

Memorandum

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Copy	Tracy Davey – Tactical Group	Reference	MPWS3-AUR-UT-MEM-0001-[B]
Date	2nd April 2020	Pages (including this page)	10
Subject	Moorebank Precinct West Stage 3 (MPWS3) – Utilities Impact Assessment for Temporary Compound		

1 Project Background and Overview

The Moorebank Precinct West (MPW) project involves the development of intermodal freight terminal facilities (IMT), linked to Port Botany, the interstate and intrastate freight rail network. Significant warehouses are to be established as commercial infrastructure as well as a rail link connecting the MPW site to the Southern Sydney Freight Line (SSFL) and a road entry and exit point from Moorebank Avenue.

Construction and operation of the MPW development is undertaken in stages in accordance to the approved submissions in place. The applicable stage corresponding to the scope of works required for preparation of this technical memorandum is relevant to MPW Stage 3 (MPWS3) consistent with the approved concept plan (SSD 5066). The following allowance is considered during the MPWS3 works:

- Establishment of works compound to facilitate site development works as part of MPW Stage 2, 3 and future stages. Proposed location in the southern portion of the MPW site within lot 10 (refer to Figure 1 – to be confirmed by the Contractor);
- Progressive subdivision of the MPW site into nine allotments for warehousing and distribution facilities, biodiversity conservation, interstate intermodal terminal facility (IMT), rail corridor for completion and operation of the import/export (IMEX) freight terminal and rail link;
- Condition E26 of SSD 5066 (MOD 1) requires that the subdivision is consistent with Liverpool City Council LEP 2008 requirements. Removal of this condition is subject to a modification that shall be lodged concurrently with the MPWS3 application;
- Ancillary works including access roads, earthworks, utilities, stormwater and drainage, signage and landscaping.

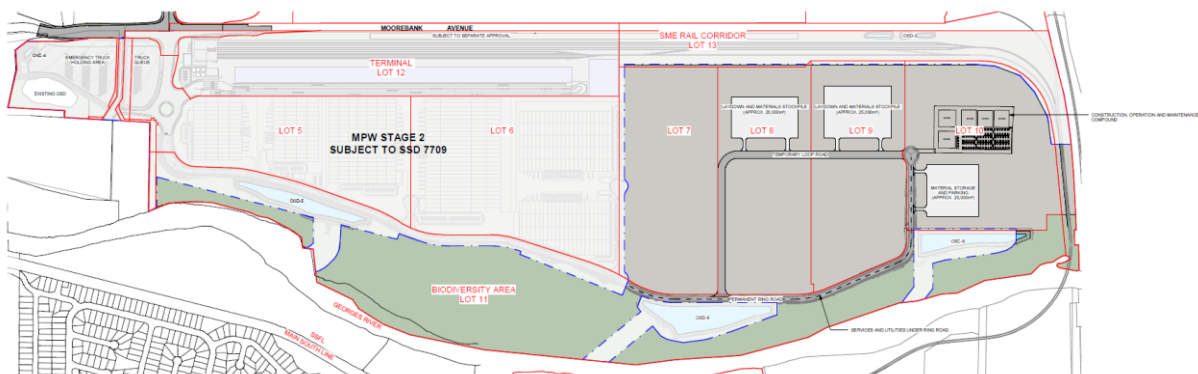


Figure 1: Temporary Compound within Lot 10 located within Southern Portion of MPW3 Site

2 Objective

Issue of this technical memorandum is for the purpose of supporting the latest stage of the Moorebank Intermodal Precinct Project, MPWS3 by conducting a desktop review of relevant information and providing an impact assessment based on the key utilities proposed. The key utilities identified are relative to the works compound only for the below which is within the overall extents of the MPWS3 works:

- Earthworks Compound
- IMT Compound
- Rail Compound

3 Limitations, Exclusions and Assumptions

The following limitations, exclusions and assumptions have been considered throughout the desktop review of relevant documentation and development of the impact assessment associated to the proposed utilities works within the works compound:

- They key utilities identified are limited to potable water, wastewater, communications, electricity and natural gas as part of the review and preparation of this impact assessment
- The identified impacts and mitigation measures proposed are relevant to the works compound only within the MPWS3 boundary
- Stormwater and drainage has been excluded from the review in relation to key utilities
- Civil design elements (i.e. earthworks), signage and landscaping have been excluded from the review and pertain only to the limited key utilities mentioned in the following section
- Investigation, design and engagement with stakeholders and or utility providers/owners have been excluded from the review and assessment
- Stakeholder and community consultations records have been excluded from the review and assessment

4 Methodology

The relevant information contained within the following documents was reviewed to assess potential (if any) impacts and identify mitigation measures associated to the proposed key utilities:

- Moorebank Precinct West Stage 2 Proposal – Utilities Summary Report by Aecom dated 10/08/2016
- Moorebank Precinct West Stage 2 Proposal – Environmental Impact Statement (SSD16-77099) by Arcadis dated 21/10/2016

The following document was also considered to address key issues for the proposed key utilities of the works compound.

