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# Moorebank Precinct West - Concept Modification

## Response to Submissions - SSD 5066 MOD1

SIMTA

SYDNEY INTERMODAL TERMINAL ALLIANCE

## Part 4, Division 4.1, State Significant Development

December 2016

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# SIMTA
# MOOREBANK PRECINCT WEST

## Concept Modification

Response to Submissions – SSD 5066 MOD1

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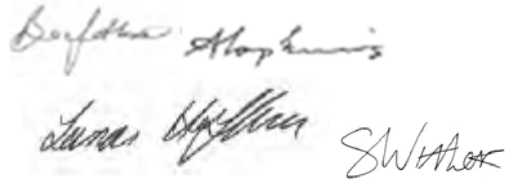
| **Author** | Ben Fethers, Alexandra Hopkins, Laura Hoffman, Sam Withers |  |
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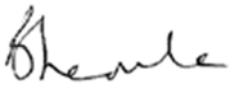
| **Approver** | Bradley Searle |  |
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## REVISIONS

| Revision | Date | Description | Prepared by | Approved by |
|---|---|---|---|---|
| Final Draft | 23/11/2016 | Final Report for DP&E Review | Ben Fethers, Alexandra Hopkins, Laura Hoffman, Sam Withers | Bradley Searle |
| Final | 5/12/2016 | Final Report | Ben Fethers, Alexandra Hopkins, Laura Hoffman, Sam Withers | Bradley Searle |

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# APPENDICES

# GLOSSARY

| Term | Definition |
|---|---|
| AAQ NEPM | National Environment Protection (Ambient Air Quality) Measure |
| ACM | Asbestos containing material |
| AEP | Annual exceedance probability |
| AQIA | Air Quality Impact Assessment |
| B99 | Building 99 |
| CBD | Central business district |
| Clean general fill | Material meeting the NSW Environment Protection Authority's (EPA) resource recovery orders and exemptions including Virgin Excavated Natural Material (VENM) and Excavated Natural Material (ENM) as defined below:<br>• VENM is natural material (such as clay, gravel, sand, soil or rock fines):<br>- that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities,<br>- that does not contain sulfidic ores or soils, or any other waste,<br>- and includes Excavated Natural Material (ENM) that meets such criteria for VENM as may be approved from time to time by a notice published in the NSW Government Gazette.<br>• ENM, refers to naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that:<br>- has been excavated from the ground<br>- contains at least 98% (by weight) natural material<br>- does not meet the definition of VENM<br>- does not include material located in a hotspot; that has been processed, contains acid sulphate soils or potential acid sulphate soils. |
| CNVMP | Construction Noise and Vibration Management Plan |
| CTAMP | Construction Traffic and Access Management Plan |
| CUST | Cullen Universal Steel Truss |
| dBA | Decibel |
| DCP | Development Control Plan |
| DMP | Dust Management Plan |
| DPE | Department of Planning and Environment |
| Early Works Approval | Approval for the Stage 1 (Early Works) component of the MPW Project under the MPW Concept Approval (SSD 5066) and the (yet to be granted) MPW EPBC Approval. Largely contained in Schedule 3 of the MPW Concept Approval. |
| Early Works area | Includes the area of the MPW site subject to the Stage 1 (Early Works) approved under the MPW Concept Approval (SSD 5066). |
| EEC | Endangered Ecological Communities |
| ENM | Excavated Natural Material |
| EP&A Act | *Environmental Planning and Assessment Act 1979* |
| EP&A Regulation | *Environmental Planning and Assessment Regulation 2000* |
| EPA | Environmental Protection Authority |
| EPBC Act | *Environment Protection Biodiversity Conservation Act 1999* |

| Term | Definition |
|---|---|
| EPL | Environmental Protection Licence |
| IMT | Intermodal Terminal |
| LEP | Local Environment Plan |
| LGA | Local Government Area |
| LMARI | Liverpool Moorebank Arterial Road Investigations |
| LOS | Level of Service |
| MCoA | Modification Conditions of Approval |
| MIC | Moorebank Intermodal Company |
| Moorebank Precinct West (MPW) Concept EIS | The Environmental Impact Statement prepared to support the application for approval of the MPW Concept and Stage 1 (Early Works) under the *Environment Protection and Biodiversity Conservation Act 1999* and the *Environmental Planning and Assessment Act 1979.* |
| MPW Concept EIS | EIS prepared by Parsons Brinckerhoff (December 2015) for the purposes of the Commonwealth EPBC Referral (2011/6086). |
| Moorebank Precinct West (MPW) Intermodal Terminal Facility/IMT facility | The Intermodal terminal facility on the MPW site, including truck processing, holding and loading areas, rail loading and container storage areas, nine rail sidings, loco shifter and an administration facility and workshop. |
| MPW Stage 2 EIS | The Environmental Impact Statement prepared by Arcadis (October 2016) to support the application for approval of the MPW Stage 2 Proposal under the *Environment Protection and Biodiversity Conservation Act 1999* and the *Environmental Planning and Assessment Act 1979.* |
| NML | Noise monitoring locations |
| NPW | National Parks and Wildlife Act |
| OEH | Office of Environment and Heritage |
| OOH | Out of Hours |
| PAD | Potential Archaeological Deposit |
| PB | Parsons Brinckerhoff |
| PM10 | Particulate matter with a mean aerodynamic diameter of 10µm |
| PM2.5 | Fine particles with a diameter of 2.5µm or less |
| POEO | Protection of Environmental Operations Act |
| RAAF | Royal Australian Air Force |
| RAE | Royal Australian Engineers |
| RAP | Registered Aboriginal Party |
| RBL | Rating Background Noise Levels |
| Revised Environmental Management Measures (REMMs) | The environmental management measures for the MPW Concept Approval as presented within the Supplementary Response to Submissions (SRtS) (PB, 2015) and approved under the MPW Concept Approval. |
| RNP | Road noise policy |
| ROL | Road Occupancy Licence |
| RtS | Response to Submissions Document |
| SEARs | Secretary's Environmental Assessment Requirements |
| SEPP | State Environmental Planning Policy |
| SSD | State Significant Development |

| Term | Definition |
|---|---|
| SSFL | Southern Sydney Freight Line |
| STRARCH | Stressed Arch |
| SWMP | Soil and Water Management Plan |
| TEC | Threatened ecological community |
| TEU | Twenty-foot Equivalent Unit or standard shipping container |
| TSC | Threatened Species Conservation Act |
| TSP | Total Suspended Particles |
| VENM | Virgin Excavated National Material |

# EXECUTIVE SUMMARY

## Overview

A modification application was prepared on behalf of SIMTA, which sought approval to modify the MPW Concept Project and Stage 1 (Early Works) (SSD_5066) (the Modification Proposal). The Modification Proposal was prepared pursuant to Section 96(2) of the *Environmental Planning and Assessment Act* 1979 (EP&A Act) and was publicly exhibited, in accordance with clause 83 of the *Environmental Planning and Assessment Regulations* 2000, between 7 July 2016 and 22 August 2016. During the public exhibition period a number of submissions were received from government agencies and the community and this Response to Submission (RtS) report has been prepared to address those submissions received (refer to Sections 4 and 5), along with providing further information and justification for the Modification, where possible, to respond and satisfy the submissions received.

This RtS also describes and assesses amendments to the Modification Proposal (the Amended Modification Proposal), which are detailed in Section 6 of this RtS, to address comments received during the public exhibition period and to reflect design development of the MPW Project.

## Assessment of submissions

Submissions were received from a total of nine government agencies including the following:

- Environment Protection Authority (EPA)
- Office of Environment and Heritage (OEH)
- Heritage Council
- Department of Primary Industries (DPI)
- Liverpool City Council (LCC)
- Fairfield City Council
- RMS
- Endeavour Energy
- Sydney Water.

A total of 371 submissions were received from community members, landowners and special interest groups. Of the 371 submissions 82% were from residents in the Liverpool LGA, with 11% choosing not to provide a location. The remaining 7% were mainly from suburbs within neighbouring LGA's such as Campbelltown, Canterbury-Bankstown and Sutherland.

It should be noted, as demonstrated within Section 5 of this RtS, that a large number of community submissions received were not directly relevant to the scope of the Modification Proposal, but rather were submitted in relation to the overall project in general.

Issues raised by the public regarding the Modification Proposal included (refer to Figure 0-1):

**Key Issues**

- Traffic and transport (201 submissions, 54% of overall submissions)
- Site selection (116 submissions, 31% of overall submissions)
- General environment (111 submissions, 30% of overall submissions)
- Community (110 submissions, 30% of overall submissions)
- Human health (99 submissions, 27% of overall submissions)
- Air Quality (93 submissions, 25% of overall submissions)
- Noise (86 submissions, 23% of overall submissions).

**Other Issues**

- Other (including cumulative impacts, construction impacts, economic impacts and viability)
- Approvals Documentation

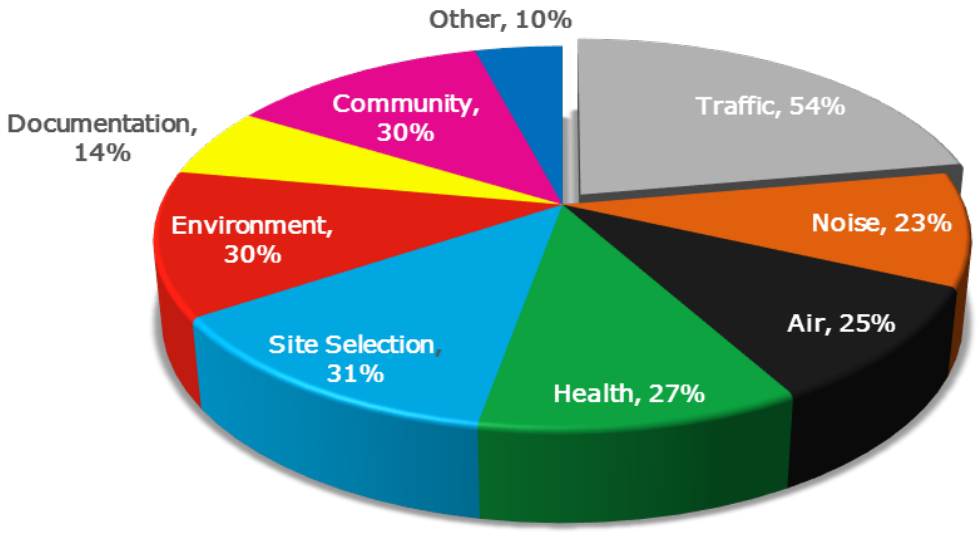


*Figure 0-1 Percentage of submission by aspect*

As shown in Figure 0-1, the key concern from the community's perspective is the potential impact on traffic and transport in the area and the selection of the site itself. The associated impacts from traffic and transport and site selection aspects were reflected in the other concerns identified by the community, with community, general environment, noise and vibration, air quality and human health all related to positioning of the site and intermodal operations.

Submissions have been collated, analysed and addressed within relevant sections of this RtS, which includes consideration of all comments raised and provides additional information and clarification where required. A summary of the responses to the key issues raised, by both government agency and community submissions, are provided briefly below.

**Traffic, transport and origin of clean general fill:**

Traffic impacts and intersection upgrades for the construction works associated with the physical importation of fill would now be undertaken during Stage 2 of the MPW Project, as per the Amended Modification Proposal. A traffic impact assessment was undertaken to provide a comparison of changes from the Concept Approval to the Amended Modification Proposal. The results from this investigation indicate that construction traffic during peak morning and afternoon periods for the Amended Modification Proposal, when compared to impacts modelled for the Concept Approval, would maintain a LoS of C or better at key intersections. Further detail is provided in Section 7 of this RtS.

Clean general fill would likely be sourced from other Sydney infrastructure projects under construction, from trucks already transporting fill material through the Liverpool area on their way to sites further west. This would potentially reduce traffic impacts of importing the required fill under an alternative scenario, by having it brought directly to the MPW site as part of that one journey. The alternative scenario would see the fill continuing further west to be stockpiled at another clean fill site, with a possible second trip required to bring the material back to the MPW site from that clean fill site.

**Stormwater and flooding:** All flows running from the developed site would be discharged via site drainage infrastructure directly into the Georges River and Anzac Creek. Further assessment has been undertaken to assess the impact associated with increased flood risk from importing clean general fill to site, as part of the Amended Modification Proposal. Results from this study indicate that all stormwater and flooding impacts associated with the Amended Modification Proposal up to the 1% AEP event are negligible, with a 0.01m predicted increase in the PMF Events, meaning that all stormwater and flooding impacts associated with the Amended Modification Proposal are manageable. Further detail regarding this study is Provided in Section 7 of this RtS.

**Noise:** The noise and vibration impacts that would have previously been associated with the Stage 1 (Early Works) phase under the original Modification Proposal, would now be included within Stage 2 of the MPW Project as per the Amended Modification Proposal. Further assessment has been undertaken to measure

any additional noise impacts generated as a result of Amended Modification items. The results of this assessment indicate that the Amended Modification Proposal would not generate any additional exceedances to relevant criteria from that originally proposed under the MPW Concept Approval. Further detail regarding this assessment is provided in Section 7 of this RtS.

As outlined within the Modification Report, noisy activities, including crushing, are to be restricted to standard construction hours, while concluding that low noise generating activities would be permissible during out of hours works.

## Proposal amendment

The MPW Project has been amended from that provided within the MPW Concept EIS and Modification Proposal to respond to submissions provided by the government agencies and to reflect the progression of the Proposal design (the Amended Modification Proposal). The amendments include the following components:

- Importation of clean general fill – importation of 1,600,000m$^3$ of clean general fill for the purposes of site formation
- Altered construction footprint – impact on additional parcels of land for the purposes of construction of the MPW Project
- Interaction between MPW and MPE sites – transfer of operational vehicles between the MPW and MPE sites for the purposes of container handling between the IMT's and warehouses on each site
- Intermodal terminal facility (interstate, intrastate and port shuttle rail freight) – re-classification of the freight that can be handled through the existing approved interstate terminal to include intrastate and port shuttle rail freight movements.
- Changes to approved function and re-arrangement of existing approved uses – land function adjustments associated with freight village, truck parking and OSDs
- Maximum building heights – increase of building heights (identified in the MPW Project) associated with the importation of fill
- Staging of future applications – alteration to future staging of the MPW Project for the purposes of addressing market demand
- Subdivision – subdivision of the MPW site to facilitate for long-term leases for proposed development.

## Environmental Assessment

An assessment of potential environmental impacts associated with items included in the Amended Modification Proposal not originally assessed in the MPW Concept EIS was undertaken (refer to Section 7 of this RtS). The assessment was based on key issues and other issues identified within the SEARS (SSD 5506) for the MPW Project (dated June 2016).

## Traffic, Transport and Access

An assessment of potential traffic impacts of the Amended Modification Proposal was undertaken (refer to Section 7.1.1 of this RtS). Key traffic impacts associated with the Amended Modification Proposal were attributed to the importation of clean general fill, which is scheduled to be undertaken as part of Stage 2 of the MPW Project. The highest number (per day) of truck movements (heavy vehicles) anticipated for the construction of the MPW Stage 2 Proposal are expected to be attributed to the importation of fill, with approximately 740 truck movements (i.e. 1,480 trips) per day.

SIDRA analysis undertaken to measure potential impacts at key intersections indicate that construction traffic during peak morning and afternoon periods for the Amended Modification Proposal, when compared to impacts modelled for the Concept Approval, would maintain a LoS of C or better at key intersections. In particular, the Amended Modification Proposal would result in only an additional 90 vehicle movements per day over a short duration (in the context of the overall development) which could be adequately managed

through controls to be included within the CEMP for the MPW Project (refer to REMM 1B, identified within the MPW Concept Approval).

Overall, subject to the implementation of the REMMs (MPW Concept SRtS), the impacts of the Amended Modification Proposal could be adequately managed and would not be substantially above those identified in the MPW Concept Approval.

Operational traffic impacts associated with the Amended Modification Proposal additional to those in the MPW Concept Approval were identified to be attributed to the interaction between the MPW and MPE sites. The intersection which would be potentially affected by additional movements associated with this activity is at the Moorebank Avenue / Anzac Road (proposed MPW site entrance) intersection, which is identified to be upgraded under the MPW Concept Approval and future stages of development. Subject to the implementation of these upgrades the operational traffic impacts of the Amended Modification Proposal (and future stages of development) are considered to be able to be adequately managed.

## Noise and Vibration

An assessment of potential noise and vibration impacts of the Amended Modification Proposal was undertaken (refer to Section 7.1.2 of this RtS), in accordance with relevant guidelines. It was identified that additional noise impacts associated with the Amended Modification Proposal would be attributed to the importation, placement and stockpiling of clean general fill.

The construction noise scenario assessed for this activity (and other overlapping construction activities) is anticipated to result in the following noise impacts:

- Standard Hours: No exceedance at most of the sensitive receivers. 1 dB noise exceedance ($L_{Aeq, 15min}$) at Casula which is considered negligible and therefore does not require mitigation
- Out of hours periods: No noise exceedance (LAeq, 15min) at any of the sensitive receivers.

The MPW Concept Approval identified that noise levels at the assessed receivers were predicted to predominantly comply with the adopted NMLs, for which no additional noise mitigation is anticipated. The importation of clean general fill, as per the Amended Modification Proposal, would result in impacts slightly above those identified in the MPW Concept Approval. These impacts are considered to be able to be managed through the preparation and implementation of a CEMP (as previously prescribed for the MPW Concept Approval) applicable to the relevant future stage of development.

During operation, additional potential noise impacts of the Amended Modification Proposal not assessed within the MPW Concept Approval include the adjustment to final building formation levels of the MPW site and the changes to function of the IMT facility. Both of these activities are scheduled to be undertaken during Stage 2 of the MPW Project, and an indicative worst-case scenario modelling these impacts during this stage has been developed.

The adjustment to building formation levels under the Amended Modification Proposal is anticipated to result in impacts that are generally consistent with those identified in the MPW Concept Approval. These noise impacts are considered to be able to be managed through the OEMP to be prepared for future stages of development as identified in REMM 1B of the MPW Concept Approval.

## Geology, Soils and Contamination

An assessment of potential impacts of the Amended Modification Proposal relating to geology, soils and contamination was undertaken (refer to Section 7.1.5 of this RtS). It was noted within the MPW Concept EIS that Stage 1 (Early Works) would include wide scale rehabilitation and remediation of contaminated areas, and that in general, the only isolated areas of land contamination not remediated during Early Works, would be those occurring within endangered ecological communities (EEC). Further assessment identified that the Amended Modification Proposal would benefit the overall MPW Project in providing of a more consistent cross-sectional layer for which pavement design can be developed.

It was identified that the importation of clean general fill may result in additional impacts above those identified within the MPW Concept Approval during construction, including an intensification of potential erosion and sedimentation impacts associated with the imported material, and fouling of stockpiled material through the unwanted growth of vegetation. It was considered that, through implementation of mitigation

measures prescribed for the MPW Concept Approval (including provision of a Soil and Water Management Plan), these impacts would be adequately managed.

Once constructed, the fill imported for the Amended Modification Proposal would have minimal impact on soils as the MPW site would be stabilised with suitable materials. Stabilisation would include clean general fill materials, hardstand areas, railway ballast and landscaping, which would significantly reduce the risk of on-site erosion.

## Stormwater and Flooding

An assessment of potential stormwater and flooding impacts of the Amended Modification Proposal was undertaken (refer to Section 7.1.6 of this RtS). During construction, the additional volume of clean general fill to be imported may be required to be temporarily stockpiled during construction, and this may result in an intensification of the potential erosion and sedimentation impacts identified in the approved MPW Concept EIS. Mitigation measures identified within the MPW Concept Supplementary Response to Submissions (SRtS) would be implemented and tailored to address and manage these impacts.

Regional flood risk from the Georges River would be minimised during construction as the area of disturbance would be consistent with the MPW Concept Approval development footprint which is located above the 1% AEP Flood extent.

For operation, the placement and spreading of clean general fill to facilitate site drainage requirements was identified to have the potential to increase the flood risk to both the site and surrounding properties. Flood modelling results indicated that potential flood impacts associated with the Amended Modification Proposal would, up to a 100 year ARI event, be negligible, and very limited for a PMF event. Furthermore, it is considered that the importation of clean general fill would result in a considerable improvement to stormwater management across the MPW site.

## Air Quality

An assessment of potential air quality impacts of the Amended Modification Proposal was undertaken (refer to Section 7.1.7 of this RtS). It was identified within this assessment that the importation of clean general fill would potentially result in construction air quality impacts including generating dust emissions. Dispersion modelling results for this activity indicated that the construction phase emissions would comply with all relevant impact assessment criteria. The predicted increase in annual average $PM_{10}$, $PM_{2.5}$, TSP and dust deposition are considered minor, when compared against existing background conditions.

Subject to the implementation of the mitigation measures outlined below, air quality impacts associated with the Amended Modification Proposal are expected to result in no additional impact to those already assessed in the MPW Concept Approval.

## Additional assessment

Assessment of impacts for biodiversity, hazards and risks, heritage (indigenous and non-indigenous), visual amenity, property and infrastructure, human health, greenhouse gas and socio-economic aspects (refer to Section 7 of this RtS), revealed that the Amended Modification would not generate a level of impact that wouldn't be adequately managed or mitigated through implementation of mitigation measures already prescribed under the MPW Concept Approval (REMMs).

Overall, the assessment identifies that the Amended Modification Proposal would, subject to the implementation of updated mitigation measures (refer to Section 8 of this RtS), result in no substantial environmental impacts in addition to those identified within the MPW Concept EIS/RtS/SRtS.

# 1 INTRODUCTION

A modification application was prepared on behalf of the Sydney Intermodal Terminal Alliance (SIMTA) and sought approval to modify the Moorebank Precinct West (MPW) Concept Project and Early Works (Stage 1) (SSD_5066) (MPW Concept Approval), which relates to the development of an intermodal terminal (IMT) facilities and warehousing on the western side of Moorebank Avenue, NSW (MPW site). The application was prepared pursuant to Section 96(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Progressive detailed design (i.e. "detailed engineering studies") has determined that the importation of fill is required for the functionality of the internal site drainage system. As a result, the fill required to be imported to the MPW site is estimated at 1,600,000 cubic metres ($m^3$). This departs from that identified within the MPW Concept Approval documentation, which stated that, although fill was required, it was to be derived from on-site excavations (i.e. balanced cut to fill). The Modification Proposal, provided in the Modification Report (Arcadis, 2016) previously sought both a modification to the MPW Concept and Early Works (Stage 1 of the MPW Project) to accommodate the importation of fill to the MPW site. It was concluded that the Modification Proposal would result in a minor intensification of activity associated with the Early Works; however, this would be of a short duration and could be managed through the implementation of the mitigation measures previously identified within the MPW Concept Approval and additional mitigation measures identified in the Modification Report.

The Modification Proposal was publicly exhibited, in accordance with clause 83 of the *Environmental Planning and Assessment Regulations 2000* between 7 July 2016 and 22 August 2016. During the exhibition period, submissions were invited from all stakeholders including members of the community and government stakeholders. A total of 371 submissions were received from the community, including landowners, occupants and community interest groups. Ten submissions were received from government stakeholders.

Since lodging the Modification Proposal, SIMTA have re-considered the timing and need for the works to be carried out during the Stage 1 Early Works. As a result, the Modification Proposal has been amended (the Amended Modification Proposal). The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of 1,600,000$m^3$ of clean general fill material. The physical importation of fill would now be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than Stage 1 (Early Works). The Amended Modification Proposal also includes a number of other minor modifications to facilitate the future stages of development for the MPW Project.

The submissions received from the Modification Report public exhibition, form the subject of this report, known as a 'Response to Submissions' (RtS), and are discussed and addressed within.

## 1.1 Purpose of this Report

The purpose of this RtS is to respond to submissions made by both community and government stakeholders during the exhibition of the Modification Proposal. This RtS has been prepared to satisfy the provisions of Section 89G of the EP&A Act and Clause 85A of the EP&A Regulations. The RtS also provides a description and environmental assessment of the Amended Modification Proposal.

## 1.2 Site Context

The MPW site is located approximately 27km south west of the Sydney Central Business District (CBD) and approximately 26km west of Port Botany. The MPW site is situated within the Liverpool Local Government Area (LGA), in Sydney's South West sub-region, approximately 2.5km from the Liverpool City Centre.

A number of residential suburbs are located in proximity to the MPW site, including:

- Wattle Grove, 670m
- Moorebank, 650m
- Casula, 300m
- Glenfield, 900m.

## 1.3 Site description

### 1.3.1 Moorebank Precinct West (MPW) site

The MPW site is generally bounded by the Georges River to the west, Moorebank Avenue to the east, the East Hills Railway Line to the south and the M5 Motorway to the north. The MPW site is located on Moorebank Avenue, Moorebank and forms Lot 1 in Deposited Plan (DP) 1197707 and Lot 100 DP 1049508, which is wholly owned by MIC, and leased by SIMTA. Other parcels of land that would be impacted by the MPW Project during road upgrades for the project include:

- Moorebank Avenue, owned by the Commonwealth Government, south of Anzac Road Lot 2, DP 1197707
- Moorebank Avenue, owned by Roads and Maritime Services, north of Anzac Road
- A portion of Bapaume Road, a public road that is the responsibility of Liverpool City Council, to the north
- A portion of Anzac Road, a public road that is the responsibility of Liverpool City Council, to the east of Moorebank Avenue.

The key existing features of the MPW site are:

- Relatively flat topography, with the western edge flowing down towards the Georges River, which forms the western boundary of the MPW site
- Direct frontage to Moorebank Avenue, which is a publicly used private road, south of Anzac Road and a publicly used and owned road north of Anzac Road
- The site has been developed and comprises low-rise buildings, including warehouses, administrative offices, residential buildings, access roads, open areas, landscaped fields and the Royal Australian Engineers (RAE) Golf Course and Club. All buildings on the MPW site are currently unoccupied and are approved for removal during the Early Works
- Vegetation exists along the western edge of the MPW site, with riparian vegetation along the banks of the Georges River. The riparian vegetation corridor provides a wildlife corridor and a buffer for the protection of soil stability, water quality and aquatic habitats. This area has been defined as a conservation area as part of the MPW Concept Approval
- Native vegetation is scattered across the MPW site
- Much of the MPW site has been developed for Defence purposes, however heritage and biodiversity values still remain on the site
- A strip of land along the western edge of the MPW site lies below the 1% annual exceedance probability flood level. This area generally corresponds to the proposed conservation area.

## 1.4 Amended Modification Proposal Overview

The Modification Proposal has been amended due to a re-assessment of the timings associated with each stage of the MPW Project and to address submissions received during the public exhibition of the Modification Report, which previously sought both a modification to the MPW Concept and Early Works (Stage 1 of the MPW Project) to accommodate the importation of fill to the MPW site. The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of clean general fill material. The physical importation of fill would now propose to be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than Stage 1 Early Works. A summary of the Amended Modification Proposal, compared with the Modification Proposal is described in Table 1-1.

*Table 1-1 - Changes to the Modification Proposal*

| Modification | Modification Proposal | Amended Modification Proposal |
|---|---|---|
| Importation of clean general fill | No modification sought | Additional parcels of land impacted as a result of design development since the MPW Concept EIS submission |
| Altered construction footprint | Importation of fill during Early Works | Importation of fill during the Stage 2 of the MPW Project |
| Interaction between the MPW and MPE sites | No modification sought | Allow (in principle) interaction between the two sites, allowing for the movement of vehicles between the MPW and MPE sites via Moorebank Avenue |
| Intermodal terminal facility (interstate, intrastate and port shuttle rail freight) | No modification sought | Land-use changes to what has been approved in the MPW Concept Approval |
| Changes to approved function and re-arrangement of existing approved uses (freight village, truck parking and OSDs) | No modification sought | Modification to allow building heights greater than that detailed in LLEP |
| Maximum building heights | No modification sought | Changes to the staging of the MPW Project |
| Staging of future applications | No modification sought | Allow subdivision of the MPW site in future stages of the MPW Project |

Further information regarding the Amended Modification Proposal is provided in Section 6 of this RtS.

## 1.5 Key Terms

Table 1-2 provides a summary of the key terms, in addition to the glossary provide above, which are included within this RtS.

*Table 1-2 - RtS key terms*

| Term | Description |
|---|---|
| Moorebank Precinct West (MPW) Concept Approval<br><br>(Concept approval and Early Works) | MPW Concept and Stage 1 Approval (SSD 5066) granted on 3 June 2016 for the development of the MPW Intermodal terminal facility at Moorebank and the undertaking of the Early Works.<br><br>Granted under Part 4, Division 4.1 of the *Environmental Planning and Assessment Act 1979*. This reference also includes associated Conditions of Approval and Revised Environmental Management Measures, which form part of the documentation for the approval. |
| Early Works | Works approved under Stage 1 of the MPW Concept Approval (SSD 5066), within the MPW site, including: establishment of construction compounds, building demolition, remediation, heritage impact mitigation works and establishment of the conservation area |
| Moorebank Precinct West (MPW) Project | The MPW Intermodal Terminal Facility as approved under the MPW Concept Approval and the MPW EPBC Approval (2011/6086). |
| Moorebank Precinct West (MPW) site | The site which is the subject of the MPW Concept Approval, MPW EPBC Proposal and MPW Planning Proposal (comprising Lot 1 DP1197707 and Lots 100, 101 DP1049508 and Lot 2 |

| Term | Description |
|---|---|
| | DP 1197707). The MPW site does not include the rail link as referenced in the MPW Concept Approval or MPE Concept Plan Approval. |
| Modification Proposal | Modification of the Concept Approval and Early Works (Stage 1) of the MPW Concept Approval (SSD 5066), the subject of the Modification Report (Arcadis, June 2016). This proposal involved the importation of fill to the MPW site. |
| Amended Modification Proposal | Modification of the Concept Approval of the MPW Concept Approval (SSD 5066), the subject of this RtS (Section 6). This proposal involves the importation of fill and a number of other modifications to facilitate for future stages of development. |
| Moorebank Precinct East (MPE) Project | The Intermodal terminal facility on the MPE site as approved by the MPE Concept Plan Approval (MP 10_0913) and including the MPE Stage 1 Proposal (14-6766). |
| Moorebank Precinct East (MPE) site | The site which is the subject of the MPE Concept Plan Approval, and includes the site which is the subject of the MPE Stage 1 Approval. |

## 1.6 Statutory Approval Process

On the 3 June 2016 Concept Approval was granted for the MPW Project under Part 4, Division 4.1 of the EP&A Act.

