodged to Sydney Water advising them of the revised water supply and sewerage high-level demand estimates in order for Sydney Water to advise of the options available / requirements for the provision of water supply and sewerage services to the development.
Sydney Desalination Plant Pty Ltd	27/10/2022	Meeting	Sydney Desalination Plant Pty Ltd, Arup, Cook Cove Inlet Pty Ltd, Arup, Ethos Urban	Meeting held between Sydney Desalination Plant Pty Ltd and the proposal team to confirm constraints related to the desalinated water pipeline running through the site, specifically with relation to the proposed master plan.
Ausgrid	27/11/2022	Feasibility Application via portal submission	Application made by Traca on behalf of Cook Cove Inlet Pty Ltd	Formal application for connection for the proposed development has been made to Ausgrid noting the estimates of the required electrical loads including a plan of proposed design scope. A response is expected from Ausgrid by 20 December 2022 to advise of the options available / requirements for the provision of electrical supply services to the development.
NBN Co	22/11/2022	Email	Arup, NBN Co	Email received from NBN Co confirming that the development has been accepted for servicing.
Jemena	23/11/2022	Email	Arup, Jemena	Email received from Jemena confirming that the development has been accepted for servicing.

3. Existing Site

3.1 Cooks Cove

Cooks Cove is located in the suburb of Arncliffe within the Bayside Council Local Government Area (LGA). The site is located to the west of the Cooks River, approximately 10km south of the Sydney Central Business District (CBD). The site enjoys adjacency to key trade-related infrastructure being immediately west of Sydney Kingsford Smith International Airport and approximately 6km west of Port Botany.

Cooks Cove is strategically located within close proximity to a number of railway stations including Banksia, Arncliffe, Wolli Creek, and the International Airport Terminal, which vary in distance from the site between 700m and 1.1km. The M5 Motorway, providing regional connectivity to the Sydney Metropolitan area, runs in an east-west direction immediately to the south of the site. The M8 and M6 Motorways are, and will be, constructed in tunnels approximately 60 metres beneath the adjoining Bayside Council 'Trust' lands. The Sydney Gateway project, presently under construction to the immediate north of Cooks Cove and Sydney Airport, will substantially improve future accessibility to the St Peters interchange and the wider M4/M5 WestConnex network, via toll free connections, as well as the Domestic Airport and Port Botany.

The Cooks Cove Development Zone is located to the north of the Southern and Western Suburbs Ocean Outfall Sewer (SWSOOS) and is generally bound by the Cooks River to the east and Marsh Street to the north and west. The site is approximately 36.2ha and is owned and managed by a number of landowners, both public and private. Surrounding development includes the Sydney Airport International Terminal precinct, Mercure Sydney Airport, an area of low-density dwellings presently transitioning to medium-high density residential flat buildings, recreation and open space facilities, and road and airport related infrastructure.

3.1.1 Kogarah Golf Club

Kogarah Golf Club was established in 1928, with the Club occupying the land subject to the Planning Proposal boundary since 1955. At this time, the Cooks River was reconfigured to its current alignment to accommodate the expansion of Sydney Airport. The land presents a highly modified environment, with relatively flat topography, gently moulded fairways and greens, separated by strips of vegetation and man-made water bodies. The golf course clubhouse, car park and maintenance facilities are located in the northern corner of the site, adjacent the Cooks River. Access is provided via Levey Street. The members of Kogarah Golf Club will relocate from the site in May 2024 to new playing facilities.

3.1.2 Arncliffe Motorway Operations Complex

The temporary construction compound for the WestConnex M8 and M6 Stage 1 Motorway tunnelling works was originally established in June 2016. The temporary construction facility occupies approximately 7.5ha and is expected to remain until 2025. At this time, the facility will reduce to 1.5ha to accommodate the permanent Arncliffe Motorway Operations Complex, located in the western corner of the site, adjacent Marsh Street. The complex will house ventilation and water treatment plant and maintenance equipment for both the M6 and M8 sub-grade motorways.

3.1.3 Easements and Affectations

The Sydney Desalination Plant pipeline runs through the development zone, north-south adjacent the Cooks River. The pipe has a diameter of 1.8m and sits within an easement of 6-9m in width. From south to north the pipeline is constructed in a combination of trench and above ground with mounded cover and then transitions to micro-tunnel with a typical depth of circa 11m.

The Moomba to Sydney Pipeline, containing mixed-phase ethane liquid and gas, follows a similar general alignment north-south adjacent the Cooks River. The pipe has a nominal 225mm diameter, within an easement generally 5m wide and with the pipe located at a depth of 1.2m-2.3m.

4. The Proposal

The Cooks Cove Master Plan 2022, as prepared by Hassell, represents an optimised and refined reference scheme, to guide best practice design and the preparation of detailed planning controls to achieve an attractive precinct with high amenity.

Key features of the Cooks Cove Master Plan are:

- A net development zone of approximately 15ha with up to 343,250m2 Gross Floor Area (GFA) comprising
    - 290,000m^2 of multi-level logistics and warehousing
    - 20,000m^2 for hotel and visitor accommodation uses
    - 22,350m^2 for commercial office uses
    - 10,900m^2 of retail uses.
- Multi-level logistics with building heights generally up to 5 storeys (approx. 48m).
- A retail podium with commercial office and hotel above, up to a total of 12 storeys (approx. 51m).
- Built form of a scale and composition which caters for the generation of approximately 3,300 new jobs.
- A surrounding open space precinct including:
    - A highly activated waterfront including the Fig Tree Grove outdoor dining and urban park precinct
    - A substantial contribution to the extension of the regional Bay to Bay cycle link, 'Foreshore Walk', including active and passive recreational uses, together with environmental enhancements
    - Master planned and Council-owned 'Pemulwuy Park' – with an agreed embellishment outcome of passive open space and environmental enhancements to be delivered in stages post construction of the M6 Stage 1 Motorway.
- Complementary on- and off-site infrastructure to be delivered by way of State and Local Voluntary Planning Agreements.

Figure 1: Proposed Cooks Cove Master Plan 2022 – Hassell

4.1.1 Proposed Planning Controls

The Planning Proposal Justification Report, as prepared by Ethos Urban, details the intention to insert new planning provisions covering the Cooks Cove development zone and adjoining lands, through the amendment of the BLEP 2021, accordingly removing this same area from State Environmental Planning Policy (Precincts—Eastern Harbour City) 2021 (formerly Sydney Regional Environmental Plan No. 33 – Cooks Cove).

Specifically, the Planning Proposal will:

- Seek new land use zones within the development zone, including a primary SP4 Enterprise Zone across the majority of the Kogarah Golf Course freehold land, RE1 Public Recreation foreshore and passive open space zones and elements of SP2 Infrastructure.
- Impose an overall maximum building height of RL51m with appropriate transitions to respond to aviation controls within limited sections of the site.
- Limit gross floor area (GFA) to the south of Marsh Street to 340,000m^2, with a further 1.25:1 Floor Space Ratio (circa 3,243m^2 of GFA) to the north of Marsh Street, to achieve the overall intended logistics, commercial, retail, and short-term accommodation land uses.
- Other additional permitted uses and site-specific planning provisions.
- Reclassification of Lot 14 DP213314 and Lot 1 DP108492 (Council owned and the subject of Charitable Trusts), initially from 'community' to 'operational' to ensure appropriate access, improve utility of public open space and to create a contiguous boundary. Following rezoning and subdivision, it is subsequently intended that Council reclassify residue RE1 parcels as 'community' by resolution.

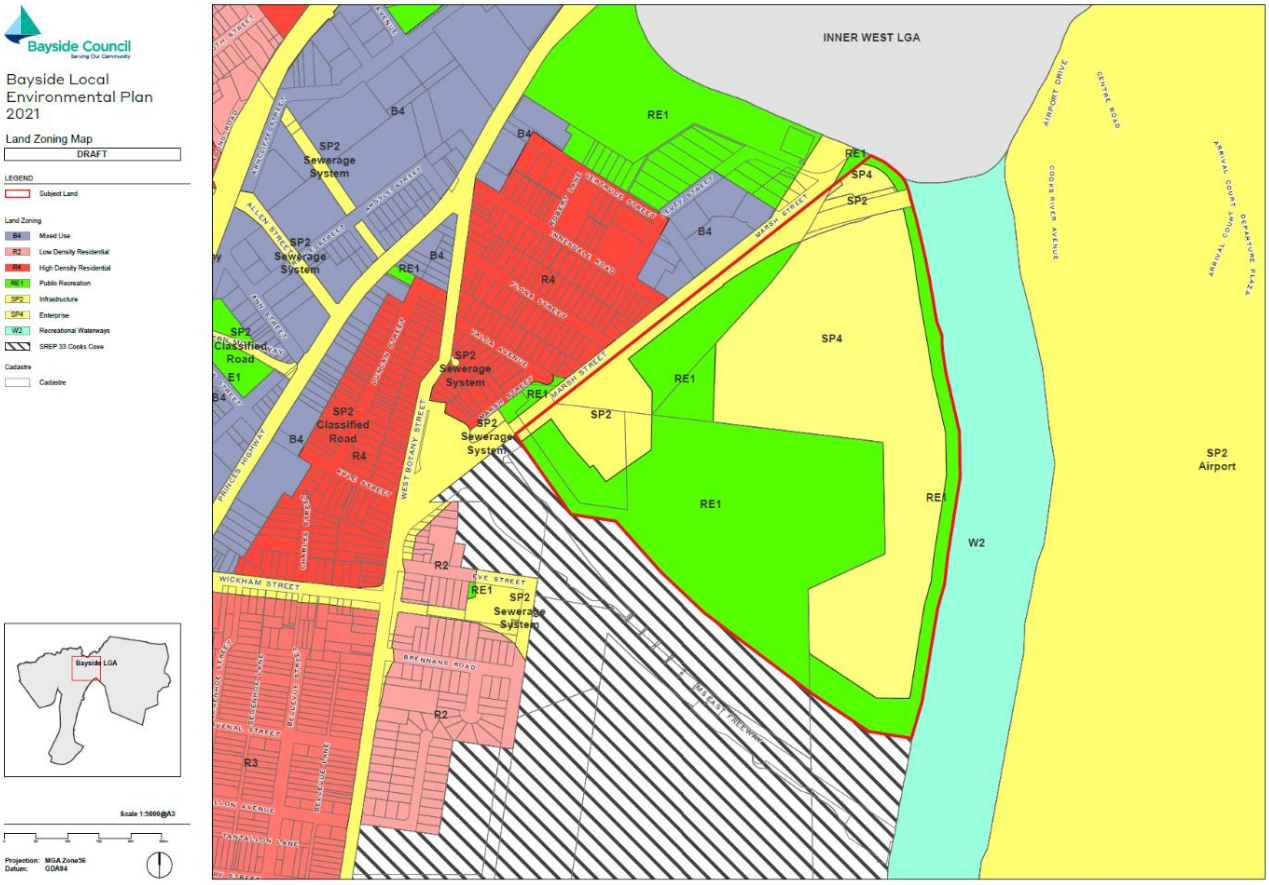


Figure 2: Proposed Draft Bayside LEP 2021 Zoning Map – Source: Ethos Urban

The proposal is in response to Bayside West Precincts 2036 – Arncliffe, Banksia, and Cooks Cove (released August 2018) and the subsequent Ministerial Directions under s9.1 of the EP&A Act, being Local Planning Directions 1.11 Implementation of Bayside West Precincts 2036 Plan and 1.12 Implementation of Planning Principles for the Cooks Cove Precinct.

5. Servicing and Utility Strategy

The following servicing and utility strategy has been undertaken in two parts:

- Part 1 – Investigation into the existing utilities servicing the site and their availability in the area surrounding the site. This was done by submitting a Before You Dig Australia (BYDA) enquiry, obtaining any available as-constructed drawings from relevant utility authorities where any specific additional details were required, detailed utilities surveys at select areas; and
- Part 2 – Review of the existing and potential future requirements for each utility to service the proposed project. Further refinement and utility sizing will be required following the rezoning and ultimate layout for the development through the Development Application and Construction Certificate documentation process. The current concepts have been determined based on the Cooks Cove Precinct Master Plan.

5.1 Utilities Corridor

As part of the proposed Cooks Cove Precinct development, it is recommended that a utilities corridor is provided in one or both street verges to accommodate water supply, electricity, telecommunications, and gas utilities. The preferred utility allocations are as described in the New South Wales Streets Opening Conference publication, Guide to Codes and Practices for Street Opening (NSW Streets Opening Coordination Council, 2018). There are two options available for utilities allocations, for footways 3 – 3.6m wide (refer to Figure 3), and footways wider than 3.6m wide (refer to Figure 4).

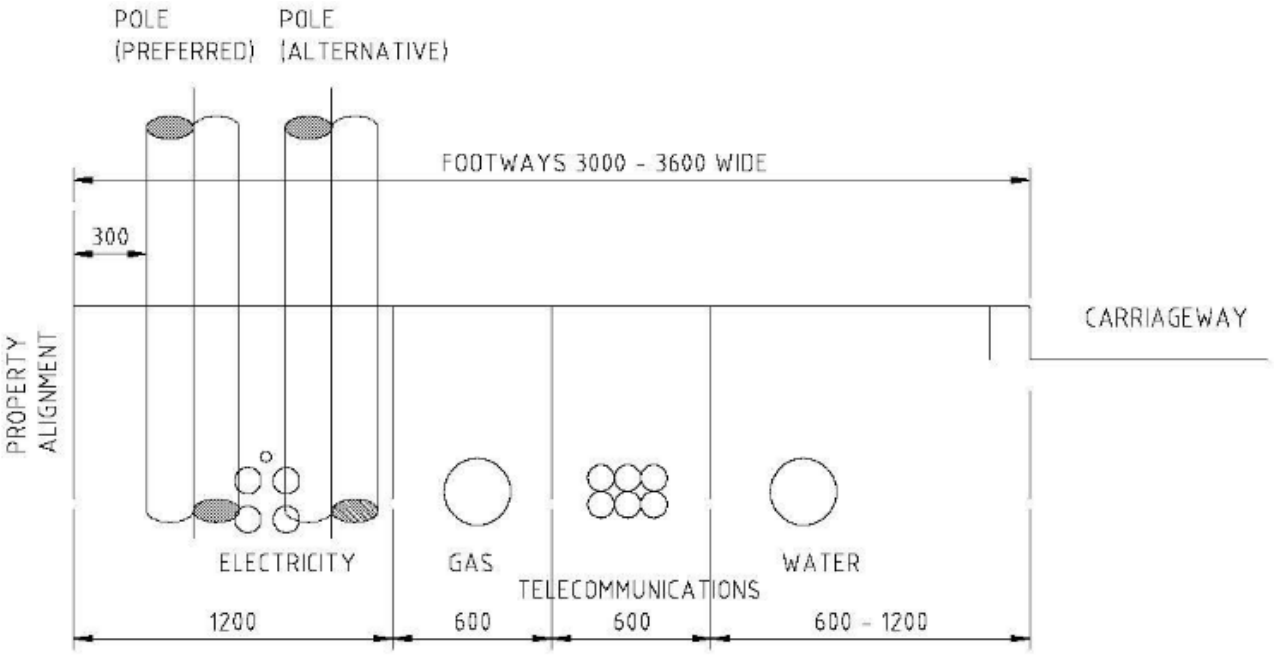


Figure 3: Traditional utility trench allocation after January 1991 – footways 3 – 3.6m wide (source: Guide to Codes and Practices for Streets Opening, NSW Streets Opening Coordination Council, 2018)