- State Significant Development SSD-10431 by Department of Planning, Industry and Environment dated 20/03/20

Table 1 below outlines particular sections of the SEAR applicable to this impact assessment and corresponds to the sections within this technical memorandum.

Table 1: SEAR Reference Corresponding to Section within Memo

SEAR	Refers to Section within this Memo
SSD-10431 Section 6a	<ul style="list-style-type: none"> ■ Potable Water – Table 2, No. 2-4 ■ Wastewater – Table 3, No. 3-2 ■ Communications – Table 4, No. 4-1 ■ Electricity – Table 5, No. 5-2 ■ Section 6 Summary
SSD-10431 Section 17b	<ul style="list-style-type: none"> ■ Potable Water – Table 2, No. 2-2 ■ Wastewater – Table 3, No. 3-1 and No. 3-3 ■ Communications – Table 4, No. 4-1 and No. 4-2 ■ Electricity – Table 5, No. 5-1 ■ Section 6 Summary

5 Key Utilities

The key utilities outlined below have been previously assessed by others as part of the Stage 2 proposal works. DBYD extracted data, existing infrastructure within the MPW site extents, demand assessment, proposed supply network and future work plans proposed was described within the assessment and will be outlined within the following sections due to potential impacts associated to the MPWS3 works relative to the works compound.

5.1 Potable Water

5.1.1 Existing Assessment - Infrastructure, Demand, Supply Network and Future Work Plan

The responsible service authority for the supply of the potable water for the MPW site is Sydney Water Corporation (SWC). As identified from DBYD data, existing infrastructure within the site extents reveal varied DN sizes from 90mm to 200mm. The various types of pipe material comprise of asbestos cement (AC), cast iron cement lined (CICL), woodstave (WS), ductile iron cement lined (DICL) and uPVC pipe. Availability of potential connection points deemed the following suitable as part of the preliminary demand assessment undertaken:

- Connection into existing SWC owned DN200mm CICL at the intersection between Moorebank Avenue and Bapaume Road
- Transferring the existing Department of Defence (DoD) owned DN375mm main on Anzac Road to the SWC. A newly constructed SWC DN200mm main extension from the MPW frontage would connect into the existing main. It is anticipated that an easement would be required for this option.

SWC recommended the following supply strategies to obtain a Section 73 Compliance Certificate:

- Construction of an extension along Moorebank Avenue, from the existing DN200mm CICL SWC main at the intersection between Moorebank Avenue and Bapaume Road
- The new main extension will require cross connection into the existing DN150mm SWC main on Anzac Road to ensure secondary supply in the event of a main failure

- An easement will be required for the new section of main along Moorebank Avenue as the area is currently owned by DoD

5.1.2 Impact Assessment and Mitigation Measures

Due to the supply of potable water significantly required as part of the works compound (associated offices, staff amenities, meeting/training rooms, staff kitchen etc), the following potential impacts are identified and presented with the relevant mitigation measures in Table 2 below.