The MPW Concept Approval gives development consent to the MPW Concept Proposal which entails:

- *the use of the site as an intermodal facility, including a rail link to the Southern Sydney Freight Line, warehouse and distribution facilities, and associated works.*

Early Works (Stage 1) under the MPW Concept Approval are considered:

- *the demolition of buildings, including services termination and diversion; rehabilitation of the excavation/earthmoving training area; remediation of contaminated land; removal of underground storage tanks; heritage impact remediation works; and the establishment of construction facilities and access, including site security*.
- As outlined in Section 1.4 a modification to the MPW Concept Approval is required to allow for the following items:
  - Altered construction footprint
  - Clean general fill importation
  - Interaction between the MPW and MPE sites
  - Changes to approved function and re-arrangement of approved uses
  - Maximum building heights
  - Staging of future applications
  - Subdivision.

Section 96(2) of the EP&A Act allows a consent authority to modify a development consent, provided that it is satisfied that the development of which the consent as modified is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all).

Overall, the modification (Amended Modification Proposal) would not result in any substantial environmental impacts, and these potential impacts can be adequately managed through the implementation of the Ministers Conditions of Approval (MCoA), the Revised Environmental Management Measures (REMMs) provided within the MPW Concept Approval and additional mitigation measures identified in Section 7 of this RtS. Further, the Amended Modification Proposal proposes a development which in essence is 'substantially the same' as that provided within the MPW Concept Approval in that it would facilitate for the development of an intermodal terminal facility with the same IMT throughput limitations, warehousing GFA, freight village, truck parking and other ancillary development as provided within the MPW Concept Approval. On this basis,

the Amended Modification Proposal is considered substantially the same development and can be considered for approval under s96(2) of the EP&A Act. Further assessment has been provided at Section 7 of this RtS.

## 1.7 Structure of this Report

The structure of this RtS is as follows:

- **Summary**: provides a brief overview of the RtS including the identification of key issues and associated further environmental assessments
- **Section 1 – Introduction**: provides an introduction to the Proposal, the site context, the statutory approval process and the structure of the RtS
- **Section 2 – Exhibition and consultation**: provides a description of the consultation which has been undertaken as part of the MPW Project to date
- **Section 3 – Overview of Submissions**: provides an analysis of the submissions received during the exhibition of the EIS and identifies key issues raised
- **Section 4 – Response to Government Agency Submissions**: provides a catalogue of responses received from Government Agencies and responses prepared by SIMTA's technical specialists
- **Section 5 – Response to Community Submissions**: provides a summary of the community responses received and responses to each of these prepared by SIMTA's technical specialists
- **Section 6 – Modification amendment**: provides a description of the amendment to the Concept modification presented within the Modification Report
- **Section 7 – Further assessment**: provides an environmental assessment of the amendments to the MPW Concept modification with reference to technical specialist addendums
- **Section 8: Compilation of mitigation measures**: provides an updated list of mitigation measures to include any changes as a result of submissions received
- **Section 9 – Conclusion**: provides a summary and conclusion to the RtS.

The following Appendices are included in this RtS:

- **Appendix A** Community Response Table
- **Appendix B** Stormwater and Flooding Technical Note
- **Appendix C** Visual Impact Assessment
- **Appendix D** Statement of Development Standard Exception

# 2 EXHIBITION AND CONSULTATION

The Modification Report was placed on exhibition between 7 July 2016 and 22 August 2016 in accordance with Section 89F (1)(a) of the EP&A Act. Hard copies of the Modification Report were available for public review and comment at the following locations for the duration of the exhibition period:

- Liverpool City Council: Level 2, 33 Moore Street, Liverpool
- Liverpool City Council Library: 170 George Street, Liverpool
- Campbelltown Council: 91 Queen Street, Campbelltown
- Glenquarie Branch Library: 12 Brooks St, Macquarie Fields
- Nature Conservation Council, 14/338 Pitt Street, Sydney

The Modification Report was also available to the public in electronic format on the DP&E website (http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7722) during this time.

## 2.1 Modification Consultation

Consultation activities were undertaken with relevant stakeholders both prior to and during public exhibition of the Modification Proposal. A summary of the consultation undertaken is provided in the following sections.

### 2.1.1 Government Agencies

Discussions relating to the Modification Proposal, at various stages of development, have been undertaken with the DP&E periodically. They key discussions commenced in February 2016 and included meetings, emails and the provision of documentation identifying the proposed approach to the Modification. The key aspect of consultation included provision of a detailed memo outlining the suitability of the proposal to be assessed under s96(2) of the EP&A Act, the potential environmental impacts of the Proposed Modification and potential mitigation measures to reduce these impacts.

Liverpool City Council (LCC) was consulted twice during the Modification Proposal's exhibition period in mid-August 2016. In particular, SIMTA met with LCC and provided a detailed presentation of the environmental assessment of the Modification Proposal and the associated mitigation measures.

In addition to the above, other government agencies have provided submissions as part of the public exhibition for the Modification Proposal, including the following:

- EPA
- Roads and Maritime
- OEH
- Heritage Council
- DPI
- Fairfield City Council.

### 2.1.2 Service and infrastructure providers

Service and utility providers were consulted with during the exhibition of the Modification Report. A number of service and utility providers provided submissions as part of the public exhibition of the Modification Proposal, including Endeavour Energy and Sydney Water.

### 2.1.3 Community and other stakeholders

SIMTA recognises the importance of the community's involvement and as such, in addition to the DP&E public exhibition and advertisement, distributed a newsletter to approximately 10,000 households in the suburbs surrounding the MPW site. The purpose of the newsletter was to inform them about the Modification

Proposal, and detail how they could submit feedback or request more information. To date no submissions have been received specifically relating to this newsletter.

SIMTA also placed a public notification of the Modification Proposal in local newspapers, consistent with clause 49 and clause 115 of the EP&A Regulation.

### 2.1.4 Aboriginal heritage consultation

Registered Aboriginal Parties were not specifically consulted for the purposes of the Aboriginal Heritage Memorandum (Appendix H of the Modification Report) as the Modification Proposal is consistent with the approach identified in the MPW Concept Approval and therefore does not result in any further impacts on Aboriginal heritage significance. This approach remains consistent with changes proposed under the Amended Modification Proposal. As such, the REMMs and MCoA would ensure Aboriginal heritage is managed consistent with the existing MPW Concept and Early Works Approval.

Registered Aboriginal Parties, like other stakeholders, were provided with the opportunity to respond during the Modification Proposal exhibition period, however no responses were received.

Aboriginal parties would continue to be engaged with as part of the broader MPW project.

## 2.2 Consultation: Next Steps

As provided in Planning Circular (PS 11-022) (30 September 2011) the criteria for an application (in this case the Modification Proposal) to be determined by the Planning Assessment Commission (PAC) is based on the following:

- More than 25 members of the public having made a submission on the application
- The Council for the area objects in writing to the application
- A political donation disclosure statement has been lodged with the application (i.e. political donation has been made by the applicant).

During the exhibition of the Modification Proposal a total of 371 community submissions were received. Further, LCC has objected to the Modification. As a result of both the number of community submissions received and the objection from Liverpool City Council the Modification Proposal is to be assessed by the PAC. Further information on the PAC assessment process, and consultation included as part of this, is provided at their website (http://www.pac.nsw.gov.au/).

In addition to the above, feedback can also be provided to SIMTA at any time via:

- The SIMTA Project website (www.simta.com.au)
- The email feedback system (SIMTA@elton.com.au)
- The free-call information line (1800 986 465) which is available 24 hours a day

SIMTA is committed to continuing to consult with stakeholders, including the community throughout the planning of the Amended Modification Proposal and future stages of development.

# 3 OVERVIEW OF SUBMISSIONS

A number of submissions were received during the exhibition period of the Modification Proposal. The submissions received were from both government agencies and the community.

An overview of the submissions and a summary of the process taken to ensure that the submissions have been accurately responded to is provided below.

## 3.1 Submissions Received

Submissions were received from a total of nine government agencies including the following:

- EPA
- OEH
- Heritage Council
- DPI
- Liverpool City Council
- Fairfield City Council
- RMS
- Endeavour Energy
- Sydney Water.

In addition to this, DP&E received a total of 371 submissions from community members, landowners and special interest groups, all of which expressed concerns with the Modification Proposal. A large number of the submissions used the phrase “I object to these modifications, on merit and on principle because…” before outlining their specific concerns and the consistent wording indicates that these are a type of form letter.

Of the 371 submissions 82% were from residents in the Liverpool LGA, with 11% choosing not to provide a location. The remaining 7% were mainly from suburbs within neighbouring LGA’s such as Campbelltown, Canterbury-Bankstown and Sutherland.

Figure 3-1 below highlights the distribution of submissions across suburbs within the Liverpool LGA, with the majority (35%) received from residents located within Holsworthy, with other significant quantities of submissions received from Moorebank and Wattle Grove.

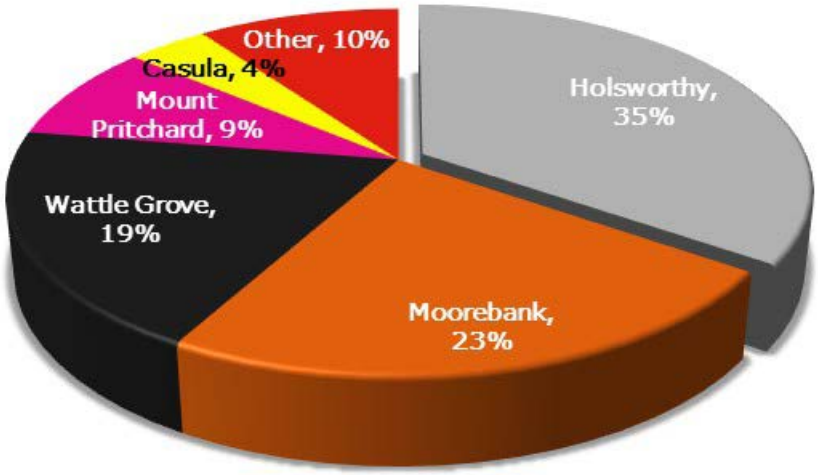


*Figure 3-1 Location of submissions from Liverpool LGA*

## 3.2 Submissions Response Methodology and Approach

### 3.2.1 Government Agencies

As outlined in Section 3.1 a total of nine government agencies provided submissions. Each submission varied in terms of the number and type of items for consideration raised, with some agencies, depending on their function/responsibility, raising more issues than others. Each agency submission was reviewed and either transcribed in full, or summarised to identify the key points.

The submissions were then provided to the SIMTA technical specialist's team for consideration and preparation of a response. The information relevant to these responses has been referenced and addressed in the response tables in Section 4 of this RtS. Where additional reporting was required to be prepared it has been provided as an appendix to this RtS.

### 3.2.2 Community

The community submissions were summarised into key aspects, issues and sub-issues using the reference number assigned to each submission by DP&E. The process of identifying this detail was iterative, utilising three rounds of review to capture each level of detail – key aspects, issues and sub-issues. Each submission was given a reference number, allowing analysis of submissions at an issue and aspect level.

Summary of Community Comments

Section 5 summarises and analyses the submissions received from the community. A complete table showing all of the aspects, issues and sub-issues raised by the community, by their reference number (assigned by the DP&E) is provided within Appendix A of the RtS.

A large number of community submissions received were not directly relevant to the scope of the Modification Proposal, but rather were submitted in relation to the overall MPW Project in general.

The aspects identified in the submission analysis are outlined in Table 3-1 and Figure 3-2.

*Table 3-1 Summary of aspects identified in community submissions*

| Aspect | No. of submissions raising aspect | % of submissions raising aspect |
|---|---|---|
| Air quality | 91 | 25% |
| Approval documentation | 53 | 14% |
| Community | 110 | 30% |
| Construction | 10 | 3% |
| Cumulative | 2 | 1% |
| Economics | 5 | 1% |
| General environment | 111 | 30% |
| Human health | 99 | 27% |
| Land use | 20 | 5% |
| Noise and vibration | 87 | 23% |
| Site selection | 116 | 31% |
| Traffic and transport | 201 | 54% |

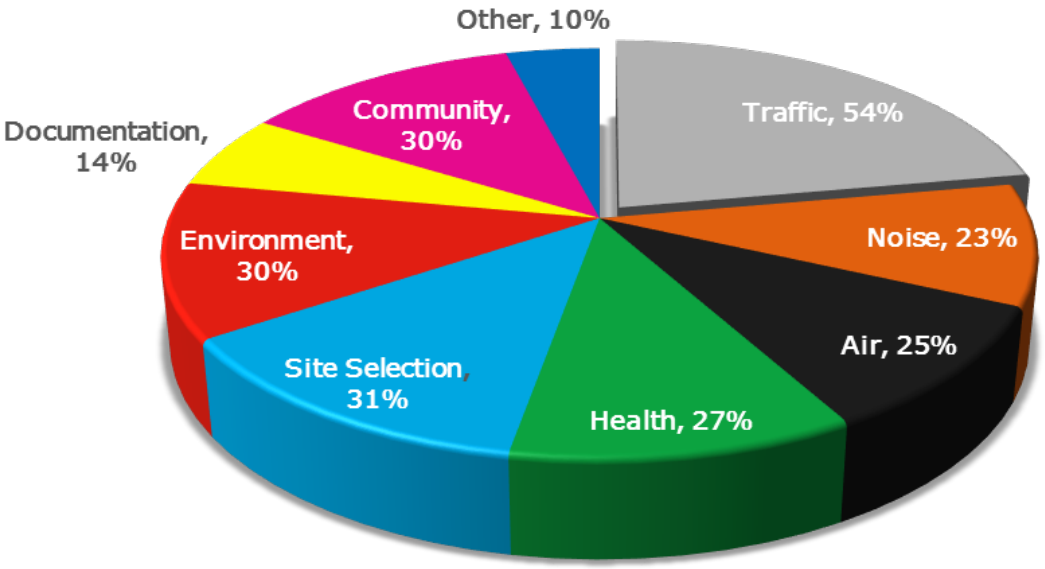


*Figure 3-2 Percentage of submissions by aspect*[1]

## 3.2.3 Issue Analysis

Table 3-2 shows a summary of all of the issues that were raised by the community during the public exhibition of the Modification Report.

*Table 3-2 Summary of key issues raised by the community*

| Aspect | Issue | No. of submissions raising issue | % of submissions raising issue |
|---|---|---|---|
| Air quality | Crushing plant | 10 | 3% |
| | Dust (importing fill) | 10 | 3% |
| | General | 5 | 1% |
| | Pollution | 61 | 16% |
| | Train emissions | 3 | 1% |
| | Vehicle emissions | 14 | 4% |
| Approvals Documentation | Approvals | 21 | 6% |
| | Combined projects | 2 | 1% |
| | Early works | 2 | 1% |
| | General | 5 | 1% |

[1] Other impacts include: Construction, Land Use, Economics and Cumulative impacts

| Aspect | Issue | No. of submissions raising issue | % of submissions raising issue |
|---|---|---|---|
| | Modification | 27 | 7% |
| | Process | 5 | 1% |
| | Technical studies | 7 | 2% |
| Community | Community venues | 2 | 1% |
| | Consultation | 11 | 3% |
| | Extended hours | 22 | 6% |
| | Financial gain | 4 | 1% |
| | General opposition | 50 | 13% |
| | Safety | 4 | 1% |
| | Social | 27 | 7% |
| Construction | Early works | 7 | 2% |
| | General | 3 | 1% |
| Cumulative | Combined impacts | 2 | 1% |
| Economics | Economic impacts | 3 | 1% |
| | Financial viability | 2 | 1% |
| General environment | Contamination | 2 | 1% |
| | Georges River | 40 | 11% |
| | Heritage | 3 | 1% |
| | Light pollution | 2 | 1% |
| | Natural environment | 82 | 22% |
| | Threatened species | 2 | 1% |
| | Visual | 1 | 0.3% |
| Human health | Human health impacts | 99 | 27% |
| Land use | Compensation | 2 | 1% |
| | Property depreciation | 12 | 3% |
| | Use of site | 6 | 2% |
| Noise and vibration | Crushing plant noise | 10 | 3% |
| | Traffic noise | 26 | 7% |

| Aspect | Issue | No. of submissions raising issue | % of submissions raising issue |
|---|---|---|---|
| | Construction noise | 3 | 1% |
| | Operational noise | 5 | 1% |
| | General | 49 | 13% |
| | Vibration | 2 | 1% |
| Site selection | Badgerys Creek (alternate location) | 34 | 9% |
| | Belfield (alternate location) | 1 | 0.3% |
| | Eastern Creek (alternate location) | 1 | 0.3% |
| | Other locations more suitable | 2 | 1% |
| | Site is generally unsuitable | 85 | 23% |
| Traffic and transport | Congestion | 158 | 43% |
| | Traffic modelling | 7 | 2% |
| | Road safety | 11 | 3% |
| | Surrounding infrastructure upgrades | 45 | 12% |
| | Road use | 5 | 1% |
| | Parking | 1 | 0.3% |
| | Travel times | 12 | 3% |

## Key Issues

A summary and analysis of the top four key aspects has been provided below.

### Traffic and Transport

As shown above, traffic and transport has been identified by the community as being the key aspect for the Modification Proposal. The submissions raised were generally related to the additional traffic movements posed by the Modification Proposal and the potential impacts this would have on the surrounding road network.

The top two issues identified within the traffic and transport aspect are:

- Congestion – general concerns about congestion associated with the traffic movements generated by the Modification Proposal
- Road network capacity – several intersections and sections of road are already at capacity and won't be able to accommodate the increase in vehicle movements

Figure 3-3 highlights the breakdown of all key issues raised by the community in relation to traffic and transport.

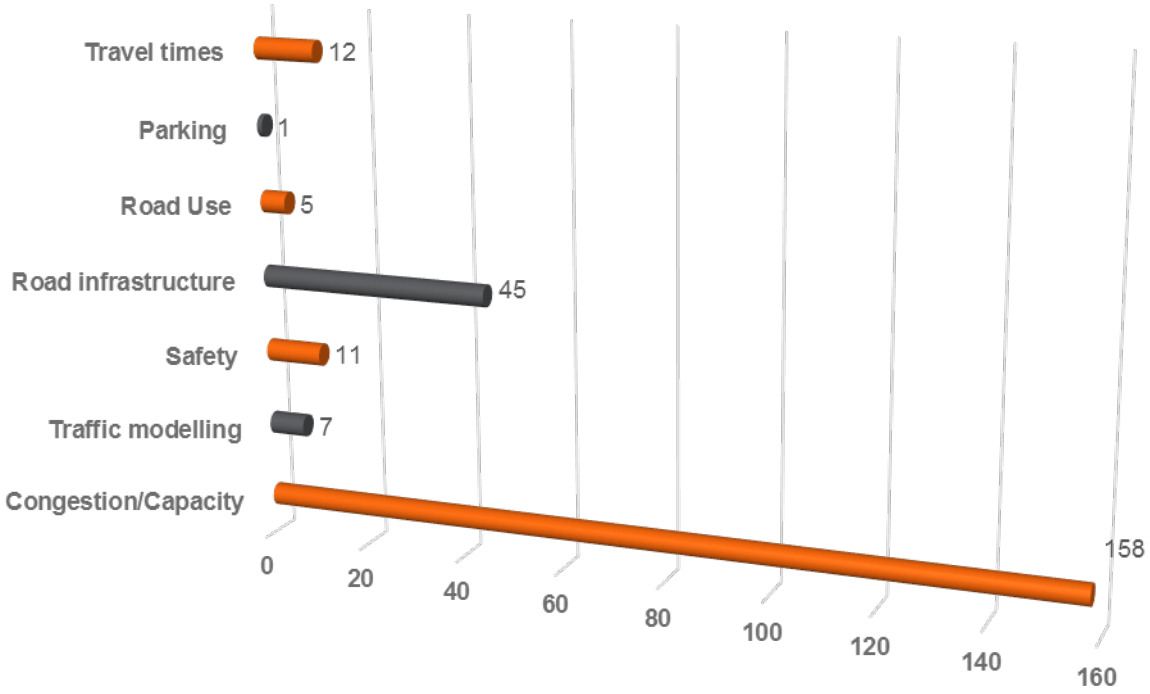


*Figure 3-3 - Traffic and transport key issue breakdown*

## Site Selection

Site selection was identified by the community as the second key aspect. The submissions raised were generally concerned with the overall development of MPW site and its suitability for an intermodal terminal facility, as opposed to raising concerns specific to the Modification Proposal.

The top two key issues identified within the site selection aspect are:

- The site being generally unsuitable – the community is concerned that Moorebank is no longer suitable for this type of industrial development
- Badgerys Creek being a more suitable site – close to airport and perceived less impact on community.

Figure 3-4 highlights the breakdown of all key issues raised by the community in relation to the site selection aspect.

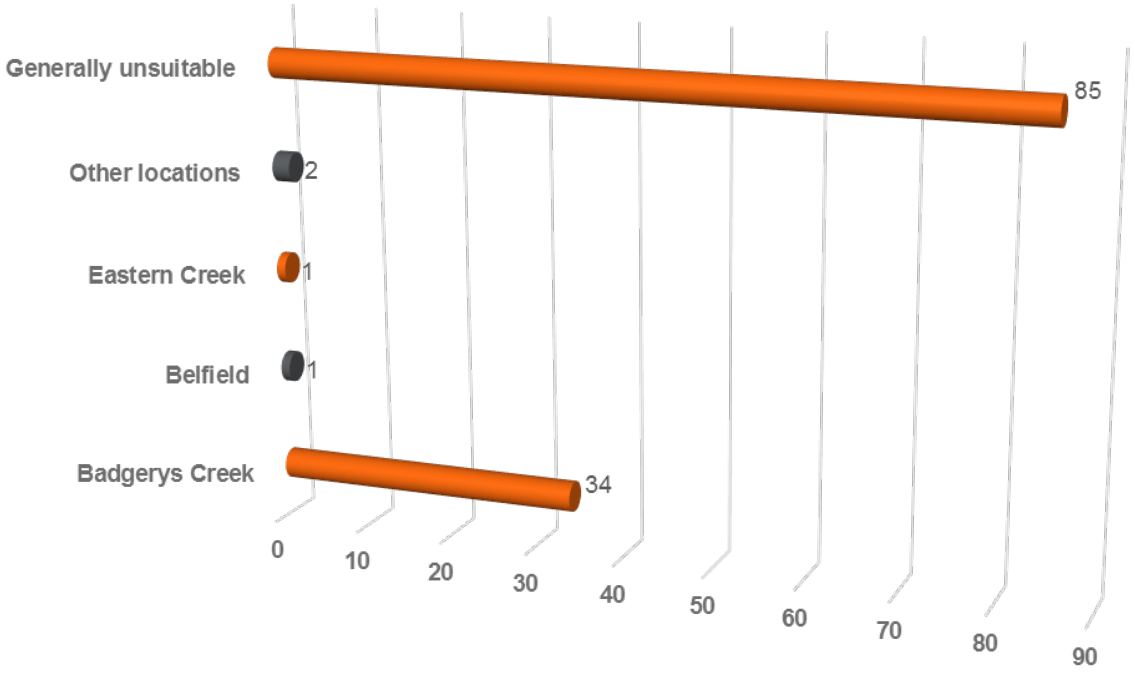


*Figure 3-4 - Site selection key issue breakdown*

## General Impacts

The third most prominent aspect raised by the community was general impacts to the environment. Concerns related to clearing works, the impact to ecological communities and the importation of fill and the potential impact that this would have on flooding in the area.

The top two key issues identified within the environment aspect are:

- Natural environment – impacts to flora and fauna and sensitive ecosystems
- Georges River – concerns with downstream flooding and the potential for destroying the recreational amenities of the river.

Figure 3-5 highlights the breakdown of all key issues raised by the community in relation to general environment impacts.

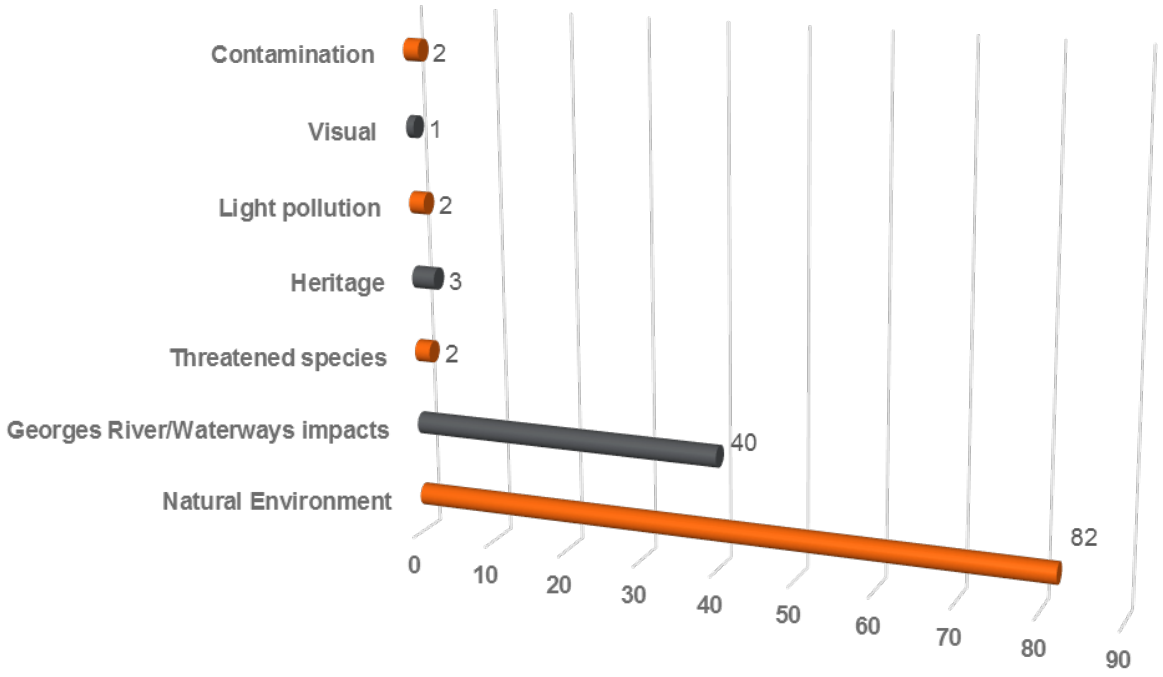


*Figure 3-5 - Environment key issue breakdown*

## Community

Impacts to the community, including a perceived lack of consultation, social impacts and the increased construction hours during early works were raised as the fourth most prominent aspect of the community's submissions.

The top two key issues identified within the community aspect are:

- General opposition to the project - including a sense from the community that the development is inappropriately located in south-west Sydney
- Social impacts - including a poorer quality of life and impact on future generations of the community.

Figure 3-6 highlights the breakdown of all key community issues raised in the public responses.

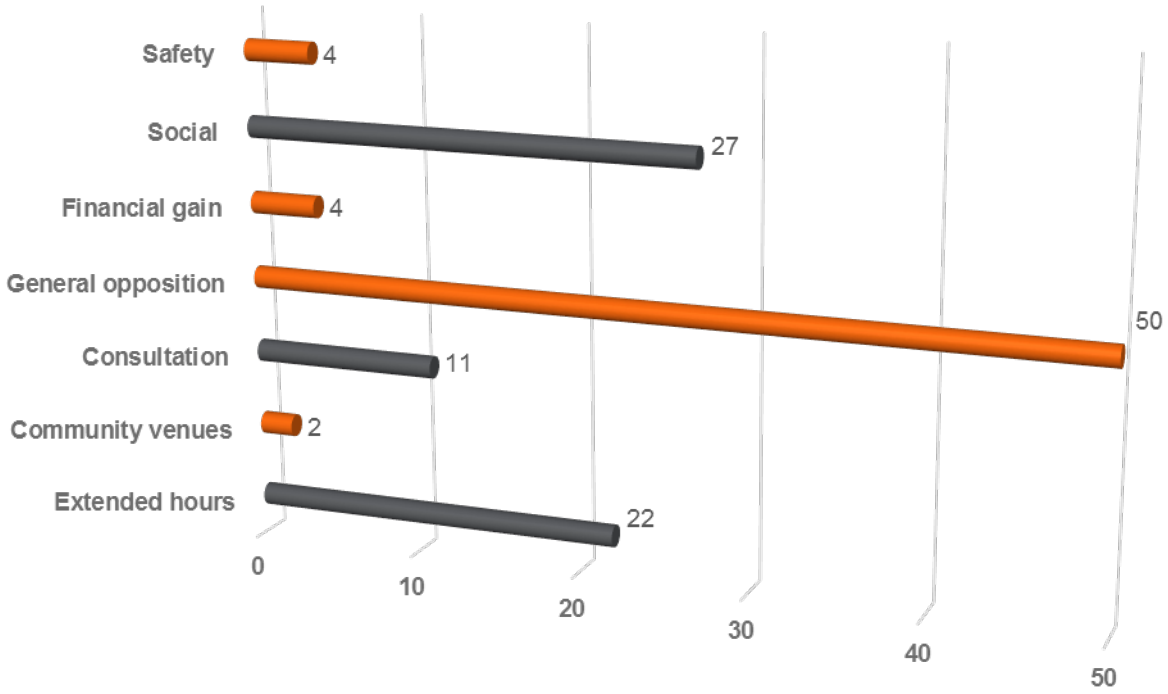


*Figure 3-6 - Community key issue breakdown*

These key issues have been further discussed and responded to in Section 5 of this RtS.