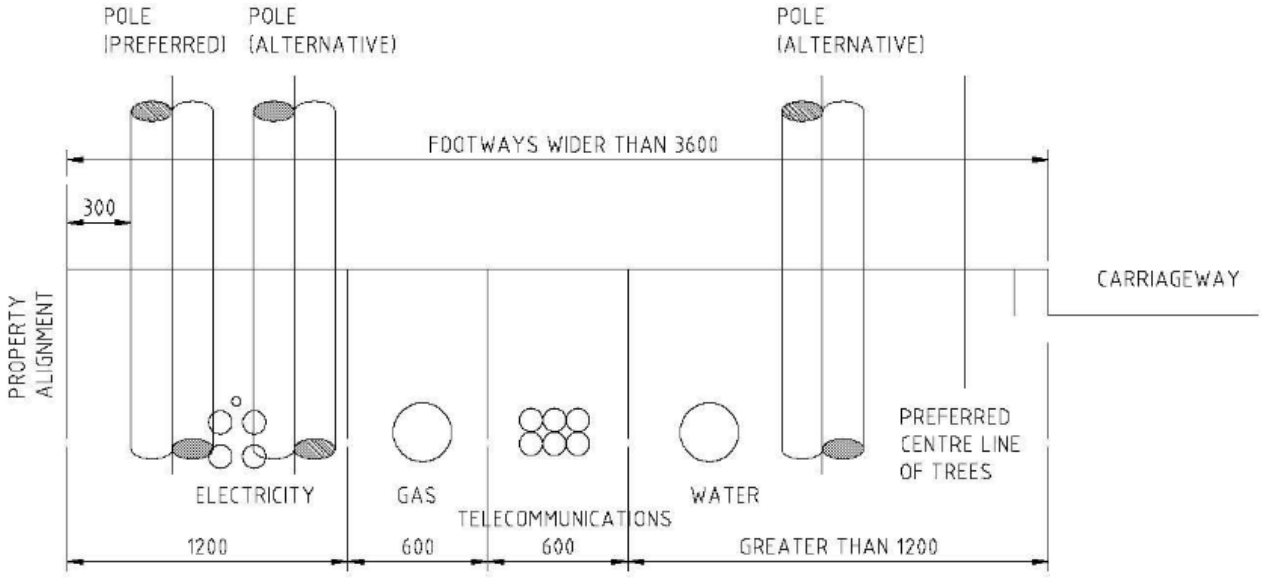


Figure 4: Traditional utility trench allocation after January 1991 – footways wider than 3.6m (source: Guide to Codes and Practices for Streets Opening, NSW Streets Opening Coordination Council, 2018)

It is recommended that footway widths are minimum 3m wide to allow minimum width services allocations, excluding recycled water and tree bays. Where dual water supply network is proposed (potable and recycled water supply), where possible, it is recommended to have these water mains in opposite footpaths.

Furthermore, it needs to be noted that:

- Where footpath widths of 3m or less are proposed, special consideration is required for both the utility allocation widths, i.e., use of shared trenches, and the street tree allocation. These will need to be discussed and agreed with the utility authority, especially for new greenfield developments.
- Where footpaths less than 3.6m are proposed, consultation with utility authorities is required in regard to street tree allocations.

Due to the size of the proposed development and size of utilities required, the development may require a wide verge to accommodate the larger / trunk utilities within. Where trunk utility services are to be installed, these are typically installed under a road carriageway and not the footway.

To accommodate for the proposed services, an initial verge width of minimum 3.6m has been included in the Cooks Cove Precinct Master Plan.

Where public utilities cross private land or proposed open space, easements are to be placed over the utilities to provide access to asset owners for maintenance. The width of easements will be as required by relevant service authorities.

5.2 Stormwater Drainage Infrastructure

5.2.1 Existing Stormwater Drainage

The existing stormwater drainage on the site is limited to minor drainage to accommodate runoff from within the golf club to local ponds which form part of the existing golf course layout. A more detailed description of the existing stormwater drainage network is included in the Flooding, Stormwater and WSUD Report prepared by Arup.

5.2.2 Proposed Stormwater Drainage

The local stormwater drainage network for the development site is proposed to follow the philosophy of Water Sensitive Urban Design (WSUD) and will include swales, absorption and bioretention swales within road reserves and green space, all of which will discharge to the proposed stormwater system. A more detailed summary of the proposed stormwater collection network is included in the Flooding, Stormwater and WSUD Report prepared by Arup.

5.3 Sewerage Infrastructure

5.3.1 Existing Sewerage

Existing sewerage infrastructure in the vicinity of the development are the assets of SWC.

These assets include an existing 225 mm diameter cast iron sewer located at the northeast corner of the site that services the existing Kogarah Golf Club clubhouse only (refer to Appendix D). This sewer was built in 1936 on 3-inch diameter piles at 12-foot centres in water charged ground (SWC Plan No. SO 44679). This sewer drains to Sewage Pumping Station No. SPO 099 northwest of the Princes Highway. Any works in the vicinity of this sewer will require monitoring using CCTV inspection prior to and following construction to monitor damage. Levels are required to be surveyed at regular intervals to monitor for any subsidence as directed by SWC.

There is also an existing 225 mm diameter cast iron sewer that services the existing lots fronting Marsh Street between Valda Avenue and Innesdale Road on the northwest side of Marsh Street. This sewer was also built in 1936 on 4-inch diameter piles at 12-foot centres in water charged ground (SWC plan No. SO 44679). This sewer drains to the sewer noted above and then to Sewage Pumping Station No. SPO 099 northwest of the Princes Highway. There are no other existing sewers that service the proposed development site.

The Southern and Western Suburbs Ocean Outfall Sewer (SWSOOS) aqueduct passes through the south of the site. The SWSOOS is both above and below ground and is a critical piece of SWC infrastructure that services the southern and western parts of Sydney and drains ultimately to the Malabar Sewage Treatment Works. It is a heritage structure of brick barrel and concrete construction. Any works in the vicinity of this sewer outfall will require monitoring using CCTV inspection prior to and following construction to monitor any damage. Levels should be surveyed at regular intervals to monitor for any subsidence as directed by SWC.

The Mean High-Water Mark from Deposited Plan DP1152790 was defined at RL 0.555 mAHD in the vicinity of the development. However, based on current data, this has increased to 0.67mAHD (Australian Hydrographic Office, 2019).

Following a review of the existing sewerage infrastructure and the low ground levels of the development site, there seems little opportunity to service the site with the existing gravity sewerage infrastructure. Subject to staging and SWC approval, the existing 225 mm diameter sewer that

services the existing Kogarah Golf Club clubhouse may be used to service only development on Lot 1 to the north of Marsh Street at the northeast of the site.

5.3.2 Proposed Sewerage

The current ground levels at the proposed development site are generally low compared to the existing surrounding sewerage infrastructure. The existing detailed sewerage plans show that the previous sewerage reticulation catchments were not designed to cater for the proposed development site with the exception of the existing Kogarah Golf Club building.

Due to the nature of the development site with its low-lying land, sandy soils, acid sulphate soils and tidal high water table, it is considered necessary to consider various sewerage options. The options available are:

1. Traditional gravity sewerage reticulation;
2. Pressure sewerage reticulation; and
3. Vacuum sewerage reticulation.

A meeting was initially held with SWC on 8 February 2017 to discuss these potential sewerage servicing options (refer to Appendix E for SWC correspondence). These discussions will continue as the development proposal and design phases progress. It is recommended that the options of pressure or vacuum sewerage collection are further investigated to limit excavation in the sandy, water charged ground with acid sulphate soils found below the high water table. The options of pressure or vacuum sewerage will also provide further options in the staging and cost of the proposed works.

In order to demonstrate the serviceability of the proposed development, an indicative traditional gravity sewerage collection network for the development has been developed. The schematic concept plan for this network is included in Appendix D.

Due to the population density of the proposed development, in the schematic design, all sewers have been sized as 225 mm diameter or larger. During detailed design all sizes will need to be reviewed and confirmed.

SWC advised that significant modelling of the existing and proposed sewerage system will be required during the design phase to determine new main sizes and confirm capacities of existing receiving sewers to confirm their remaining capacity. This modelling is to be undertaken by the developer at their cost.

Coordination is also currently underway between the precinct WSC Rose Atkins Rimmer (RAR) and SWC to investigate the feasibility of the following new sewerage options to service the development site to SWC requirements:

1. A new gravity sewerage collection system capable of draining and servicing the entire development to the south of Marsh Street with discharge to the SWSOOS; and
2. One of the following three pumped options with discharge to the SWSOOS:
    a) A new sewage pumping station located within the development to collect and pump sewage from the lots to a discharge point through a 300 mm diameter pressure main (sizing subject to final population densities, modelling, and detailed design). This station will need to include an offline storage structure, vents at the sewage pumping station and pressure main discharge point, an electrical switch room building and an overflow structure. A plot of land with a minimum area of 35 m by 35 m is required

to site the pumping station and associated infrastructure complete with an all-weather semi-trailer access road and security fencing (refer to Appendix D);

b) A new sewage pumping station with the same requirements as above, but positioned on Sydney Water land within the west of the Northern Precinct (i.e. adjacent to the SWSOOS); and

c) A pressure sewer system with individual pumps and storage within each lot. Sewerage would be pumped within a pressure main reticulation system to discharge to the SWSOOS.

As there is currently no alternative discharge point if detailed modelling indicates the SWSOOS is near to capacity, SWC informed Arup and Cook Cove Inlet Pty Ltd at meetings on 31 October and 12 November 2019 (refer to Appendix E for SWC correspondence), and that the following feasibility options are currently being investigated by SWC to serve the projected population growth of southwest Sydney for the foreseeable future:

1. A new alternative sewer trunk main;
2. Amplification of the existing SWSOOS; and
3. Sewer loading reduction strategies across southwest Sydney, such as the adoption of widespread greywater recycling.

In order to work with SWC's ongoing sewer strategy planning for southwest Sydney and to ensure best practice sustainability for the development, Arup is also currently investigating options for greywater recycling to reduce sewer loading from the precinct in coordination with the precinct sustainability assessment.

Irrespective of the final sewage disposal option adopted in coordination with the WSC and SWC, this review has demonstrated that the site can be serviced by sewerage infrastructure and that there will be a disposal option for sewage available via the SWSOOS or another appropriate means to SWC requirements.

A feasibility application has recently been submitted by the project appointed WSC to Sydney Water detailing the proposed development and estimated sewerage demand. This feasibility application is currently with Sydney Water for review. Sydney Water have confirmed receipt of the Feasibility Application and a formal response from Sydney Water is expected in the coming weeks.

5.4 Potable Water Supply Infrastructure

5.4.1 Existing Potable Water supply

Existing potable water supply infrastructure in the area are the assets of SWC.

There is an existing 100 mm diameter cast iron cement lined water main, built in 1972 (SWC plan No. WO 92778) on the north-western side of Marsh Street which services the lots fronting Marsh Street between Valda Avenue and Rockwell Avenue.

All other mains to the northwest of Marsh Street are 100 mm diameter cement lined cast iron with the exception of a new augmented 200 mm diameter PVC-U main built in 2012 in Innesdale Road.

There is an existing 150 mm diameter cast iron cement lined main (SWC plan No. DO35499) built in 1936 on the northern side of the SWSOOS to the south of the site.

Following a review of the existing potable water supply infrastructure, it appears that there is insufficient water supply infrastructure locally of a size sufficient to service the development. However, there are two large trunk water mains in the Princes Highway approximately 350 m to 450 m north of the site which can be accessed for water supply (refer to Appendix F). These mains include a 750 mm diameter cast iron cement lined water main, built in 1918 (SWC plan No. WO4746), and a 500 mm diameter cast iron cement lined water main, built in 1896 (refer SWC plan No. CO 50).

At a meeting held with SWC on 8 February 2017, this proposed supply option was discussed and SWC advised that this would be the point of supply.

5.4.2 Proposed Potable Water supply

The existing potable water supply infrastructure adjoining the site has insufficient capacity to service the proposed development site. The developer would need to install water supply connections and supply points away from the site. This would require the construction of lead-in works through the surrounding existing residential area and streets to the north.

Any supply to service the site would need to be a looped supply, thus resulting in two lead-in mains to the development site (refer to Appendix F). To achieve this, new connections would be required to the existing 250 mm diameter main that connects to the 500 mm diameter and 750 mm diameter mains in the Princes Highway at the intersection of West Botany Street. This new 300 mm diameter main would then extend to the site via West Botany Street and Flora Street.

Subject to network modelling and sizing, it is anticipated that up to two development precincts could be serviced by a single water main connection. Once more than two development blocks are developed, a second 300 mm diameter main would need to connect to both the 500 mm diameter and 750 mm diameter mains at the Princes Highway at the intersection of Gertrude Street. This main would then extend down Gertrude Street and Rockwell Avenue to service the development site.

The following potable water supply infrastructure will be required to service the development site internally:

- New distribution mains capable of providing required peak hour and fire demands;
- A looped reticulation system with linked mains and dead-end mains avoided where possible; and
- All pipework to be PVC-O material unless advised otherwise.

The 300 mm diameter lead-in mains are to be extended around the site to provide a distribution loop and also provide dual feed points for the water supply reticulation supply to the site. All distribution mains shall be a minimum of 200 mm in diameter.

A meeting was held with SWC on 8 February 2017 to discuss potential potable water servicing options for the development site. SWC advised that significant modelling of the existing and proposed water supply network will be required during the design phase to determine new potable water main sizes and confirm that the capacity of existing water mains is not affected. This is to be undertaken by the developer at the developer's cost.

In order to demonstrate the serviceability of the proposed development, a schematic design of an indicative potable water reticulation network has been prepared. The schematic concept plan for this network is included in Appendix G. Due to the population density of the proposed development, all lead-in and distribution water mains have been sized as 300 mm in diameter and all reticulation mains as 200 mm in diameter.

Irrespective of the final water supply option chosen, this review has demonstrated that the site can be serviced by potable water infrastructure with the construction of some lead-in infrastructure.

Similar to the sewerage infrastructure investigations, a feasibility application has recently been submitted by the project appointed WSC to Sydney Water detailing the proposed development and estimated water supply demand. This feasibility application is currently with Sydney Water for review. Sydney Water have confirmed receipt of the Feasibility Application and a formal response from Sydney Water is expected in the coming weeks.

5.5 Sydney Desalination Plant Pipeline

5.5.1 Existing Desalinated Water Pipeline

The existing Sydney Desalination Plant Pipeline is the asset of Sydney Desalination Plant Pty Ltd under contract from the New South Wales State Government for a period of 50 years.

The pipeline runs through the Cook Cove Northern Precinct from south to north (refer to Appendix H) and has an 1829 mm outside diameter and 12 mm thick walls. The pipeline alignment varies and is approximately 40 m to 100 m west of the Cooks River embankment and contained within a 6 m wide easement. The main crosses over the SWSOOS in the south of the site and then dives to allow for a future stormwater channel to pass over for a distance of 110 m north of the SWSOOS. The main then gradually rises and is under fill material to a distance of 370 m north of the SWSOOS. At this point, the main drops vertically to an invert level of -10.0 mAHD and deeper where it continues north and is contained within a 2500 mm outer diameter Reinforced Concrete jacked pipe (micro tunnel) for the full length of the remainder of the development site to the north.