Table 2: Potable Water - Impacts and Mitigation Measures

No.	Potential Impacts	Mitigation Measure
2-1	Various SWC pipe assets are of various material and due to the currently unknown conditions of the pipes or structural integrity pose a potential impact during installation and or connection during construction phase as a result of unknown general ageing or deterioration.	<ul style="list-style-type: none"> ■ Consult with SWC to obtain additional records to identify the condition of the pipelines via CCTV records, characteristics and or age to prevent any compromise of supply in the network
2-2	Option to transfer existing DoD watermain on Anzac Road to the SWC	<ul style="list-style-type: none"> ■ Pre-dilapidation prior to relocation ■ Request CCTV records
2-3	Proposed water supply network for potable water supply is subject to potable water modelling and impact to discrepancies in design and or delay throughout the development of design and construction.	<ul style="list-style-type: none"> ■ Service coordination and interdisciplinary consultation with SWC and internal designers
2-4	Demand and supply impacts to surrounding local areas, businesses and local infrastructure	<ul style="list-style-type: none"> ■ Comprehensive feasibility assessment and due diligence undertaken on the new ad proposed extension of potable supply network that includes (as a minimum) the assessed service demand, capacity, augmentation and secondary relocation option to ensure reliable supply for the surrounding local areas, businesses and local infrastructure
2-5	Cross connection of the watermain has the potential impact to cause other connections or fixtures to be installed and impact of reduction in pressure or head loss due to pipe clashes and alternative pipe alignments	<ul style="list-style-type: none"> ■ Minimisation of steep grades and or alternative pipe alignment to maintain levelling of pipe in design phase

No.	Potential Impacts	Mitigation Measure
2-6	Impact to project timeline is design and construction due to liaison with SWC in order to meet necessary compliance and conditions	<ul style="list-style-type: none"> ■ Following project approval, commence consultation with SWC and obtain correspondence records early to follow up and to prevent delays ■ Monitor project timelines to ensure works are carried out efficiently and in a timely manner to prevent delays ■ Application of program risk management based on expected timing and approvals with SWC to expediate forward planning and minimise unforeseen risks

5.2 Wastewater

5.2.1 Existing Assessment - Infrastructure, Demand, Supply Network and Future Work Plan

The responsible asset owner for the local wastewater within the vicinity of the site is SWC and DoD. The existing infrastructure discharges to the Liverpool sewerage system from a pumping station as revealed from DBYD request comprising of the following alignments:

- Privately owned DN750mm steel cement lined (SCL) rising main on Moorebank Avenue which is identified to be at capacity
- SWC DN225mm PVC gravity sewer along northern alignment considered as the eastern side of Moorebank Avenue short of Bapaume Road intersection

Provision of wastewater reticulation presented the option to construct a new SWC DN225mm sewer extension from existing SWC DN225mm main at intersection of Moorebank Avenue and Bapaume Road. Proposal of the following supply strategies were accompanied by recommendations by SWC to obtain a Section 73 Compliance Certificate:

- Install new sewer gravity main extension from the existing DN225mm gravity main located within lot 21 on Moorebank Avenue and into the MPW site
- Discharge to the proposed sewer extension by a private sewer pumping station (pending approvals obtained from SWC) through a pump to sewer application. Discharge to the new gravity main extension will be facilitated by a private rising main along Moorebank Avenue
- Existing DN750mm pressure sewer main to be protected and traversing the DoD land along Moorebank Avenue crossing the rail line

5.2.2 Impact Assessment and Mitigation Measures

The wastewater supply relevant to the works compound present the following potential impacts outlined in Table 3 below due to encroachment within the extents of the MPWS3 works.

Table 3: Wastewater - Impacts and Mitigation Measures

No.	Potential Impacts	Mitigation Measures
3-1	The alignment expected to encroach the rail line for the DN750mm pressure sewer main potential impact for clashes with other services, adjacent fixtures and or operational rail.	<ul style="list-style-type: none"> ■ Propose alternative alignment options which are supported by a feasible assessment in accordance to adjacent and local infrastructure to prevent access for operations and maintenance and or encroachment to rail line ■ Interdisciplinary design requirements and coordination required
3-2	The pump to sewer application potential to delay design and construction works which will impact other work phases and project budgets.	<ul style="list-style-type: none"> ■ Refer to the procedure document by SWC for each of the steps outlined for the following phases: <ul style="list-style-type: none"> Phase 1 – Enquiry and requirements Phase 2 – Design Phase 3 – Construction Phase 4 – Finalise construction and application ■ Engage with SWC early on in project and maintain consultation, correspondence and meetings where required to inform of project requirements in line with satisfying SWC conditions ■ Obtain existing consultation records in order to progress existing application where required ■ Satisfy requirements for Section 73 Certificate application and Notice of Requirement (NOR) via any Water Servicing Coordinator or through Sydney Water Developer Direct ■ Conduct risk assessment and or program risk management based on the procedural phases to minimise potential delays with SWC
3-3	Recommendations proposed by SWC applicable for new extension of sewer gravity main potential to have an impact on local infrastructure and or surrounding areas	<ul style="list-style-type: none"> ■ In addition to the issued Section 73 Certificate, obtain verified records confirming no compromise to the service demand and capacity of the network

5.3 Communications

5.3.1 Existing Assessment - Infrastructure, Demand, Supply Network and Future Work Plan

Telstra is the telecommunications provider for the MPW site in lieu of NBN unable to meet the provision criteria for the proposed supply and demand of the network. The assets existing within the site extents are owned by Telstra, Optus and Pipe Networks along the alignments of Moorebank Avenue, Anzac Road, Bapaume Road and existing internal transfer roads.