# 4 RESPONSE TO GOVERNMENT AGENCY SUBMISSIONS

The following Local and State government authorities provided responses as part of the public exhibition of the Modification:

- Environment Protection Authority
- Office of Environment and Heritage
- Heritage Council
- Department of Primary Industries
- Liverpool City Council
- Fairfield City Council
- Endeavour Energy
- Roads and Maritime Services
- Sydney Water.

## 4.1 Environment Protection Authority

The EPA provided a response to the submission on 25 July 2016. The EPA considered that the conditions outlined in the Development Consent for Early Works (Stage 1) adequately cover the key environmental issues of noise and air quality in regards to the proposed modification. As the Amended Modification Proposal no longer seeks to modify Early Works and only the MPW Concept Approval, this submission is no longer considered to be relevant.

## 4.2 Office of Environment and Heritage

Table 4-1 provides a response to the submission received from OEH dated 19 August 2016.

*Table 4-1 Office of Environment and Heritage (OEH) comments*

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| Floodplain risk management | The subject modification proposal outlines a significant variation in the scope of work in relation to the filling of the site with 1,600,000m$^3$ of imported material and proposed cut and fill operations.<br><br>OEH's review of the relevant reports has revealed that from a floodplain risk management perspective the documents do not provide sufficient information to clearly demonstrate:<br>• The impacts, if any, of the modified project on the full range of flooding from the Georges River, Anzac Creek or overland flooding<br>• Proposed floodplain risk management measures to mitigate or eliminate the risk from flooding<br>• A revision of the cumulative impacts upstream and downstream of the proposed works<br>• A revision of the climate change impacts as a result of the modified works.<br><br>It is therefore recommended that a revised flood assessment is undertaken to assess the modified proposal. | The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of clean general fill material. The physical importation of fill would now be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than Stage 1 (Early Works) (please refer to Section 6 and 7 of this RtS for detailed explanation of the Amended Modification Proposal and environmental assessment, respectively).<br><br>A Stormwater and Flooding Addendum has been prepared (refer to Appendix B of this RtS) to provide further discussion of the Amended Modification Proposal and associated flood risks to the site and surrounding properties. | Section 5.3 of the Modification Report<br><br>Section 6 and Section 7 of this RtS<br><br>Appendix B of this RtS |
| Biodiversity | OEH notes that the Stormwater Assessment (Appendix D) indicates that the site levels would be raised by up to 10m and that some of the extant vegetation to be conserved is immediately adjacent to the 'area of impact (modification subject)'. Of note is that three vegetation types that are to be conserved on site | The MPW Concept Modification Report (Arcadis, 2016) stated that clean general fill material, required for future stages of the MPW Project, would be temporarily stockpiled within the primary earthworks area, at a maximum height of up 10 metres above the final site levels. | Appendix D of the Modification Report<br><br>Section 1, Section 6 and |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | (Alluvial Woodland, Riparian Forest, Castlereagh Swamp Woodland), all of which are endangered ecological communities, are vegetation communities that occur in floodplains and river-flats. As such, they are particularly susceptible to alterations in drainage patterns, sedimentation and changes to groundwater levels. The Concept Modification report acknowledges that the proposed modification would 'result in an intensification of erosion and sedimentation impacts previously identified for Early Works', most notably including:<br>• Changes to groundwater levels and systems<br>• Changes to volume and velocities of surface drainage<br>• Sedimentation of creeks and drainage lines.<br>The Biodiversity Impact Assessment however, does not include a discussion of the proposed alterations to surface levels and the impacts of this on native vegetation and it not clear what impact the importation of large quantities of fill would have on the vegetation. OEH recommends that the Biodiversity Impact Assessment be revised to address this issue. | Drawing number MCPN-ARC-CV-DWG-01111 (Appendix D of the Modification Report) specifies boundaries and cross sections of the primary earthworks area, confirming that there would be a permanent fill layer of approximately 1 metre underlying a stockpiled fill layer of 6 metres high in some areas (well below the maximum 10 metre height). This stockpiled fill would ultimately be spread out across a 150 ha area (refer to Section 1 and Section 6 of this report for justification for fill importation).<br>The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of clean general fill material. The physical importation of fill would now be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than Stage 1 (Early Works) (please refer to Section 6 and 7 of this RtS for detailed explanation of the Amended Modification Proposal and environmental assessment, respectively).<br>EEC vegetation impacts were assessed as part of the original MPW Concept EIS. The Amended Modification Proposal does not result in an increase to impacts to EEC.<br>Potential impacts generated as a result of raised site levels on adjoining areas of retained native vegetation, including EECs has been assessed within Section 7 of this RtS. | Section 7 of this RtS. |

## 4.3 Heritage Council

The Heritage Council provided a submission on 8 August 2016 and considered that as long as the modification was carried out in accordance with the recommendations of the *Moorebank Precinct West Intermodal Terminal Facility Modification – Non-Aboriginal (Historical) Heritage Assessment* (Arcadis 2016) no objection is raised. The Amended Modification Proposal does not propose any works requiring additional assessment in relation to the reference document and this submission is therefore not considered to be relevant to the Amended Modification Proposal. As per the MPW Concept EIS the Proponent would implement an Unanticipated Discoveries Protocol for potential Indigenous and non-Indigenous heritage works.

## 4.4 Department of Primary Industries

Table 4-2 provides a response to the submission received from DPI dated 22 August 2016.

*Table 4-2 Department of Primary Industries (DPI) comments*

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| Riparian corridor | Section 2.2.1 of the report refers to an existing 25-metre-wide riparian corridor. The proponent should ensure a minimum 40-metre-wide corridor (measured from the top of the bank) along the terminal site and a minimum 50 metres wide associated with the rail corridor. This is in accordance with consent condition E16 from the original Concept Proposal Development Consent. | While there is an existing 25-metre-wide riparian corridor the Proponent would increase this to 40 metre along the terminal site and 50m along the rail corridor as per consent condition E16.<br><br>Despite implementing this requirement, it is noted that both the terminal and rail corridor are located several hundred metres from the riparian corridor. | N/A |

## 4.5 Liverpool City Council

Table 4-3 provides a response to the submission received from LCC dated 23 August 2016.

*Table 4-3 Liverpool City Council (LCC) comments*

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| Construction traffic | An approximate 37-fold increase in the number of heavy vehicle movements during the early works phase. This is a significant increase which would cause amenity impacts during the early works period that were not considered in the Project Approval<br><br>It is also noted that the origin of the imported fill needs to be identified in order for the proposed routes to be analysed | The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of clean general fill material. The physical importation of fill would now be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than Stage 1 (Early Works) (please refer to Section 6 and 7 of this RtS for detailed explanation of the Amended Modification Proposal and environmental assessment, respectively).<br><br>An assessment of traffic impacts associated with the importation of clean general fill is provided in Section 7 of this RtS.<br><br>As discussed in Section 6 of this RtS, clean general fill would likely be sourced from other Sydney infrastructure projects under construction, from trucks already transporting fill material via the M5 Motorway site. This would potentially reduce traffic impacts of importing the required fill under an alternative | Section 6 and Section 7 of this RtS |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | | scenario, by having it brought directly to the MPW site and potentially shortening the haulage distance. | |
| Moorebank Avenue intersection upgrades | The haulage activities would require improvements to two intersections along the section of Moorebank Avenue along the site. Details of the intersection improvements should be discussed and agreed with the RMS and Council. Similarly, haulage routes and time need to be discussed and agreed with Council to ensure that haulage is limited to existing B-double routes | The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of clean general fill material. The physical importation of fill would now be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than Stage 1 (Early Works) (please refer to Section 6 and 7 of this RtS for detailed explanation of the Amended Modification Proposal and environmental assessment, respectively).<br><br>An assessment of traffic impacts associated with the importation of clean general fill is provided in Section 7 of this RtS.<br><br>Roads and Maritime Services and Council would be consulted during future development stages to discuss any associated traffic alterations in further detail. However, approval would not be sought from Roads and Maritime Services for these alterations as this section of Moorebank Avenue (south of Anzac Road) is a privately-owned road that is publicly accessible.<br><br>Further, a Construction Traffic and Access Management Plan would be prepared for future development stages, in accordance with Condition of Approval D20(a) for the Project, that would include considerations for designated truck haulage routes to preserve the amenity of the surrounding environment and in accordance with relevant regulatory measures. | Section 6 and Section 7 of this RtS<br><br>MPW Conditions of Approval |
| Dust | The proposal would significantly increase on-site dust emissions during construction and impact on adjoining residential communities, with the residential area of Casula located directly to the west across the Georges River, as well as residential areas further to the north and south potentially subject to reduced air quality | An assessment of air quality impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated air quality impacts.<br><br>The results of this further assessment indicate that the construction phase emissions would comply with all relevant impact assessment criteria.<br><br>A Dust Management Plan (DMP) or equivalent, in accordance with REMM 10A (refer to Section 8 of this Report) would be | Section 7 of this RtS<br><br>MPW Conditions of Approval |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | | developed and implemented for the Amended Modification Proposal. | |
| Noise | The import of 1,600,000 cubic metres of fill is anticipated to create a substantial increase in noise impacts on the community, with noise increasing by 4-6 dB during the day time, noting also the proposed extended hours of construction activity to 10pm at night would mean increased noise impacts at night. Council recommends that the crushing and compaction at the site should be restricted to the normal construction hours i.e. 7:00pm<br><br>Further, it is recommended that a precinct wide, master planned approach to earthworks be considered | The noise and vibration assessment provided in Section 7 of this RtS, provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated noise and vibration impacts.<br><br>The results from the assessment undertaken in Section 7 of this RtS indicate that the Amended Modification Proposal would not generate any additional exceedances to relevant criteria from that originally proposed under the MPW Concept Approval. | Section 7 of this RtS |
| Constructability | Far greater consideration of constructability is required due to the substantially different earthworks model now proposed, which indicates the need for importation of 1,600,000 $m^3$ of fill occurring over a six to nine-month period. Unless this consideration is given, there is potential for further modifications to be required to address the final design and construction process.<br><br>The importation and emplacement rates are ambitious, particularly given that the anticipated unsuitable ground conditions will be 'treated' on an ad-hoc basis. This poses a high environmental impact risk, with further traffic, noise, dust and constructability assessments necessary to demonstrate the feasibility of works on this scale | The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of clean general fill material. The physical importation of fill would now be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than (Stage 1) Early Works (please refer to Section 6 and 7 of this RtS for detailed explanation of the Amended Modification Proposal and environmental assessment, respectively).<br><br>Further consideration of this activity in terms of its constructability has been undertaken, and has been integrated within the technical specialist assessments supporting this document (Section 7 of this RtS and Appendix Documents).<br><br>Revised construction and staging plans in accordance with the Amended Modification Proposal indicates that the importation of clean general fill would be undertaken across two key construction stages, with indicative timing suggesting these works would commence during the third quarter of 2017 and concluding in the commencement of the fourth quarter of 2020. Refer to Section 6 for the construction methodology for the Amended Modification<br>Proposal. | Section 3.2, 5.1, 5.4 and 5.5 of the Modification Report<br><br>Section 6 of this RtS |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | | Further detail regarding the construction program and activities would be provided during future development stages for the Project.<br><br>Council would also be consulted during the CEMP approval process once a contractor is engaged to deliver the works. | |
| Section 96 EP&A Act | The modification at the scale proposed is not considered to satisfy the 'substantially the same' test as defined by legal precedent under Section 96(2) of the EP&A Act. Therefore, it is deemed inappropriate for the development as modified to obtain approval under Section 96 of the EP&A Act.<br><br>Council requests the DPE seek legal advice on the above point and advise Council prior to determination of this modification. Subsequent to receiving the legal advice, Council will submit appropriate consent conditions, should the proposed modification be considered for approval | The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of clean general fill material. The physical importation of fill would now be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than Stage 1 (Early Works) (please refer to Section 6 and 7 of this RtS for detailed explanation of the Amended Modification Proposal and environmental assessment, respectively). | Section 6 and Section 7 of this RtS |
| Masterplan | Council questions the processes for modifications to both proposals and requests that a master plan application be lodged which provides a full assessment of environmental impacts associated with both the SIMTA and MIC applications, now that SIMTA is to develop the combined projects.<br><br>This approach reflects previous comments from the Planning and Assessment Commission and from Council, as this approach would allow more orderly development and aid the understanding of the full extent of environmental impacts | SIMTA has entered into an agreement with MIC to build and operate the MPW Project.<br><br>Irrespective of this agreement, the two existing Concept Plan approvals for the MPW Project and MPE Project would continue to maintain their separate approval status and both projects remain viable standalone operations. | N/A |
| Agency Regulation | Apart from onsite crushing activities and rail movements, the NSW Environment Protection Authority (EPA) appears reluctant to regulate non-scheduled construction and operational activities. Instead, the NSW EPA is only offering minimal assistance to Council even though Liverpool Council has consistently raised concerns regarding its ability to regulate the proposed 24-hour operation.<br><br>In addition to the NSW EPA, the Department of Planning and Environment (the Department) will be responsible for assessing compliance with the planning approvals. It is envisaged that the Department will have primary responsibility | This submission is directed to EPA and DP&E. | N/A |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | for assessing compliance with conditions of consent in relation to environmental emissions (i.e. noise, air, water, land) during the construction and operational phases of the project.<br><br>According to the NSW Planning & Environment website, the Department's compliance team monitors and enforces the conditions of projects granted by the Minister for Planning or their delegate. The Department has published a compliance policy and associated guidelines for breach management, prosecutions and penalty notices to assist their Authorised Officers in exercising enforcement powers in a fair, consistent and equitable manner. Therefore, Liverpool Council believes the Department is equipped with the appropriate skills, knowledge and enforcement powers to jointly regulate the proposed development with the NSW EPA during construction and operation. A united regulatory response between the Department and NSW EPA would alleviate Council's role in regulating the remaining unscheduled activities.<br><br>It is requested that the Department outlines their commitment and confirms their responsibilities in regulating construction and operational activities at the proposed freight terminal. Furthermore, the Department and NSW EPA have appeared largely disinterested in attending meetings with the Proponent at Council's Administration Centre. Council is requesting that appropriate personnel from the Department and NSW EPA attend a future meeting with Council officers regarding the proposed freight terminal. | | |
| Appropriate Regulatory Authorities | The proponent indicated that the proposed development would appoint an Environmental Representative to immediately respond to any future pollution incidents, complaints and concerns. Although self-regulation is important, an appropriately skilled and resourced Regulatory Authority will be required to control site activities. Council is requesting clarification of the Appropriate Regulatory Authorities for scheduled and non-scheduled activities at the site. Furthermore, Council is also seeking confirmation of what assistance will be provided by the State in the regulation of non-scheduled activities at the facility. | This submission is directed to the NSW Government and DP&E. | N/A |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| EPA's classification of fill importation | The Modification Application is seeking to import approximately 1,600,000m$^3$ of fill by truck to the site. The Environment and Health Section is seeking confirmation as to whether the importation of fill material to the site is a scheduled activity and would be therefore regulated by the NSW Environment Protection Authority under the *Protection of the Environment Operations Act 1997*. | The importation of clean general fill is not a scheduled activity under Schedule 1 of the POEO Act, and therefore does not need an Environment Protection Licence. In addition, the fill would come with relevant waste classification certificates verifying that it is VENM/ENM and suitable for use as clean general fill on the site. | N/A |
| Noise | Based upon the meeting held with the applications on 18 August 2016, it was understood that the proposed modification would result in an exceedance of the relevant site assessment criteria by approximately 1-2 dB(A). In contrast, Cardno's Peer Review indicates that predicted noise increase of between 4-6 dB(A) are likely as a result of the proposed modification. The extent of noise exceedances associated with the proposed modification appears relatively uncertain. Council is seeking further information regarding the extent of noise exceedances associated with the proposed modification and the adequacy of proposed mitigation measures | The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of clean general fill material. The physical importation of fill would now be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than Stage 1 (Early Works) (please refer to Section 6 and 7 of this RtS for detailed explanation of the Amended Modification Proposal and environmental assessment, respectively).<br><br>A noise and vibration assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated noise and vibration impacts.<br><br>The results from the assessment undertaken in Section 7 indicate that the Amended Modification Proposal would not generate any additional exceedances to relevant criteria from that originally proposed under the MPW Concept Approval.<br><br>Arcadis has not seen the Cardno assessment for which the finding of 4-6 dB exceedance originates, and would be happy to review this information in the context of the Proposal should it become available. | Section 6 and Section 7 of this RtS Report |
| Suitable mitigation measures not identified | The Proponent is primarily interested in attaining the necessary approvals without completing a comprehensive environmental assessment of the proposed development. It is concerning that the identification and selection of appropriate mitigation measures to address environmental impacts is an afterthought when planning for the proposal. During the meeting, Council's officers were advised on numerous occasions that appropriate mitigation measures would be selected when the contractor is required to prepare their | The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of clean general fill material. The physical importation of fill would now be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than Stage 1 (Early Works) (please refer to Section 6 and 7 of this RtS for detailed explanation of the Amended Modification Proposal and environmental assessment, respectively). | Section 6, Section 7, Section 8 of this RtS |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | appropriate Environmental Management Plans. Approval shall not be granted until further consideration is given to the selection of appropriate safeguards that offer sufficient protection to human health and the environment. | Section 7 and Appendix B to Appendix D provide technical environmental impact assessment for aspects occurring as a result of the Amended Modification Works, in comparison to the conditions prescribed under the original MPW Concept Approval. Mitigation measures, outlined in Section 8 of this RtS Report, would minimise/manage the environmental impacts associated with the Amended Modification Proposal.<br><br>As in the case of all infrastructure projects, it is common practice to include objective mitigation measures, leaving the details on how to achieve these objective measures to the contractor in their CEMPs. The contractor would be required to implement the environmental conditions of approval, including the management measures and safeguards set out in pre-approval planning documentation. The proponent and DP&E would review all planning documentation prior to approval. | |
| Environmental Monitoring | During the meeting, it was indicated that opportunities for appropriate environmental monitoring and reporting had not been fully investigated. In particular, it was suggested the compliance monitoring would be largely dependent upon active surveillance by site personnel and the appointed Environmental Representative. Council believes that the environmental monitoring program must incorporate both qualitative and quantitative measures. In this regard, data collected using quantitative methods for the duration of construction and operational phases would assist in determining compliance with the appropriate Approval. Furthermore, data collection would assist the proponent to monitor their adherence with conditions of consent, Environmental Protection Licences and environmental best practice. Reporting of environmental parameters via online or printed media could also be used to inform the community of the Proposal's compliance | Monitoring requirements have been identified where necessary within Section 8 of this RtS Report, where relevant for various environmental aspects.<br><br>Further details relating to the monitoring strategy (including method and duration) would be considered in accordance with specialist assessment for subsequent stages of development applications, in accordance with the Amended Modification Proposal. Monitoring systems implemented would seek to achieve regulatory compliance and environmental best practice. | N/A |
| Consultation | Council was provided with insufficient time to provide a thorough response to the proposed modification. The complexity of this project demands a comprehensive assessment which cannot be undertaken within the limited timeframe provided by the Department. It is believed that the | Consultation has been undertaken progressively for the MPW site, such that issues raised during previous phases of consultation have been used to shape the assessment approach during this stage. The Modification Proposal was on public exhibition for a period of 47 days, which complies with | Section 1 and Section 2 of this RtS |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | hasty consultation process will lead to inaccuracies in the environmental assessment process and deliver inadequate levels of protection to human health and the environment. | clause 83 of the *Environmental Planning and Assessment Regulation 2000* minimum timeframe of 30 days. A meeting was held with LCC on 18 August 2016, during the exhibition period, to consider concerns raised by LCC relating to the MPW Concept and Stage 1 (Early Works) modification. Issues raised by Council were consistent with those presented in Council submissions received regarding the Proposal Modification and as addressed in this Section 4.5. | |

## 4.6 Fairfield City Council

FCC provided a response to the submission dated 22 August 2016. FCC were satisfied that the Modification results in substantially the same project as described within the MPW Concept Approval, and given the changes would not have a significant traffic impact within the Fairfield LGA, had no additional comments to make.

## 4.7 Endeavour Energy

Endeavour Energy had no objections to the proposed Moorebank Intermodal Terminal or the modification request (11 August 2016) however made the following recommendations and comments from an electricity transmission and distribution networks perspective, applicable to the existing MPW Concept Approval, but not relevant with regards to the Modification Proposal and Amended Modification Proposal given that the scope of both does not include modification to these aspects of the existing MPW Concept Approval. Table 4-4 provides this information for acknowledgement purposes only.

*Table 4-4 Endeavour Energy comments*

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| Network Capacity / Connection | In due course the applicant for the future proposed development of the site will need to submit an application for connection of load via Endeavour Energy's Network Connections Branch to carry out the final load assessment and the method of supply will be determined. Depending on the outcome of the assessment, any required pad-mount substations will need to be located within the property (in a suitable and accessible location) and be protected (including any associated cabling) by an easement and associated restrictions benefiting and gifted to Endeavour Energy.<br><br>Endeavour Energy's Capacity Planning Branch have provided the following advice: | The Proponent would provide the appropriate documentation, requesting connection from Endeavour Energy's Network Connections Branch during the appropriate future stage of development | N/A |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | • The Moorebank Intermodal Terminal site will draw a very high electrical loading. The source of the new capacity will be from Endeavour Energy's Anzac Village Zone Substation at Anzac Road Moorebank (Lot 3004 DP 1125930)<br>• Endeavour Energy has provided a method of supply (MOS) for the combined Moorebank Intermodal Terminals from Anzac Village Zone Substation for the connection of load for multiple National Meter Identifiers (NMIs) under UIL4834 and UIL4692<br>• There will need to be a new/additional load application for the petrol station in Bapaume Road if it is not included as part of UIL4834 and UIL4692<br>• There is potential need for sub-transmission and distribution asset relocations if required due to any development or associated activity along Bapaume Road to the Georges River for the 33,000 volt (33kV) high voltage overhead transmission easement for Feeder 511 – Casula Zone Substation to Anzac Village Zone Substation | | |
| Asset Relocation | If required to facilitate the future development of the site, advice on the possible relocation of the existing electrical assets on the site can be obtained by submitting a Technical Review Request to Endeavour Energy's Network Connections Branch. Alternatively, the applicant future development of the site should engage a Level 3 Accredited Service Provider approved to design distribution network assets, including underground or overhead. | Noted | N/A |
| Easement Management / Network Access | The following is a summary of the usual/main terms of Endeavour Energy's electrical easement works requiring that the land owner:<br>• Not install or permit to be installed any services or structures within the easement site<br>• Not to alter the surface level of the easement site<br>• Not do or permit to be done anything that restricts access to the easement site without prior written permission of Endeavour Energy and in accordance with such conditions as Endeavour Energy may reasonably impose | The Proponent would consider Endeavour Energy's assets in the design and construction of all subsequent stages of the MPW Project. Where there is potential for the MPW Project to encroach or impact on Endeavour Energy's easements/electrical assets Endeavour Energy's Easement Officer would be consulted with. | N/A |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | Accordingly, if the proposed development will encroach/affect Endeavour Energy's easements/electrical assets, contact must first be made with Endeavour Energy's Easement Officer.<br><br>It is imperative that the access to the existing electrical infrastructure adjacent and on the site is maintained at all times. To ensure that supply electricity is available to the community, access to the electrical assets may be required at any time. | | |
| Safety Clearances | Any future proposed buildings, structures, etc. must comply with the minimum safe distances/clearances for voltages up to and including 132,000 volts (132kV) as specified in AS/NZS 7000:2010 'Overhead line design – Detailed procedures' and the 'Service and Installation Rules of NSW'. Different voltages are kept at different heights, the higher the voltage, the higher the wires are positioned on the pole. Similarly, the higher the voltage, the greater the required building setback. These distances must be maintained at all times e.g. for the erection of scaffolding etc., and regardless of the Council's allowable buildings setback etc. under its development controls, allowance must be made for the retention of appropriate/safe clearances. | The requisite safety clearances would be communicated via design documentation, Safe Work Method Statements and Work Packs throughout each stage of the MPW Project. | N/A |
| Earthing | The construction of any building or structure (including fencing) that is connected to or in close proximity to Endeavour Energy's electrical network is required to comply with AS/NZS 3000:2007 'Electrical installations' to ensure that there is adequate connection to the earth. Inadequate connection to the earth places persons and the electricity network at risk | All earthing would comply with AS/NZS 3000:2007 'Electrical installations'. This would be communicated on the relevant design documentation | N/A |
| Vegetation Management | The planting of large trees in the vicinity of electrical infrastructure is not supported by Endeavour Energy. Suitable planting needs to be undertaken in proximity of electricity infrastructure. Only low growing shrubs not exceeding 3.0 metres in height, ground covers and smaller shrubs, with non-invasive root systems are the best plants to use. Larger trees should be planted well away from electricity infrastructure and even with underground cables, be installed with a root barrier around the root ball of the plant. Landscaping that interferes with electricity infrastructure may become subject to Endeavour Energy's Vegetation Management program and/or provisions of the *Electricity Supply Act 1995* (NSW) Section 48 'Interference with electricity works by trees' by which under | Noted | N/A |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | certain circumstances the cost of carrying out such work may be recovered | | |
| Demolition | Demolition work is to be carried out in accordance with Australian Standard AS2601: The demolition of structures. All electrical cables or apparatus which are liable to be a source of danger, other than a cable or apparatus used for the demolition works shall be disconnected i.e. the existing customer service lines will need to be isolated and/or removed during demolition. Appropriate care must be taken to not otherwise interfere with any electrical infrastructure on or in the vicinity of the site e.g. street light columns, power poles, overhead and underground cables etc. | The Proponent would ensure that the demolition contractor's Safe Work Method Statement has reference to AS2601: The demolition of structures | N/A |
| Dial before You Dig | Before commencing any underground activity, the applicant is required to obtain advice from the Dial before You Dig 1100 service in accordance with the requirements of the *Electricity Supply Act 1995* (NSW) and associated Regulations. This should be obtained by the applicant not only to identify the location of any underground electrical infrastructure across the sites, but also to identify them as a hazard and to properly assess the risk | Dial before you Dig is a key component of design development and risk assessment and would be completed as required during the design phase | N/A |
| Public Safety | Workers involved in work near electricity infrastructure run the risk of receiving an electric shock and causing substantial damage to plant and equipment. Endeavour Energy has available public safety training resources, which were developed to help general public/workers to understand the risks and how to perform work safely. | Noted | N/A |
| Emergency Contact | In case of emergency relating to Endeavour Energy's electrical network, the applicant should not Emergencies Telephone is 131 003 which can be contacted 24 hours/7 days | Noted | N/A |

## 4.8 Roads and Maritime Services (RMS)

Table 4-5 provides a response to the submission received from RMS dated 15 September 2016.

*Table 4-5 RMS comments*

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| Construction traffic | To accommodate construction traffic as a result of the Modification Proposal, the Chatham Avenue/Moorebank Avenue signalised intersection is to be modified as follows:<br>• The Moorebank Avenue north leg right turn lane is to be increased to provide a storage length of 200m. The Moorebank Avenue south leg left turn lane storage length is to be increased from 15m to 25m. These changes must be implemented prior to the commencement of construction works associated with Stage 1 – Early Works<br>• The proposed traffic control light modifications shall be designed to meet Roads and Maritime requirements. The Traffic Control Signal (TCS) plans shall be drawn by a suitably qualified person and endorsed by a suitably qualified practitioner<br>• The submitted designs shall be in accordance with Austroads Guide to Road Design in association with relevant Roads and Maritime supplements. The certified copies of the civil design plans shall be submitted to Roads and Maritime for consideration and approval prior to the release of a Construction Certificate and commencement of road works<br>• Road and Maritime fees for administration, plan checking, civil works inspections and project management shall be paid by the developer prior to the commencement of works<br>• The developer will be required to enter into a Works Authorisation Deed (WAD) for the above-mentioned works. Please note that the WAD will need to be executed prior to Roads and Maritime assessment of the detailed civil design plans | The Amended Modification Proposal would seek to modify only the MPW Concept Approval for the importation of clean general fill material. The physical importation of fill would now be undertaken as part of Stage 2 of the MPW Project (subject to separate approval), rather than Stage 1 (Early Works) (please refer to Section 6 and 7 of this RtS for detailed explanation of the Amended Modification Proposal and environmental assessment, respectively).<br>The Traffic and Transport assessment provided in Section 7 of this RtS, provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, an assessment of associated traffic impacts, and details on intersection alterations required to mitigate traffic impacts associated.<br>The results from this investigation indicate that construction traffic during peak morning and afternoon periods for the Amended Modification Proposal, when compared to existing volumes, would maintain a LoS at key intersections of C or better.<br>The proponent would consult with Roads and Maritime during future stages of development, with regard to potential construction access from Moorebank Avenue, and any required modifications to intersections (signalised or non-signalised).<br>The proponent notes that any traffic control light modifications, to be addressed as part of future stages of development would consider Roads and Maritime requirements, and that Traffic Control Signal (TCS) plans would be prepared by a suitably qualified person and endorsed by a suitably qualified practitioner.<br>The proponent notes that designs for future development stages, not part of the Amended Modification Proposal, would consider *Austroads Guide to Road Design*, in association with relevant Roads and Maritime supplements, including but not limited to: Part 4 Intersection and Crossings-General; Part 4A un-signalised and | Section 6 and Section 7 of this RtS |

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| | | signalised intersections; Part 5 Drainage Design; Part 6: Roadside Design, Safety and Barriers and Part 6B: Roadside Environment.<br><br>The proponent would consult with Roads and Maritime during future stages of development in accordance with the Amended Modification Proposal, with regard to potential construction access to the site and any required modifications to existing intersections according to land ownership (public or privately owned) and nature of works (civil/roadworks or signal works). However, the proponent does not consider that a Works Authorisation Deed (WAD) would be required as a WAD authorises a developer to undertake roadworks on the State road network and/or traffic control signals, and Moorebank Avenue south of Anzac road is privately owned and not part of the State road network. | |

## 4.9 Sydney Water

Table 4-6 provides a response to the submission received from Sydney Water dated 16 August 2016.