The alignment of the existing desalinated water main encroaches on a significant area of developable land. The ability to relocate or build over and around the main was discussed with Sydney Desalination Plant Pty Ltd at a meeting held on 14 February 2017. Sydney Desalination Plan Pty Ltd noted that the pipeline has a design life of 100 years and any works in and around the pipeline should consider this design life for access should it be needed. Where the pipeline dips to the deep invert level of -10.0 mAHD, there is cathodic protection equipment and an air release valve which will need to be accessed for maintenance – this should be considered in any future design. Preferably the point of access for the cathodic protection and air release valve should be built into a future pit for maintenance and the pit is to be sited in an open public space free of traffic.

5.5.2 Sydney Desalination Plant Pipeline within the Proposed Development

Sydney Desalination Plant Pty Ltd was approached to discuss and advise on the relocation and building over and adjacent to the Sydney Desalination Plant Pipeline through the development site. A meeting was held on 14 February 2017 with the minutes attached in Appendix I. Following consultation with Sydney Desalination Plant Pty Ltd the preferred option was to:

1. Maintain the easement access and rights over the easement;
2. Build any structures outside of the existing easement;
3. Preferably build any works outside the zone of influence for the pipe. The zone of influence being a line from the invert of and outside diameter of the pipe to the finished surface on each side of the pipe at a one (1) vertical to one (1) horizontal batter slope as per the Sydney Water Corporation, Technical Guidelines, *Building over and adjacent to pipe assets* (October 2015). Sydney Desalination Plant Pty Ltd further requested at the meeting that a one (1) vertical to two (2) horizontal batter slope be considered during design due to the sandy soils in the area;

4. All works where building over or adjacent to the Sydney Desalination Plant Pipeline is to be done in accordance with the Sydney Water Corporation, Technical Guidelines, *Building over and adjacent to pipe assets* (October 2015);
5. Any works built over the pipeline are to be built with the minimum cover and to the loading criteria as supplied by Sydney Desalination Plant Pty Ltd; and
6. Preference is to be given to a road being built over the pipeline alignment if possible.

In order to comply with these requirements, it will be necessary for structures within the zone of influence of the pipeline to be founded beneath the zone of influence of the pipeline. This can be achieved by piling to the required depth beneath the zone of influence. Given soil conditions at the site, which are anticipated to require deep piles, this is not anticipated to present a significant design constraint in these areas.

5.6 Electrical Infrastructure

5.6.1 Existing Electrical Infrastructure

Existing electrical infrastructure in the area are the assets of Ausgrid. Preliminary discussions with Ausgrid on 9 February 2017 (their reference No. 700003432) advised that there is no redundancy in their existing electrical system in the area. Since then, discussions with Ausgrid have been ongoing. An ASP3 service provider has recently been appointed to estimate the required power demand and develop a servicing concept.

The existing 11kV Ausgrid kiosks on Marsh Street (S76825 and S76826) are believed to be currently serving the M8 Motorway tunnelling construction. The two High Voltage connections (HVCs) are fed from the Rockdale Zone Substation via two separate dedicated underground 11kV feeders. We assume the two HVCs will no longer be required once the tunnel construction is completed. This can be considered as a major connection opportunity to supply power to the Cooks Cove development.

5.6.2 Proposed Electrical Infrastructure

Following the initial consultation with Ausgrid on 9 February 2017, Ausgrid have since advised that they will have electrical supply/supplies in the area by the end of 2017 (refer to Appendix J for a copy of the correspondence).

In coordination with the precinct Electrical Services Strategy Consultant (TRACA Engineering), coordination is currently ongoing with Ausgrid to confirm in further detail how the development will be serviced based on the current power supply demand estimates. Depending on the final loading, timing, and staging of the development, Ausgrid is investigating whether a new zone substation will need to be established on site, or alternatively, whether high voltage feeders can be provided to supply the development from a single or multiple zone substations within the area.

Initial consultations with Ausgrid suggested a new 11kV lead-in feeder to the development site from an existing zone substation approximately 3km away. Investigations are underway for an option for multiple connections, 2 off, to Ausgrid's existing underground network in Marsh Street and Gertrude Street as shown in Figure 6 below.

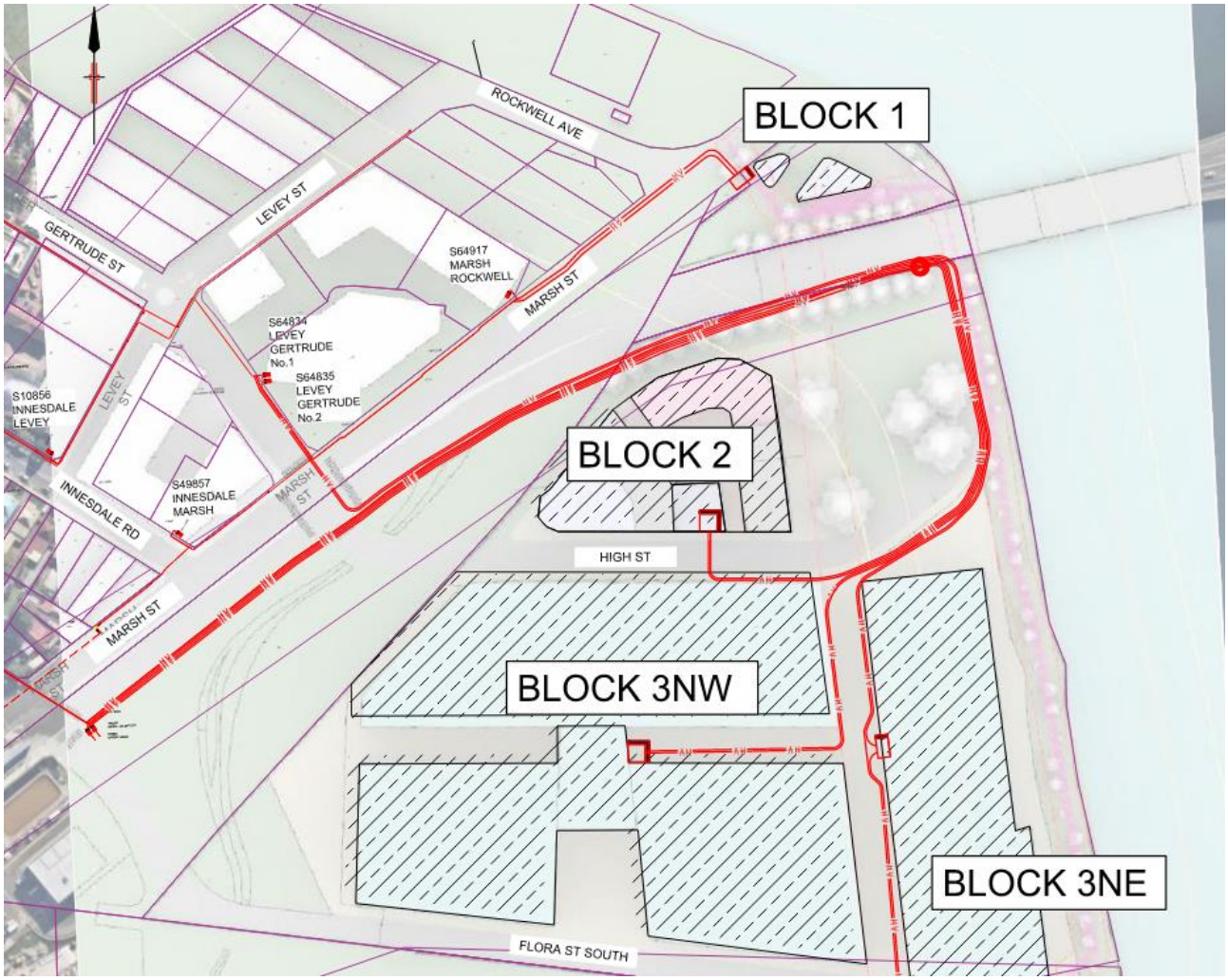


Figure 5: Ausgrid Proposed Design Scope plan

Following the formal feasibility application to Ausgrid, Ausgrid have advised of two (2) potential supply routes. These are currently being investigated and priced for a high-level construction cost estimate. A high-level construction cost estimate with relevant Ausgrid correspondence is expected to be provided by the project ASP3 consultant in the coming weeks.

If a zone substation option is adopted, a 2,000 m^2 (approximate) block of land would be required, depending on the available shape and location of land and the site access. It is suggested that a block be provided with a 50 m by 40 m allotment with road frontage and all-weather access for delivery of transformers and other large equipment to the site and for large maintenance vehicles.

The development will also need to install an underground electricity distribution network involving multiple kiosks or chamber substations across the site.

A concept plan for the proposed electrical layout for the site is included in Appendix K.

Any electricity supply in the vicinity of the Moomba-Sydney Pipeline is not to be laid parallel where possible due to the electrolysis which may occur with the pipeline. Crossings are to be limited where possible.

5.7 Telecommunications Infrastructure

5.7.1 Existing Telecommunications

Existing telecommunications infrastructure in the area are the assets of Telstra, NBN Co and Optus. Due to the size of the site and proposed development, only NBN Co servicing was investigated further. There is NBN Co cabling in Innesdale Road and Levey Street to the north of Marsh Street. There is no closer NBN Co cabling near the site.

There is an Optus optical fibre cable in a Telstra duct on the north side of the Marsh Street deviation and then across the Cooks River. The cable on the north side of the original Marsh Street extends from Innesdale Road to Rockwell Avenue servicing the lots facing Marsh Street.

NBN Co have been contacted with regards to the updated master plan. Refer to Appendix M for confirmation from NBN CO that the development has been accepted for servicing.

5.7.2 Proposed Telecommunications

No discussion was held with Telstra or Optus. Due to the size of the proposed development, the site would be serviced with NBN Co fibre optic services.

Following consultation with NBN Co, they advised by phone that all pit and pipework would be installed by the developer and all cabling would later be installed by NBN Co. A copy of the correspondence is attached in Appendix M.

A concept plan for the site telecommunications network is included in Appendix L.

5.8 Natural Gas Infrastructure

5.8.1 Existing Natural Gas

Existing Natural Gas infrastructure in the area are the assets of Jemena. These assets include an existing 100 mm diameter secondary 1050kPa gas main on the south side of Marsh Street leading over the Giovanni Brunetti Bridge and the Cooks River. The main then crosses over Marsh Street at the western end of Lot 1 into Rockwell Avenue and continues along the northwest footpath of Marsh Street as a 50 mm diameter nylon main to Innesdale Road. The gas main was adjusted as part of the current Marsh Street widening works.

5.8.2 Proposed Natural Gas

Following consultation with Jemena on 13 January 2017, Jemena advised that they had undertaken a desktop study of the development proposal and advised that natural gas can be made available to the development. Jemena confirmed on 19 February 2020 that this arrangement would still be the case regarding the revised precinct scheme. Copies of these correspondence are attached in Appendix N.

Supply to this site will need to come from the high pressure 1050kPa gas network located in Marsh Street. To facilitate suitable supply to the site, reduction of this high-pressure gas pipeline will be required via a below ground pressure reduction station to be accommodated within the development site. The station would be approximately 6 m long by 3 m wide. From this device a suitable medium pressure 210kPa plastic network can be reticulated to the site for retail and commercial applications.

Jemena have been contacted with regards to the updated master plan. Refer to Appendix M for confirmation from Jemena that the development has been accepted for servicing.

5.9 Moomba-Sydney Pipeline

5.9.1 Existing Moomba-Sydney Pipeline

The existing 225 mm diameter Moomba-Sydney Pipeline runs through the site from south to north adjacent the Cooks River embankment (refer Appendix O). The pipeline carries ethane at high pressure. Ethane is a colourless and odourless gas which is heavier than air. The pipeline is the asset of the APA Group Pty Ltd who provide maintenance services for their own pipelines.

The pipeline primarily runs along the riparian zone of the Cooks River through the north of the site, and further away from the river on a varying alignment from the river to the south of the site. The pipeline is contained within an easement generally 5 m wide across the site, but can also vary in width from 1 m to 2 m, 5 m to 10 m.

North of Marsh Street in Lot 1, an above ground valve station is located in the Block 1 area of the development (refer to Figure 6). The valve station comprises a small brick building and another louvered enclosure. These structures and the associated parking area are surrounded by a chain wire fence located within a 10 m wide by approximately 40 m long easement around the buildings.

Figure 6: Above ground valve station and enclosure

5.9.2 Moomba-Sydney Pipeline within Proposed Development

APA Group are to be advised of any works within 50 m of the Moomba-Sydney High Pressure Pipeline.

In preliminary discussions held on 16 February 2017 with APA Group, the following was advised:

- Any works to be undertaken in accordance with Australian Standard AS2885;
- Cover to the pipe is generally a minimum 1.2 m;

- A maximum cover of 3 m would be considered subject to independent engineering evaluation;
- Minimum separation to any service crossing the pipeline to be 1 m and to cross perpendicularly to the pressure main;
- All crossings to be open excavated, not bored;
- All works will need to be monitored for vibration and stress during any construction near the main;
- Any parallel utilities to have a minimum separation of 3 m to 5 m preferred;
- Any electricity distribution should not run parallel to the pressure main due to the ultimate effect of electrolysis. It was also noted that the main is protected by Cathodic protection; and
- Preferably no roads are to be built over the pipeline or along its length.

On the 28 February 2017 APA Group responded to the Department of Planning and Environment detailing comments on the planning of the Arncliffe, Banksia, and Cook Cove developments (refer to the letter attached in Appendix P).

From this letter it was recommended that a Safety Management Study (SMS) should be undertaken to understand and manage risks associated with the pipeline. This SMS workshop was held on 25 August 2017 (refer to the report attached in Appendix Q) and resulted in the following outcomes:

- Provision of a protection slab will likely be required over the pipeline for the entire site;
- Construction works associated with the reconstructed seawall will require plant, material, and equipment to cross the pipeline. APA to approve detailed design and construction plan;
- Servicing the waterfront area will require utilities to cross the pipeline. The preference of APA is for any pipeline crossings to occur in designated corridors will all necessary utilities crossing in the same location;
- APA required unfettered access to the pipeline easement at all times during construction and once the project has been completed;
- There were a number of concerns surrounding construction works adjacent to the pipeline. Construction works adjacent to the pipeline would be subject to a number of APA requirements and approval, including (but not limited to) access, training, vibration, loading and direct current voltage grading (DCVG) testing; and

The most recent meeting with APA was held on 15 December 2022 with the minutes of the meeting attached in Appendix R).

The outcomes of the SMS will be incorporated into the layout, design, and ongoing management of the project.

This high-pressure ethane pipeline solely supplies the Qenos Botany complex at Botany. It is understood Qenos have a storage limit of approximately 3 days at their plant.

The current master plan does not propose any relocation works for the pipeline. However, localised protection measures to the requirements of APA will need to be implemented where working within the minimum setback/easement requirements to the pipeline.

6. Conclusion

Cook Cove Inlet Pty Ltd propose to rezone the existing Kogarah Golf Club to a contemporary warehouse and logistics precinct. Once rezoned, it is proposed that the site would be developed to include , retail, commercial buildings, hotel, and serviced apartments, multi storey warehouse, recreational facilities, and roads. To support this application, Arup has prepared this report summarising the proposed servicing strategy for major utilities and provisional projected utility demands.