Telstra is required to be incorporated throughout engagement of consultations with a minimum notice of 3 months of forward planning. As required by Telstra, this involves agreement for construction relative to the extents for connection points to infrastructure, compliance of developer responsibilities and finalisation of services agreement for allowance of detailed design and construction for associated pits for the network supply and development. The infrastructure connection will be an extension of copper and or fibre south alignment of Moorebank Avenue.

Proposal of new telecommunication conduits for install along the MPW site internal road to provide connection to each of the warehouse offices. There is a potential for increased demand to cater for additional private services (if required) to potential buildings onsite for allowance of future demand increase across the development.

- 4 x DN100 by Telstra
- 2 x DN100 privately serviced conduits owned

Provision of conduit arrangement from each building for fibre optic and copper cables will be allowed for as connections to other communication carriers. Availability by service authority, Optus for additional communications supply is also a secondary option if in the case this is required relative to the works compound.

5.3.2 Impact Assessment and Mitigation Measures

The following impacts to the communication services are listed below however due to supply installation anticipated to each building within the MPWS3 site extents, the service is considered to be reliable with very minimal impacts to the compound.

Table 4: Communications - Impacts and Mitigation Measures

No.	Potential Impacts	Mitigation Measures
4-1	Telstra outage to main supply	<ul style="list-style-type: none"> ■ Obtain consultation records to follow through existing application and approvals with Telstra where required to confirm the demand and supply <p>Undertake feasibility assessment in conjunction with Telstra to evaluate any existing secondary supply networks including its locality and capacity as a due diligence check for risk minimisation and preventative program measures</p>
4-2	Service clashes	<ul style="list-style-type: none"> ■ Conduct assessment of alignments and undertake further ground investigation works in accordance to AS5488 for GPR and or potholing in detailed design phase ■ Service coordination between disciplines

5.4 Electricity

5.4.1 Existing Assessment - Infrastructure, Demand, Supply Network and Future Work Plan

Existing infrastructure assessed from DBYD data for electricity supply was located at Anzac Road for three 11kV feeders from the main supply at the substation adjacent to Anzac Village. The responsible service authority of the electricity is Endeavour Energy. It was noted that applicable diversity factors were applied to the demand calculations during the utility assessment.

As part of the network supply strategy proposed, 2 x 11kV feeding back from the substation is identified as a potential feasible install by Endeavour Energy having confirmed the required demand will sufficiently meet the estimated assessment. Provision of the secondary feedback for the network demand for the purpose of network redundancy to enable constant supply in lieu of primary supply if required. Twin DN300mm are proposed for reticulation underground and terminated at a proposed HV switch room where the alignment of the services are proposed to at boundary of the site perimeter.

The services to be installed in accordance to the Building Services Strategy which is found within Appendix D of the document, Moorebank Precinct West Stage 2 Proposal – Utilities Summary Report by Aecom dated 10/08/2016.

5.4.2 Impact Assessment and Mitigation Measures

The following impacts as a result of the electrical power supply are presented in the below table corresponding to implementation of mitigation measures to reduce impacts.

Table 5: Electricity - Impacts and Mitigation Measures

No.	Potential Impacts	Mitigation Measures
5-1	Due to the proposed supply network noted assumptions of spare circuit breakers available for use at Anzac Village zone substation and that the substation can meet additional capacity requirements.	<ul style="list-style-type: none"> ■ Obtain consultation records and continue ongoing existing application to progress approvals where required and compliance to ensure enablement of increase demand can be met. ■ Associated documentation to be requested as a due diligence check to further assess capacity, augmentation and demand of supply network
5-2	Limitation for Endeavour Energy to reserve capacity for an application potential to delay progression of works within the detailed design and or construction phase.	<ul style="list-style-type: none"> ■ Coordination with Endeavour Energy to identify timeframes ■ Application of program risk management and assessment based on Endeavour Energy's expected timeframes in line with approval processes for forward planning
5-3	Impacts for additional augmentation costs for the network for provision of capacity of additional loads.	<ul style="list-style-type: none"> ■ Estimate and confirm design and construction costs with service authority

5.5 Natural Gas

The main service authority for the supply of the natural gas is Jemena. From the DBYD data, various existing infrastructure revealed indicative locations on and adjacent to Moorebank Avenue.