*Table 4-6 Sydney Water comments*

| Issue | Comment | Clarification / Response | Reference |
|---|---|---|---|
| Building Plan Approval | The approved plans must be submitted to the Sydney Water Tap in™ online service to determine whether the development will affect any Sydney Water sewer or water main, stormwater drains and/or easement, and if further requirements need to be met. | This submission is not relevant to the Modification Proposal or Amended Modification Proposal as neither is seeking water connection. During the future development stages, the Proponent would submit design drawings to Sydney Water Tap in™ in accordance with Sydney Water's request. This would be conveyed in the design management plan. | N/A |

# 5 RESPONSE TO COMMUNITY SUBMISSIONS

This section provides a summary of the submissions raised by the public and interest groups. Submissions have been grouped and responded to by environmental aspect, within Table 5-1. A summary of the key issues and other issues raised is provided in Section 3 of this RtS.

Table 5-1 should be read in conjunction with the source table provided in Appendix A of this RtS.

*Table 5-1 Response to community submissions*

| Aspect | Issue | Summary | Comments | Reference |
|---|---|---|---|---|
| Traffic and Transport | Congestion | General concerns about traffic increase in the area | Traffic impacts and intersection upgrades for the construction works associated with the physical importation of clean general fill would now be undertaken during Stage 2 of the MPW Project, as per the Amended Modification Proposal. An assessment of the traffic and transport impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated traffic impacts. The results from this investigation indicate that construction traffic during peak morning and afternoon periods for the Amended Modification Proposal, when compared to impacts modelled for the MPW Concept Approval, would maintain a LoS of C or better at key intersections. | Section 6 and 7 of this RtS |
| | | Truck movements on local roads during construction | As required under MCoA D20(a) a Construction Traffic and Access Management Plan (CTAMP) would be prepared, detailing management controls to be implemented to avoid or minimise impacts to traffic, pedestrian and cyclist access, and the amenity of the surrounding environment<br>Construction Traffic Management Plans (TMPs) would be developed for each stage, including Early Works, to provide additional information for the construction planning of the MPW Project including the upgrade to Moorebank Avenue. | Section 5.1.3 of the Modification Report<br>Section 11.5.3 of the MPW Concept EIS<br>Section 5.6.3 of the MPW Concept SRtS |
| | | Traffic impacts to local residents | Traffic impacts and intersection upgrades for the construction works associated with the physical importation of fill would now be undertaken during Stage 2 of the MPW Project, as per the Amended Modification Proposal. An assessment of the traffic and transport impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated traffic impacts. The results from this investigation indicate that construction traffic during peak morning and afternoon periods for the Modification Proposal, when compared to existing volumes, would maintain a LoS at key intersections of C or better. | Section 6 and Section 7 of this RtS.<br>Section 5.1.2 of the Modification Report |
| | | An additional 1490 truck movements daily | | |
| | | Congestion on the M5 | | |
| | | Congestion on local road including Newbridge Rd, Cambridge Av, Glenfield | | |

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| | Rd, Brickmakers Dr and Heathcote Rd | | |
| | Congestion on Moorebank Av | | |
| | 9 months of increased congestion | | |
| | Access to hospitals restricted due to congestion | | |
| | Freight on Anzac Rd | No change is proposed in the Amended Modification Proposal to the operational aspects and impacts assessed and approved in the MPW Concept Approval. | MPW Concept EIS, RtS, and SRtS reports |
| | Will move congestion from Port Botany to Moorebank | | |
| Traffic modelling | Have daily truck movements been calculated on 6 or 9-month timeframe | Daily truck movements are based on an estimated peak volume within a period of between six and nine months. | Section 6 and Section 7 of this RtS |
| | How will waiting times to get on and off the M5 be impacted | No change to the Level of Service at the Moorebank Avenue/M5 intersection is anticipated as a result of the Amended Modification Proposal. | Section 7 of this RtS |
| | How were peak hours determined (8-9am & 5-6pm) | The peak hours adopted for the traffic assessment was the commuter peak in the AM and PM peak. This peak was determined from the examination and analysis of existing traffic count survey data in the study area. | Section 7 of this RtS |
| | Would staff at the site add to the peak | The contribution of vehicle trips by staff travelling to and from work is not expected to have any noticeable impact on traffic flows in the peak periods. | Section 7 of this RtS |
| | Where is the evidence that 1 in 3 workers would ride share? | The Modification Report does not include a reference that 1 in 3 workers would ride share. | Section 5.1 of the Modification Report |

| | | |
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| Where does the assumption that 90% of staff would travel north via Moorebank Avenue come from | The traffic distribution of light vehicles associated with the construction activities including construction staff has been assumed to be similar to the traffic distribution assumed for the operational phase. This distribution is based on Journey-to-Work data from the Census. | |
| The Modification Proposal states traffic contribution in the peak period is small – which peak period was used (actual or staff) | This reference is to the commuter peak, i.e. 8-9am and 5-6pm weekdays. | Appendix B of the Modification Report<br>Section 6 of this RtS |
| There is no information regarding traffic impact due to fill importation | Traffic impacts and intersection upgrades for the construction works associated with the physical importation of fill would now be undertaken during Stage 2 of the MPW Project, as per the Amended Modification Proposal. An assessment of the traffic and transport impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated traffic impacts. The results from this investigation indicate that construction traffic during peak morning and afternoon periods for the Amended Modification Proposal, when compared to impacts modelled for the MPW Concept Approval, would maintain a LoS of C or better at key intersections. | Section 5.1 and Appendix B of the Modification Report<br>Section 7 of this RtS |
| Trucks will increase with intermodal – not decrease | No change is proposed in the Amended Modification Proposal to the operational aspects and impacts assessed and approved in the MPW Concept Approval. | |
| Traffic modelling will be out of date by now | Traffic modelling was based on 2015 figures from Roads and Maritime's Liverpool Moorebank Arterial Road Investigation (LMARI) Model. This is the most current information available and remains appropriate for the assessment of the Modification Proposal. | Section 7 of this RtS |
| There has been no examination of truck movements past Moorebank Ave | The traffic assessment examined impacts on a range of intersections in the local road network.<br>Traffic impacts and intersection upgrades for the construction works associated with the physical importation of fill would now be undertaken during Stage 2 of the MPW Project, as per the Amended Modification Proposal. An assessment of the traffic and transport impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated traffic impacts. The results from this investigation indicate | Section 7 of this RtS |

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|---|---|---|
| | that construction traffic during peak morning and afternoon periods for the Amended Modification Proposal, when compared to impacts modelled for the MPW Concept Approval, would maintain a LoS of C or better at key intersections for the Project. | |
| The M5 bridge btw Moorebank and Hume is at capacity and the impact of additional trucks has not been examined | Traffic impacts and intersection upgrades for the construction works associated with the physical importation of fill would now be undertaken during Stage 2 of the MPW Project, as per the Amended Modification Proposal. An assessment of the traffic and transport impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated traffic impacts. The results from this investigation indicate that construction traffic during peak morning and afternoon periods for the Modification Proposal, when compared to existing volumes, would maintain a LoS at key intersections of C or better. | Section 7 of this RtS |
| M5 has accident rate 40x higher than the RMS threshold. Additional trucks will make this higher again but has not been studied | Traffic impacts and intersection upgrades for the construction works associated with the physical importation of fill would now be undertaken during Stage 2 of the MPW Project, as per the Amended Modification Proposal. An assessment of the traffic and transport impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated traffic impacts. Road safety has also been considered within this further assessment (Section 7 of this RtS). | Section 7 of this RtS |
| Increase of 20% in accidents between two EIS reports shows that additional trucks will cause additional accidents | Traffic impacts and intersection upgrades for the construction works associated with the physical importation of fill would now be undertaken during Stage 2 of the MPW Project, as per the Amended Modification Proposal. An assessment of the traffic and transport impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated traffic impacts. Road safety has also been considered within this further assessment (Section 7 of this RtS). | Section 7 of this RtS |
| Traffic report is so limited it should be referred to Engineers Australia for lack of professional ethics | The traffic assessment was completed by suitability qualified and experienced professionals and is considered to be at an appropriate level of detail for the purposes of the Modification Report.<br>An assessment of the traffic and transport impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated traffic impacts. | Section 7 of this RtS |
| Modelling does not take into account predicted growth | 2015 traffic volumes were multiplied with a 1.8% per annum (compound) growth rate, consistent with the growth projections in the LMARI traffic study. | Appendix B of the Modification Report (Section 5.1.2) |

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| Safety | Concerns about the use of Cambridge Avenue for trips to Glenfield Waste Facility. Need to ensure that the 16 daily trips are not exceeded | SIMTA appreciates the use of Cambridge Avenue for trips to Glenfield Waste Facility has raised community concerns. These trucks would be using the facility to dispose of a small amount of unsuitable materials and no other trucks would be permitted to use this route.<br>As required under MCoA D20(a) a Construction Traffic and Access Management Plan (CTAMP) would be prepared, detailing management controls to be implemented to avoid or minimise impacts to traffic, pedestrian and cyclist access, and the amenity of the surrounding environment. | Appendix B of the Modification Report (Section 5.1.2) |
| | Child safety around trucks | Heavy vehicles with compression-braking systems (referred to as restricted access vehicles (RAVs)) are restricted under the Roads Transport (Mass Loading and Access) Regulation 2005 and the Road Transport (Vehicle Registration) Regulation 2007 from using roads outside of the routes identified on RMS RAV maps. Trucks accessing the MPW Project would be bound to follow this legislation restricting them from using local roads that have not been prescribed as heavy vehicle access routes. | Section 11.5.3 of the MPW Concept EIS |
| | Trucks weaving at M5 interchanges | The functionality and safety of the M5 interchange is not within the scope of the MPW Project or this modification. | N/A |
| Road infrastructure | Existing road infrastructure is not suitable for the increase in truck movements | An agreement, which may entail a Voluntary Planning Agreement, with TfNSW would detail any agreed road/transport infrastructure upgrades required to mitigate the impacts of the development of the state transport network and the timing of their delivery. The detailed agreement would be part of future SSD applications and is not within the scope of this modification. | MPW Concept EIS, RtS, and SRtS |
| | Concerns with tonnage limited roads being used | Other than the small number of vehicles permitted to use the southern portion of Moorebank Avenue for disposal of unsuitable material at the Glenfield Waste Facility, heavy vehicles would be restricted from using the southern portion of Moorebank Avenue. This restriction would be preventing heavy vehicles form using this portion of the road for ‘rat runs’. | |
| | Potholes are already bad | An agreement, which may entail a Voluntary Planning Agreement, with TfNSW would detail the agreed road/transport infrastructure upgrades required to mitigate the impacts of the development of the state transport network and the timing of their delivery. The detailed agreement would be part of future SSD applications and is not within the scope of this modification.<br>The existing MPW Concept Approval includes a condition that requires a dilapidation survey to be undertaken on Moorebank Avenue prior to commencement of | |

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| | construction and any damage incurred on the road arising as a result of construction to be repaired by the proponent once construction is complete. | |
| Cambridge and Glenfield Rd upgrades should be part of the proposal | An agreement, which may entail a Voluntary Planning Agreement, with TfNSW would detail the agreed road/transport infrastructure upgrades required to mitigate the impacts of the development of the state transport network and the timing of their delivery. The detailed agreement would be part of future SSD applications. | |
| Trucks damaging local roads | SIMTA acknowledges that the increase in truck numbers may result in increased asset degradation; however, it is expected that the majority of truck movements would be on RMS roads which are designed to cater for truck movements.<br>The existing MPW Concept Approval includes a condition that requires a dilapidation survey to be undertaken on Moorebank Avenue prior to commencement of construction and any damage incurred on the road arising as a result of construction to be repaired by the proponent once construction is complete. | Section 6.6.17 of the MPW Concept RtS |
| Nuwarra Rd potholes | An agreement, which may entail a Voluntary Planning Agreement, with TfNSW would detail the agreed road/transport infrastructure upgrades required to mitigate the impacts of the development of the state transport network and the timing of their delivery. The detailed agreement would be part of future SSD applications. | Section 6.1.5 of the MPW Concept RtS |
| There should be no work until the roads are upgraded | Future stages of the MPW Project, such as the recently exhibited MPW Stage 2 EIS, provides for the upgrading of Moorebank Avenue to a four-lane carriageway from the M5 Motorway to Anzac Road.<br>In addition to the upgrade of the Anzac Road intersection, alterations to access arrangement to and from Bapaume Road and its intersection with Moorebank Avenue would be also undertaken (further details of these arrangements are also included in the MPW Stage 2 EIS).<br>An assessment of the traffic and transport impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated traffic impacts.<br>An agreement, which may entail a Voluntary Planning Agreement, with TfNSW would detail the agreed road/transport infrastructure upgrades required to mitigate the impacts of the development of the state transport network and the timing of their delivery. The detailed agreement would be part of future SSD applications | Section 7.10.3 of the MPW Concept RtS<br>Section 6.1.5 of the MPW Concept RtS<br>Section 7 of this RtS |
| Anzac Road already prohibits trucks over a certain tonnage yet | As required under MCoA D20(a) a Construction Traffic and Access Management Plan (CTAMP) would be prepared, detailing management controls to be implemented. This | Section 5.1.3 of the Modification Report |

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| | | large semis still use this road | would include measures to ensure that construction vehicles travel on designated routes. | |
| | Road use | Modification says some light vehicles would use Anzac Rd while there was a promise that this road wouldn't be used for site activities | The reference to light vehicles using Anzac Road is related to staff travelling to work only.<br>As required under MCoA D20(a) a Construction Traffic and Access Management Plan (CTAMP) would be prepared, detailing management controls to be implemented. This would include measures to ensure that construction vehicles travel on designated routes. | Section 6 and Section 8 of this RtS |
| | | "*no construction trucks are **expected** to travel along Anzac Road*" – suggests they can if they want | | |
| | | Defence owns Moorebank Av. What happens when they close it in an event of national emergency | There is no record of this having previously happened. | N/A |
| | Parking | 75 parking spaces for workers. What happens at the change of shift, will there be spill onto local streets | The contribution of vehicle trips by staff travelling to and from work is not expected to have any noticeable impact on traffic flows of the surrounding road network. | Appendix B of the Modification Report |
| | Travel times | Increased travel times to work for locals | Traffic impacts for the construction works associated with the physical importation of fill would now be undertaken during Stage 2 of the MPW Project, as per the Amended Modification Proposal. An assessment of the traffic and transport impacts (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated traffic impacts. | Section 7 of this RtS |
| | | Impact to work-life balance | | |
| | | Trucks creating gridlock | | |
| Noise and vibration | Crushing plant | No mention of the noise level of the crushing plant, there should be a | The typical sound power level of a mobile crushing plant is 118 dBA.<br>Section 7 of this RtS provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated noise and vibration impacts. | Section 7 of this RtS |

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| | separate DA not a modification | The results from the assessment undertaken in Section 7 of this RtS (including noise impacts associated with crushing activities) indicate that the Amended Modification Proposal would not generate any additional exceedances to relevant criteria from that originally proposed under the MPW Concept Approval. | |
| | Lack of noise barriers around crushing plant | The crushing plant would be located away from sensitive receivers and only operate during standard construction hours. Attended noise measurements would be undertaken at regular intervals, in areas within close proximity to sensitive receivers and upon receipt of adverse comment/complaints during the construction program, to confirm that noise levels at adjacent communities and receptors are consistent with the predictions. If the attended noise monitoring identifies greater impacts than those predicted in the modelling, further mitigation would be considered and implemented as appropriate to manage the noise emission of the crushing plant. | Appendix E and Section 5.4.2 of the Modification Report |
| | No warehouse to dampen noise | The crushing plant would be located away from sensitive receivers and only operate during standard construction hours. The noise assessment detailed in Section 7 of this RtS indicates no exceedance of the NMLs for activities associated with the Amended Modification Proposal, during standard construction hours, with the exception of a 1 dB(A) exceedance at Casula, which is not perceptible to the average human ear.<br>Construction noise was assessed in accordance with the Interim Construction Noise Guideline (DECC 2009) which states for normal construction the recommended standard hours of work are Monday to Friday 7am to 6pm and Saturday 8am to 1pm. Crushing would occur within these times. | Section 7 of this RtS |
| | General crushing plant noise | | Section 7 of this RtS |
| | Crushing at 7am | | Section 7 of this RtS |
| Traffic noise | General traffic noise | The Modification Report determined that as a result of increased traffic due to the importation of clean general fill the increase in road traffic noise levels are considerably less than 2 dBA, which represents a minor impact that is considered barely perceptible to the average person. In accordance with the RNP, no mitigation of traffic noise levels is warranted.<br>The concept road designs included in the MPW Concept complied with the NSW Road Noise Policy, which is consistent with the outcomes of the road traffic noise assessment in the MPW Concept EIS. The assessment undertaken for the Amended Modification Proposal (refer to Section 7 of this RtS) indicates no significant change (less than 2dBA) in noise impacts generated by traffic as a result of fill importation.<br>As the road design is updated for subsequent development applications, the predicted road traffic noise levels would also be updated. | Section 5.7.1 of the MPW Concept SRtS<br>Section 7 of this RtS |
| | Additional noise from the M5 | The concept road designs included in the MPW Concept complied with the NSW Road Noise Policy, which is consistent with the outcomes of the road traffic noise assessment in the MPW Concept EIS. The assessment undertaken for the Amended | Section 5.7.1 of the MPW Concept SRtS |

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| | | Modification Proposal (refer to Section 7 of this RtS) indicates no significant change (less than 2dBA) in noise impacts generated by traffic as a result of fill importation.<br>As the road design is updated for subsequent development applications, the predicted road traffic noise levels would also be updated. | Section 7 of this RtS |
| | Traffic noise has been underestimated | Road traffic noise resulting from increased traffic associated with the Modification Proposal was calculated using the Calculation of Road Traffic Noise (CORTN) algorithm, in accordance with the Road Noise Policy (RNP) (NSW EPA, 2011).<br>A Noise and Vibration Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated noise and vibration impacts.<br>The results from the assessment undertaken in Section 7 of this RtS indicate that the Amended Modification Proposal would not generate any additional exceedances to relevant criteria from that originally proposed under the MPW Concept Approval. | Section 7 of this RtS |
| Construction noise | Truck tail gates slamming | A Noise and Vibration Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the Concept Approval to the Amended Modification Proposal, and an assessment of associated noise and vibration impacts.<br>The results from the assessment undertaken in Section 7 of this RtS indicate that the Amended Modification Proposal would not generate any additional exceedances to relevant criteria from that originally proposed under the MPW Concept Approval. | Section 7 of this RtS |
| | Casula having to suffer 2dBA exceedance due to cumulative construction activities | The technical assessment undertaken (refer to Section 7 of this RtS) for the worst-case construction noise levels, exceed the NML at the most affected residential receivers in Casula by up to 2 dBA. This is considered a negligible and undistinguishable exceedance, and the overall result at this location is still several dBA less than the highly disturbed criteria of 75 dBA. Attended noise monitoring would be undertaken to confirm noise levels during physical works. | Section 7 of this RtS |
| | Already experiencing noise from work currently being undertaken | Pre-construction works are currently being undertaken in preparation for Stage 1 (Early Works) under the existing MPW Concept Approval (SSD-5066). Activities include: installation of erosion and sediment controls, soft stripping of buildings, heritage salvage, compound set-up and installation of fencing. | MPW Concept EIS, RtS, and SRtS. |
| Operational noise | General operating noise | No change is proposed in the Amended Modification Proposal to the operational aspects and impacts assessed and approved in the MPW Concept Approval. | MPW Concept EIS, RtS, and SRtS. |
| | Trains during use of intermodal | | |

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| | Breaking/shunting/wheel squeal | | |
| | No noise wall along the Georges River and noise will carry | | |
| | There is noise at Port Botany – why would it be different at Moorebank | | |
| General noise | No noise impact study | A Noise and Vibration Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated noise and vibration impacts.<br>The results from the assessment undertaken in Section 7 of this RtS indicate that the Amended Modification Proposal would not generate any additional exceedances to relevant criteria from that originally proposed under the MPW Concept Approval. | Section 7 of this RtS |
| | Noise impacts in general | Some potential noise impacts are acknowledged, as documented in the MPW Concept EIS and Section 7 of this RtS (assessment of the Amended Modification Proposal). SIMTA is committed to management of construction impacts to ensure actual noise impacts are minimised. | Section 7 of this RtS |
| | Noise hasn't been properly regulated | Construction noise would be regulated and managed in accordance with mitigation measures listed in Section 8 of this RtS, which have considered both the MPW Concept Approval and Amended Modification Proposal. | Section 7 and Section 8 of this RtS |
| | Has there been consideration to sound proof houses | A Noise and Vibration Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated noise and vibration impacts.<br>The results from the assessment undertaken in Section 7 of this RtS indicate that the Amended Modification Proposal would not generate any additional exceedances to relevant criteria from that originally proposed under the MPW Concept Approval.<br>The anticipated noise impacts during construction would not be at a level where acoustic treatment of residences would be considered. | Section 7 and Section 8 of this RtS |

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| | | | A Construction Noise and Vibration Management Plan which identifies detailed mitigation measures would be implemented during this phase to ensure impacts on residents are minimised. | |
| | | No noise abatement plan | A Construction Noise and Vibration Management Plan would be prepared which identifies detailed mitigation measures to ensure impacts on residents are minimised. | Section 8 of this RtS |
| | Vibration | General vibration | Potential ground vibration levels would be highly localised and given the distances to sensitive receivers, vibration is not predicted to exceed human comfort criteria. Nearby buildings are also unlikely to suffer cosmetic damage as equipment is expected to be operated beyond the recommended safe working distances for construction ground vibration, which are localised within the MPW site. | Chapter 12 of the MPW Concept EIS |
| Air | Crushing plant | Will there be air quality monitoring | A construction air quality management plan would be implemented during construction of the relevant future stage of development. This plan would include daily visual checks relevant to the crushing plant including:<br>• Daily visible inspection of excessive dust generated at source and used to implement additional controls, such as increased watering<br>• Daily visible inspection to ensure no dust is leaving the site. | Section 8 of this RtS |
| | | What air quality measures will be in place | A range of air quality management measures would be identified in the construction air quality management plan of the relevant future stage of development.<br>An Air Quality Impact Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated air quality impacts. The assessment results indicate that this activity would comply with all relevant impact assessment criteria. | Section 7 and Section 8 of this RtS |
| | | Dust from crushing plant | Crushing plants are common on construction sites and associated dust is generally manageable with standard measures.<br>An Air Quality Impact Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated air quality impacts. Assessment results indicate that this activity would comply with all relevant impact assessment criteria. | Section 7 and Section 8 of this RtS |
| | | Dust on properties | A range of air quality management measures to minimise dust impacts on surrounding properties would be identified in the construction air quality management plan. | Section 7 and Section 8 of this RtS |

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| | | An Air Quality Impact Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated air quality impacts. Assessment results indicate that this activity would comply with all relevant impact assessment criteria. | |
| Air pollution | Dust impact from works unrelated to fill importation | Works unrelated to fill importation are addressed under the existing MPW Concept Approval. The construction air quality management plan of the relevant future stage of development would guide management of dust impacts from these activities. | MPW Concept EIS, RtS, and SRtS |
| | General air quality concerns | | |
| | Work currently happening onsite is already causing dust | Pre-construction works are currently being undertaken to facilitate Stage 1 (Early Works) under the existing, unmodified MPW Concept Approval (SSD-5066).<br>Incidents of dust leaving site should be reported to the SIMTA hotline (1800 986 465) which is available 24 hours 7 days a week. | Section 2 of this RtS |
| Dust from fill importation | Construction methodology around dust suppression is vague | An Air Quality Impact Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated air quality impacts. Assessment results indicate that this activity would comply with all relevant impact assessment criteria. | Section 7of this RtS |
| | What will be used to stop trucks dragging materials off-site | Revised Environmental Mitigation Measure 10F from the Modification Report states:<br>*Vehicle movements would be limited to designated entries and exits, haulage routes and parking areas. Project site exits would be fitted with hardstand material, rumble grids or other appropriate measures to limit the amount of material transported offsite (where required).* | Section 8 of this RtS |
| Diesel emissions from trucks | Not sufficient monitoring to monitor diesel particulate from the extra trucks | An Air Quality Impact Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated air quality impacts. Assessment results indicate that this activity would comply with all relevant impact assessment criteria.<br>Monitoring of diesel emissions is therefore not considered reasonable or feasible | Section 7 of this RtS |
| | Increased diesel emissions from trucks | An Air Quality Impact Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated air quality impacts. Assessment results indicate that this activity would comply with all relevant impact assessment criteria. | Section 7 of this RtS |

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| | General | What air pollution measures are to be installed | As the Amended Modification Proposal no longer seeks to modify Stage 1 (Early Works), air quality management measures to minimise air quality impacts would be identified in the construction air quality management plan of the relevant future stage of development.<br>An Air Quality Impact Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated air quality impacts. Assessment results indicate that this activity would comply with all relevant impact assessment criteria.<br>Mitigation measures in accordance with this assessment are outlined in Section 7 of this RtS Report, including those for management of air quality. | Section 7 of this RtS |
| | | There should be live monitoring with punishment for breaches | An Air Quality Impact Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated air quality impacts. Assessment results indicate that this activity would comply with all relevant impact assessment criteria.<br>As per the POEO Act, SIMTA and their contractors have a duty to report pollution incidents. | Section 7 of this RtS, MPW Concept EIS, RtS, and SRtS. |
| | | Already poor air quality in the area | Existing air quality was taken into account in the LAQIA (Technical Paper 7 – Local air quality impact assessment in Volume 6 of the MPW Concept EIS) to assess the cumulative impacts with emissions from the Project and background levels. The assessment concluded that the MPW Project would not result in significant impacts to the air quality of the local air shed to those already experienced. It has also been determined that the Amended Modification Proposal (refer to Section 7 of this RtS) would comply with all relevant impact assessment criteria. | Section 6.11.2 of the MPW Concept RtS, Section 7 of this RtS |
| | | No suitable mitigation measures are in place | A range of air quality management measures to minimise air quality impacts are outlined in Section 7 of this RtS, based on both the assessments undertaken for the MPW Concept Approval and the Amended Modification Proposal | Section 7 of this RtS |
| | Train emissions | Diesel train emissions | No change is proposed in the Amended Modification Proposal to the operational aspects and impacts assessed and approved in the MPW Concept Approval. | MPW Concept EIS, RtS, and SRtS. |
| Health | Human Health | Impacting quality of life | Health impacts have been addressed in the MPW Concept Approval. | MPW Concept EIS, RtS, and SRtS |
| | | Health impacts on the community | Health impacts generated by activities proposed under the Amended Modification Proposal are assessed in Section 7 of this RtS. It is concluded that no additional | Section 7 of this RtS. |

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| Asthma | health impacts would be generated from the Amended Modification Proposal when compared to the MPW Concept Approval. | |
| Mental health / anxiety | | |
| Impact on schools and day-care | Health impacts have been addressed in the MPW Concept Approval.<br>Health impacts generated by activities proposed under the Amended Modification Proposal are assessed in Section 7 of this RtS. It is concluded that no additional health impacts would be generated from the Amended Modification Proposal when compared to the MPW Concept Approval. | MPW Concept EIS, RtS, and SRtS.<br>Section 7 of this RtS |
| Compensation should be paid | Health impacts generated by activities proposed under the Amended Modification Proposal are assessed in Section 7 of this RtS. It is concluded that no additional health impacts would be generated from the Amended Modification Proposal when compared to the MPW Concept Approval. | MPW Concept EIS, RtS, and SRtS<br>Section 7 of this RtS |
| Sleep disturbance due to extended hours | A Noise and Vibration Assessment (refer to Section 7 of this RtS) provides a comparison of changes from the MPW Concept Approval to the Amended Modification Proposal, and an assessment of associated noise and vibration impacts.<br>The results from the assessment undertaken in Section 7 indicate that the Amended Modification Proposal would not generate any additional exceedances to relevant criteria from that originally proposed under the MPW Concept Approval.<br>Health impacts generated by activities proposed under the Amended Modification Proposal are assessed in Section 7 of this RtS. It is concluded that no additional health impacts would be generated from the Amended Modification Proposal when compared to the MPW Concept Approval. | Section 7 of this RtS |
| Particles increasing likelihood of cancer and other illnesses | The Human Health Risk Assessments undertaken to date suggest that risks to human health as a result of the modification proposal are low. Health impacts generated by activities proposed under the Amended Modification Proposal are assessed in Section 7 of this RtS. It is concluded that no additional health impacts would be generated from the Amended Modification Proposal when compared to the MPW Concept Approval. | Section 7 of this RtS, Section 5.10 of the Modification Report |
| Vehicle emissions | | |
| Asbestos and other waste affecting local residents' health | All asbestos removal would be undertaken by a licenced asbestos removal contractor, in accordance with relevant legislation and tracked in WasteLocate. | Section8 of this RtS |

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| Site selection | Badgerys Creek | Space and opportunities at Badgerys Creek due to airport development | The EIS for the MPW Concept Approval included consideration of the choice of the current site and potential alternative sites and the site selection is not considered further in the scope of the modification. | MPW Concept EIS, RtS, and SRtS |
| | Belfield | Should consider Belfield as there is already a train line there | | |
| | Eastern Creek | There are existing warehouses at Eastern Creek that could be used | | |
| | Other locations | North shore | | |
| | | Regional locations | | |
| | | Ingleburn | | |
| | Generally unsuitable for IMT development | There are more suitable locations | | |
| | | Generally unsuitable | | |
| | | Too big for the proposed location | | |
| | | Moorebank is a family friendly area | | |
| | | Should be a residential development | | |
| | | Doesn’t fit with the surrounding area | | |
| | | Benefits don’t justify the location | | |