Existing utilities are primarily to the northwest and south of the site. The site will be able to be serviced with drainage, sewerage, potable water supply, electricity, telecommunications, and domestic gas.

The Sydney Desalination Plant Pipeline is to remain in its existing position and the development is to maintain access by including roads or open space above the existing easement alignment.

The Moomba-Sydney High Pressure Ethane Pipeline passes through the Cook Cove Northern Precinct site. Based on recommendations from the asset owner, APA Group, it was proposed to undertake an independent SMS in order to understand and manage risks associated with building in the vicinity of the pipeline and the requirements associated with relocating the pipeline. The outcomes of the SMS will be incorporated into the layout, design, and ongoing management of the project.

In summary, the site can be serviced by all utilities required for the proposed development. As the rezoning application progresses and designs advance, it is recommended that utilities planning continues to be coordinated with the relevant utilities authorities. In particular, where relocations and lead-in works are required to service the site, early planning is essential to accommodate lead times and prevent delays.

7. References

Australian National Tide Tables (AHP 11), Australian Hydrographic Office, 2019.

Bayside West Precincts (Arncliffe, Banksia and Cooks Cove) Draft Land Use and Infrastructure Strategy, NSW Planning and Environment, November 2016.

Cook Cove Northern Precinct – Planning Proposal Flood Impact Assessment, Arup, May 2020.

Cook Cove Northern Precinct – Planning Proposal Stormwater Management Concept Plan, Arup, May 2020.

Cook Cove Northern Precinct Master Plan, Skidmore, Owings & Merrill (SOM), February 2020.

Cook Cove Southern Precinct DA Amended Site Infrastructure and Services Assessment, Advisian, July 2017

Guide to Codes and Practices for Street Opening, NSW Streets Opening Coordination Council, 2009.

Guide to Codes and Practices for Street Opening, NSW Streets Opening Coordination Council, 2018.

Technical Guidelines: Building Over and Adjacent to Pipe Assets, Sydney Water Corporation, October 2015.

Appendix A

Existing Site Aerial Photograph

A.1


Princes
Gertrude Street
Flora Street
Marsh Street
SITE
COOKS RIVER
M5 East

Appendix B

Bayside West – Precinct Plan

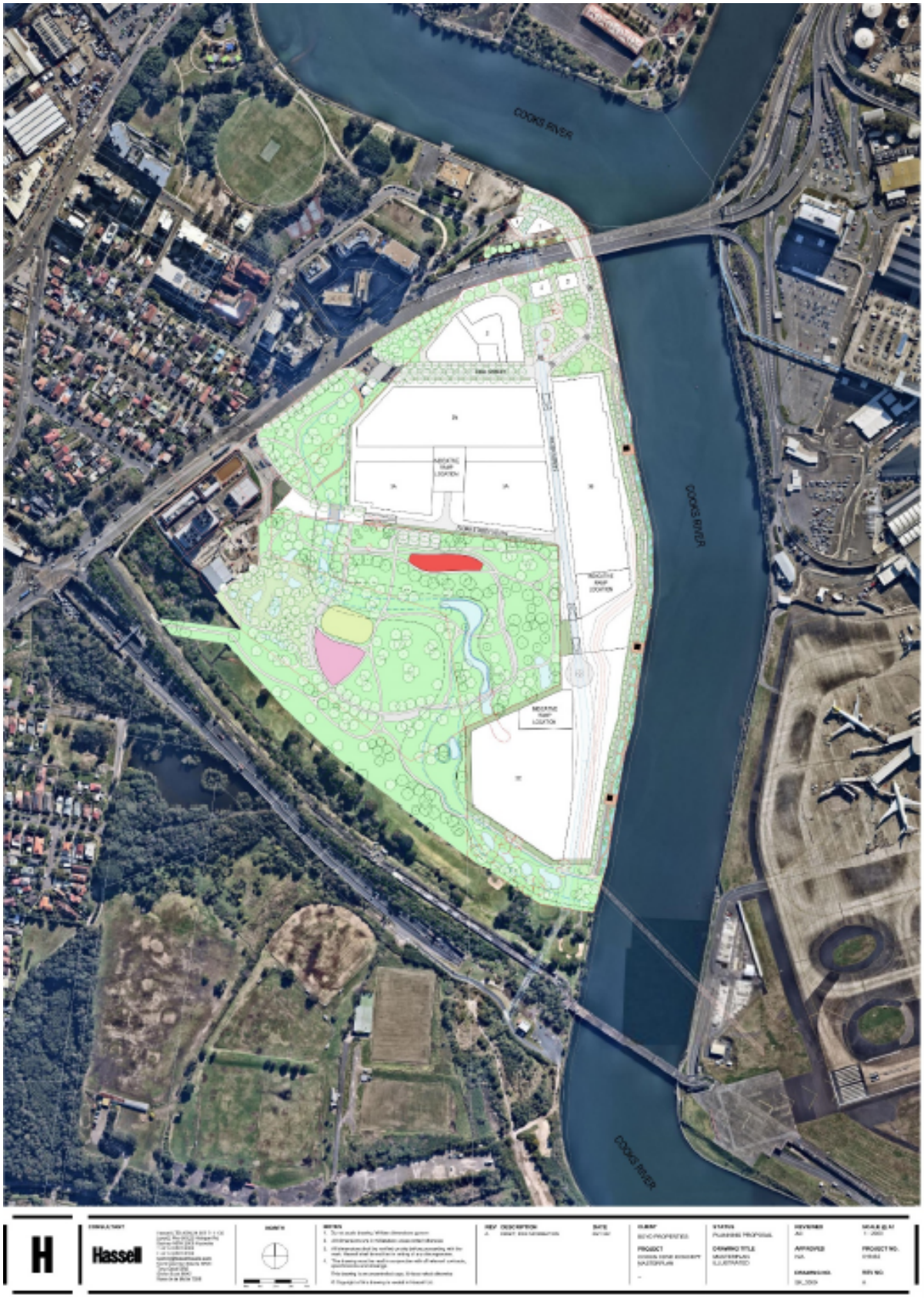
B.1

Bayside West Precinct
LUIS Structure Plan
(DPE, Nov 2016

Appendix C

Proposed Site Layout Plan

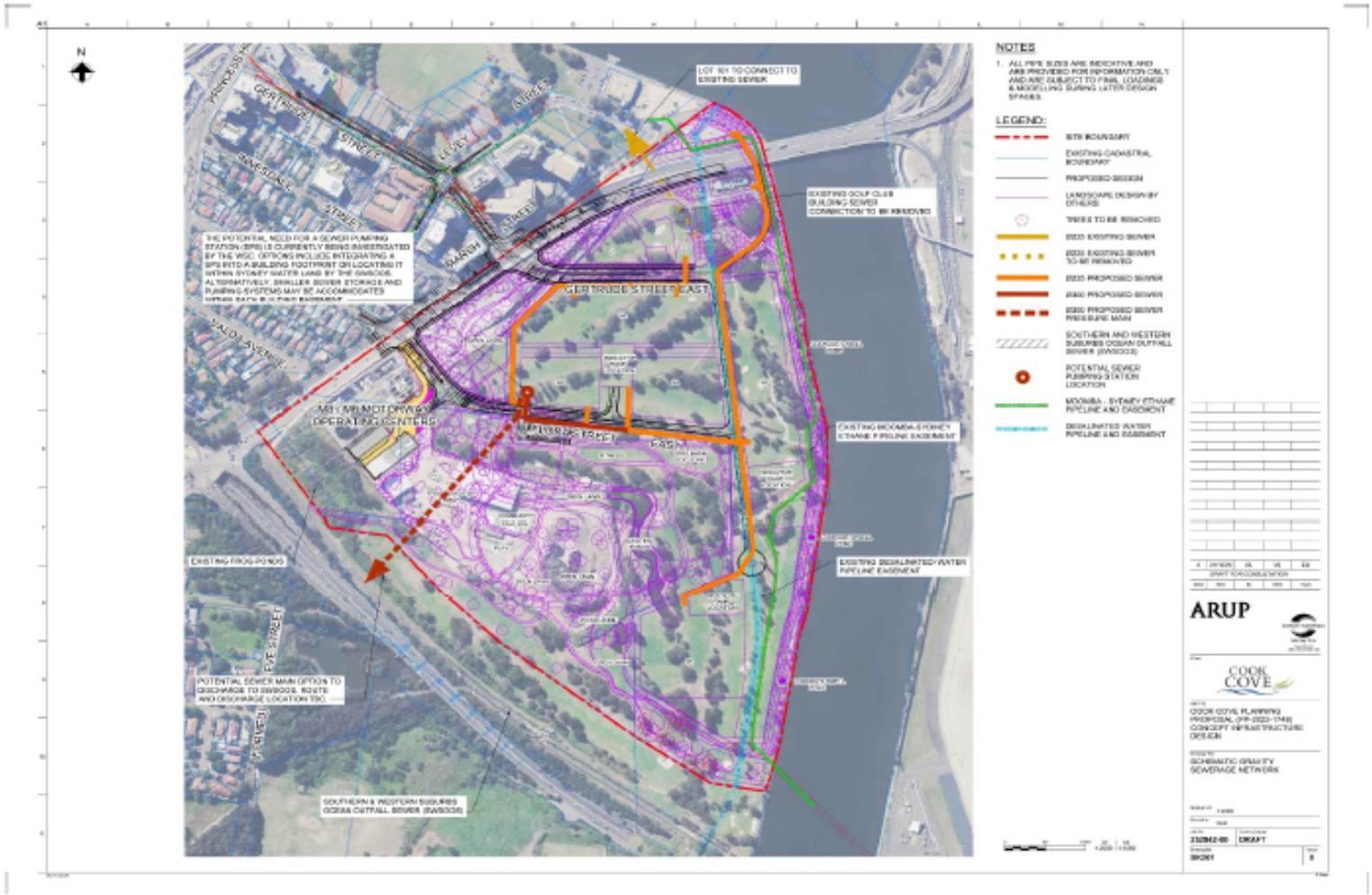
C.1



Appendix D

Proposed Sewage Pumping Station and Pressure Main Location

D.1


N
GERTRUDE STREET EAST
EXISTING GOLF CLUB BUILDING SEWER CONNECTION TO BE REMOVED
EXISTING MOOMBA-SYDNEY ETHANE PIPELINE EASEMENT
EXISTING DESALINATED WATER PIPELINE EASEMENT
EXISTING FROG PONDS
POTENTIAL SEWER MAIN OPTION TO DISCHARGE TO SWSOOS. ROUTE AND DISCHARGE LOCATION TBC.
SOUTHERN & WESTERN SUBURBS OCEAN OUTFALL SEWER (SWSOOS)
NOTES
LEGEND:
ARUP
COOK COVE
SCHEMATIC GRAVITY SEWERAGE NETWORK
DRAFT

Appendix E

SWC Correspondence

Sydney Water -
Checklist of critical information to be lodged with an e-Developer application

Case Number: 203282

Application Type is: ☐ **S73 Complying** ☒ **Non S73 Complying** (Adjustment and Deviation / Feasibility / Minor Extension* / Road Closure / Anticipated Requirements / S73 - Development / S73 - Dual Occupancy) (* NOT a 'Minor service extension')

Section 1: Complete for *ALL* applications	Yes	No	Comments
Hydra Download is on the correct address	☒	☐	
Correct application type has been determined & selected	☒	☐	
Both Developer and Applicant details and spelling are **correct** (because they're used in NORs, letters and Deeds plus the S73 Certificate)	☒	☐	
Hydra download number is allocated to the correct application and the Application Entry form 'Kept'	☒	☐	
Download plan included in Application (modified to include location and lot information as per *Section 73 Plan requirements*)	☐	☒	NA
Lead address is correct (St number, St name etc entered)	☒	☐	
Developer's email address is correct (it IS developer's email address and IS correct)	☒	☐	
Proposed Development description is **exactly** as stated in the Council Consent	☐	☒	NA
Proposed development details are correct (including 'development type' and 'development sub-type', lot, dwelling and stage details have been entered correctly)	☒	☐	
Subdivision plan conforms to the *Section 73 Plan requirements*	☐	☒	NA
Subdivision plan has been attached	☐	☒	NA
Development Plan has been approved by council and conforms to the *Section 73 Plan requirements*	☐	☒	NA
LUD form (V1), subd plan and PPN sent to CSD mailbox	☐	☒	NA
LUD form (V2) received from CSD	☐	☒	NA
Attached consent is valid and has all the details for the proposed development	☐	☒	NA
Dual Occupancy **or** other servicing requirements have been determined and included in the 'Additional Information' and the form has been attached	☒	☐	Intro letter requesting meeting
I have confirmed the application type in e-Developer is correct	☒	☐	
I have confirmed all the above have been entered correctly.	**Date:** 2/11/22		**Initial:** AR

Section 2: Non *S73 Complying* applications ONLY	Yes	No	Comments
Anticipated Requirements	☐	☒	
Completed the Anticipated Requirements Information Form and attached to the 'Attach Consent Document' field	☐	☐	
Stormwater cases	☐	☒	
On-site detention (City of Sydney Council applications) required?	☐	☐	
Stormwater connection required?	☐	☐	
Road Closures, Adjustment and Deviation, Minor Extensions*	☐	☒	
Only service(s) relating to the application have been selected	☐	☐	
Concept and engineering plans show the entire scope of works	☐	☐	
All existing Sydney Water services within the vicinity of the adj/dev works have been identified	☐	☐	
All proposed and existing Sydney Water assets are clearly shown on the	☐	☐	

plan			
Options presented for adj/dev of affected Sydney Water assets	☐	☐	
Provide flow schedule	☐	☐	
Special, Commercial, Industrial or Mixed Developments	☒	☐	
'Expected Requirements' section has been completed	☐	☒	
Engineering Plans attached	☐	☒	
Hydraulic information has been determined and entered	☐	☒	
I have confirmed all the above have been entered correctly	**Date:** 2/11/22		**Initial:** AR

Section 3: *S73 Complying* applications ONLY	**Yes**	**No**	**Comments**
M2M required?	☐	☐	
LUD form (V3) completed (with tag numbers) & attached	☐	☐	
Main to Meter services have been locked and tagged	☐	☐	
WAC plan conforms to *Section 73 Plan requirements*	☐	☐	
WAC Plan file naming convention has been followed	☐	☐	
Main to Meter PCP attached	☐	☐	
BPA required?	☐	☐	
BPA requirement Blue Form completed and attached	☐	☐	
Minor Works Sewer required?	☐	☐	
Notice Of Entry was **not** required	☐	☐	
Construction Commencement Notice attached	☐	☐	
WAC Plan attached and conforms to *Section 73 Plan requirements*	☐	☐	
WAC Plan file naming convention has been followed	☐	☐	
Connection Report attached	☐	☐	
Design/Project Management/Construction Costs attached	☐	☐	
Total Project Costs is correct **(**per attachment and matches 'Installed assets' in e-Developer**)**	☐	☐	
Refundable GST is correct	☐	☐	
Declaration is read and confirmed	☐	☐	
MLiM required?	☐	☐	
Undertaking copy attached	☐	☐	
Asset Installation data entered:	☐	☐	
Type of Asset(s) is correct	☐	☐	
Material used for asset(s) is correct	☐	☐	
Length and Diameter of asset(s) is correct	☐	☐	
Project Management costs is correct	☐	☐	
Design costs is correct	☐	☐	
Construction costs (less GST) is correct	☐	☐	
GST amount is correct	☐	☐	
S73 *Additional Advice sheet* was issued to the developer	☐	☐	
Requirements for Business Customers for Commercial and Industrial Property Developments Advice was issued to developer	☐	☐	
I have confirmed all the above have been entered correctly.	**Date:**		**Initial:**

I CERTIFY BY THE SUBMISSION OF THIS APPLICATION THAT THE APPLICATION HAS BEEN PREPARED AND SUBMITTED IN ACCORDANCE WITH SYDNEY WATER REQUIREMENTS

_____	*Anneke Rimmer*	*3/11/22*
Signature	**Name**	**Date**

ROSE ATKINS RIMMER
(Infrastructure) Pty Ltd
WATER RELATED INFRASTRUCTURE
DESIGN & MANAGEMENT
LICENSED WATER SERVICING COORDINATOR

Additional Information

17 November 2022

CASE – 203282
Feasibility Application for Cook Cove Northern Development
Response to application rejections comments:

Master Plan provided references Block 2 and 3, however Structure Plan references Blocks, 1, 2 and 3. Is there further information available on Block 1 on what Specific type of Development will be built on this Block, or are these existing Buildings?