Consistent with MPW Stage 2, there is no gas demand required for the proposal works as part of MPWS3 and there is considered to be no potential impacts relative to the works compound. If in the case this is required, advance notice is preferable by Jemena for further detailed assessments to be carried out due to their network focused on investment of infrastructure for commercial returns as well as long term planning.

5.6 Other Considerations

5.6.1 Impact Assessment and Mitigation Measures

Other considerations for the impacts associated to the MPWS3 works relative to the works compound are identified in the table below. These are deemed necessary for the proposed supply strategies of connection points to existing services, maintenance access and or operation.

Table 6: Other Impacts and Mitigation Measures

No.	Potential Impacts	Mitigation Measures
6-1	Hot works undertaken adjacent to vegetated areas during construction works generating potential bush fires to occur.	<ul style="list-style-type: none"> Implement safe clearance distances to ensure no hot works permitted within close vicinity to vegetated land and or minimise works adjacent to these vegetated areas Work personnel to be briefed of HSE conditions or restrictions of hot works at safety inductions and safety toolbox during construction
6-2	Media attention and or political issues due to unsatisfied community members.	<ul style="list-style-type: none"> Consideration of comments received from community consultation session Obtain stakeholder and community consultation records from relevant stakeholders
6-3	Indicative location of utilities as shown from DBYD extracted data where connection points could be off the anticipated points and potential impact to alternative positions.	<ul style="list-style-type: none"> Conduct additional ground investigation works in accordance to AS5488 (GPR and potholing) during detailed design phase
6-4	Non-compliance to approved concepts and the submission of EIS.	<ul style="list-style-type: none"> Implement strategies throughout construction phase to conduct audits and or HSE inspections
6-5	Consider surrounding locations and or adjacent roads/highways i.e. M5 Western Motorway impact utility supply leading to outages and increasing unsafe risk to drivers.	<ul style="list-style-type: none"> Approved Traffic Management Plan in place to control vehicle movements during construction works for access/egress to the site Work personnel onsite to be informed of controls in place and to take caution. Recommend to review previous traffic studies by others in reference to Figure 7-5 within document, Moorebank Precinct West Stage 2 Proposal – Environmental Impact Statement (SSD16-77099) by Arcadis dated 21/10/2016

6 Summary

The existing assessments undertaken on the proposed key utilities were summarised within this technical memorandum to identify the potential impacts and corresponding mitigation measures associated with the works compound as part of MPWS3 works to support the MPWS3 SSD-10431 application dated 20/03/20. Potable water, wastewater, communications, electricity and natural gas were considered the key utilities for inclusion within this impact assessment.

A feasibility study is recommended to be undertaken as a separable portion or in conjunction with the relevant service authority for the existing and proposed utilities relevant to the works compound for due diligence purposes. The study shall comprise as a minimum the assessment of the service demand, capacity, augmentation and locality of alignment such that the supply network is of upmost reliability and does not compromise supply to surrounding local areas and infrastructure. It is also suggested that risk management be applied as a preventative measure throughout the design and construction phase developments.

The following outcomes are summarised below for each utility in order to reduced the impacts associated:

- Potable Water – Further consultation and request of pipe records via CCTV, dilapidation records and historical information from SWC (and DoD if required) to enable supply and demand is feasible and reliable throughout Stage 3 works including additional service coordination by relevant stakeholders.
- Wastewater – Alternative alignments to be explored and assessed to reduce encroachment to the rail line due to minimising access during rail maintenance and or operations as well as procedural requirements for application with SWC in order to progress with ongoing design and construction works whilst satisfying compliance conditions.
- Communications – Obtain existing applications and or update with Telstra to confirm primary and secondary supply as well as conducting further ground investigation works and alternative proposed alignments.
- Electricity – Obtain previous consultation records and continue ongoing consultation with Endeavour Energy for progression of design and confirm associated augmentation costs.
- Natural gas - Identification of no potential impacts to the works compound as there is nil requirements for gas demand for MPWS3 which is also consistent with MPW stage 2 however in such a case supply is required, advance notice is critically required by service authority, Jemena.