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| | | Should be used to develop affordable housing | | |
| | | Prime riverfront land | | |
| | | Moorebank no longer suitable for industrial development | | |
| Environment | Natural environment | Pollution to the environment | Pollution would be managed in accordance with the Construction Environmental Management Plan that would be prepared prior to commencement of construction of the relevant stage of future development. | Section 8 of this RtS |
| | | Changes to the floodplain due to importation of fill | A Stormwater and Flooding Assessment (refer to Appendix B) provides a comparison of impacts between the original MPW Concept Approval conditions and those proposed under the Amended Modification Proposal with regard to Stormwater and Flooding.<br>Results from this study indicate that all stormwater and flooding impacts associated with the Amended Modification Proposal up to the 1% AEP event are negligible, with a 0.01m predicted increase in the PMF Events, meaning that all stormwater and flooding impacts associated with the Amended Modification Proposal are manageable. | Section 7 and Appendix B of this RtS |
| | | Loss of biodiversity | The Amended Modification Proposal does not propose any additional biodiversity impacts to those already assessed and approved under the MPW Concept Approval (refer to the Biodiversity assessment in Section 7 of this RtS). | Section 7 of this RtS |
| | | Vegetation removal should be undertaken during the construction phase | The Amended Modification Proposal does not propose any additional vegetation removal to those already assessed and approved under the MPW Concept Approval (refer to the Biodiversity assessment in Section 7 of this RtS). | Section 7 of this RtS |
| | | Heat sink impact | No change is proposed in the Amended Modification Proposal to the operational aspects and impacts assessed and approved in the MPW Concept Approval. | Chapter 9 of the MPW Concept EIS |
| | | Impact to sensitive ecosystems due to importation of fill | The Amended Modification Proposal does not propose any additional sensitive ecosystem impacts to those already assessed and approved under the MPW Concept Approval (refer to the Biodiversity assessment in Section 7 of this RtS). | Section 7 of this RtS |

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| | How soon will monitoring analysis of pollution levels be reported to the public | As part of the CEMP, which is required to be developed prior to commencement of construction of all future stages of development, monitoring and reporting requirements for air, noise, water and waste would be detailed to the approval of the Secretary. SIMTA is also required to notify the Secretary and relevant public authorities of any incident with actual or potential on-site or off-site impacts on human health or the biophysical environment within 24 hours of becoming aware of the incident. | SSD5066 Determination Report |
| | Environmental impact felt by future generations | Potential impacts of the scope of the Amended Modification Proposal are confined to construction impacts only. These impacts are short term and considered able to be appropriately managed with the implementation of mitigation measures prescribed in the MPW Concept EIS, RtS, SRtS, and the Modification Report. Therefore, impacts felt by future generations is not anticipated. | Appendix C of the MPW Concept RtS<br>Section 7.9.3 of the MPW Concept RtS<br>Section 7 of this RtS |
| | Location of crushing plant near river | Environmental management of the crushing plant would take account of any risks to the Georges River. These risks are however considered to be extremely low. | Section 3.2.1 of the Modification Report |
| Georges River / waterways | General impacts to Georges River and local waterways | The Amended Modification Proposal does not include components that are likely to increase potential impacts to the Georges River. | Section 6 and Section 7 of this RtS |
| | Georges River should be conserved for the community | The Amended Modification Proposal does not include components that are likely to increase potential impacts to the Georges River. | Section 6 of this RtS |
| | Downstream flooding and floodplain impacts due to raising of the site | A Stormwater and Flooding Assessment (refer to Appendix B of this RtS) provides a comparison of impacts between the original MPW Concept Approval conditions and those proposed under the Amended Modification Proposal with regard to Stormwater and Flooding.<br>Results from this study indicate that all stormwater and flooding impacts associated with the Amended Modification Proposal up to the 1% AEP event are negligible, with a 0.01m predicted increase in the PMF Events, meaning that all stormwater and flooding impacts associated with the Amended Modification Proposal are manageable. | Section 7 of this RtS<br>Appendix B of this RtS |
| | Flooding due to fill importation will cause contaminants to be deposited into the river | | |
| | MPW Project will destroy recreational amenities of the river | The Amended Modification Proposal does not include components that are likely to increase potential impacts to the Georges River. | Section 6.15.2 of the MPW Concept RtS<br>Section 6 of this RtS |

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| | Threatened species | Impacts to threatened and endangered species | The Amended Modification Proposal does not propose any additional impacts to threatened and endangered species to those already assessed and approved under the MPW Concept Approval (refer to the Biodiversity assessment in Section 7 of this RtS). | Section 7 of this RtS |
| | | Koalas | The Amended Modification Proposal does not propose any additional impacts to koalas to those already assessed and approved under the MPW Concept Approval (refer to the Biodiversity assessment in Section 7 of this RtS). | Section" 7 of this RtS |
| | Heritage | Loss of military heritage | The heritage impacts assessed under the MPW Concept remain applicable to the Amended Modification Proposal. Refer to Section 7 of this RtS for a further assessment on heritage impacts, which concluded that there would be no additional impacts to Indigenous or non-Indigenous heritage as a result of the Amended Modification Proposal. | Section 7 of this RtS |
| | | Heritage impacts | | |
| | Light pollution | Light pollution | It is not anticipated that the Amended Modification Proposal works, particularly the importation of fill, would result in any added light spill that has not previously been identified under the MPW Concept Approval and Modification Report. Visual impacts of the Amended Modification Proposal have been further assessed in Section 7 of this RtS. | Section 5.10 of the Modification Report<br>Section 7 of this RtS |
| | Visual | Raising the height of the site will mean containers will be higher and impact on visual amenity | While not applicable to the original Modification Proposal, the Amended Modification Proposal includes a Visual Impact Assessment (refer Section 7 of this RtS) that indicates that the Amended Modification Proposal would not result in any changes to the visual impact levels identified in the MPW Concept Approval. | Section 7 of this RtS |
| | Contamination | Contamination impacting flora, fauna and Georges River | It is not anticipated that the Amended Modification Proposal works, particularly the importation of fill, would pose any added contamination threat that has not previously been identified under the MPW Concept Approval. Further assessments regarding the Amended Modification proposal works are included in Section 7 of this RtS. | Section 5.2.2 of the Modification Report<br>Section 7 of this RtS |
| Planning process | Approvals | The proper approvals aren't in place | The MPW Concept and Stage 1 (Early Works) Approval was granted on 3 June 2016 under Part 4, Division 4.1 of the EP&A Act. This allows for the Stage 1 (Early Works) component of the MPW Project to commence in accordance with the conditions of that approval.<br>Further detailed development applications and associated EIS's would be prepared and submitted for subsequent stages (Stages 2 and 3) of development as appropriate in the future to enable further development of the MPW Project to proceed. | Section 1.4 of this RtS |

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| Premature to import fill with only concept approval | The scope of the Amended Modification Proposal has been described in detail in Section 6 of this RtS. Modification to import fill under the Early Works is no longer being sought under this modification. | Section 6 of this RtS |
| Proponent is rushing approvals | SIMTA has followed the approval pathway designated under the EP&A Act. | Section 1 of this EIS |
| There is a concrete recycling plant (5km away) that is on hold due to legal action yet a crushing plant is proposed at this location | The crushing plant proposed in the Amended Modification Proposal is a mobile crushing plant and would be used temporarily while clean general fill is being imported, and in order to recycled site generated demolition waste for re-use within later stages of the development. This is not comparable to a permanent concrete recycling plant that is of a much larger scale than the crushing plant proposed for the MPW site. | Section 5.5.2 of the Modification Report |
| The Proponent is dictating to the DP&E | SIMTA has followed the approval pathway designated under the EP&A Act. | Section 1 of this EIS |
| The Proponent is assuming subsequent stages will be approved | The MPW Concept Approval and Stage 1 (Early Works) were approved on 3 June 2016 under Part 4, Division 4.1 of the EP&A Act. The MPW Concept Approval included stages subsequent to Stage 1 (Early Works) and SIMTA are committed to achieving the goals set out in the MPW Concept Approval.<br>Each subsequent stage would be assessed via the EIS process which is a condition of approval stipulated by the DP&E. | Section 1.4 of this RtS |
| The Proponent is not following the rules | The Proponent has followed the approval pathway designated under the EP&A Act. No works have occurred on site without the proper approvals. The MPW Concept Approval and Stage 1 (Early Works) were approved on 3 June 2016 under Part 4, Division 4.1 of the EP&A Act. | Section 1.4 of this RtS |
| Importing fill should be a new project | Approval for importation of clean general fill for bulk earthworks as a modification to the MPW Concept Approval under the Amended Modification Proposal is considered to be substantially the same development under section 96 of the EP&A Act. | Section 1.6 and Section 6 of this RtS |
| Crushing plant shouldn't be allowed due to incorrect zoning | The crushing plant is a temporary and ancillary use associated with construction of the MPW Project and is therefore permissible. | MPW Concept EIS, RtS, and SRtS |

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| | The Proponent has underestimated the impacts | SIMTA has assessed the impacts from the Modification Report and Amended Modification Proposal and has used suitably qualified professionals to undertake assessments and modelling where required. Accurate inputs have been used and conservative modelling assumptions adopted.<br>SIMTA would continue to use this methodology to assess impacts in future development applications. | Section 5 of the Modification Report<br>Section 7 of this RtS |
| | Conditions for subsequent stages have not been met | The MPW Concept Approval and Stage 1 (Early Works) were approved on 3 June 2016 under Part 4, Division 4.1 of the EP&A Act.<br>The Concept, summarised as "use of the site as an intermodal facility, including a rail link to the Southern Sydney Freight Line, warehouse and distribution facilities, and associated works", and Stage 1 (Early Works), summarised as "including but not limited to demolition of buildings, termination of services, remediation of contaminated land and establishment of construction facilities", has been approved subject to the Conditions of Consent issued 3 June 2016 by the Planning Assessment Commission. All works have been undertaken on the site to date in accordance with these Conditions of Consent.<br>All development applications for subsequent stages of the MPW Project would be submitted to the DP&E for separate approval. As such, no conditions of consent for subsequent stages of the MPW Project have been issued to SIMTA. | MPW Concept Approval MCoAs |
| | The Proponent is not compliant with PAC requirements | | |
| Combined project | Adding MPW into the smaller MPE Project | The MPW and MPE Projects have been approved as part of separate concept approvals (MPW-SSD 5066, MPE – MP 10_0193). A detailed cumulative assessment has been provided in both approvals based on the information available at that time. This cumulative assessment is still considered suitable at a concept level.<br>Both separate approvals require future stages of development to prepare individual SSD applications. Further cumulative assessments would be included (based on information available at the time) as part of future SSD applications. | MPW Concept EIS, RtS, and SRtS |
| | SIMTA are trying to sneak MPW onto smaller scale approval | The MPW Project is, and would remain, a separate approval to the MPE Project. All development applications for subsequent stages of the MPW Project would be submitted to the DP&E for separate approval as required by the MPW Conditions of Consent issued 3 June 2016 by the Planning Assessment Commission.<br>It should be noted that this is not applicable to the scope within the Amended Modification Proposal. | MPW Concept EIS, RtS, and SRtS |
| | All approvals should be combined | The MPW and MPE Projects have been approved as part of separate concept approvals (MPW-SSD 5066, MPE – MP 10_0193). A detailed cumulative assessment | Section 1.5 of the MPW Concept RtS |

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| | | has been provided in both approvals based on the information available at that time. This cumulative assessment is still considered suitable at a concept level.<br><br>Both separate approvals require future stages of development to prepare individual SSD applications. Further cumulative assessments would be included (based on information available at the time) as part of future SSD applications. | |
| Modification | Using modification to 'sneak' this work through | The scope of the Amended Modification Proposal has been described in detail in Section 6 of this RtS. This provides a description of all components relating to the Amended Modification Proposal, and a justification for each component, including the importation of clean general fill. | Section 6 of this RtS |
| | Maps in the Modification Report don't show the full extent of homes impacted | The maps shown in the Modification Report are similar extents to those in the MPW Concept EIS. The works associated with the MPW Concept EIS were approved on 3 June 2016 under Part 4, Division 4.1 of the EP&A Act. Therefore, it is considered that the maps are suitable for assessment purposes of the Amended Modification Proposal. | Section 3.2.1 of the Modification Report |
| | 3 times larger than the original consent | The Amended Modification Proposal does not change the overall site footprint. | Section 6 of this RtS |
| | Community are being lied to | Due to design developments between submission of the MPW Concept EIS and MPW Stage 2 EIS aspects of the MPW Project required a modification. The EP&A Act facilities for modifications in accordance with Section 96(2) of the EP&A Act and this is a standard part of development of this nature, scale and complexity.<br><br>SIMTA distributed a newsletter to approximately 10,000 households in the suburbs surrounding the MPW site. The purpose of the newsletter was to inform them about the Modification Proposal, and detail how they could submit feedback or request more information | Section 1, 2 and 6 of this RtS |
| | Proponent is incompetent if underestimated fill by 1.6 million cubic metres | Section 8 of the MPW Concept EIS stated: "It is important to note that, should the Project be granted Stage 1 SSD approval, detailed engineering studies would be prepared to determine the optimal design for the Project".<br><br>Progressive detailed design (i.e. "detailed engineering studies") has determined that the importation of fill is required to support the functionality of the internal site drainage system in a range of storm events. | Section 6 of this RtS |
| | Questions SIMTA integrity | SIMTA have provided community updates throughout the MPW Project including distributing a newsletter to approximately 10,000 households in the suburbs surrounding the MPW site. | Section 2 of this RtS |

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| | | The physical importation of clean general fill has been assessed in the MPW Stage 2 EIS (currently on exhibition) and the community would have the opportunity to continue to provide comment on the development. | |
| | How is importing 1.6 million cubic metres of fill 'remediation' or 'early works' | The scope of the Amended Modification Proposal has been described in detail in Section 6 of this RtS.<br>Approval for the physical importation of clean general fill for bulk earthworks is being sought as part of Stage 2 of the MPW Project, rather than as part of Stage 1 (Early Works), and this EIS has recently been on public exhibition from 26 October 2016 to 25 November 2016. | Section 6 of this RtS |
| Technical studies | Question the validity of overall studies | Section 8 of the MPW Concept EIS stated: "It is important to note that, should the Project be granted Stage 1 SSD approval, detailed engineering studies would be prepared to determine the optimal design for the Project".<br>Progressive detailed design (i.e. "detailed engineering studies") has determined that the importation of fill is required to support the functionality of the internal site drainage system in a range of storm events. | Section 6 of this RtS |
| | Why the difference in fill quantities | | |
| | Errors in pre-construction traffic impact assessment (road hierarchy) | Further traffic assessments aren't required for the Amended Modification Proposal as studies undertaken to date are suitable for concept approval.<br>Detailed traffic impact assessments would be undertaken as part of subsequent development applications | Section 6 of this RtS |
| | Environment and traffic studies need to reflect the truth | All technical studies are completed by suitably qualified professionals using relevant information and data. | Section 5 of the Modification Report<br>Section 7 of this RtS |
| | Deliberate miscalculations of fill quantities | Section 8 of the MPW Concept 1 EIS stated: "It is important to note that, should the Project be granted Stage 1 SSD approval, detailed engineering studies would be prepared to determine the optimal design for the Project".<br>Progressive detailed design (i.e. "detailed engineering studies") has determined that the importation of fill is required for both the functionality of the internal site drainage system in a range of storm events. | Section 6 of this RtS |
| Early Works | Community was told Early Works meant remediation and demolition | As SIMTA are no longer proposing to modify Stage 1 (Early Works) under the Amended Modification Proposal, the Stage 1 (Early Works) approved under the MPW Concept Approval remain unchanged. | Section 6 of this RtS |

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| | There should be a new application for Early Works | | |
| General | Lack of confidence in previous work | Section 8 of the MPW Concept EIS stated: “It is important to note that, should the Project be granted Stage 1 SSD approval, detailed engineering studies would be prepared to determine the optimal design for the Project”.<br>Progressive detailed design (i.e. “detailed engineering studies”) has determined that the importation of fill is required for both the functionality of the internal site drainage system in a range of storm events. | Section 6 of this RtS |
| | Lack of faith and trust in the Government | Section 3 of the MPW Concept EIS identifies that there has been strong and consistent support at State and Commonwealth Government levels for the development of an IMT in Moorebank. The MPW site has been earmarked as a highly suitable location for an IMT in both freight and distribution strategy and there is demonstrable demand for an IMT within the area. Development of the land for the purposes of an IMT is therefore considered the highest and best use for the land.<br>The Commonwealth and State governments have further endorsed the development of an IMT on the MPW site through granting approvals including the EPBC Approval and the MPW Concept Approval. | Section 3 of the MPW Concept EIS |
| Approval process | There is no impact on SIMTA for them changing their proposal. They will get what they discover they need | Due to design developments between submission of the MPW Concept EIS and MPW Stage 2 EIS aspects of the MPW Project were identified to require a modification. The EP&A Act allows for modifications in accordance with Section 96(2). | Section 1 and 6 of this RtS |
| | Greed is behind project | Section 3 of the MPW Concept EIS identifies that there has been strong and consistent support at State and Commonwealth Government levels for the development of an IMT in Moorebank. The Proposal site has been earmarked as a highly suitable location for an IMT in both freight and distribution strategy and there is demonstrable demand for an IMT within the area. Development of the land for the purposes of an IMT is therefore considered the highest and best use for the land.<br>The Commonwealth and State governments have further endorsed the development of an IMT on the MPW site through granting approvals including the EPBC Approval and the Concept Approval. | Section 3 of the MPW Concept EIS |
| | Government pushing project through | | |

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| | Financial viability | Cost of surrounding infrastructure upgrades will cause project to fail<br>There is no finance for the whole development if it was to go ahead | The scope of the Amended Modification Proposal has been described in detail in Section 6 of this RtS. The Amended Modification Proposal does not include any provision for the discussion of the financial viability of the MPW Project. Concept Approval for the MPW Project was granted under the existing approval. This modification does not seek to modify the existing approval and these submissions are therefore not considered applicable to the Modification Proposal or Amended Modification Proposal. | Section 6 of this RtS |
| Economics | Economic impacts | No benefit to Liverpool or NSW<br>Does not benefit Moorebank<br>Lacks financial benefits compared to community impact | These elements were considered in the original MPW Concept Approval and the Amended Modification Proposal does not alter the overall merit of the MPW Project and that Concept Approval. | Section 6 of this RtS |
| Community | Extended hours | Extended hours are not suitable<br>Noise and anxiety from extended hours<br>Sleep disturbance | The Modification Report noise impact assessment considered sleep disturbance as a result of the construction activities and concluded that the impacts would be manageable with implementation of restricted working activities during out of hours works periods.<br>As the physical works would now be conducted under the MPW Stage 2 EIS, a detailed Human Health Risk assessment that specifically addresses the importation of fill for bulk earthworks has been prepared as part of that EIS, which has recently been on public exhibition from 26 October 2016 to 25 November 2016. This assessment includes evaluation of sleep disturbance and anxiety and concludes generally low associated human health risks. Additional further assessments are also included in Section 7 of this RtS. | Appendix E of the Modification Report<br>Section 6 and Section 7 of this RtS |
| | Community venues | Impacts to Casula Powerhouse | The scope of the Amended Modification Proposal has been described in detail in Section 6 of this RtS. The Amended Modification Proposal does not include works that may further impact upon Casula Powerhouse. | Section 6 of this RtS |
| | Consultation | Residents are being lied to | Due to design developments between submission of the MPW Concept EIS and MPW Stage 2 EIS aspects of the MPW Project required a modification. SIMTA are entitled to seek a modification in accordance with Section 96(2) of the EP&A Act.<br>SIMTA distributed a newsletter to approximately 10,000 households in the suburbs surrounding the MPW site. The purpose of the newsletter was to inform them about | Section 1, 2 and 6 of this RtS |

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| | | the Modification Proposal, and detail how they could submit feedback or request more information | |
| | Proponent not listening to residents' feedback | SIMTA recognises the importance of the community's involvement and as such, in addition to the DP&E public exhibition and advertisement, distributed a newsletter to approximately 10,000 households in the suburbs surrounding the MPW site. The purpose of the newsletter was to inform them about the Modification Proposal, and detail how they could submit feedback or request more information. To date no submissions have been received specifically relating to this newsletter.<br>SIMTA also placed a public notification of the Modification Proposal in local newspapers, consistent with clause 49 and clause 115 of the EP&A Regulation | Section 2 of this RtS |
| | Proponent is faceless when it comes to discussion | | |
| | Lack of community notification | | |
| General opposition | Negative impact on community | These elements were considered in the original MPW Concept Approval and the Amended Modification Proposal does not alter the overall merit of the MPW Project and that Concept Approval. | Section 6 of this RtS |
| | General opposition | | |
| | Already too much pollution in Liverpool and surrounding area | | |
| | Disregard for communities in South-west Sydney | | |
| | Sydney is not a major east coast port for Australia | | |
| | Construction of the Project would be disruptive to families | | |
| | Not considering a sustainable future for the area | | |

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| | Destroy Moorebank's family values | | |
| | Project will create an eyesore | | |
| | Will consider moving because of this development | | |
| | Wouldn't have moved here if aware of this development | | |
| Financial gain | Residents have been sold out by the Government | These elements were considered in the original MPW Concept Approval and the Amended Modification Proposal does not alter the overall merit of the MPW Project and that Concept Approval. | Chapter 3 of the MPW Concept EIS |
| | Profit over community | | |
| | Government driven by financial incentives | | |
| Social | Impacting thousands of families | These elements were considered in the original MPW Concept Approval and the Amended Modification Proposal does not alter the overall merit of the MPW Project and that Concept Approval. | Section 6 of this RtS |
| | Impact to neighbourhood from the MPW Project | | |
| | Impact on future generations | | |
| | Impact on barefoot ski club | | |
| | Aged care/retirement | | |

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| | | Will impact being able to study for HSC and to be able to get a good job | | |
| | | Impact quality of life | | |
| | | People are making decisions from afar – doesn't affect them | | |
| | | Impact outdoors lifestyle | | |
| | | Impact peace and quiet | To minimise noise emissions and comply with the Project approvals and regulations, the MPW Project would be designed and constructed with reasonable and feasible noise mitigation measures to control noise emissions within the surrounding communities, as detailed in section 12.4 of Chapter 12 – Noise and vibration of the MPW Concept EIS. The appropriateness of the noise mitigation measures would be further assessed during the Stage 2 SSD applications once the detailed design is developed and the mitigation measures can be adopted to reflect what would actually be built on the site. | Chapter 12 of the MPW Concept EIS |
| | Safety | Family safety | These elements were considered in the original MPW Concept Approval and the Amended Modification Proposal does not alter the overall merit of the MPW Project and that Concept Approval. | Section 6 of this RtS |
| Cumulative | Combined impacts | If community had of known about additional scope and combined impacts, then there would have been stronger opposition | All development applications have been placed on public exhibition and available for comment. | Section 1.5 of the MPW Concept RtS |
| | | Will MPE require importation of similar quantities of fill | The MPE Stage 2 EIS, recently on exhibition, contains up-to-date quantities of construction materials required for the works. The construction methodology for the Amended Modification Proposal is included in Section 6 of this RtS. | Section 6 of this RtS |
| Land use | Use of site | What will site be used for once it is levelled | As described in the Chapter 7 of the MPW Concept EIS the site would be used as an IMT facility with associated warehousing and distribution facilities. | Chapter 7 of the MPW Concept EIS |

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| | | Better uses for land along Georges River | The merits of this type of land use at this location were assessed as part of the MPW Concept Approval. The Amended Modification Proposal does not seek to alter the MPW Project and that Concept Approval. | Section 6 of this RtS |
| | | Business park | | |
| | Property depreciation | Decrease in property value after development | The Amended Modification Proposal does not seek to change the existing approval in any way that would be likely to have an impact on property values. | Section 6 of this RtS |
| | Compensation | Proponent should pay compensation to community due to impacts | The Amended Modification Proposal does not create increased levels of impact that would in any way justify compensation. | N/A |
| | | Compensation for property value loss | | |
| Construction | General | Why the range for the construction duration | Construction duration would not be able to be accurately identified until the detailed construction planning stage. The Modification Report therefore adopted a range to enable a conservative assessment of impacts. | Section 6 of this RtS |
| | | Where is the fill coming from – how do we know it is safe | Fill may be imported from various locations across Sydney and is dependent on where fill is available from at the time of construction. Material would be accompanied with an appropriate waste classification certificate designating it appropriate for use as clean general fill material. | Section 6 of this RtS<br>Section 8 of this RtS |
| | | Will there be delays along Moorebank Av whilst the traffic signals/alterations are installed | The Amended Modification Proposal does not include changes to Moorebank Avenue. | Section 6 of this RtS |
| | Waste management | Concerns that asbestos will find its way into the crusher | As discussed in the Modification Report all asbestos management, including removal, transport and disposal would be performed in accordance with the *Work Health and Safety Regulations 2011.*<br>Asbestos waste must be tracked using WasteLocate | Section 5.9.3 of the Modification Report |
| | | Transportation of asbestos material | As discussed in the Modification Report all asbestos management, including removal, transport and disposal would be performed in accordance with the *Work Health and Safety Regulations 2011.* | Section 5.9.3 of the Modification Report |

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| | | Asbestos waste must be tracked using WasteLocate | |
| | Crushing unknown demolition waste is a concern | The demolition waste that would be crushed would include brick, tile and concrete that would be suitable for direct placement within the site. The materials permitted to pass through the crusher would have undergone appropriate waste classification by a suitably qualified Environmental Consultant prior to processing. | Section 2.1 of the Modification Report |

# 6 MODIFICATION AMENDMENT

## 6.1 Overview

### 6.1.1 Approval sought (Amended Modification Proposal)

The Amended Modification Proposal, the subject of this RtS, includes a number of amendments to various stages of the MPW Project. A summary of the Amended Modification Proposal, for which approval is sought is as follows:

- Importation of clean general fill – importation of 1,600,000m$^3$ of clean general fill for the purposes of site formation
- Altered construction footprint – impact on additional parcels of land for the purposes of construction of the MPW Project
- Interaction between MPW and MPE sites – transfer of operational vehicles between the MPW and MPE sites for the purposes of container handling between the IMT's and warehouses on each site
- Intermodal terminal facility (interstate, intrastate and port shuttle rail freight) – re-classification of the freight that can be handled through the existing approved interstate terminal to include intrastate and port shuttle rail freight movements.
- Re-arrangement of existing approved uses – land function adjustments associated with freight village, truck parking and OSDs
- Maximum building heights – increase of building heights (identified in the MPW Project) associated with the importation of fill
- Staging of future applications – alteration to future staging of the MPW Project for the purposes of addressing market demand
- Subdivision – subdivision of the MPW site to facilitate for long-term leases for proposed development.

The Amended Modification Proposal seeks modification of the MPW Concept Approval and subsequent stages of development, namely Stage 2 and Stage 3. The Amended Modification Proposal, as per the MPW Concept Plan Approval, does not seek approval for any physical works as part of the Concept Plan (i.e. subject to future approvals). The Amended Modification Proposal does not seek approval for any modification to Early Works (Stage 1) identified under the MPW Concept Approval. A summary of the modifications sought and when these works (as relevant) would be undertaken is provided in Table 6-1.

*Table 6-1 Modifications sought and timing of works (as relevant) as part of the Amended Modification Proposal*[2]

| Amendments | MPW Concept [3]Approval | Early Works | MPW Stage 2 | MPW Stage 3 (and sub-stages) |
|---|---|---|---|---|
| Importation of clean general fill | Y | N | Y | N |
| Altered construction footprint | Y | N | Y | N |
| Interaction between the MPW and MPE sites | Y | Y[4] | Y | Y |
| Intermodal terminal facility (interstate, intrastate and port shuttle rail freight) | Y | N | Y | N |

[2] 'Y' = Yes a Modification is sought and works (as relevant) are to be undertaken as part of this stage, 'N' = No a Modification is not sought and works (as relevant) are not to be undertaken as part of this stage.

[3] As per the MPW Concept Plan Approval no physical works are to be undertaken during this stage.

| Amendments | MPW Concept [3]Approval | Early Works | MPW Stage 2 | MPW Stage 3 (and sub-stages) |
|---|---|---|---|---|
| Changes to approved function and re-arrangement of existing approved uses (freight village, truck parking and OSDs) | Y | N | Y | Y |
| Maximum building heights | Y | N | Y | Y |
| Staging of future applications | Y | N | Y | Y |
| Subdivision | Y | N | Y | Y |

## 6.1.2 Comparison (Modification Proposal Vs Amended Modification Proposal)

As discussed above, the Modification Proposal provided in the Modification Report has been amended (Amended Modification Proposal) as described in Table 6-2. A summary of these amendments from the Modification Proposal to the Amended Modification Proposal is provided in Table 6-2. Details of the changes are provided in Section 6.2 and the associated impacts are addressed in Section 7.