Block 1 will have a max of 2,000sqm of gross floor area – in the format of 2x 3-4 storey commercial building, food and beverage premises and commercial office.

Please provide Hydraulic calculations for the proposed Commercial and Industrial Buildings.

Included are sewer equivalent EP calculation and water supply demand estimated based on the GFA breakdowns as provided in the attached PDF from Hassell, the Architect.

With respect to the potable water demand calculations, we have assumed for the Net Hectare Area (Nha) to be 80% of the GFA. We have run this past our building services team and they have confirmed that this is industry best practice estimate for projects at this early phase of the proposed development.

The attached water demands spreadsheet also includes 2 additional tabs for Nha=70%GFA and Nha=90%GFA as a sensitivity analysis to the demand calcs.

Please provide hydra Download plan showing the location of the proposed Building footprints. This is required for all Applications.

Please refer to attached plan.

Is there any Drinking Water servicing advice available for review by Sydney Water's internal stakeholders.

Please see the attached relevant water supply and sewer sketches from the previous master plan design (issued March 2020).

The Hydra download Case is only referencing one lot. Can you please review?

This has been reviewed and all development lots have been selected as best as possible.

ROSE ATKINS RIMMER
(Infrastructure) Pty Ltd
WATER RELATED INFRASTRUCTURE
DESIGN & MANAGEMENT
LICENSED WATER SERVICING COORDINATOR

Additional Information

2 November 2022

CASE – 203282
Feasibility Application for Cook Cove Northern Development

To Whom It May Concern,

In relation to case 203282, RAR has been engaged as the WSC to provide servicing advice and submit a Feasibility Application to Sydney Water for the proposed Cook Cove Northern Development. Sydney Water's response is required to assist in the Planning Proposal phase of the project, which successfully received rezoning during August 2022. In support of the Feasibility Application submission, we have included the following documentation:

- Sydney Water Growth Servicing Data Form (please refer to this as the figures in the eDeveloper form are not accurate due to eDeveloper limitations/restrictions)
- Current concept masterplan and massing details

We note that the nature of this project is quite large scale and that previous discussions with Sydney Water regarding this project have taken place. In order to continue the investigations regarding the future Sydney Water servicing arrangement for the project, RAR is also submitting this Feasibility Application as a way of continuing the line of communication with Sydney Water. Accordingly, it is expected that the outcome of this Feasibility Application and discussion with Sydney Water is to gain a better understanding on the below key Sydney Water issues regarding the sewer servicing:

1. Whether the proposed development can discharge directly to the heritage Southern and Western Suburbs Ocean Outfall Sewer (SWSOOS) by the year 2026, and if so, where is the best point to connect (e.g. at the existing Georges River submain mixing station)? This would require a pumped connection (either a new pumping station or via a pressure sewer system, refer below).
2. Due to possible sewerage system constraints, would Sydney Water consider a dedicated sewer pump out strategy whereby localised pump out tanks would be located within each lot with effluent pumped directly into a Sydney Water pressure sewer system?
3. If the development will not likely be permitted to connect to the SWSOOS, where else could the site realistically connect to by 2026? Can a connection to the existing sewer reticulation network west of Marsh St (either via gravity or pumped via a pressure sewer system) be made?
4. If a new sewer pumping station (SPS) is required (not the preferred option at this stage), can this be located within the Sydney Water land adjacent that borders the SWSOOS (Lot 17)? If so, then please confirm whether an allocation will need to be left vacant for the SWSOOS to extend into, assuming that future amplification is likely to take place.

In addition to this Feasibility Application under case 203282, we request that Sydney Water facilitate a meeting between all relevant stakeholders. Once a meeting request has been issued by Sydney Water, RAR will forward this to the client to ensure all parties can attend as it is expected that this will be extremely beneficial for this Feasibility study.

If there are any queries, please contact me on the number below.

Regards,

Anneke Rimmer
Project Coordinator
ROSE ATKINS RIMMER (Infrastructure) Pty Ltd
Water Related Infrastructure Design and Management.
P: (02) 9853 0200 | F: (02) 9671 7399

Growth Servicing Data

The data collected will inform Sydney Water's planning investigations for servicing of the proposed development. Updated data must be provided every quarter for each development. The data collected will be treated as commercial in confidence.

Growth Data	
Date (select):	21-Sep-2022
Developer:	Cook Cove Inlet Pty Ltd
Project/Development name:	Cooks Cove Development Zone
Precinct:	
Growth Area:	Arncliffe Banksia Growth Area
LGA:	Bayside Council
Development Status (select):	Planning Proposal
Anticipated date of rezoning:	01-Dec-2023
Type of development and ultimate yield: Low density residential N/A Medium density residential N/A High density residential N/A	Commercial (m2) 52,000sqm GFA Industrial (m2) 290,000sqm GFA
Any known high water users e.g. data centre	Primarily warehouse / logistics, with short term accommodation, commercial office and retail.
First s73 expected (month and year):	01-Jan-2025
First dwelling connection (month and year):	N/A

10 Year Forecast									
Yr 1	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Yr 6**	**Yr 7**	**Yr 8**	**Yr 9**	**Yr 10**
Rezoning	Rezoning	Construct	Construct	20%	20%	20%	20%	20%	-

Services Required		
Potable Water ✓	Wastewater ✓	Recycled Water ✓

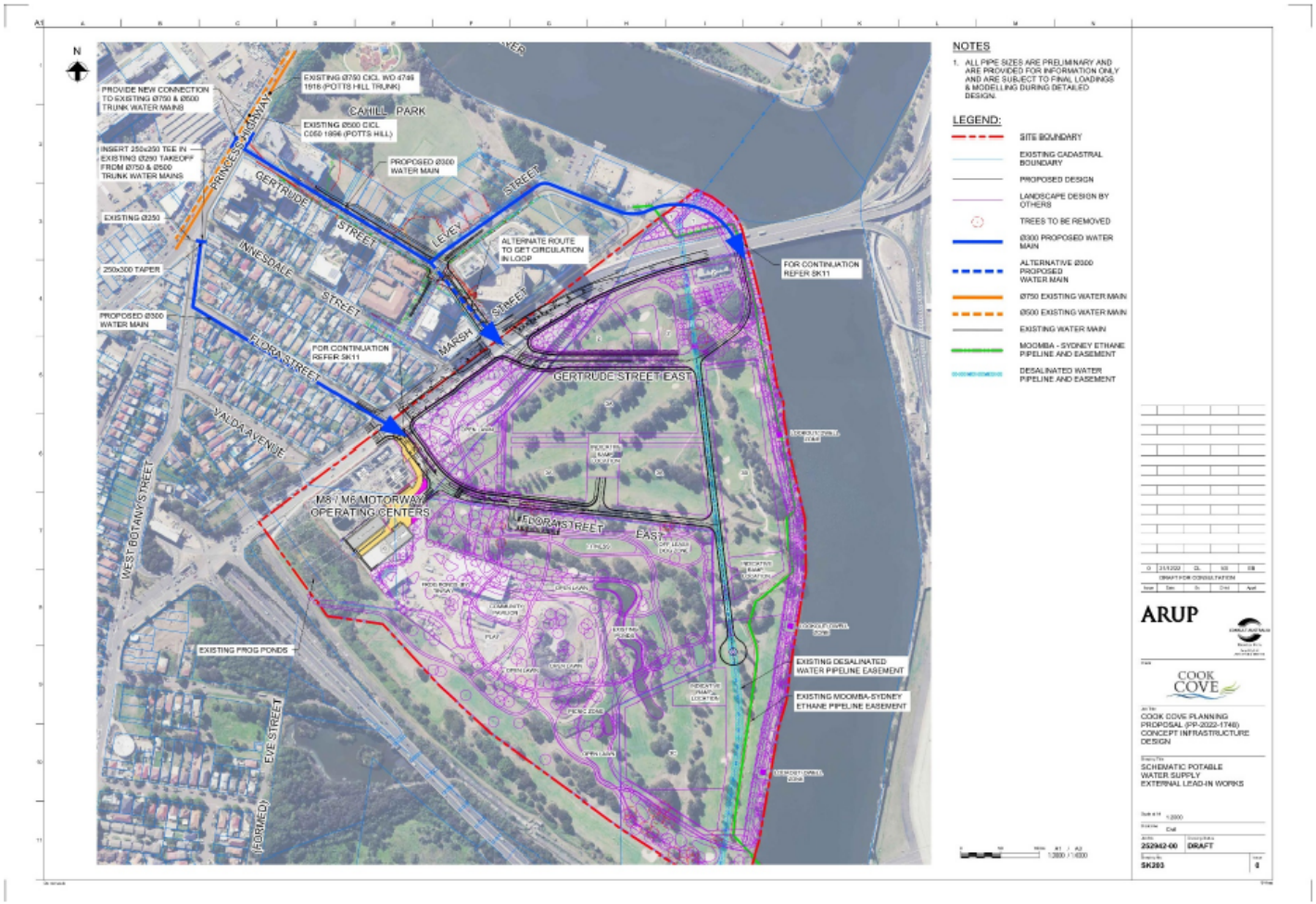
Attachments (please submit):

1. Overall site plan
2. Staging plan for the entire development

Appendix F

Water Supply Lead-in Works

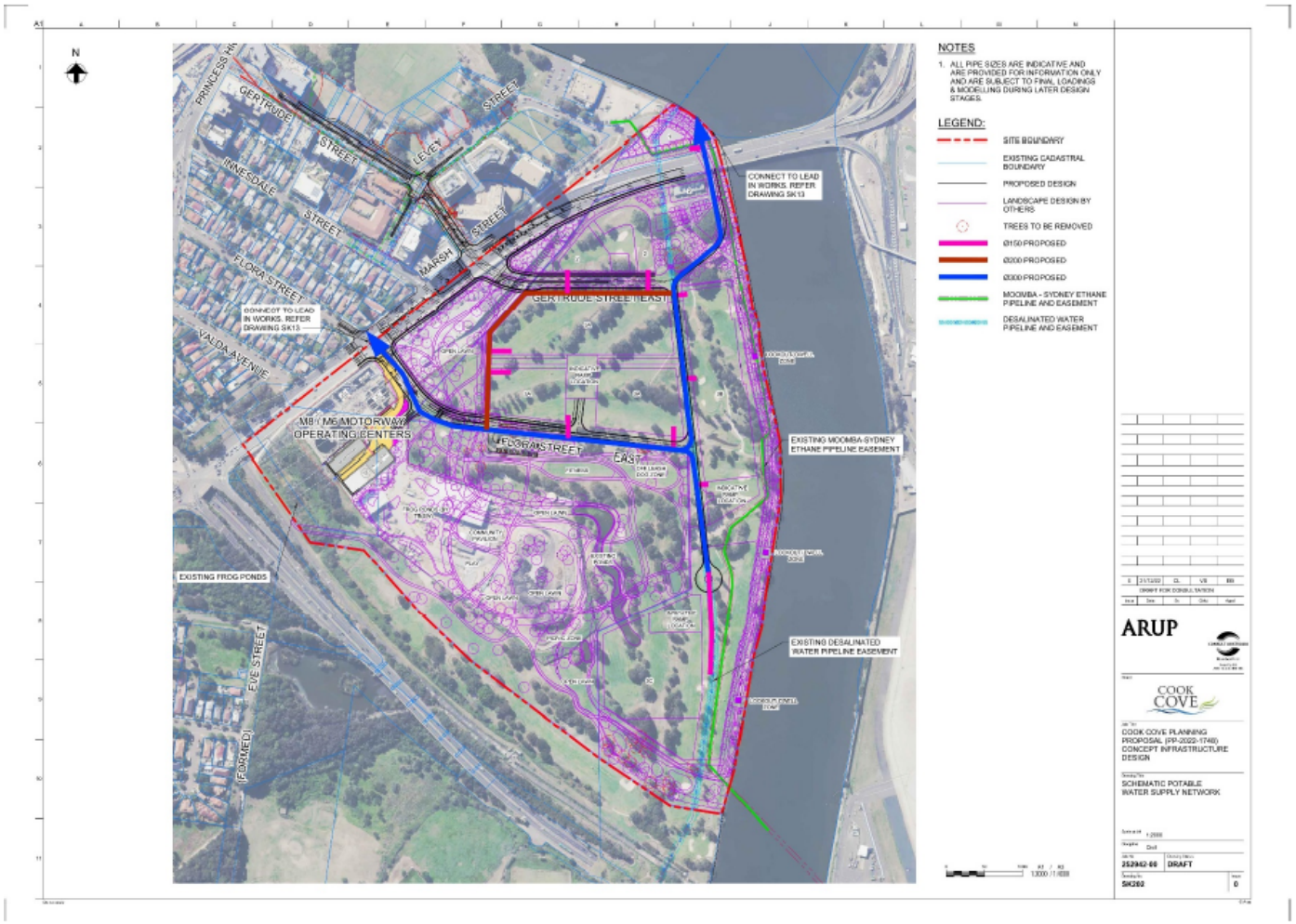
F.1


NOTES
1. ALL PIPE SIZES ARE PRELIMINARY AND ARE PROVIDED FOR INFORMATION ONLY AND ARE SUBJECT TO FINAL LOADINGS & MODELLING DURING DETAILED DESIGN.
LEGEND:
SITE BOUNDARY
EXISTING CADASTRAL BOUNDARY
PROPOSED DESIGN
LANDSCAPE DESIGN BY OTHERS
TREES TO BE REMOVED
Ø300 PROPOSED WATER MAIN
ALTERNATIVE Ø300 PROPOSED WATER MAIN
Ø750 EXISTING WATER MAIN
Ø500 EXISTING WATER MAIN
EXISTING WATER MAIN
MOOMBA - SYDNEY ETHANE PIPELINE AND EASEMENT
DESALINATED WATER PIPELINE AND EASEMENT
PROVIDE NEW CONNECTION TO EXISTING Ø750 & Ø500 TRUNK WATER MAINS
EXISTING Ø750 CICL WD 4746 1918 (POTTS HILL TRUNK)
CAHILL PARK
EXISTING Ø500 CICL CO50 1896 (POTTS HILL)
INSERT 250x250 TEE IN EXISTING Ø250 TAKEOFF FROM Ø750 & Ø500 TRUNK WATER MAINS
PROPOSED Ø300 WATER MAIN
PRINCES HIGHWAY
GERTRUDE STREET
LEVEY STREET
INNESDALE STREET
MARSH STREET
FLORA STREET
VALDA AVENUE
WEST BOTANY STREET
EVE STREET (FORMED)
EXISTING Ø250
250x300 TAPER
PROPOSED Ø300 WATER MAIN
ALTERNATE ROUTE TO GET CIRCULATION IN LOOP
FOR CONTINUATION REFER SK11
GERTRUDE STREET EAST
M8 / M6 MOTORWAY OPERATING CENTERS
FLORA STREET EAST
EXISTING FROG PONDS
EXISTING DESALINATED WATER PIPELINE EASEMENT
EXISTING MOOMBA-SYDNEY ETHANE PIPELINE EASEMENT
ARUP
COOK COVE
COOK COVE PLANNING PROPOSAL (PP-2022-1748) CONCEPT INFRASTRUCTURE DESIGN
SCHEMATIC POTABLE WATER SUPPLY EXTERNAL LEAD-IN WORKS
252942-00
DRAFT
SK203