*Table 6-2 – Comparison of Modification Proposal vs Amended Modification Proposal*

| Component | Modification sought in Modification Report | Changes to Modification as part of the Amended Modification Proposal |
|---|---|---|
| **Importation of clean general fill** | Refer to discussion below | Refer to discussion below |
| Clean general fill import as part of the MPW Concept Project | Importation of clean general fill for bulk earthworks of the MPW Concept Project | No change to the original Modification Proposal, the Amended Modification Proposal continues to include the importation of clean general fill for bulk earthworks of the MPW Concept Project |
| Clean general fill importation during Stage 1 Early Works | Importation, crushing, placement and stockpiling of clean general fill during Early Works | Importation, crushing, placement and stockpiling of clean general fill during Stage 2 of the MPW Project |
| **Altered construction footprint** | No modification sought | Additional parcels of land impacted as a result of design development since the MPW Concept EIS submission |
| **Interaction between the MPW and MPE sites** | No modification sought | Allow interaction between the two sites, allowing for the movement of vehicles south from the MPW site to the MPE site via Moorebank Avenue and vice versa for operations. |
| **Intermodal terminal facility (interstate, intrastate and port shuttle rail freight)** | No modification sought | re-classification of the freight that can be handled through the existing approved interstate terminal to include intrastate and port shuttle rail freight movements. |
| **Changes to approved function and re-arrangement of existing approved uses (freight village, truck parking and OSDs)** | No modification sought | Re-arranging the location of land functions (already approved in the MPW Concept Approval) within the confines of the MPW Project. |

| Component | Modification sought in Modification Report | Changes to Modification as part of the Amended Modification Proposal |
|---|---|---|
| **Maximum building heights** | No modification sought | Modification to allow building heights greater than that detailed in the LLEP |
| **Staging of future applications** | No modification sought | Changes to the staging of the MPW Project |
| **Subdivision** | No modification sought | Allow subdivision of the MPW site in future stages of the MPW Project |

As detailed above, modifications to the Early Works (MPW Stage 1) are no longer sought. Section 6.2 describes the proposed modifications to the MPW Concept Approval and a further concept level assessment of each modification item is provided within Section 7 of this RtS. Some of the works included within the Amended Modification Proposal would be undertaken as part of the MPW Stage 2 Proposal (SSD 16_7709), the EIS for which has recently been on public exhibition, while others would occur in future stages of the MPW Project.

## 6.2 Amended Modification Proposal components

*Table 6-3* considers the changes comprising the Amended Modification Proposal in relation to the MPW Concept Approval and associated environmental assessment documentation.

*Table 6-3 – Amended Modification Proposal components*

| MPW Concept Plan Approval | Amended Modification Proposal |
|---|---|
| **Clean general fill importation** | |
| The MPW Approvals documentation (EIS, RtS and SRtS) identified only a minor quantity of fill (approximately 46,134m$^3$) to be imported to the MPW site as part of Early Works (refer to Section 3.1.2 of the Modification Report for further information). No fill was to be imported to site as part of future stages of development. | The Amended Modification Proposal intends to update the MPW Concept Approval to allow the import, placement, stockpiling, spreading and compaction of 1,600,000m3 clean general fill during Stage 2 of the MPW Project.<br><br>The term “clean general fill” refers to material meeting the NSW EPA’s resource recovery orders and exemptions including but not limited to Excavated Natural Material (ENM) and Virgin Excavated Natural Material (VENM), according to EPA definitions for these materials.<br><br>The importation of clean general fill is to be undertaken within and outside of standard construction hours (refer to Section 3.2.6 of the Modification Report and also Section 8 of this RtS). |
| **Altered construction footprint** | |
| The MPW CoA (Land) included the following Lots/DPs:<br>• Lot 1 of DP 1197707<br>• Lot 100 of DP 1049508<br>• Lot 101 DP 1049508<br>• Lot 2 of DP 1197707<br>• Lot 5 of DP 833516<br>• Lot 51 of DP 515696<br>• Lot 104 of DP 1143827 | Four additional parcels of land, from what was described in the MPW Concept Approval, have been identified during detailed design to be impacted as a result of the MPW Project. These additional parcels of land are as follows:<br>• ABB site (Lots 2 and 3 of DP 32998)<br>• DJLU site (Lot 3 of DP 1197707)<br>• Public road reserve of Moorebank Avenue and part of Anzac Road |

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| • Lot 103 of DP 1143827<br>• Lot 102 of DP 1143827<br>• Lot 4 of DP 1186349 | |
| **Interaction between MPW and MPE sites** | |
| The MPW Concept Approval (CoA E12) did not permit IMT related heavy vehicle movements from using Moorebank Avenue south. | The Amended Modification Proposal would facilitate for the movement of vehicles from the MPW site to the MPE site, primarily for the transfer of containers between terminals and associated warehousing. MPW vehicles would utilise Moorebank Avenue to enter and access the MPE site. The Amended Modification Proposal does not seek approval for the use of Moorebank Avenue (south of the MPE site) and/or Cambridge Avenue, during operations. |
| The MPW Concept Approval (CoA 15) indicates that warehousing for the MPW Project must only be used for activities associated with IMEX and interstate terminals, unless otherwise approved in a subsequent Development Application. | The Amended Modification Proposal would facilitate for warehousing which is associated with an intermodal terminal (interstate or IMEX) on either the MPW site or the neighbouring MPE site. Supporting the warehousing on the MPW site with either terminal would result in TEU throughput being measured at whichever terminal is supplying/receiving freight to/ from the warehousing. For example, if the MPE IMEX terminal delivers/receives freight to the MPW warehousing this would be measured as a part of the TEU throughput cap of the MPE IMEX Terminal, and the same would apply to the MPW Stage 2 IMT facility. This approach would ensure adherence to all throughput caps across both the MPW and MPE Concept Approvals.<br><br>All vehicle movements once entering the MPE site would be subject to the separate approvals and conditions under the MPE Concept Plan Approval. The Amended Modification Proposal does not seek to modify the MPE Concept Plan, which is subject to separate approval. |
| **Changes to approved function and re-arrangement of existing approved uses (freight village, truck parking and OSDs)** | |
| The MPW Concept Plan Approval included a site layout identifying an indicative location of the key uses and their locations (refer to Figure 6-1).<br><br>Truck parking, originally located in the central portion of the site (directly north of the central internal transfer road and east of the previously proposed location for the freight village – refer to Figure 6-1), was proposed for the MPW Concept (full build).<br><br>The MPW Concept Approval included the construction of three OSDs along the western and northern site boundary. | The Amended Modification Proposal includes several alterations to the functional uses supporting the approved land use of the MPW Concept Approval. These alterations include the freight village, truck loading area and OSDs.<br><br>Figure 6-1 and Figure 6-2 illustrates the key re-arrangement in location of land functions, which are further explained below.<br><br>The freight village for the Amended Modification Proposal has been relocated to an area previously identified for warehousing, at the northern end of the MPW site, directly adjacent to the drainage channel (that leads to the northern OSD) and western perimeter road (refer to Figure 6-2). The land previously identified for the freight village is identified for warehousing under the modified layout.<br><br>The revised layout for truck parking would see the original area identified for truck parking used for warehousing. Truck parking areas would now be |

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| | more efficiently integrated into the IMT facility, with an additional area on the northern part of the Proposal site for emergency storage if necessary (north of Bapaume Road – refer to Figure 6-2).<br><br>The Amended Modification Proposal identifies the need for two additional OSDs within the MPW site, in the south western and northern portions of the site. |
| **Intermodal terminal facility (interstate, intrastate and port shuttle rail freight)** | |
| **Interstate terminal**<br><br>The MPW Concept Approval included an Interstate terminal, with a throughput of 500,000 TEU per annum, located along the eastern portion of the Proposal site adjacent to Moorebank Avenue, to the north of an internal transfer road running perpendicular to Moorebank Avenue (refer to Figure 6-1).<br><br><u>Terminal function</u><br><br>The facility approved under the MPW Concept was designed to accommodate freight from interstate trains, totalling approximately 12 trains (24 movements) per week, and up to three interstate empty trains (either originating from, or travelling to Sydney) per week.<br><br><u>Built form (track layout)</u><br><br>The Interstate terminal, as described in the MPW Concept Approval, included eight railway tracks in total, consisting of four interstate arrival and departure tracks, designed to accommodate trains up to 1800 metres long, and four container handling tracks suitable for 900-metre long trains. It should be noted that the original MPW Concept EIS figure showed nine sidings, while the project description only included eight. | **Intermodal terminal facility (interstate, intrastate and port shuttle rail freight)**<br><br>The Amended Modification Proposal seeks to modify the Interstate terminal both in its built form and function, to expand the number of railway tracks, and also to modify the types of freight and daily movements being processed through this facility. The Amended Modification Proposal does not provide for any increase in overall freight throughput associated with this facility and it would remain at the existing approved throughput of 500,000 TEU per annum. In addition, the proposed location of the terminal would not change.<br><br>The proposed changes are described in further detail below.<br><br><u>Terminal function</u><br><br>The modified IMT facility would process up to six trains per day (30 per week), comprising trains of:<br><br>• Interstate trains from Melbourne (of 1800 metres in length)<br>• Interstate trains from Brisbane (of 1500 metres in length)<br>• Port shuttle or regional trains within NSW (of 900 metres or 650 metres in length).<br><br><u>Built form (track layout)</u><br><br>The modified IMT facility proposed would include nine railway tracks in total, comprising five 1,800-metre long entry tracks, and four 900-metre long container handling tracks. This site arrangement would allow for up to three 1,800-metre long trains and two 900-metre long trains to be processed at one time, and would adequately facilitate the modified terminal function. |
| **Maximum building heights** | |
| The MPW CoA states (Schedule 2, CoA 16) that building heights are to be a maximum of 21 metres. The MPW Concept Plan does not specify a definition for building height and therefore the most suitable definition is within the *Liverpool Local Environmental Plan 2008* (Liverpool LEP). The Liverpool LEP provides the following definition for the measurement of the maximum building height; “the vertical distance from ground level (existing) to the highest point of the building”. | The importation of 1,600,000m$^3$ of fill, as discussed above, is required to address the stormwater and drainage requirements across the site and as a result the building formation level across the site requires adjustment. The exact levels would be determined during future detailed development application however finished levels are anticipated to vary up to 3m from their current pre-development (i.e. existing) levels.<br><br>While no changes are proposed to the height of warehouses (the maximum structural height of buildings would be maintained at 21 m), the |

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| | placement of fill beneath buildings would subsequently increase building heights as defined under the Liverpool LEP. |
| **Staging of future applications** | |
| The MPW Concept Approval included five development phases for the MPW Project as follows:<br>• Early Works: The demolition of buildings, including services termination and diversion; rehabilitation of the excavation/earthmoving training area; remediation of contaminated land; removal of underground storage tanks; heritage impact remediation works; and the establishment of construction facilities and access, including site security<br>• Phase A: Construction of 250,000 TEU Interstate terminal, 100,000m$^2$ of warehousing and construction of the southern rail link<br>• Phase B: The phase would commence with the operation of a 250,000 TEU interstate terminal and 100,000m$^2$ of warehousing, as well as the construction of a 500,000 TEU IMEX rail terminal<br>• Phase C: The phase would commence with operation of a 500,000 TEU IMEX terminal, 100,000m$^2$ of warehousing and a 250,000 TEU interstate terminal. Additional construction activities during Phase C (which would become operational once completed) comprise the construction of 150,000m$^2$ of warehousing and a 250,000 TEU IMEX, construction of an additional 300,000 TEU IMEX; and construction of an additional 250,000 TEU interstate capacity and 50,000m$^2$ of warehousing<br>• Full Build[5]: Operation of a 500,000 TEU p.a. interstate terminal and a 250,000 TEU p.a. IMEX terminal initially (with the potential to increase up to an additional 300,000 TEU p.a.), and 300,000m$^2$ of warehousing. The combined movement of container freight on the MPW site must not exceed 1.05 million TEU p.a.<br>The Supplementary Response to Submissions (SRtS) for the MPW Concept Approval (Section 1.2.1) states that future development phases may be subject to change in light of changing economic conditions. | Since the preparation of the MPW Concept EIS, the proposed phasing of the MPW Project has changed, to align with constructability and operational efficiencies at the site, i.e. Phases A, B, C and Full Build are now condensed into Stage 2 and Stage 3 (and sub-stages).<br>**Stage 2**<br>Stage 2 of the MPW Project, which is subject to subsequent approval, would consist of the following elements:<br>• Multipurpose IMT Facility, including infrastructure to support a container freight volume of 500,000 TEU p.a.<br>• Rail link connection<br>• Warehousing area, including construction and operation of approximately 215,000m$^2$ of warehouses<br>• Upgraded intersection on Moorebank Avenue<br>• Ancillary works, including the importation of 1,600,000m$^3$ of clean general fill and bulk earthworks across the site.<br>**Stage 3**<br>Stage 3 of the MPW Project, which would be the subject of subsequent approval, would consist of the residual elements approved under the MPW Concept Approval (SSD_5066) including:<br>• Infrastructure to support an increase in container freight throughput to the limits of the MPW Concept Approval (SSD_5066) or as modified<br>• Warehousing area, including construction of additional warehouses and operation of warehousing to the limits of MPW Concept Approval (SSD_5066) or as modified<br>• Ancillary works, specific to activities undertaken during Stage 3 of the MPW Project.<br>Stage 3 may be undertaken in a number of sub-stages which have the potential to form separate approvals. |
| **Subdivision** | |
| The MPW CoA did not include the provision for subdivision at any stage of the MPW Project. | The Amended Modification Proposal seeks to include the ability to subdivide the site into lots in future stages of the MPW Project. |

[5] Subsequent to agreement between MIC and SIMTA the MPW Concept Approval (SSD_5066) was updated to reflect limit on TEU throughput of 1.55 million per annum across both the MPW and MPE Projects. As such the ultimate capacity of the MPW Project is now 1.05 million TEU per annum (Schedule 2, condition 6 to 8).

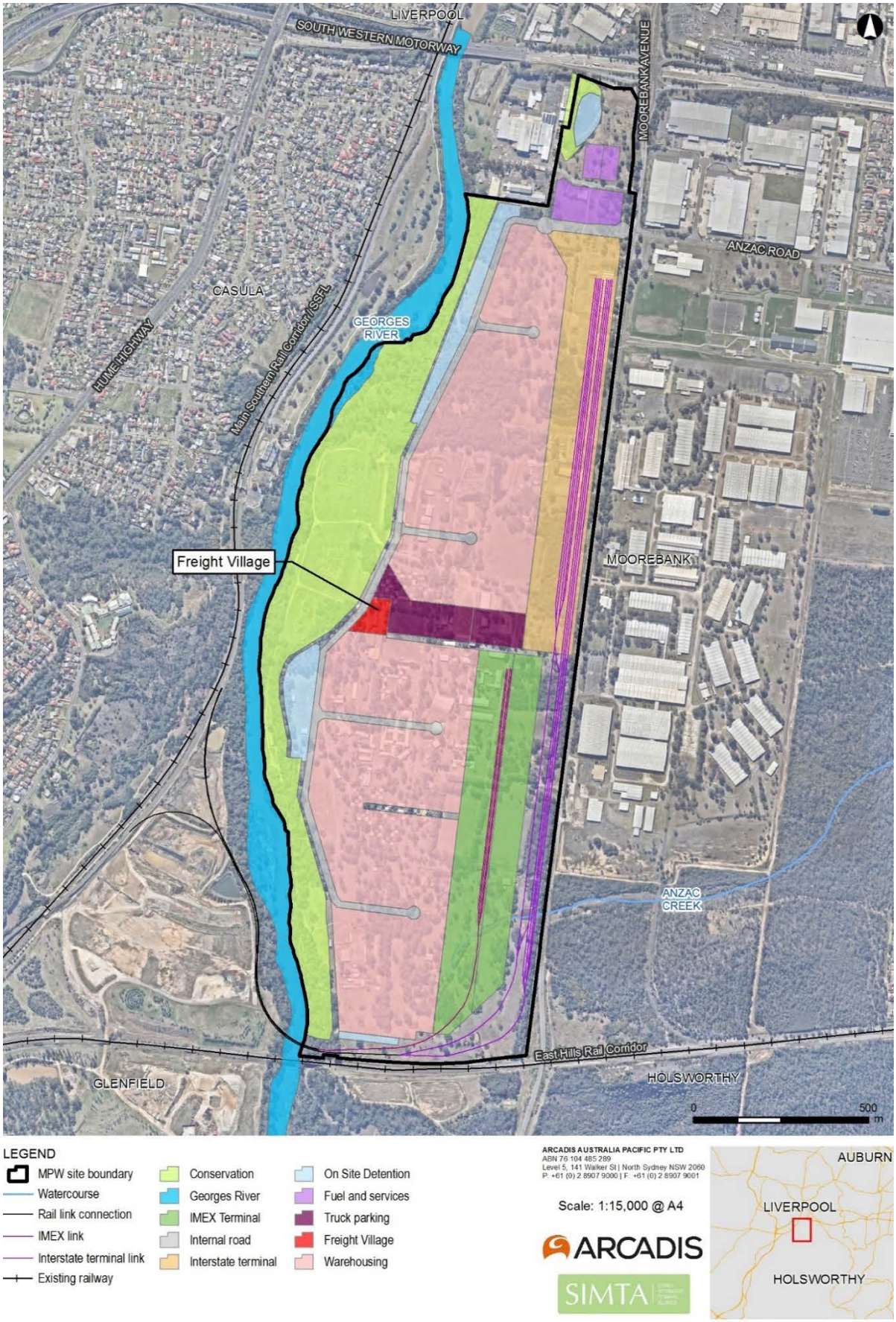


*Figure 6-1 - MPW site layout (concept)*

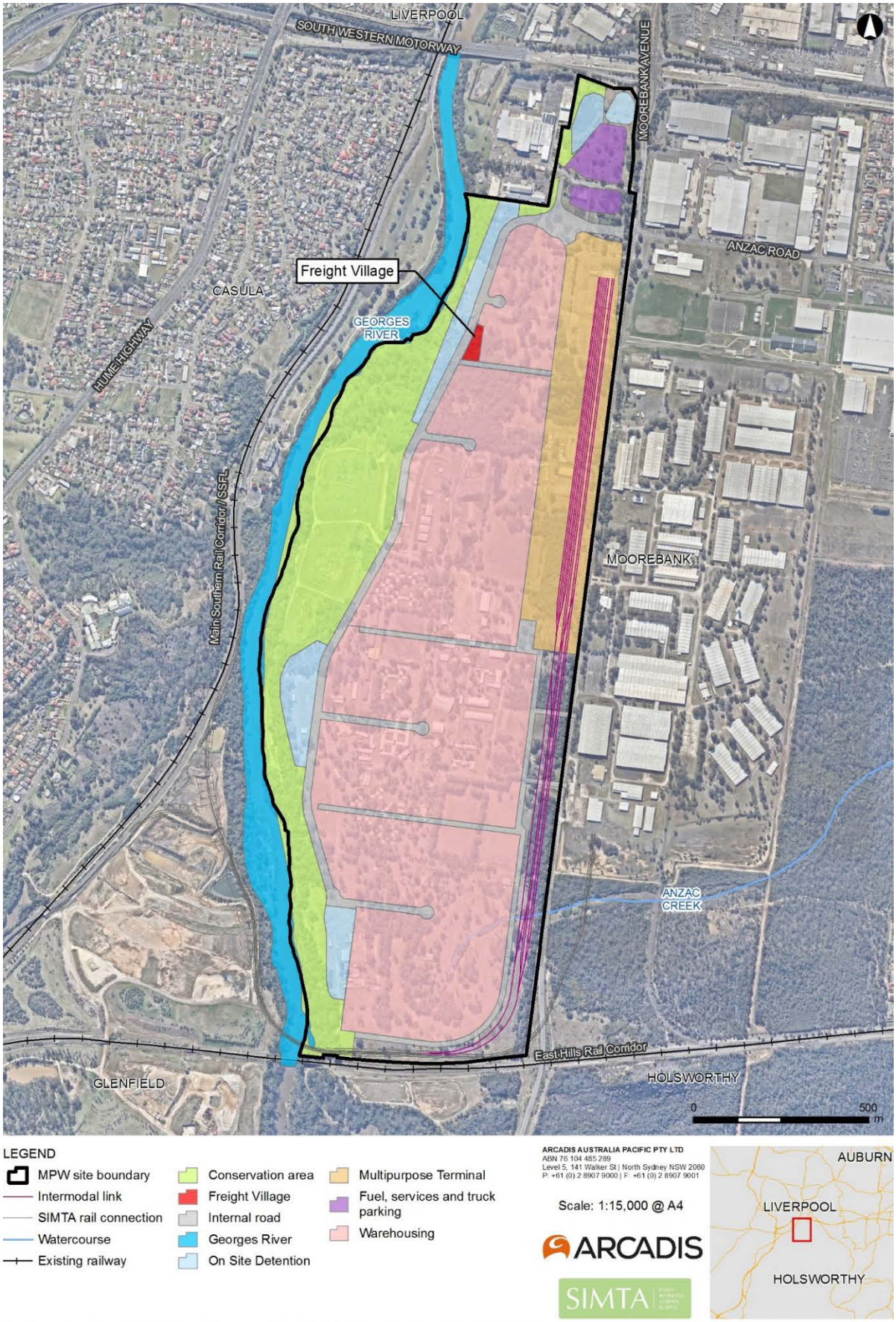


*Figure 6-2 - MPW site layout (modified)*

## 6.3 Construction methodology for the Amended Modification Proposal

This construction methodology has been prepared as an amendment to the MPW Concept Approval to only identify the additional works included within the Amended Modification Proposal. Construction of the Amended Modification Proposal is expected to be attributed predominantly to the importation, placement and stockpiling of clean general fill. In addition, and to a minor extent, works to additional parcels of land (altered construction footprint) would also result in construction activity. A general description and justification of these two items is provided, in Sections 6.1.2 and 6.5 respectively of this RtS.

Construction of the above two items would likely commence during the third quarter of 2017 (indicative timing schedule that is subject to change), and would be carried out over an approximate three-year period.

This section provides a summary of indicative construction activities to be undertaken as part of the Amended Modification Proposal (in addition to those approved under the MPW Concept Approval).

*Table 6-4: Works periods and activities for the Amended Modification Proposal*

| Works activity | Sub activities |
|---|---|
| Site preparation activities | Establishment of temporary erosion and sediment controls<br>Establishment of a temporary stockpiling pad and associated temporary access roads |
| Bulk earthworks, drainage and utilities installation activities | Installation of OSDs and drainage infrastructure<br>Importation, stockpiling and placement of imported clean general fill (1,600,000 m3) to achieve desired building formation levels |
| Intersection modification | Construction works required within additional parcel of land to modify Moorebank Avenue/Anzac Road intersection. |

Figure 6-3 provides a layout of indicative locations for construction areas associated with the Amended Modification Proposal, including the pre-construction and bulk earthworks stockpile, construction footprint, earthworks compound and site access points.


*Figure 6-3: Indicative construction layout for items included in the Amended Modification Proposal*

# Construction Methods

## Site preparation activities

It should be noted that the activities contained within this section are to be considered complementary to activities already approved under the MPW Concept Approval.

Prior to the commencement of clean general fill importation, topsoil within the earthworks stockpiling area would be stripped and stockpiled on site. Clean topsoil stripped from this area would be progressively used during other stages of the MPW Project. Potentially contaminated material would be removed from the primary earthworks area and disposed of at a suitably licensed landfill facility.

A level area would be established for the Earthworks Compound, indicatively located at the southern part of the Earthworks Stockpiling area (refer to Figure 6-3). The compound would generally include, but not be limited to, offices, car parking, equipment storage and laydown areas and materials screening, crushing and washing facilities.

Multiple access points are proposed to accommodate for the importation of clean general fill to the MPW site. These locations are shown on Figure 6-3.

Temporary onsite drainage infrastructure, including sediment basins, would be established to manage potential water quality impacts resulting from these works. Approximate sizes and locations of sediment basins would be developed in accordance with relevant guideline documentation and detailed during the relevant future development stage. Water captured within the sediment basins would be considered for re-use on site for dust suppression

Internal haulage roads would be established prior to the commencement of clean general fill importation. The location of these haulage roads would be detailed during the relevant future development stage. Works for the establishment of these haulage roads would include grading and surfacing (potentially gravel) and associated drainage.

Locations for stockpiling imported clean general fill would be predominantly located within the bulk earthworks stockpiling area outlined in Figure 6-3, however other isolated stockpiles may also be located throughout the construction footprint. It is also anticipated that that stockpiles of clean general fill would be established and spread out across the site progressively, to optimise construction staging timeframes and minimise the size and extent of the stockpiles.

## Bulk earthworks

Imported clean general fill would be placed in stockpiles around the site, predominantly within the bulk earthworks stockpiling area illustrated in Figure 6-3, for both short (periods up to 6 months) and long-term (periods up to 36 months) stockpiling as require by the construction works periods. Stockpile stabilisation methods would be implemented in accordance with relevant guidelines, to be detailed during the relevant future development stage and appropriate to the likely duration of the stockpile.

Stockpiled material throughout the site would be progressively spread into the desired areas of the construction footprint, and compacted, to achieve desired building formation levels.

Where considered suitable, material excavated from the MPW site would be reused on-site as general fill below. Excavated material considered unsuitable for re-use on site would be temporarily stockpiled and then transferred off site. All material removed from site would be tested in accordance with the NSW EPA Waste Classification Guidelines Part 1 Classifying Waste and would be transported to a suitably licensed waste disposal facility.

There is the potential for some oversized boulders to be contained within the imported fill that would require segregation and crushing on site to make the materials suitable as an engineered fill.

## Construction workforce and hours

It is anticipated that approximately 50 construction personnel would be required for construction activities associated with the Amended Modification Proposal. Construction works for the importation of fill would be undertaken both within and outside general construction hours.

Any works that are undertaken outside construction hours would comply with mitigation measures set out as per the MPW Concept Approval relating to out of hours works (refer to Section 8 REMM 5D).

## Plant and equipment

A range of plant and equipment would be required for the construction Amended Modification Items. It is important to note that the below list is to be considered in complementary to activities already approved under the MPW Concept Approval:

- Loaders
- Static and vibratory rollers
- Excavators
- Excavators with hammers
- Backhoes
- Crushing plant
- Air compressors
- Dozers
- Mulchers
- 20-40 tonne articulated tipper trucks
- Scrapers
- Graders
- Water Trucks

## Construction traffic movements

Construction traffic generated from the Amended Modification Proposal is expected to be attributed predominantly to the import of clean general fill, to be undertaken as part of Stage 2 of the MPW Project. The highest daily traffic numbers expected to be generated during Stage 2 of the MPW Project (which are expected to be largely attributable to the importation of clean general fill) were estimated at 740 truck movements (i.e. 1,480 trips) per day.

All trucks are expected to access and egress the site to/from the north via Moorebank Avenue. No construction trucks would be permitted to access/egress to/from the site via Anzac Road. There would be minor truck movements via Cambridge Avenue for disposal of unsuitable material to the Glenfield Waste Facility, and these movements would not travel to/from beyond that facility.

## 6.4 Proposed modifications to consent

In summary, a number of modifications are sought to the MPW Concept Plan Approval to permit a number of activities as part of future stages of development. The proposed modifications described above necessitate amendments to the MPW Concept Approval conditions, which are identified below. Words proposed to be deleted are shown in ***~~bold italic strike through~~*** and words to be inserted are shown in ***underlined bold italics***.

**Schedule 1**

**Land:**

- Intermodal Site: Land generally described as being located on the western side of Moorebank Avenue, between the M5 Motorway and the East Hills Passenger Line, Moorebank, comprising:

- Lot 1 DP 1197707 - Lot 101 DP 1049508
- Lot 100 DP 1049508 - Lot 2 DP 1197707
- ***Lot 2 of DP 32998 - Lot 3 of DP 32998***
- ***Lot 3 of DP 1197707 - Public road reserve of Moorebank Avenue and part of Anzac Road***

1 Rail Corridor: Land generally described as being located between the intermodal site and the East Hills Passenger Line to the south, and the northern portion of the Glenfield Waste Disposal Facility to the west, comprising:

- Lot 5 DP 833516 - Lot 103 DP 1143827
- Lot 51 DP 515696 - Lot 102 DP 1143827
- Lot 104 DP 1143827 - Lot 4 DP 1186349

**Schedule 2 – Terms of Approval**

**Development Description**

- **(1)**: Except as amended by the conditions of this consent, development consent is granted only to the Concept Proposal and Early Works as described in Schedule 1 and the Environmental Impact Statement dated October 2014, as amended by the Response to Submissions, dated May 2015 (as further amended by the Supplementary Response to Submissions dated August 2015), ***the Section 96(2) Modification Report, dated May 2016, as amended by the Modification Report Response to Submissions dated December 2016***, and the conditions contained in this development consent.

…

**Development in Accordance with Plans and Documents**

- **(4)**: The applicant shall carry out the development generally in accordance with the:

  a) Environmental Impact Statement titled Moorebank Intermodal Terminal Project Environmental Impact Statement, prepared by Parsons Brinckerhoff Australia Pty Limited, dated October 2014;

  b) Response to Submissions report titled, Moorebank Intermodal Terminal Response to Submissions Report, prepared by Parsons Brinckerhoff Australia Pty Limited, dated May 2015;

  c) Supplementary Submissions report titled, Moorebank Intermodal Terminal Supplementary Response to Submissions Report, prepared by Parsons Brinckerhoff Australia Pty Limited, dated August 2015; ***~~and~~***

  ***d) Section 96(2) Modification Report prepared by Arcadis Australia Pacific Pty Ltd, dated May 2016;***

  ***~~d)~~ e) Modification Report Response to Submissions prepared by Arcadis Australia Pacific Pty Ltd, dated December 2016***

  ***~~e)~~ f)*** the conditions of this consent.

- **(5):** In the event of an inconsistency between:

(a) the conditions of this approval and any document listed from condition 4(a) to ***~~4(c)~~ 4(e)*** inclusive, the conditions of this approval shall prevail to the extent of the inconsistency; and

(b) any document listed from condition 4(a) to ***~~4(c)~~ 4(e)*** inclusive, and any other document listed from condition 4(a) to ***~~4(c)~~ 4(e)*** inclusive, the most recent document shall prevail to the extent of the inconsistency.

- **(15):** The warehousing must only be used for activities associated with freight using the IMEX and interstate terminals ***within the site, or on the neighbouring MPE site,*** unless otherwise approved in a subsequent Development Application."
- **(16):** Building heights are to be a maximum of 21 m ***(as measured as the vertical distance from final finished ground level to the highest point of the building)*** and other structures are to be generally consistent with Appendix D Landscape and Visual Impact of the Response to Submissions dated May 2015, ***as amended by the Section 96(2) Modification Report, dated May 2016, as amended by the Modification Report Response to Submissions dated December 2016,***

…

**Schedule 4 – Conditions to be met in Future Development Applications**

**Traffic**

- E12: All future Development Applications shall include adequate measures ~~demonstrate how the main access to the site has been designed~~ to prevent heavy vehicles associated with the facility from using Cambridge Avenue via southern movements along Moorebank Avenue ~~south,~~ and should be accompanied by a strategy to restrict these movements ~~detailed engineering drawing(s).~~

## 6.5 Justification

Section 3 of the MPW Concept EIS presents a proposal justification as was required by the Secretary's Environmental Assessment Requirements (SEARs) issued on 2 September 2014. This section provides an update to that analysis in the context of the Amended Modification Proposal.

The Amended Modification Proposal responds to opportunities to optimise the operation of the IMT facility, facilitate the construction process, and address flooding and drainage issues. The Modification Proposal also addresses matters such as subdivision which were not contemplated at the time of the MPW Concept Approval. The specific need for each of the components of the Amended Modification Proposal is discussed below.

### 6.5.1 Need for the importation of fill

The MPW Approvals documentation (EIS, RtS and SRtS) identified only a minor quantity of fill (approximately 46,134m$^3$) to be imported to the MPW site as part of Early Works (refer to Section 3.1.2 of the Modification Report for further information). No fill was to be imported to site as part of future stages of development. The MPW Concept Approval did not include the provision to import fill at any stage of the MPW Project.

As described in Section 8 of the MPW Concept EIS, the concept design focused on optimising a cut and fill balance across the MPW site to minimise the requirement for fill to be imported or excess spoil to be exported. Section 8 of the MPW Concept EIS also states "It is important to note that, should the Project be granted Stage 1 SSD approval, detailed engineering studies would be prepared to determine the optimal design for the Project".

Progressive detailed design (i.e. "detailed engineering studies") has determined that the importation of fill is required for the functionality of the internal site drainage system.

Clean general fill would be sourced from other Sydney infrastructure projects under construction, from trucks already transporting fill material through the Liverpool area on their way to sites further west. This would potentially reduce traffic impacts of importing the required fill under an alternative scenario, by having it brought directly to the MPW site as part of that one journey. The alternative scenario would see the fill continuing further west to be stockpiled at another clean general fill site, with a possible second trip required

to bring the material back to the MPW site from that clean general fill site. Indicative construction timelines for MPW Stage 2 Proposal (which is subject to a separate planning approval) show clean general fill importation is likely to commence in the second half of 2017 (subject to the relevant approvals).

The Modification Report describes the potential impacts and mitigation measures associated with the importation, crushing, placement and stockpiling of clean general fill at the MPW site during Early Works and provides a suitable level of detail for those works. The MPW Stage 2 EIS contains further detail on the potential impacts associated with the importation of clean general fill, which would be spread across an area covering approximately 150 hectares.

Importation of 1,600,000m$^3$ of fill is required as a result of:

- The functionality of the site stormwater and drainage system, and
- Inadequacy of on-site fill.

## Site Drainage

The MPW Concept EIS was placed on public exhibition between 8 October and 8 December 2014. During this period government agencies, local councils, key business/infrastructure stakeholders and the community were invited to make written submissions on the Project to NSW DP&E. A Response to Submissions Report (Parsons Brinkerhoff, 2015) was prepared in response to the issues raised in community and stakeholder submissions received during the public exhibition. One of the issues raised by Bankstown City Council related to their concern that the MPW Project is located within a high-risk flood zone.

The response to this submission reiterated that the MPW Project's operations on the MPW site would be located out of the high and medium flood risk zones of the Georges River catchment, as illustrated on Figure 16.2 (Section 16) of the MPW Concept EIS. The response also clarified that no development (or any vegetation clearing) is proposed for the area of high flood risk, identified along the lower terraces of the Georges River that exceeds the 1% AEP for a significant flood event. The response included a commitment that the internal site drainage system would be designed to convey flows from the 10% AEP flood, in accordance with the LCC Drainage Design Specification Section D5.04. For events above the 10% AEP, the MPW site would be designed to safely convey overland flow to the detention ponds which would be designed to attenuate the runoff from the site to pre-development levels up to the 1% AEP flood level.

Detailed design has determined that the importation of 1,600,000 m$^3$ of fill is required to facilitate appropriate design gradients of the stormwater and drainage system to fulfils the commitment for the MPW site to safely convey stormwater flows from the site to pre-development levels up to the 1% AEP flood level. The onsite detention basins must therefore be located above the 1% AEP Flood level. In addition, this adjustment is also needed to ensure that the underground pit and pipe/conduit system can be designed with the appropriate gradients to facilitate underground drainage east to west across the site into the onsite detention basins.

As the site is generally flat, importation of fill is required to adequately address the stormwater and drainage requirements and an adjustment is required to the building formation level across an area covering approximately 150 hectares. Pre-development surface levels across the MPW site are undulating, hence a varying depth of fill would be required to be placed across the site, to establish the required gradient for overland flows to drain (by gravity) across the MPW site and towards the onsite detention basins.

## Inadequacy of on-site fill

Existing fill on MPW site may be suitable for reuse as general fill provided it is treated to remove unsuitable materials and re-compacted to meet the requirements of AS3798. As the volume required to adjust the building formation level is not available from within the MPW site, the importation of clean general fill is required.

### 6.5.2 Need for the altered construction footprint

Four additional parcels of land, from that described in the MPW Concept Approval, have been identified during detailed design to be impacted as a result of the MPW Project. These additional parcels of land, and the reasons for their inclusion, are as follows:

- ABB site (lots 2 and 3 of DP 32998):
  - Further drainage design undertaken for the MPW Project has identified the need for minor drainage works within the ABB site and near the ABB site entrance to reduce the risk and impact of flooding
- DJLU site (lot 3 of DP 1197707) and the Public road reserve of Moorebank Avenue and part of Anzac Road (this lot incorporates a portion of Anzac Road, a section of Moorebank Avenue between Anzac Road and the M5 interchange and a strip of land along the western side of Moorebank Avenue north of Bapaume Road):
  - Further design refinement regarding the proposed Moorebank Avenue/Anzac Road intersection modifications has identified the need for works within a small portion of the DJLU site, and within sections of Anzac Road and along Moorebank Avenue. These design refinements are required to improve traffic flow in and surrounding the MPW Project.

### 6.5.3 Need for interactions between the MPE and MPW sites

The staged development of the MPW Project may result in a scenario whereby an operating IMEX Terminal on neighbouring land (i.e. the MPE Stage 1 Proposal) may require the use of offsite, interim freight storage facilities at the same time as warehousing becomes available on the MPW site as part of the MPW Stage 2 Proposal.

It is therefore proposed, as a modification to the MPW Concept Approval, to allow (in principle) interaction between the two sites, enabling vehicle movement between the MPW and MPE sites via Moorebank Avenue. A modification of two Conditions of Approval (CoAs) for the MPW Concept are proposed to facilitate this, as outlined below in Table 6-2.

The original MPW CoA E12 (prevention of movements using Moorebank Avenue south) was originally prepared to limit heavy vehicles accessing Cambridge Avenue, rather than limiting right turns out of the MPW site by A and B-doubles. The proposed amendment would enable movements turning right out of the MPW site onto Moorebank Avenue to continue south only until the MPE Stage 1 IMEX site entrance. No movements further south onto Cambridge Avenue would be included. Therefore, the proposed amendment (to discourage vehicles from accessing Cambridge Avenue), is considered to be consistent with purpose of the original MPW CoA E12. In addition, the southern portion of Moorebank Avenue (i.e. between the MPE Stage 1 IMEX site entrance and Cambridge Avenue) is not a Roads and Maritime approved B-double route, therefore movements further south onto Cambridge Avenue are already not permitted. The proposed amendment would also be consistent with this existing Roads and Maritime restriction.

The proposed amendment to MPW CoA 15, to enable warehousing on the MPW site to be used for activities associated with freight using the IMEX and Interstate terminals within the MPW site or the MPE site, would enable and encourage operational efficiencies. In addition, traffic that would otherwise enter the local road network, resulting in external traffic network impacts, would be reduced as the vehicle movements would instead remain within the local proximity of the MPW Project.

### 6.5.4 Intermodal terminal facility (interstate, intrastate and port shuttle rail freight)

The Amended Modification Proposal seeks to modify this feature both in its built form and function, to expand the number of railway tracks, and to reclassify the types of freight and daily movements being processed through this facility to more effectively address predicted demand. Furthermore, modifying the terminal to process a broader scope of freight would improve the operational efficiency of the facility.

### 6.5.5 Changes to approved function and re-arrangement of existing approved uses

The Amended Modification Proposal seeks to re-arrange the locations of the freight village and truck parking and to increase the numbers of OSDs on the site. These changes are a result of operational efficiencies identified during further design since the approval of the MPW Concept (including spatial and locational), and do not represent significant departures from the original MPW Concept (full build). The additional OSDs do not increase the overall volume of OSD, they simply re-distribute the stormwater runoff to additional locations to allow improved function of the stormwater system upstream of the OSDs in line with the adjusted building formation level.

### 6.5.6 Need for building height changes

The *Liverpool Local Environment Plan 2008* (LLEP 2008) identifies the MPW Project as being located on land with a permitted maximum building height of 21 metres. The Dictionary included within the LLEP 2008 defines building height as: *the vertical distance from ground level (existing) to the highest point of the building* (in metres).

As described in Section 6.5.1 of this report, the importation of fill, to be spread across an area covering approximately 150 hectares, is required on the MPW site and as a result the building formation level across the site requires adjustment. The exact levels would be determined during future detailed development application however finished levels are anticipated to vary up to 3 m from their current pre-development (i.e. existing) levels.

As discussed above, while no changes are proposed to the height of warehouses (the maximum structural height of buildings would be maintained at 21 metres), the placement of fill beneath buildings would subsequently increase building heights as calculated from existing ground levels. To address the non-compliance of some of these proposed building (warehouse) heights with the maximum building height specified by Liverpool LEP, a Statement of Development Standard Exemption has been prepared (Appendix D of the RtS). A Visual Impact Assessment (Appendix C of this RtS) has also been prepared to assess the additional visual impact generated as a result of the amended building heights.

### 6.5.7 Need for changes to staging

Since the preparation of the MPW Concept EIS, the previously proposed phasing of the MPW Project has changed, to align with constructability and operational efficiencies at the MPW site, i.e. Phases A, B, C and Full Build are now condensed into Stage 2 and Stage 3. These amendments have been undertaken to better structure and sequence the development from both an operational efficiency and environmental impact perspective. These changes to staging are not considered to represent a significant departure from the original MPW Concept Approval.

### 6.5.8 Need for site subdivision

The Amended Modification Proposal seeks to include the ability to subdivide lots in future stages of the MPW Project. The subdivision is required as a prerequisite to completion of each stage of the works to allow the land to be subleased for operations. The MPW Project would attract tenants that are seeking to setup long term operations and build greater long term efficiency in their entire supply chain. The term of these leases would likely exceed five years, which is the maximum lease term permitted for parts of lots under Section 23F and 23G of the *Conveyancing Act 1919*. Subdivision of the MPW site is needed to facilitate the long-term leases on land associated with the land within the MPW site. Reference in Section has been updated accordingly.

The creation of separate lots is therefore a fundamental requirement of the MPW Project for the following reasons:

- It provides legal boundaries to each lot for future subleasing of land to individual tenants
- It allows the subleases to be registered with a registered subdivision plan for periods longer than five years.

# 7 FURTHER ASSESSMENT

This section of the report assesses the potential environmental impacts associated with items included in the Amended Modification Proposal not originally assessed in the MPW Concept EIS. This section is based on the description of amendments included in the Amended Modification Proposal provided in Section 6 of this RtS.

This assessment is based on the key issues and other issues identified within the SEARs (SSD 5066) for the MPW Project (dated June 2016). It is noted that a detailed assessment of the importation and placement of 1,600,000m$^3$ of clean general fill for bulk earthworks was undertaken as part of the Modification Report (SSD_5066-MOD1) (dated June 2016). Notwithstanding, the scope of the Amended Modification Proposal is broader than that included in the Modification Report and therefore this assessment section updates the assessment provided in the Modification Report.

For each environmental aspect, outcomes arising from the environmental assessment undertaken to support the MPW Concept EIS have been described to identify a baseline for the MPW Concept Approval to be compared against modifications sought in the Amended Modification Proposal.

Overall, it is considered that the Amended Modification Proposal would, subject to the modification of Ministers Conditions of Approval (MCoA) (refer to Section 4 of this RtS) and the implementation of updated mitigation measures/REMMs (refer to Section 8 of this RtS), result in no substantial additional environmental impacts in addition to those identified within the MPW Concept EIS, and therefore would remain substantially the same development as that identified in the MPW Concept Approval (SSD_5066). Further to this, an assessment of the Amended Modification Proposal in accordance with the 'substantially the same development' test, required under Section 96(2) of the EP&A Act is provided in Section 7.2 of this RtS. This planning assessment is based on the environmental assessment provided in Section 7.1 of this RtS below.

## 7.1 Environmental Assessment

### 7.1.1 Traffic, Transport and Access

#### MPW Concept Approval

A Traffic, Transport and Accessibility Impact Assessment Report was prepared by Parsons Brinkerhoff (2014) to support the MPW Concept Approval. The report aimed to assess the existing and proposed transportation network surrounding the Proposal site, as well as potential traffic and transport-related impacts arising as a result of construction and operation of the MPW Project.

The traffic and transport assessment for the MPW Concept Approval analyses future traffic conditions with the MPW Project and without the MPW Project. The key outcome sought for the MPW Project would be (at a minimum) that the 'with MPW Project' traffic conditions are not significantly worse than the 'without MPW Project' traffic conditions.

The assessment for the MPW Concept Approval comprised of two main components:

- The development of a strategic transport model to assess impacts associated with articulated truck movements on the Sydney greater metropolitan area (GMA) network. The model forecasted traffic numbers for the year 2031, by utilizing elements from a number of other NSW Government models.
- Undertaking intersection performance modelling (using Signalised and Unsignalised Intersection Design and Research Aid [SIDRA] modelling software) to assess the performance of 21 selected intersections within the local and wider road network for the year 2030 with and without the MPW Project.

The assessment also included a cumulative assessment of traffic and transport impacts of the MPW Project with the adjacent MPE Project and other planned developments in the surrounding region.

The methodology for the traffic impact assessment involved the following key steps:

- Determining existing traffic network demands and performance through the use of data collection from traffic survey counts

- Determining expected traffic generation from the full development proposed within the Project site, for both construction and operation
- Distributing predicted traffic generated to the network through a number of key intersections along Moorebank Avenue
- Establishing the peak traffic years to be tested based on construction and operational traffic demands and AM peak hour and PM peak hour periods
- Modelling construction and operational traffic impacts at a strategic level (using the NSW Roads and Maritime Road Assignment Model (EMME/2)) to forecast future year traffic growth within the study area
- Modelling the performance of proposed future intersection upgrades along Moorebank Avenue using SIDRA 6 (intersection analysis software) to forecast the impact of the MPW Project on the operation of the network for five key scenarios, as outlined in Table 7-1

*Table 7-1 Scenarios assessed under the MPW Concept Approval (construction/operation)*[6]

| Phase (year) | Detail of works |
|---|---|
| Early Works (2015) | This considers construction only impacts generated by remedial earthworks and demolition of buildings |
| Phase A (2016) | This considers peak construction impacts occurring for Phase A generated by spoil removal and the upgrade of Moorebank Avenue (and associated intersections) |
| Phase B (2023) | This considers a combination of construction and operational impacts. Under this scenario operations on site would be 24 hours a day, 7 days a week with the exception of the operation of the truck gate, which would only be operational 16 hours a day, 5.5 days a week |
| Phase C (2028) | This considers a combination of construction and operational impacts. Under this scenario operations on site would be 24 hours a day, 7 days a week with the exception of the operation of the truck gate, which would only be operational 16 hours a day, 5.5 days a week |
| Full Build (2030) | This considers operational impacts only. Under this scenario operations on site would be 24 hours a day, 7 days a week and truck movements would occur 24 hours a day, 7 days a week |

An assessment of the existing road safety of Moorebank Avenue and sections of the M5 Motorway was also undertaken in accordance with the Roads and Maritime *Accident Reduction Guide Version 1.1* (Roads and Maritime, 2005).

The assessment made recommendations for future intersections and other required upgrades to mitigate any other impacts. Specific findings of the assessment are summarised below:

- According to the assessment, the MPW Project would generate approximately 13,884 car and truck movements a day (i.e. 6,942 trips to the MPW site and 6,942 trips from the MPW site) when fully operational (full build) in 2030
- The assessment of the Moorebank study area without the MPW Project identified that, based on the predicted yearly background traffic growth rates on Moorebank Avenue and Anzac Road provided by the Roads and Maritime (Roads and Maritime Services *Background Traffic Annual Growth Rates 2016 to 2031 for a 2hr and PM peak period Moorebank Area)* the following existing intersection layouts along Moorebank Avenue would operate unsatisfactorily (i.e. a level of service of F):
  - Moorebank Avenue and Bapaume Road intersection would operate unsatisfactorily during both the AM and PM peak hours from 2015 onwards
  - Moorebank Avenue and Anzac Road intersection would operate unsatisfactorily in the PM peak in 2030

[6] Phase scenarios selected for the MPW Concept Approval assessment were sourced from the MPW Concept Approval EIS Document (PB, 2014)

  - Moorebank Avenue and the Defence Joint Logistics Unit Access intersection would operate poorly in the PM peak from 2016 and in the AM peak from 2028
  - Moorebank Avenue and the DNDSC Access intersection (i.e. the access into the existing MPE site) would operate poorly in the PM peak from 2023
  - Moorebank Avenue and Chatham Avenue intersection would operate poorly in the AM and PM peaks from 2023
- An assessment on wider network volumes show the Moorebank Avenue and M5 Motorway interchange would perform satisfactorily during the AM and PM peak hours in 2030 both with and without the predicted traffic generated by the MPW Project. The Hume Highway and M5 Motorway interchange is predicted to operate at an unsatisfactory level of service (LoS F) for the PM peak hours with or without the generated traffic by the MPW Project.

Overall, only a minor contribution to congestion is predicted throughout the road network due to the traffic generated by the MPW Project. Furthermore, there are no significant intersection performance changes between the 'with' and 'without' the MPW Project scenarios. This is because the network in 2030 is generally predicted to be already congested based on general background traffic growth predictions.

Of particular relevance, is that the MPW RtS (prepared for the MPW Concept Approval) identifies the number of vehicle movements associated with each phase of construction, Table 7-2 identifies that the most significant volume of construction vehicle movements for the MPW Project would be experienced during Scenario 1[7], which included 1,390 heavy vehicle movements per day.

*Table 7-2* Indicative construction traffic volumes for the MPW Proposal (MPW RtS, PB May 2015)

| Stage | Daily vehicle movements | | Peak hourly vehicle movements | |
|---|---|---|---|---|
| | Cars | HV | Cars | HV |
| Early Works (2015) | 810 | 64 | 54 | 10 |
| Scenario 1 (2016) | 2295 | 1390 | 153 | 152 |
| Scenario 2a (2019) | 1485 | 260 | 99 | 28 |
| Scenario 2b (2023) | 2080 | 360 | 139 | 40 |

## Impact Assessment – Amended Modification Proposal

An assessment of the potential traffic impacts of the Amended Modification Proposal, in consideration of those assessed for the MPW Concept Approval is provided below.

### Construction

A summary of the key findings of the further traffic impact assessment, from a construction perspective, are provided in Table 7-3 . Where required, further assessment of these potential construction impacts is provided below.

*Table 7-3 Summary of construction traffic impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal has the potential to result in impacts on the surrounding road network. Further assessment has been provided below. |

[7] Scenario 1 includes the majority of construction activities proposed within Phase A, i.e. IMT facility with a 250,000 TEU capacity per annum and 100,000m$^2$ of warehousing, but excludes the Rail link and some supporting utilities infrastructure.

| Item | Assessment |
|---|---|
| Altered construction footprint | The amendment to the construction footprint has the potential to impact on access to the DJLU and ABB site and movement of vehicles along the northern part of Moorebank Avenue. Further assessment has been provided below. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE site to interact during construction, within the MPW Concept Approval. There is the potential for there to be interfacing between the MPW and MPE site's during construction, i.e. with construction vehicles related to each site, accessing Moorebank Avenue. Notwithstanding, this interface has previously been assessed as part of the cumulative assessment provided in the MPW Concept Approval and further assessment is not considered necessary. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) and reconfiguration of truck parking would result in an alteration to construction traffic movements within the MPW site. Generally, the key change between the MPW Concept Approval and the Amended Modification Proposal is that construction vehicle movements would be limited to the central, rather than the southern part of the MPW site. Notwithstanding this, the re-arrangement of existing approved use would not increase the total number of construction vehicles travelling to the MPW site or the site access points identified in the MPW Concept Approval. Overall, this potential construction impact is considered temporary, minor and would not adversely impact on the surrounding road network, in particular Moorebank Avenue, above that identified within the MPW Concept EIS and further assessment is not considered necessary. |
| Maximum building heights | The alteration to the building heights, would not result in an impact on the traffic movement and therefore would not alter the traffic impact assessment provided within the MPW Concept EIS and further assessment is not considered necessary. |
| Staging of future applications | The staging of future applications, would alter the amount of traffic movements undertaken for each stage of construction for the MPW Project. In particular, additional traffic movements would be evident during Stage 2 of the MPW Project as a result of additional works being undertaken during this stage Notwithstanding this, there would be anticipated to be a reduction in traffic movements during MPW Stage 3 as a result of the reduction in works to be undertaken at this stage. Overall, staging is not anticipated to exceed the construction traffic numbers (maximum volumes – refer to Table 7-2) in any one stage of construction and further assessment is not considered necessary. |
| Subdivision | The inclusion of subdivision within the MPW Project would result in minor, if any, additional physical works to be undertaken. Overall, subdivision would not result in any additional traffic movements, or alteration to access, during construction of the MPW Project, above that identified within the MPW Concept Approval and further assessment is not considered necessary. |

### Importation of clean general fill

Key additional activities impacting traffic conditions during the MPW Project that were not assessed in the MPW Concept EIS include the import, placement and stockpiling of approximately 1,600,000 $m^3$ of clean general fill. Under the Amended Modification Proposal, the importation of fill is to be undertaken during the construction of Stage 2 of the MPW Project (refer to Section 6 of this RtS for further discussion regarding staging under the Amended Modification Proposal).

Light vehicle movements for importation of fill would be generally minor and would not be, per stage/per day, above those maximum volumes identified within the MPW Concept Modification. Notwithstanding this, light vehicle movements have been assessed for the purposes of determining a worst-case AM and PM weekday peak scenario (refer to Table 7-4).

Section 14.4 of the MPW RtS states the following relating to construction access:

*"Depending on the scheduling of the upgrade to Moorebank Avenue, the access locations into the Project construction site would vary. However, due to the volume of spoil to be removed and material to be imported*

*to the Project site, it would likely require multiple locations to improve the efficiency of construction logistics. This will require coordination between the two construction activities*."

The construction access for the Amended Modification Proposal is to include a number of access points some of which have previously been identified within the MPW Concept Approval and others that are required to import fill and undertake other activities for the construction of the MPW Project. A summary of the access points included within the Amended Modification Proposal are shown in Section 6 of this RtS.

**Construction traffic movements**

The highest number (per day) of truck movements (heavy vehicles) anticipated for the construction of Stage 2 of the MPW Project are expected to be attributed to the importation of fill, with approximately 740 truck movements (i.e. 1,480 trips) per day. These trips would be undertaken throughout the day between 6:00am and 10:00pm weekdays and 8:00am and 6:00pm on Saturdays. Heavy vehicle movements would be evenly distributed throughout the hours of construction.

All trucks are expected to travel from north via Moorebank Avenue. No construction trucks are expected to travel via Anzac Road. There would be minor truck movements via Cambridge Avenue for disposal of unsuitable material (to the Glenfield Waste Facility).

To ascertain a worst-case scenario for construction traffic movements within weekly peak hours (AM and PM) a conservative approach has been undertaken. It is anticipated that the importation of fill may overlap with over works periods within Stage 2 of the MPW Project and therefore a worst case[8] estimate of both construction vehicles (heavy and light) has been provided as shown in Table 7-4.

*Table 7-4 Weekday AM and PM Peak hour construction traffic movements*

| Works Period | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| | Truck movements | Car movements | Total | Truck movements | Car movements | Total |
| Construction scenario | 162 | 319 | 481 | 162 | 274 | 436 |

In consideration of the above, traffic impacts from construction activities associated with the Amended Modification Proposal (and overlapping activities anticipated for MPW Stage 2) have been assessed for based on a potential cumulative traffic construction scenario. This cumulative traffic construction scenario is assessed as a cumulative impact for peak construction period which is anticipated during the overlap in works periods (importation of fill and others). The scenario assumed that the peak construction period would occur concurrently with MPE Stage 1 operation in mid-2018. The scenario assumed the site access at Moorebank Avenue / Anzac Road intersection is constructed. The relevant background traffic growth has been included in this scenario tested for construction traffic impact purposes.

An analysis of the road impacts has been undertaken with consideration given to the following factors:

- The capacity of two key intersections that would be largely impacted by the construction activities, including the Moorebank Avenue/M5 Motorway interchange and Moorebank Avenue/Anzac Road intersection.
- Capacity of site access intersections
- Access / egress
- Carriageway restrictions.

The construction traffic impact on Moorebank Avenue/M5 Motorway and Moorebank Avenue/Anzac Road intersections was modelled using traffic analysis software SIDRA (version 7 at the time of undertaking the assessment).

[8] This estimation represents the predicted peak traffic generation for a number of works periods and is considered to represent an overestimation of the traffic that would be generated in scenarios where construction works periods may overlap.

*Impact at key access roads/intersections*

The construction traffic from the Proposal is expected to impact key intersections that would provide access for construction cars and trucks including:

- Moorebank Avenue / Anzac Road intersection
- M5 Motorway / Moorebank Avenue interchange.

The SIDRA modelling results indicate that the M5 Motorway/Moorebank Avenue interchange is operating at level of service (LoS) B in the morning peak and at LoS C in the afternoon peak. Table 7-5 shows the predicted delay and LoS at the M5 Motorway / Moorebank Avenue interchange under the cumulative traffic construction scenario. During the peak construction period, the SIDRA model predicts minor impact to delay and level of service at the M5 Motorway / Moorebank Avenue surface interchange with construction traffic. The model predicted that the interchange would operate at the existing LoS B and C during peak construction period (i.e. there would not change to the LoS from existing and during construction).

*Table 7-5 Modelled level of service with the construction traffic scenario*

| ID | Intersections | Intersection Control | AM Peak | | PM Peak | |
|---|---|---|---|---|---|---|
| | | | Avg. Delay (seconds) | LoS | Avg. Delay (seconds) | LoS |
| 1 | M5 Motorway / Moorebank Avenue | Existing Signal | 24 | B | 31 | C |

*Impact at site access points/intersections*

During the AM and PM peak for the cumulative traffic construction scenario the two key access to the construction site are proposed as follows:

- via the existing signalised intersection on Moorebank Avenue at Chatham Avenue.
- via the new access to the MPW site at the existing signalised intersection on Moorebank Avenue at Anzac Road. The fourth leg (western leg) would be constructed prior to this time.

SIDRA modelling was undertaken to assess the intersection performance of the proposed access points. Table 7-6 shows the predicted delay and LoS at the two access points with construction traffic.

The analysis suggests the upgraded Moorebank Avenue / Anzac Road intersection with the proposed access to the MPW site would operate satisfactorily at LoS C in both morning and afternoon peak hour during the peak construction scenario. The analysis also suggests that the proposed access at the existing Chatham Avenue traffic signal would operate at LoS A in both morning and afternoon peak. The SIDRA analysis indicated that construction traffic from the proposed access point at Chatham Avenue would not adversely impact through traffic on Moorebank Avenue.

*Table 7-6 Modelled level of service with construction traffic at access intersection*

| ID | Intersections | Intersection Control | AM Peak | | PM Peak | |
|---|---|---|---|---|---|---|
| | | | Avg. Delay (seconds) | LoS | Avg. Delay (seconds) | LoS |
| 2 | Moorebank Avenue / Anzac Road | Updated signal with 4$^{th}$ leg providing access to MPW site | 41 | C | 35 | C |
| 3 | Moorebank Avenue / Chatham Avenue | Existing Signal | 24 | B | 10 | A |

*Other considerations*

A summary of the other considerations for potential impacts of the importation of fill during the Amended Modification Proposal, in consideration of the MPW Concept Approval is provided in Table 7-7. In summary, the importation of fill, included within the Amended Modification Proposal, would not considerably alter other potential traffic and transport impacts identified within the MPW Concept Approval.

*Table 7-7 Other construction traffic considerations*

| Potential impact | Comment |
|---|---|
| Access / egress | There may be a possibility that part of Moorebank Avenue would need to be closed from time to time, for short periods, to undertake works near the MPW site boundary. This is consistent with the MPW Concept Approval which permitted periodic road closures during construction. |
| Public transport | Any works which impact the carriageway of Moorebank Avenue would be undertaken outside of peak hours to limit impacts to the network operation and therefore public transport. The impact on public transport movement or accessibility would remain substantially the same as that identified in the MPW Concept Approval. |
| Road access restrictions | Access to surrounding land uses would not change as identified within the MPW Concept Approval. Under the Amended Modification Proposal temporary road closures of Moorebank Avenue may be required as identified within the MPW Concept Approval. |
| Access for emergency vehicles | The Amended Modification Proposal would not alter access for emergency vehicles as identified within the MPW Concept Approval. In particular, REMM 4N addresses the implementation of an emergency response plan to facilitate for emergency access to be maintained. |
| Pedestrian and cyclist access | Access for pedestrians would not change as identified within the MPW Concept Approval. In particular, REMM 4Q would ensure that alternative pedestrian and cyclist access is provided as required. |

**Summary**

Overall, subject to the implementation of the REMMs (MPW Concept SRtS), the impacts of the Amended Modification Proposal could be adequately managed and would be substantially the same as those identified in the MPW Concept Approval.