Appendix G

Water Supply Concept Plan

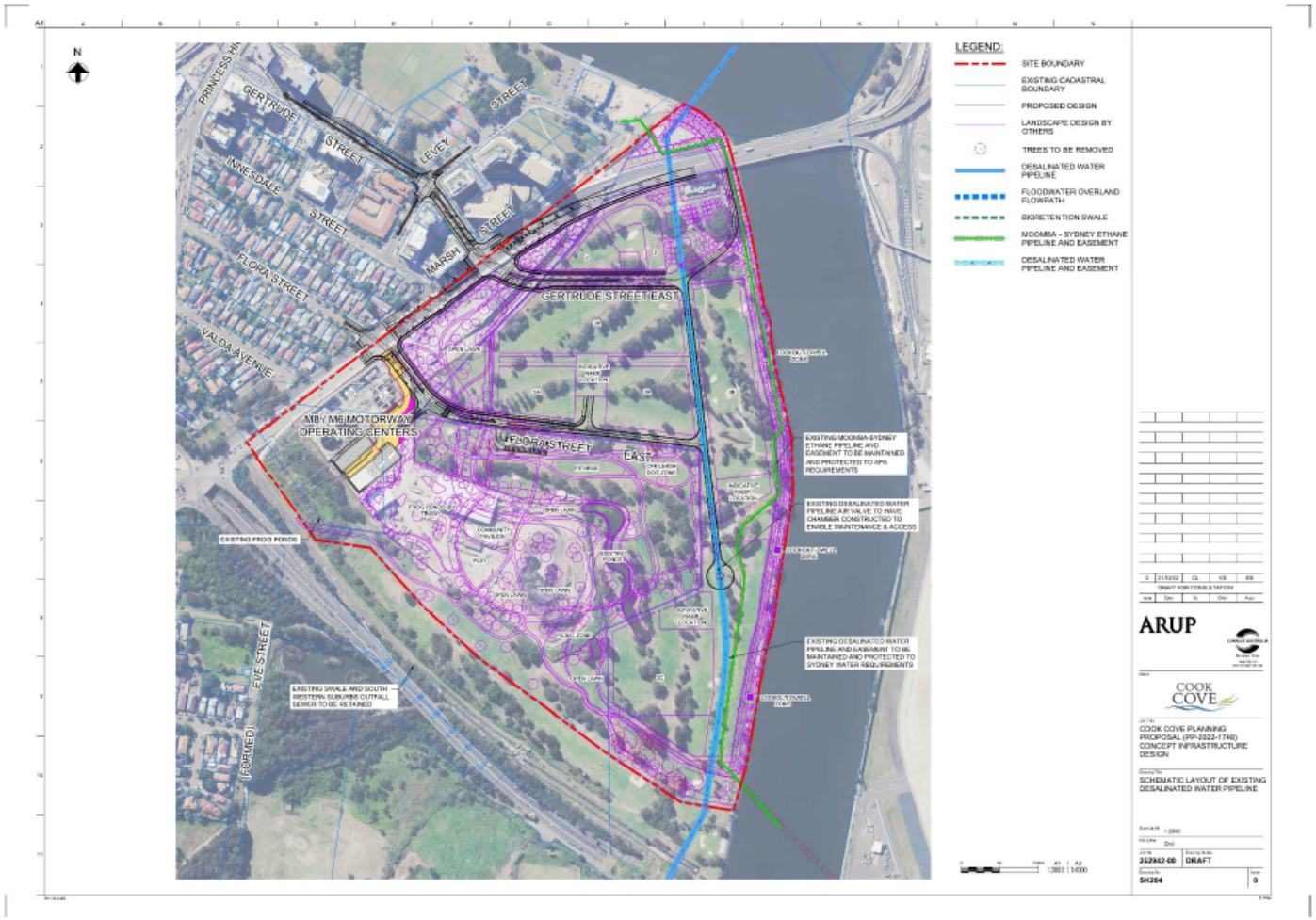
G.1


N
NOTES
1. ALL PIPE SIZES ARE INDICATIVE AND ARE PROVIDED FOR INFORMATION ONLY AND ARE SUBJECT TO FINAL LOADINGS & MODELLING DURING LATER DESIGN STAGES.
LEGEND:
SITE BOUNDARY
EXISTING CADASTRAL BOUNDARY
PROPOSED DESIGN
LANDSCAPE DESIGN BY OTHERS
TREES TO BE REMOVED
Ø150 PROPOSED
Ø200 PROPOSED
Ø300 PROPOSED
MOOMBA - SYDNEY ETHANE PIPELINE AND EASEMENT
DESALINIATED WATER PIPELINE AND EASEMENT
CONNECT TO LEAD IN WORKS. REFER DRAWING SK13
GERTRUDE STREET EAST
M8 / M6 MOTORWAY OPERATING CENTERS
FLORA STREET EAST
EXISTING MOOMBA-SYDNEY ETHANE PIPELINE EASEMENT
EXISTING DESALINATED WATER PIPELINE EASEMENT
EXISTING FROG PONDS
FIVE STREET (FORMED)
ARUP
COOK COVE
COOK COVE PLANNING PROPOSAL (PP-2022-1748) CONCEPT INFRASTRUCTURE DESIGN
SCHEMATIC POTABLE WATER SUPPLY NETWORK
DRAFT

Appendix H

Desalinated Water Pipeline Route

H.1


LEGEND:
SITE BOUNDARY
EXISTING CADASTRAL BOUNDARY
PROPOSED DESIGN
LANDSCAPE DESIGN BY OTHERS
TREES TO BE REMOVED
DESALINATED WATER PIPELINE
FLOODWATER OVERLAND FLOWPATH
BIORETENTION SWALE
MOOMBA - SYDNEY ETHANE PIPELINE AND EASEMENT
DESALINATED WATER PIPELINE AND EASEMENT
GERTRUDE STREET EAST
FLORA STREET EAST
ANEW M5 MOTORWAY OPERATING CENTERS
EXISTING FROG PONDS
EXISTING SWALE AND SOUTH WESTERN SUBURBS OUTFALL SEWER TO BE RETAINED
EVE STREET (FORMED)
ARUP
COOK COVE
COOK COVE PLANNING PROPOSAL (PP-2022-1748) CONCEPT INFRASTRUCTURE DESIGN
SCHEMATIC LAYOUT OF EXISTING DESALINATED WATER PIPELINE
DRAFT

Appendix I

Sydney Desalination Plant Meeting Minutes

Vlatko Stoilovski

Subject: FW: Cook Cove - Desal and APA meeting minutes

From: Edward Bond <Edward.Bond@arup.com>
Sent: Thursday, 22 December 2022 11:00 AM
To: Vlatko Stoilovski <Vlatko.Stoilovski@arup.com>
Subject: Cook Cove - Desal and APA meeting minutes

Hi Vlatko,

Here are the Cook Cove desal meeting minutes:

Notes:

1. Buildings are not allowed to be placed over the desal easement so maintenance access can be maintained.
2. The pipeline should be concrete-encased where roads will be built overhead. Protection slabs may be required also where the pipeline is particularly shallow. Slabs may need to tie-into piles – site specific.
3. Air valve chamber, flange and cathodic protection require appropriate access for maintenance and replacement in the proposed case.
4. If fill needs to be placed over the air valve, the top of the air valve needs to be raised so it's exposed to the air. Don't allow the air valve to flood or to sit in a low point where overland flow could affect it.

Actions:

1. Arup to provide a list of requested documents to Sydney Desal, which Sydney Desal will provide as soon as they are able to.
2. KBR to provide the general high level requirements for when the desal pipeline should be concrete-encased and/or protected by slabs.
3. Sydney Desal to provide access requirements for pipeline repair e.g. crane heights and loads for pavement design.
4. Sydney Desal and Boyd Properties to exchange letters regarding covering appropriate costs to Sydney Desal for Cook Cove development coordination time.
5. Brendan and KBR to coordinate regarding site risk and appropriate pipeline protection and access.

Regards,

Edward Bond
He/him/his
Senior Civil Engineer | NSW & ACT Infrastructure
BSc(Hons) MSc(Distinct) TMIEAust CEngT NER

Arup
Gadigal Country
Barrack Place, Level 5, 151 Clarence St
Sydney, NSW, 2000, Australia
d +61 2 9320 9366
arup.com

Connect with us on LinkedIn
Follow us on Twitter Instagram YouTube Facebook

I acknowledge the Traditional Owners and Custodians of the lands on which we work and recognise their continuing connection to land, water and community. I pay respect to Elders past, present and emerging
Arup is a flexible employer, with teams working across multiple time zones. Although I have sent this at a time that is convenient for me, it is not my expectation that you read, respond or follow up on this email outside your hours of work.

Appendix J

Ausgrid Correspondence

Ausgrid

Preliminary Enquiry

Reference Code : 1069341

Preliminary Enquiry

LOCATION

Property Name
Cook Cove
Property Type
Building
Land Title Type
Torrens
Street Number/RMB
19A
Nearest Cross Street
Innesdale Rd
Location Address
Marsh Street, Arncliffe, 2205
Land Zoning
Urban

APPLICANT

Applicant Type
Asp On Behalf Of A Retail Customer Or Real Estate Developer
Full Name
Mr Richard Saliba
Email Address
richard.saliba@tracagroup.com.au
ABN/ACN
12604669776
Company Name
Traca Group Pty Ltd
Po Box/Locked Bag
Po Box 2214
Applicant Address
North Parramatta 2214
Phone Number
1300470350
Other Number
0404898456
Asp Number
4280
Asp Level
Level 3

CUSTOMER

Customer Type
Real Estate Developer
Full Name
Mr Vlatko Stoilovski
Email Address
vlatko.stoilovski@arup.com
Phone Number

0410 586 621

Company Name

Arup

ENQUIRY

Type

I Have An Enquiry Related To A New Or Altered Residential Or Small Commercial/Industrial Load Connection (Up To 10mva) That I Cannot Answer After Reviewing Your Website.

Your Question

A Building Development (Cook Cove) Consisting Of Commercial, Retail & Warehouses Is Proposed To Be Built Over Stages. We Would Like To Start The Discussion With Ausgrid Regarding The Power Supply Configurations To The Site. Please Find Attached Our Proposal Which Is Based On The Limited Data We Have From Webgis. Attachments: - Estimated Electrical Maximum Demand Calculations - Estimated 11kv Ausgrid Feeders Remaining Capacity (Reduced 80%) - Our Connection Proposal For Discussion Thank You

Supporting documents

File name	Ausgrid filename reference	Size
Ausgrid 11kV feeders Capacity.pdf	SupportingAttachmentFilePath_1	0.071 MB
Maximum Demand_20221128.pdf	SupportingAttachmentFilePath_2	0.095 MB
PS148A_Cooks_Cove_20221127.pdf	SupportingAttachmentFilePath_3	2.91 MB
016462_PR_Cooks-Cove_BaysideCouncil-03_221012_LR.pdf	SupportingAttachmentFilePath_4	10.281 MB

DECLARATION

Applicant Name

Mr Richard Saliba

Application Date

30-Nov-2022

Price Description

Preliminary Enquiry.

Price Including GST

AUD $473.07

Total Price

AUD $473.07

Terms and Conditions:

In submitting this preliminary enquiry you are engaging Ausgrid to provide you with a written response. Once submitted the fee charged is consumed. Ausgrid will aim to provide you with a written response within 10 business days. If additional work and/or fees are required, we will contact you to advise prior to providing the response.

*I acknowledge the terms & conditions. ☑

Project: Cook Cove
Description: Master Development Plan
Calcs By: Richard Saliba
Date: 28/11/2022

Checked by: Richard Saliba
Date: 28/11/2022

AREA DETAILS			AS/NZS3000 POWER DENSITY (VA/sqm)		CHOSEN POWER DENSITY (VA/sqm)				GENERAL POWER	ADDITIONAL DIVERSITY (kV	GENERATOR BACKED (%)			GENERATOR	UPS (%)		UPS
AREA NAME	AREA TYPE	AREA SIZE (sqm)	LIGHT AND POWER	MECHANICAL	LIGHTING	POWER	MECHANICAL	TOTAL	DEMAND (KVA)	0.7	LIGHTING	POWER	MECHANICAL	Demand (KVA)	LIGHTING	POWER	DEMAND (KVA)
Block 1N - Retail GFA	Retail Shop Airconditioning	185	40-100	20-40	20	20	40	80	15	10	0%	0%	0%	0	0%	0%	0
Block 1N - Office GFA	Offices with Cooling	370	40-60	30-40	20	30	35	85	31	22	0%	0%	0%	0	0%	0%	0
Block 1S - Retail GFA	Retail Shop Airconditioning	940	40-100	20-40	20	20	40	80	75	53	0%	0%	0%	0	0%	0%	0
Block 1S - Office GFA	Offices with Cooling	940	40-60	30-40	20	30	35	85	80	56	0%	0%	0%	0	0%	0%	0
Block 2 - Retail GFA	Retail Shop Airconditioning	3970	40-100	20-40	20	20	40	80	318	222	0%	0%	0%	0	0%	0%	0
Block 2 - Office GFA	Offices with Cooling	28121	40-60	30-40	20	30	35	85	2390	1673	0%	0%	0%	0	0%	0%	0
Block 2 - Hotel GFA	Other	26370	NA	NA	10	30	35	75	1978	1384	0%	0%	0%	0	0%	0%	0
Block 2 - Carpark Basement GFA	Carpark with Basement	50000	10-20	Included in power load	5	5	0	10	500	350	0%	0%	0%	0	0%	0%	0
Block 3NW - Logistics	Warehouse with Ventilation	17'065	5-15 + equipment loads for special equipment	5	5	5	10	20	3421	2395	0%	0%	0%	0	0%	0%	0
Block 3WE - Logistics	Warehouse with Ventilation	9'985	5-15 + equipment loads for special equipment	5	5	5	10	20	1840	1288	0%	0%	0%	0	0%	0%	0
Block 3S - Logistics	Warehouse with Ventilation	9'750	5-15 + equipment loads for special equipment	5	5	5	10	20	1955	1369	0%	0%	0%	0	0%	0%	0

	AMP 3PH	KVA
TOTAL	8212.4	12602.985
ADDITIONAL DIVERSITY	0.7	
DEMAND	2748.7	8822.0895

	AMP 3PH	KVA
TOTAL	0	0
ADDITIONAL DIVERSITY	1	
DEMAND	0	0

	AMP	KVA
TOTAL	0	0
L DIVERSITY	1	
DEMAND	0	0

NOTES

	PROPOSED	EXISTING
Pole	○	●
SL Standard	▣	■
SL Column Remove	⊗	⊗
LV Pillar	□	■
LV Link Pillar	⊠	H
Streetlight		
Streetlight-PEC		
Streetlight-replacement		
Streetlight-remove		
UGOH or Riser	○	●
Pot End	◁	◀
Joint	⬭	⬬
HV cable	○	●
HV Triplex	❀	❀
LV cable	○	●
SL cable	○	●
Supply Point		

	PROPOSED	EXISTING
Item to be Removed	x	
Pole-to be removed		●
Pillar-to be removed		■
USL	▯▯	▮▮
ABS	◁	◀
IDT	▯	▮
Kiosk Sub	□	■
Chamber Sub	◨	■
Pole Sub	◐	●
Sealed End	◁	◀
Cable Termination	◁	◀
Service cable	○	●
Auxiliary cable	○	●
Cable to be removed		■
Open Point	0	0
PEC	☆	★
4-WAY LINK BOX	▭	

	PROPOSED		EXISTING		REMOVE
Conduit					
	OH Lines	UG Cables	OH Lines	UG Cables	OH Lines
HV	HV	HV			
LV	LV	LV			
SL	SL	SL			
SV	SV	SV			
TR132	TR132	TR132			
TR33	TR33	TR33			
AUX	AUX	AUX			

ASP LEVEL 2 WORK

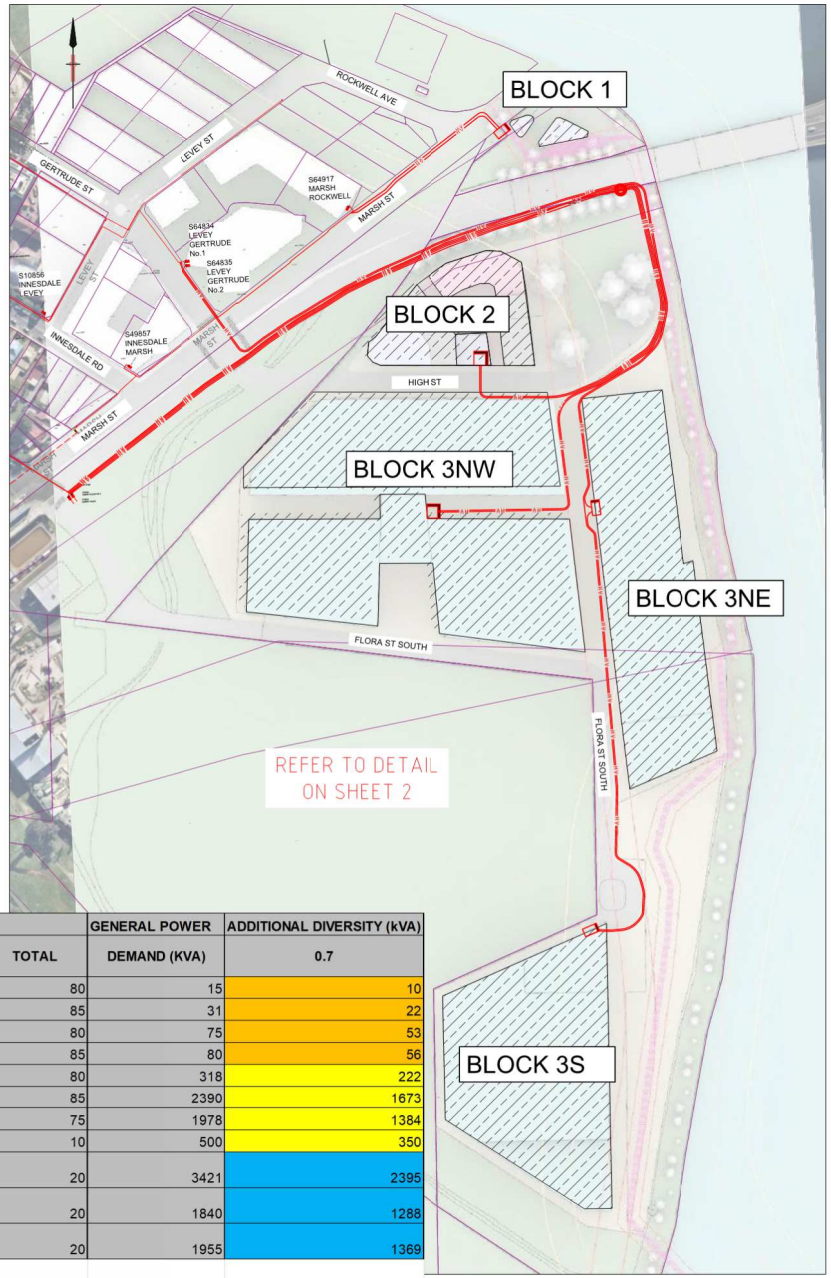
ALL LEVEL 2 ASP WORK DEPICTED ON THIS DRAWING IS SHOWN FOR INFORMATION PURPOSES ONLY AND DOES NOT FORM PART OF THE CERTIFIED DESIGN.

WARNING

- THIS DESIGN CANNOT BE USED FOR CONSTRUCTION PURPOSES UNTIL THE LOCATION OF ALL EXISTING SERVICES IS VERIFIED.
- THE INFORMATION PROVIDED IN THIS DESIGN MUST BE CHECKED ON SITE AND THE MOST CURRENT INFORMATION ON THE CONFIGURATION OF ALL SERVICES, INCLUDING AUSGRID'S NETWORK, MUST BE VERIFIED IMMEDIATLEY BEFORE CONSTRUCTION COMMENCES BY CONTACTING BEFORE-YOU-DIG BY TELEPHONE ON 1100 OR AT www.1100.com.au.
- DIAL-BEFORE-YOU-DIG INFORMATION MUST NOT BE OLDER THAN 20 BUSINESS DAYS AT THE TIME OF CONSTRUCTION.

NOTES:

1. DETAILED PLANS OF ALL UTILITY CONSTRUCTIONS MUST BE OBTAINED PRIOR TO UNDERTAKINANY EXCAVATIONS. MACHINE EXCAVATION MUST NOT BE USED IN THE VICINITY OF LIVE ELECTRICITY CABLES.
2. ALL WORK TO BE UNDERTAKEN IN ACCORDANCE WITH ALL RELEVANT AUSGRID NETWORK STANDARDS AND THE NECESSARY SAFETY, TRAFFIC AND ENVIRONMENTAL MEASURES.
3. CLAIMS FOR VARIATIONS TO THE COST OF WORKS, INCLUDING ROCK EXCAVATION, WILL NOT BE ACCEPTED UNLESS VERIFIED ON SITE BY AUSGRID WHILE THE WORKS ARE IN PROGRESS.
4. THE CONSTRUCTOR MUST MINIMISE THE IMPACT OF THE WORKS ON THE ELECTRICITY SUPPLY TO CUSTOMERS AND INTERRUPTIONS TO SUPPLY MUST BE AVOIDED, WHEREVER POSSIBLE UNLESS THE CONSTRUCTOR CAN PROVIDE AUSGRID WITH WRITTEN AGREEMENT FROM THE AFFECTED CUSTOMER(S), THEN AUSGRID MAY REQUIRE THE CONSTRUCTOR TO PROVIDE A GENERATOR(S) IN ORDER TO MAINTAIN SUPPLY TO CUSTOMERS BEING INTERRUPTED. WHERE INTERRUPTIONS ARE PERMITTED, AT LEAST FOUR (4) CLEAR BUSINESS DAYS NOTICE MUST BE PROVIDED TO ALL AFFECTED CUSTOMERS PRIOR TO ANY PLANNED INTERRUPTIONS TO THE ELECTRICITY SUPPLY. NOTICE MUST BE IN WRITING IN ACCORDANCE WITH CLAUSE 90 OF THE NATIONAL ENERGY RETAIL RULES.
5. ADEQUATE PUBLIC LIGHTING LEVELS ARE TO BE MAINTAINED FOR THE DURATION OF THE WORKS. IF NECESSARY, THE CONSTRUCTOR TO ARRANGE FOR SUITABLE TEMPORARY STREET LIGHTING TO BE PROVIDED UNTIL PERMANENT LIGHTING IS RE-ESTABLISHED.
6. THE CONSTRUCTOR MUST TAKE APPROPRIATE SAFETY AND ENVIRONMENTAL PRECAUTIONS AND ARRANGE FOR THE APPROPRIATE LICENCES AND AUTHORISATIONS IN HANDLING AND TRANSPORTING HAZARDOUS EQUIPMENT AND ANY OIL FILLED EQUIPMENT TO ENSURE COMPLIANCE WITH RELEVANT LEGISLATION AND AUSGRID'S NS174 ENVIRONMENTAL PROCEDURES.
7. REINSTATE FOOTPATH AND ROAD AS PER COUNCIL REQUIREMENTS.
8. FOR IDENTIFICATION AND JOINTING PURPOSES, ALL CABLE ENDS SHALL BE LABELLED AT THE TERMINATIONS AND IN JOINT BAYS DURING CABLE INSTALLATION. THE CABLES MUST BE LABELLED AS PER CERTIFIED DESIGN.
9. THIS INFORMATION INCLUDES DATA FROM THE NSW DIGITAL CADASTRAL DATABASE BY LAND AND PROPERTY INFORMATION© 2016, USED UNDER CREATIVE COMMONS LICENCE VERSION 4.0.
10. ALL WORK TO COMPLY WITH AUSGRID NETWORK STANDARDS, UNLESS NETWORK STANDARD VARIATION IN ACCORDANCE WITH NS181 HAS BEEN APPROVED IN WRITING BY AUSGRID. IN THE EVENT OF A DISCREPANCY BETWEEN THIS CERTIFIED DESIGN AND AUSGRID'S NETWORK STANDARDS, THE NETWORK STANDARD REQUIREMENTS SHALL PREVAIL.



AREA DETAILS			AS/NZS3000 POWER DENSITY (VA/sqm)		CHOSEN POWER DENSITY (VA/sqm)				GENERAL POWER	ADDITIONAL DIVERSITY (kVA)
AREA NAME	AREA TYPE	AREA SIZE (sqm)	LIGHT AND POWER	MECHANICAL	LIGHTING	POWER	MECHANICAL	TOTAL	DEMAND (KVA)	0.7
Block 1N - Retail GFA	Retail Shop Airconditioning	185	40-100	20-40	20	20	40	80	15	10
Block 1N - Office GFA	Offices with Cooling	370	40-60	30-40	20	30	35	85	31	22
Block 1S - Retail GFA	Retail Shop Airconditioning	940	40-100	20-40	20	20	40	80	75	53
Block 1S - Office GFA	Offices with Cooling	940	40-60	30-40	20	30	35	85	80	56
Block 2 - Retail GFA	Retail Shop Airconditioning	3970	40-100	20-40	20	20	40	80	318	222
Block 2 - Office GFA	Offices with Cooling	28121	40-60	30-40	20	30	35	85	2390	1673
Block 2 - Hotel GFA	Other	26370	NA	NA	10	30	35	75	1978	1384
Block 2 - Carpark Basement GFA	Carpark with Basement	50000	10-20	Included in power load	5	5	0	10	500	350
Block 3NW - Logistics	Warehouse with Ventilation	171065	5-15 + equipment loads for special equipment	5	5	5	10	20	3421	2395
Block 3WE - Logistics	Warehouse with Ventilation	91985	5-15 + equipment loads for special equipment	5	5	5	10	20	1840	1288
Block 3S - Logistics	Warehouse with Ventilation	97750	5-15 + equipment loads for special equipment	5	5	5	10	20	1955	1369

MAXIMUM DEMAND CALCULATIONS

GENERAL SITE PLAN

SCALE 1 : 2000

0 50 100 150 200 METRES

CAD DRAWING

AMENDMENTS

ASSOCIATED DRAWINGS

CERTIFICATION NUMBER ##/##

TRACA ENGINEERING GROUP

ABN 13604665776

Po Box 2214, NORTH PARRAMATTA NSW 1750

Tel: 1300 470 350 Email: admin@tracagroup.com.au

www.tracagroup.com.au

DESIGNED BY	RICHARD SALIBA
AUTH NO.	4280
SUBMIT DATE	SUBMITTED 28/11/2022
LGA	BAYSIDE
MAP REF.	UBD or STREET DIR. REF.
AUSGRID REF.	AUSGRID MAP REF.
PRJTRAK No.	
ASP REF.	PS148A

COOK COVE
NORTHERN PRECINCT

PROPOSED CONNECTIONS
PRELIMINARY DESIGN

SIZE A1 | AUSGRID PROJECT No. TBA | SHEETS 1 of 3 | AMD.

20160817

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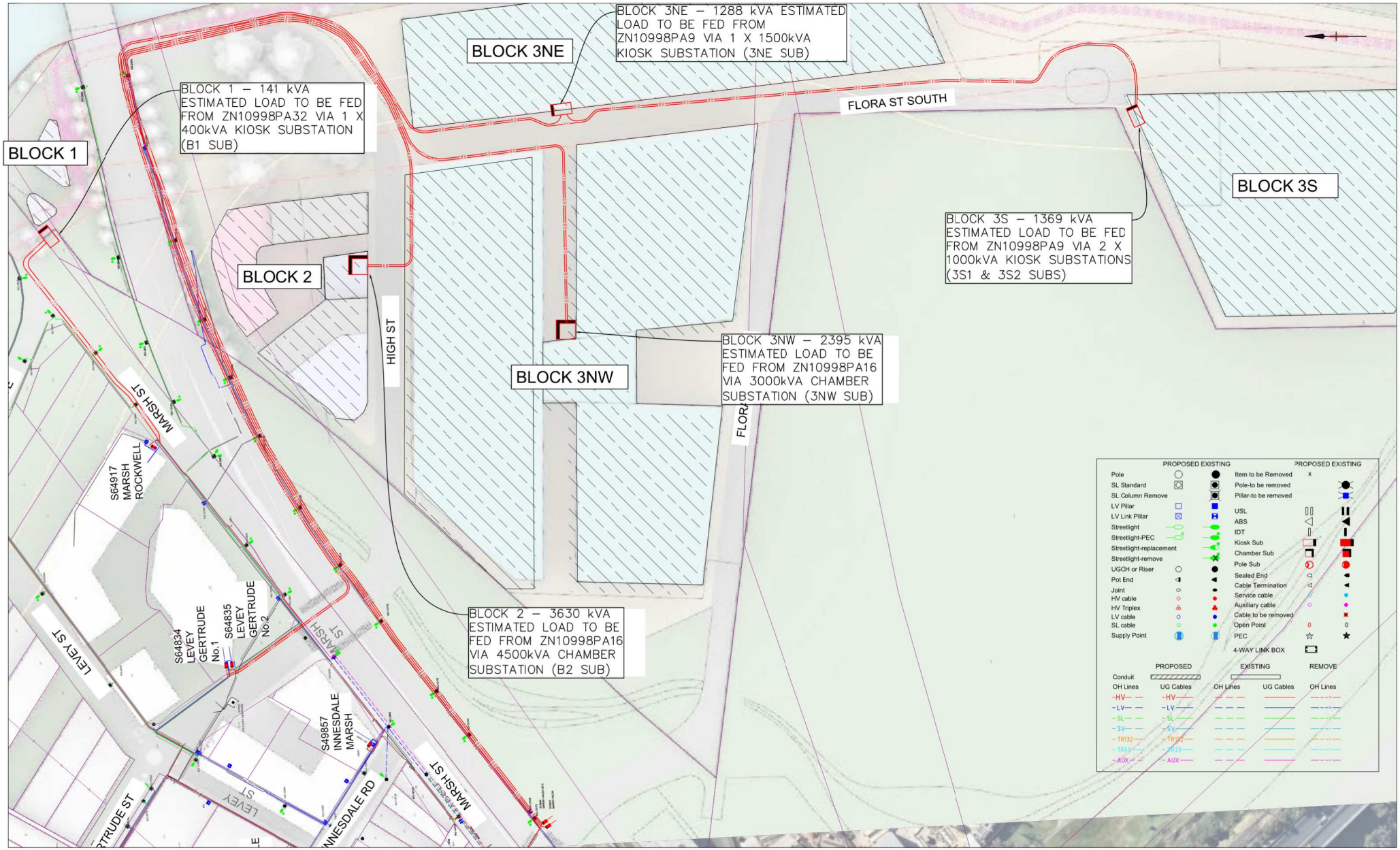


SITE PLAN

SCALE 1 : 1000

0 20 40 60 80 100 METRES

CAD DRAWING AMENDMENTS

ASSOCIATED DRAWINGS	CERTIFICATION NUMBER	##/##		

TRACA ENGINEERING GROUP
ABN 13604668776
Po Box 2214, NORTH PARRAMATTA NSW 1750
Tel: 1300 470 350 Email: admin@tracagroup.com.au
www.tracagroup.com.au

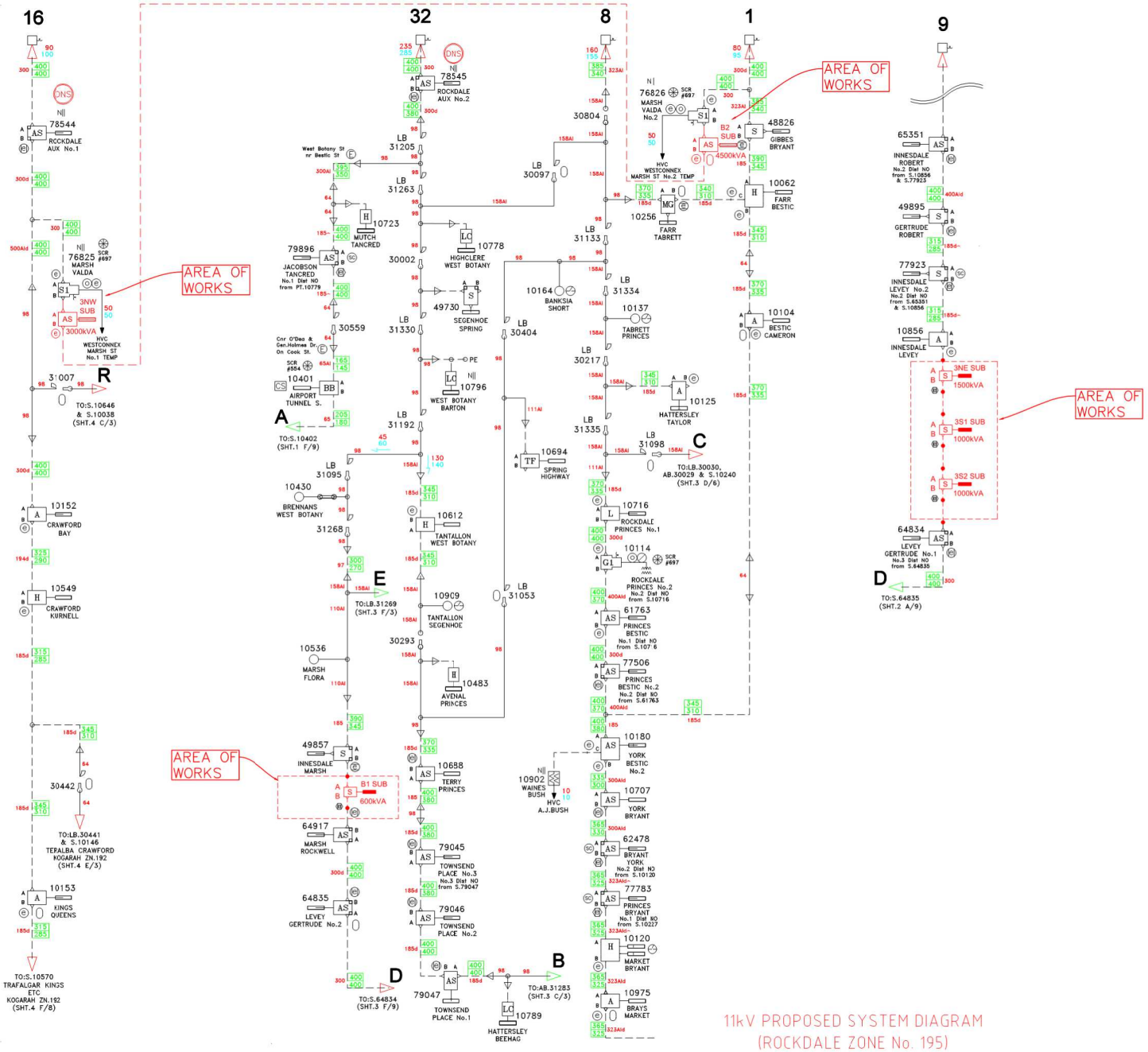
DESIGNED BY	RICHARD SALIBA
AUTH NO.	4280
SUBMIT DATE	SUBMITTED 28/11/2022
LGA	BAYSIDE
MAP REF.	UBD or STREET DIR. REF.
AUSGRID REF.	AUSGRID MAP REF.
PRJTRAK No.	
ASP REF.	PS148A

COOK COVE
NORTHERN PRECINCT

PROPOSED CONNECTIONS
PRELIMINARY DESIGN

SIZE A1 | AUSGRID PROJECT No. TBA | SHEETS 2 of 3 | AMD.

20160817



11kV PROPOSED SYSTEM DIAGRAM
(ROCKDALE ZONE No. 195)

CAD DRAWING AMENDMENTS			
ASSOCIATED DRAWINGS	CERTIFICATION NUMBER	##/##	

TRACA ENGINEERING GROUP
ABN 13604665776
Po Box 2214, NORTH PARRAMATTA NSW 1750
Tel: 1300 470 350 Email: admin@tracagroup.com.au
www.tracagroup.com.au

DESIGNED BY	RICHARD SALIBA
AUTH NO.	4280
SUBMIT DATE	SUBMITTED 28/11/2022
LGA	BAYSIDE
MAP REF.	UBD or STREET DIR. REF.
AUSGRID REF.	AUSGRID MAP REF.
PRJTRAK No.	
ASP REF.	PS148A

COOK COVE NORTHERN PRECINCT

PROPOSED CONNECTIONS PRELIMINARY DESIGN

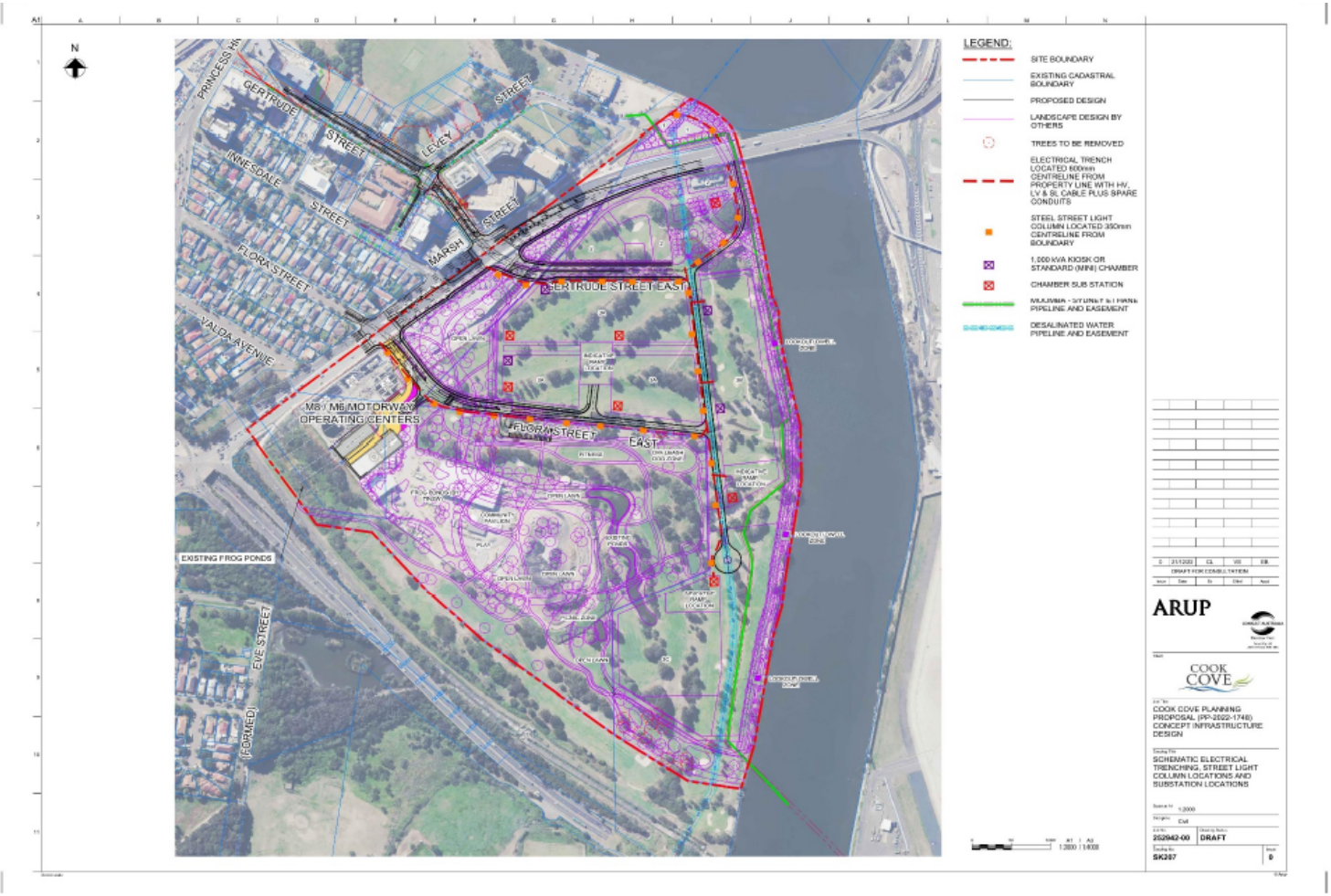
SIZE A1 | AUSGRID PROJECT No. TBA | SHEETS 3 of 3 | AMD.

20160817

Appendix K

Electrical Concept Plan

K.1


N
LEGEND:
SITE BOUNDARY
EXISTING CADASTRAL BOUNDARY
PROPOSED DESIGN
LANDSCAPE DESIGN BY OTHERS
TREES TO BE REMOVED
ELECTRICAL TRENCH LOCATED 600mm CENTRELINE FROM PROPERTY LINE WITH HV, LV & SL CABLE PLUS SPARE CONDUITS
STEEL STREET LIGHT COLUMN LOCATED 350mm CENTRELINE FROM BOUNDARY
1,000 kVA KIOSK OR STANDARD (MINI) CHAMBER
CHAMBER SUB STATION
DESALINATED WATER PIPELINE AND EASTMENT
GERTRUDE STREET EAST
FLORA STREET EAST
M5 / M8 MOTORWAY OPERATING CENTERS
EXISTING FROG PONDS
EVE STREET (FORMED)
ARUP
COOK COVE
COOK COVE PLANNING PROPOSAL (PP-2022-1748) CONCEPT INFRASTRUCTURE DESIGN
SCHEMATIC ELECTRICAL TRENCHING, STREET LIGHT COLUMN LOCATIONS AND SUBSTATION LOCATIONS
2529462-00
DRAFT
SK207

Appendix L

Telecommunication Concept Plan

L.1


N
LEGEND:
SITE BOUNDARY
EXISTING CADASTRAL BOUNDARY
PROPOSED DESIGN
LANDSCAPE DESIGN BY OTHERS
TREES TO BE REMOVED
MINIMUM CONDUIT REQUIREMENT 1 x P100
FIBRE DISTRIBUTION HUB LOCATION (SUBJECT TO CARRIER REQUIREMENTS)
STANDARD NBN PITS AS PER NBN-TE-CTO-194, COMMUNICATIONS ALLIANCE Ltd G645:2011 AND ALL OTHER AUSTRALIAN STANDARDS, INDUSTRY STANDARDS AND CODES OF PRACTICES
DESALINATED WATER PIPELINE AND EASEMENT
PRINCESS HIGHWAY
GERTRUDE STREET
INNESDALE STREET
LEVEY STREET
MARSH STREET
FLORA STREET
VALDA AVENUE
EVE STREET (FORMED)
GERTRUDE STREET EAST
FLORA STREET EAST
M8 / M6 MOTORWAY OPERATING CENTERS
EXISTING FROG PONDS
EXISTING TELSTRA NETWORK IS IN THIS AREA AND TELCO LEAD-IN CAN BE DESIGNED TO THIS NETWORK
PROPOSED NETWORK CONNECTION POINT. PENDING PROVIDER AVAILABILITY AND APPROVAL. PROPOSED LOCATION FOR FIBRE DISTRIBUTION HUB ON CONCRETE PAD
ARUP
COOK COVE
COOK COVE PLANNING PROPOSAL (PP-2022-1748) CONCEPT INFRASTRUCTURE DESIGN
SCHEMATIC TELECOMMUNICATIONS LAYOUT
DRAFT

Appendix M

NBN Co Correspondence

Vlatko Stoilovski

From: Kareena Prado <kareenaprado@nbnco.com.au>
Sent: Thursday, 24 November 2022 2:46 PM
To: Vanessa Khuu
Cc: Edward Bond; Vlatko Stoilovski
Subject: DEV-00102121 - Cook Cove Northern Precinct Development - Request for Information

Hello Vanessa,

Thank you for your email,

I will forward back to planning for review.

This was previously submitted for residential as the Bayside West Precinct redevelopment area.

We can provide **nbn** to this site however I am wanting to discuss this further with you as it looks to have changed to commercial?

Please do not hesitate to contact me

Kind Regards

Kareena Prado
Senior Account Manager (NSW/ACT) – New Developments
M +61 428 537 208 | **E** kareenaprado@nbnco.com.au
100 Mount Street, North Sydney NSW 2060
Cammeraygal Country

nbn acknowledges and pays respects to the traditional custodians of all the lands upon which we work.

From: Vanessa Khuu <Vanessa.Khuu@arup.com>
Sent: Tuesday, 22 November 2022 12:28 PM
To: Kareena Prado <kareenaprado@nbnco.com.au>