### Altered construction footprint

Further design refinement regarding the proposed Moorebank Avenue/Anzac Road intersection upgrades has identified the need for works within a small portion of the DJLU site on the north and eastern boundaries, within sections of Anzac Road and along Moorebank Avenue. Overall these design refinements are required to improve traffic in the local vicinity of the MPW Project. The MPW Concept Approval included an upgrade to the Moorebank Avenue and Anzac Road intersection to accommodate entrance to the MPW site. Notwithstanding this, the MPW Concept Approval omitted the inclusion of all the relevant land to accommodate this upgrade (i.e. omitted DJLU, Anzac Road and northern part of Moorebank Avenue) (refer to Section 6 of this RtS).

The construction works to be undertaken on this additional land (alone) would not increase the number of construction vehicle movements assessed for the MPW Concept Approval. Further, the works to be undertaken on this additional land would not result in a reduction of access as it was identified in the MPW Concept Approval that there would be the potential for Moorebank Avenue to be closed from time to time for short periods (refer to Appendix E, MPW RtS, Section 14.4).

Further, there would be minor, temporary impacts during the construction of drainage infrastructure on the ABB site, however these would be consistent with the construction impacts identified in the MPW Concept EIS and would be effectively managed through the implementation of a Construction Environmental Management Plan (CEMP) as required in REMM 1B of the MPW Concept Approval. Access to the ABB site

would be maintained at all times, which is consistent with the REMMs provided in the MPW Concept Approval.

Overall, subject to the implementation of the REMMs, the impacts of the Amended Modification Proposal could be adequately managed.

## Operation

A summary of the key findings of the further traffic impact assessment, from an operational perspective, are provided in Table 7-7. Where required, further assessment of these potential operational impacts is provided below. In particular, the Amended Modification Proposal would not alter the approach to the implementation of upgrades to the surrounding traffic road network as identified within the MPW Concept Approval.

*Table 7-8Summary of operation traffic impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | Fill would be imported and deposited during the construction of MPW Stage 2 Proposal. As a result, the importation of fill would not impact on traffic movements for operational stages of the MPW Project, including all future stages of development. The importation of fill would therefore not alter the operational traffic movements of the MPW Project as described in the MPW Concept Approval. |
| Altered construction footprint | The amendment to the construction footprint and the works to be undertaken has the potential to result in minor alteration to access to the DJLU and ABB site and movement of vehicles along the northern part of Moorebank Avenue during operations of the MPW Project. Maintenance of the proposed infrastructure, Moorebank Avenue and drainage infrastructure on the ABB site, would be required during the operation of the MPW Project. This maintenance would be infrequent and is not considered to result in a significant number of additional vehicles travelling to the MPW site, nor is it anticipated that access to these sites would be impacted for any long durations. Any maintenance activities would be undertaken in accordance with the procedures provided with the Operational Environmental Management Plan (OEMP) for the MPW site, which would be prepared and implemented periodically as identified in REMM 1B of the MPW Concept Approval. Overall, the traffic movements generated by these maintenance activities, associated with the altered construction footprint, would result in a minor generation of vehicles which would not increase the overall number of operational vehicles identified within the MPW Concept Approval. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal would facilitate for heavy vehicles to turn right from the MPW site onto Moorebank Avenue. Notwithstanding this, under the Amended Modification Proposal operational heavy vehicles would be prohibited from travelling further south on Moorebank Avenue, south of the southern extent of the MPE site and, in particular, from using Cambridge Avenue. The MPW Concept did not permit vehicles to utilise Moorebank Avenue south. The Amended Modification Proposal would result in an alteration to the characteristic of operational vehicle trips, with some heavy vehicles travelling south to the MPE site (on Moorebank Avenue) when, under the MPW Concept Approval, all vehicles would have travelled north (towards the M5 Motorway). Further assessment has been provided below. |
| Changes to approved function and re-arrangement of approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) and reconfiguration of truck parking would result in an alteration to operational traffic movements within the MPW site. Notwithstanding this, the re-arrangement of existing approved uses would not increase the total number of operational vehicles travelling to the MPW site or the site access points identified in the MPW Concept Approval. In particular, truck parking although not identified as a specific use is to be provided within other parts of the MPW site, in particular the IMT facility areas and within individual warehousing areas. The available truck parking provided within the MPW Concept Approval would therefore not be impacted. The inclusion of this truck parking into other operational areas within the MPW site is considered a more suitable approach in that it reduces additional truck movements around the MPW site (i.e. to a designated truck parking area), thereby increasing access |

| Item | Assessment |
|---|---|
| | within the site and reducing the potential for conflicts between heavy and light vehicles (i.e. increasing safety).<br>Overall, this potential impact is considered minor and would not impact on the surrounding road network, in particular Moorebank Avenue, above that identified within the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights, would not result in an impact on the traffic movement and therefore would not alter the traffic impact assessment provided within the MPW Concept EIS. |
| Staging of future applications | The staging of future applications, would alter the amount of traffic movements for each stage of operation for the MPW Project. In particular, additional traffic movements would be evident during MPW Stage 2 as a result of additional built form being operational in this stage. Notwithstanding this, there would be anticipated to be a reduction in traffic movements during MPW Stage 3 as a result of the reduction in built form to be operational at this stage. Further assessment has been provided below. Overall, staging is not anticipated to exceed the operational traffic numbers identified for the MPW Project |
| Subdivision | The inclusion of subdivision within the MPW Project would not result in any additional vehicle movements above that identified within the MPW Concept Approval. |

## Interaction between the MPW and MPE sites

The key additional activity proposed within the Amended Modification Proposal is facilitating for operational traffic to utilise the southern part of Moorebank Avenue, i.e. permitting a right hand turn out of the MPW site (operational entrance). This operational aspect was not permitted as part of the MPW Concept Approval. Under the Amended Modification Proposal operational traffic would use the southern part of Moorebank Avenue to interact with the MPE site however would not use Moorebank Avenue south of the southern extent of the MPE site.

The movement of vehicles onto the southern part of Moorebank Avenue has been assessed in further detail below. Once these vehicles enter the MPE site they are considered to be under the MPE Concept Plan Approval (or subsequent approvals) and attribute to operational vehicles for that site. The assessment of vehicles entering and exiting the MPE site and associated impacts is assessed within and therefore remains only relevant to the MPE Concept Plan Approval.

Further, the interaction of vehicles would not exceed the current approvals for each site nor would it alter the TEU limitations as identified within the separate MPW Concept Approval and MPE Concept Plan Approval (refer to Section 6 of this RtS).

**Operational traffic movements**

This interaction between the two sites would commence from the operation of MPW Stage 2 Proposal and continue to future stages. An impact assessment based for MPW Stage 2 Proposal has therefore been provided as this is considered the most suitable, in that it would include more traffic movements (alone, i.e. without a cumulative assessment) than Stage 3 of the MPW Project. Further impact assessment, including detailed cumulative assessment, for Stage 3 of the MPW Project would be provided as part of future stages of approval. The assessment for Stage 2 of the MPW Project is based on an intermodal terminal to support a container freight throughput volume of 500,000 twenty-foot equivalent units (TEUs) per annum, warehousing of 215,000m$^2$ gross floor area (GFA), a freight village of 800 m$^2$ GFA and associated infrastructure.

The Proposal is expected to generate approximately 1,458 truck trips (2-way) and 2,670 car trips (2-way) to and from the precinct each week day. The intersection, which would be potentially affected by additional movements at the Moorebank Avenue / Anzac Road (proposed MPW site entrance) intersection, and therefore this intersection has only been considered in this assessment.

In 2019, the Amended Modification Proposal (MPW Stage 2 Proposal) is anticipated to increase traffic at Moorebank Avenue / Anzac Road intersection by 20% to 26 % during the peak hour. The increase is expected to reduce to between 6% and 7% by 2029 as a result of the background traffic increasing and operational traffic remaining consistent (from the opening year). A summary of the key findings of the SIDRA analysis is as follows:

- The existing intersection is currently operating satisfactorily at LoS B in the peak periods and is expected to operate satisfactorily at LoS B in the opening year 2019 without the MPW Stage Proposal. No upgrading of the existing intersection is required to cater for background traffic demand in 2019
- However, in 2029, the model predicted that the existing Moorebank Avenue/ Anzac Road intersection would operate at unacceptable LoS F without Stage 2 of the MPW Project. The modelling indicated that the performance of the intersection in its current form would be impacted by the M5 Motorway / Moorebank Ave due to spill back of vehicular queues from the M5 Motorway. Upgrading of the M5 Motorway / Moorebank Avenue intersection is considered to be required to improve the current performance of the Moorebank Avenue / Anzac Road intersection.
- An upgraded Moorebank Avenue/ Anzac Road intersection is proposed to provide access to the MPW site and to cater for traffic generated by Stage 2 of the MPW Project. The upgraded intersection is expected to perform at LoS C in 2019 and LoS D in 2029 with Stage 2 of the MPW Project, which is considered satisfactory.

The upgrade of the above identified intersections is to be undertaken as identified within the MPW Concept Approval and future stages of development. Subject to the implementation of these upgrades the operational traffic impacts of the Amended Modification Proposal (and future stages of development) are considered to be able to be adequately managed. Further amendments to the MCoA have been undertaken to ensure that operational vehicles do not travel further south (past the southern extent of the MPE site) onto Moorebank Avenue and Cambridge Avenue.

## Mitigation measures

The MPW Concept Approval includes Ministers Conditions of Approval (MCoAs) and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. The relevant REMMs and additional mitigation measures, as considered suitable, are discussed below.

In summary, through the implementation of the REMMs approved for the MPW Concept Approval identified above along with the additional measures outlined, traffic impacts associated with the Amended Modification Proposal are expected to able to adequately managed.

### Construction

Mitigation measures identified within the MPW SRtS and the MCoA for the MPW Concept Approval which are applicable to the management of traffic impacts and would be implemented during the Amended Modification Proposal (and future stages of development) are listed in Table 7-9.

*Table 7-9 REMMs applicable to construction traffic management for the Proposal*

| REMM | Mitigation measure |
|---|---|
| The following mitigation measures would be implemented as part of the traffic management plans to be prepared for the Project: | |
| **REMM 4I** | Reducing the volumes of construction vehicles travelling during peak periods, especially if the increase in traffic generated by construction activities impedes on the operation of Moorebank Avenue. |
| **REMM 4J** | Maintain access to neighbouring properties. It is particularly important that the ABB site has access throughout the construction stages. |
| **REMM 4K** | In addition to the Community Engagement Plan (or equivalent) (Refer to 2A), a communication plan would be developed to provide information to the relevant authorities and bus operators in addition to the local community. The communication plan will need to incorporate a contact list with the chain of command. |
| **REMM 4L** | Implement relevant traffic control measures to inform drivers of the construction activities and locations of heavy vehicle access locations. |

| REMM | Mitigation measure |
|---|---|
| **REMM 4M** | Obtain Road Occupancy Licences (ROLs) as necessary. |
| **REMM 4O** | Traffic on Moorebank Avenue would be monitored during peak periods to ensure that queuing at intersections does not impact on other road users. |

An additional mitigation measure is proposed below:

- Road Safety Audit on Cambridge Avenue to be undertaken prior to the commencement of the Modification Proposal works period to identify the traffic safety risks and determine appropriate mitigations which would need to be implemented (e.g. truck movements to occur outside peak hours, driver awareness and safety training, speed monitoring and reporting protocols, etc.).

## Operation

As required under REMM 1A a OEMP would be prepared, which is anticipated to detail management controls to be implemented to avoid or minimise impacts to traffic, pedestrian and cyclist access, and the amenity of the surrounding environment. The OEMP would be approved by the DP&E prior to commencement of construction and would be implemented during the Amended Modification Proposal (and future stages of development).

Mitigation measures identified within the MPW SRtS and the MCoA for the MPW Concept Approval are applicable to the management of traffic impacts and would be implemented during the Amended Modification Proposal (and future stages of development) are listed in Table 7-10.

*Table 7-10 REMMs applicable to operational traffic management for the Proposal*

| REMM | Mitigation measure |
|---|---|
| **REMM 4H** | Prior to all future development application stages, in consultation with Transport for NSW and other relevant agencies of NSW Government, ensure that adequate arrangements are in place to ensure that:<br>• The impacts of additional traffic associated with the future development application stages would minimise Project related traffic impacts and consider the capacity of the road network, taking account of background traffic growth and planned road network improvements.<br>• Arrangements are in place (irrespective of funding source) for the on-time delivery of the necessary road network improvements referred to in point 1 above.<br>The contribution of MIC towards road network improvements as envisaged by this mitigation measure would be subject to the following conditions:<br>• That certain throughput levels at the terminal had been achieved. These throughputs are outlined in column 1 of Table 7.20 of the MPW RtS.<br>• That it can be further demonstrated (as part of any subsequent planning approval stage) that the intersection performance would have deteriorated to a Level of Service E or worse (where previously operating at a LoS D or above) were it not for the implementation of the upgrades outlined in Table 7.20 of the MPW RtS. |

## 7.1.2 Noise and Vibration

### MPW Concept Approval

A *Noise and Vibration Impact Assessment* was undertaken by SLR Consulting for the MPW Concept Approval. This assessment identified the following key characteristics relating to the noise conditions of the Proposal site, relevant for subsequent studies:

- The suburbs of Casula, Wattle Grove, North Glenfield and Moorebank are the closest communities to the MPW site and include sensitive receptors that have the potential to be impacted by noise generated by the MPW Project. In these communities, receivers and land uses that are potentially sensitive to noise and vibration include residences, educational institutions, places of worship, child care facilities, aged care facilities and places of recreation
- The MPW site is located at an approximate ground level height of 15 m above Australian height datum (AHD) and immediately to the east of the Georges River and floodplain. There is steep relief on either side of the floodplain, between the MPW site and the surrounding suburbs. The nearest receptors in Wattle Grove and Glenfield are predominantly at the same ground level height as the main IMT site for the Proposal, with the exception of some receptors that are up to five meters above the residual level of the main IMT site. At Casula, the nearest receptors are approximately 10 m to 30 m above the residual ground level of the main IMT site. The location of potentially affected receivers, noise monitoring locations and measured background noise levels are shown in Figure 6-1.

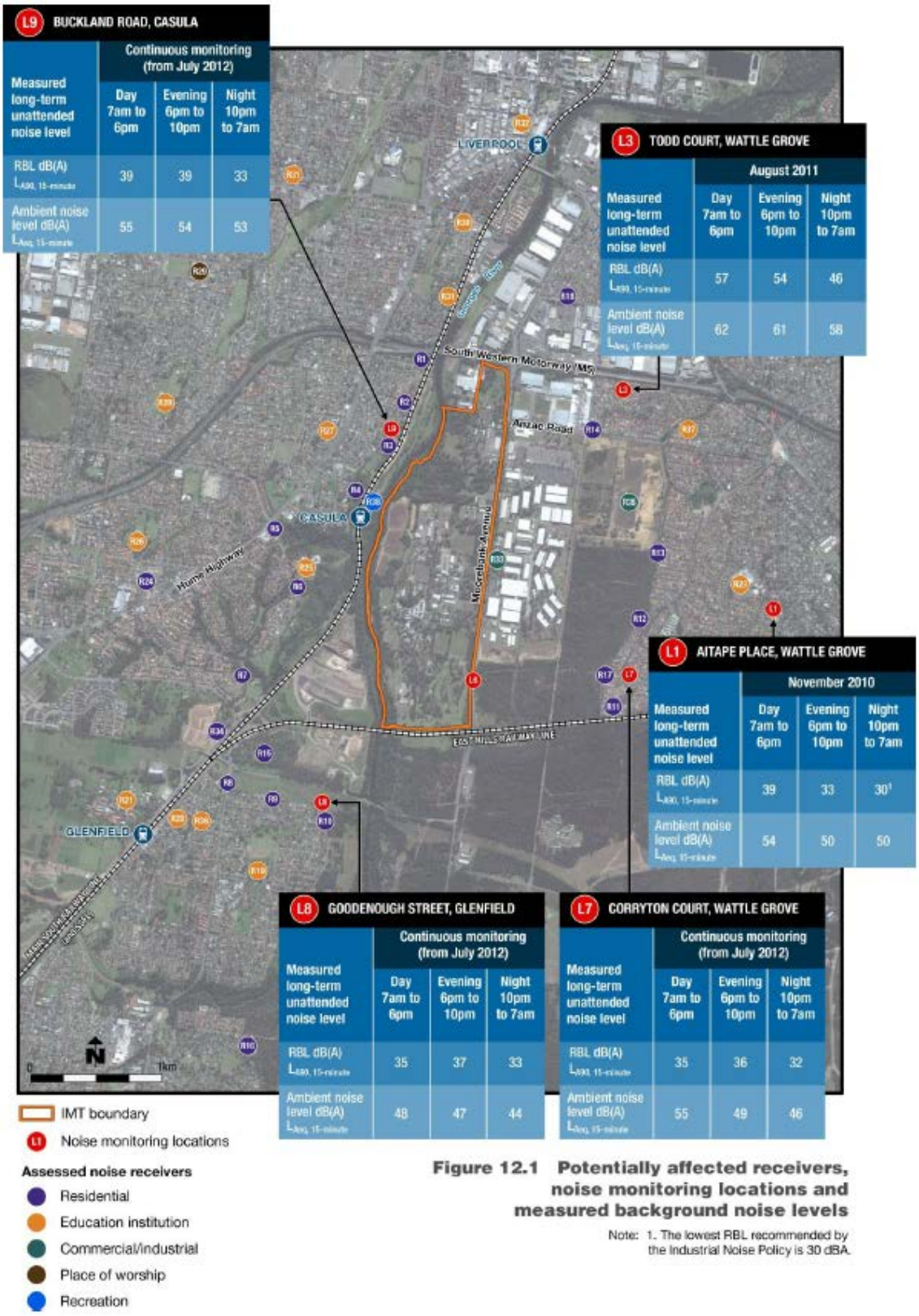


**Figure 12.1 Potentially affected receivers, noise monitoring locations and measured background noise levels**

Note: 1. The lowest RBL recommended by the Industrial Noise Policy is 30 dBA.

*Figure 7-1 Potentially affected noise receivers surrounding the Proposal site*

The assessment established background ambient noise levels and noise management levels (NMLs) at key receivers in Casula, Wattle Grove and Glenfield (refer Figure 6-1) by utilising 20 months of noise monitoring data from the MPW site and surrounding areas. This monitoring was carried out in November 2010, August 2011 and October 2011, with a continuous ambient noise monitoring survey commencing in July 2012. The noise assessment was undertaken using the following policy criteria:

- Construction noise criteria were established using the NSW EPA's *Interim Construction Noise Guidelines* (ICNG), 2009
- Operational noise criteria were established using the 'intrusiveness' and 'amenity' criteria in the *NSW Industrial Noise Policy* (INP), 2000
- Sleep disturbance criteria were established using the EPA's *Noise Guide for Local Government*
- Road traffic noise criteria were established using the EPA's *NSW Road Noise Policy*
- Rail traffic noise criteria were established using the *Rail Infrastructure Noise Guideline* (RING)
- Construction vibration criteria were established using the EPA's *Assessing Vibration: A Technical Guideline*.

The assessment considered construction noise and vibration impacts and operational noise and road traffic noise for the MPW Project during construction and operation of each phase. Construction noise levels at the assessed receivers were predicted to mostly comply with the adopted NMLs, for which no additional noise mitigation is anticipated. All daytime construction works were predicted to comply with NMLs with the exception of piling works that may impact nearby receivers in Casula, Wattle Grove and Glenfield. Activities undertaken at these sites in conjunction with worst case background levels may trigger the potential requirement for noise mitigation during construction.

Construction equipment was expected to be operated within the recommended safe working distances for construction ground vibration. Furthermore, potential ground vibration levels were expected to be within the human comfort criteria and nearby buildings were predicted to be unlikely to suffer cosmetic damage.

SoundPLAN V7.2 noise propagation software was used to create a noise prediction model for the operational phase (full build scenario at 2030) for the MPW Project. Rail noise levels were predicted in SoundPLAN using the Nordic Rail Traffic Noise Prediction Method (Kilde, 1984). The calculation parameters included the speed and length of rail freight to determine the potential noise levels at a receptor during a passby event. Noise levels were predicted in the absence of mitigation, thereby representing a worst-case scenario.

Operational noise levels were anticipated to increase throughout the progressive development phases of the MPW Project, and varied at various receptors depending on the proximity of each receiver to prominent noise sources (e.g. trucks transporting containers, side picks, in-terminal transport vehicles and rail freight).

Road traffic noise from the MPW Project on the M5 Motorway, Moorebank Avenue and Anzac Road was expected to either comply with or have a negligible exceedance of the RNP noise criteria during the daytime and night-time at the nearest receptors, and therefore would not trigger a requirement for road noise mitigation.

The key findings of the noise and vibration assessment for the MPW Project are shown in Figure 7-2 and are outlined in Table 7-11.

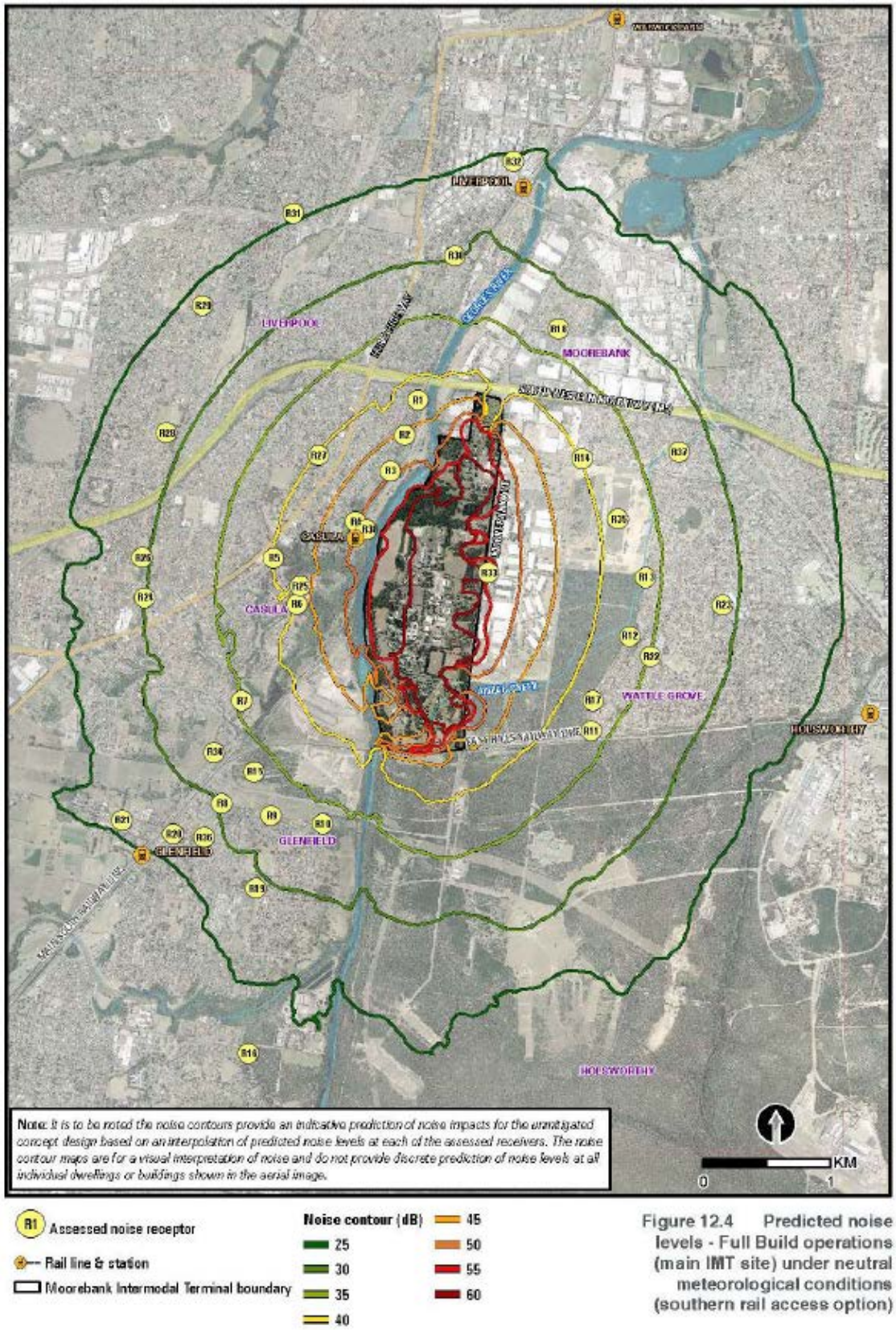


Figure 12.4 Predicted noise levels - Full Build operations (main IMT site) under neutral meteorological conditions (southern rail access option)

*Figure 7-2 Predicted noise levels at operational full build scenario*

*Table 7-11 Noise and vibration assessment - MPW Concept Approval*

| MPW Concept Approval |
|---|
| During construction:<br>• Noise levels at the assessed receivers would mostly comply with the construction noise management levels (NMLs)<br>• All daytime early works would comply with the NMLs at all receivers and would not require noise mitigation<br>• At Casula, Wattle Grove and Glenfield, noise levels during piling and rail link connection construction works during the main construction phases would temporarily exceed the NMLs at certain times and under worst case conditions and would therefore trigger the need for reasonable and feasible noise mitigation measures<br>• If the recommended management and mitigation measures are implemented the potential noise levels at the assessed receivers in Wattle Grove, Casula and North Glenfield would be sufficiently controlled to achieve the adopted NMLs<br>• Construction equipment would be operated within the recommended safe working distances for construction ground vibration<br>• Potential ground vibration levels would be within the human comfort criteria and nearby buildings would be unlikely to suffer cosmetic damage |
| During operation:<br>• At full build of the project during neutral meteorological conditions, operations at the interstate terminal would result in occasional exceedances of the noise assessment criteria at the nearest sensitive receivers in Casula and Wattle Grove<br>• No noise level exceedances were predicted for operational rail noise<br>• Operations would comply with sleep disturbance objectives at the nearest receivers in Casula, Wattle Grove and Glenfield<br>• Operation of the rail link connection would comply with sleep disturbance objectives<br>• Noise levels at all non-residential receivers would comply with the amenity noise criteria<br>• Any potential ground vibration caused by operations on site and the rail link connection would comply with the relevant vibration criteria for human comfort and cosmetic structural damage |

## Impact Assessment – Amended Modification Proposal

### Construction

A summary of the key findings of the further noise impact assessment, from a construction perspective, are provided in Table 7-12. Where required, further assessment of these potential construction noise impacts is provided below.

*Table 7-12 Summary of construction noise impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal has the potential to result in noise impacts on surrounding sensitive noise receivers. Further assessment has been provided below. |
| Altered construction footprint | The amendment to the construction footprint has the potential to result in minor noise impacts generated by works to be undertaken on this additional land. The works to be undertaken on these parcels of land result in a minor reduction (of approximately 5-10 m) in separation distances from sensitive receivers (DJLU (east) and ABB site, Casula (west)). The works at these locations would be generally consistent with the types of works identified within the MPW Concept Approval. Based on the minor alteration to the separation distances, the existing buffers to the MPW site and the type of works to be undertaken it is anticipated that any additional noise impacts would be minor and can be |

| Item | Assessment |
|---|---|
| | managed through the preparation of a CEMP (as required by REMM 1B of the MPW Concept Approval). |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE site to interact during construction, within the MPW Concept Approval. There is the potential for there to interfacing between the MPW and MPE site's during construction, i.e. with construction vehicles/equipment related to each site, accessing Moorebank Avenue. Notwithstanding this, this interface has previously been assessed as part of the cumulative assessment provided in the MPW Concept Approval. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), reconfiguration of truck parking and OSDs would result in an alteration to construction traffic movements and compound locations within the MPW site. Generally, the key change between the MPW Concept Approval and the Amended Modification Proposal is that construction vehicle movements would be limited to the central, rather than, the southern part of the MPW site. Notwithstanding this, the re-arrangement of existing approved use would not increase the total number of construction vehicles travelling to, or equipment being used on, the MPW site identified in the MPW Concept Approval. Overall, this potential construction impact is considered temporary, minor and would not substantially increase the noise impacts of the MPW Project identified within the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights, would not alter construction activities on the MPW site and therefore would not alter the noise impacts identified for the MPW Project within the MPW Concept EIS. |
| Staging of future applications | The staging of future applications, would alter the amount of construction activities undertaken for each stage of construction for the MPW Project. In particular, additional construction activities (and therefore noise emissions) would be evident during Stage 2 of the MPW Project as a result of additional works being undertaken in this stage. Notwithstanding this, there would be anticipated to be a corresponding reduction in construction activities (and therefore noise emissions) during Stage 3 of the MPW Project. Overall, these noise impacts although altering the individual noise impacts per stage are not considered to result in a substantial increase to the noise impacts for the construction of the MPW Project to full build. |
| Subdivision | The inclusion of subdivision within the MPW Project would result in minor, if any, additional physical works to be undertaken. Overall, subdivision would not result in any additional noise impacts during construction of the MPW Project, above that identified within the MPW Concept Approval. |

## Importation of clean general fill

Key additional activities impacting construction noise impacts during the MPW Project that were not assessed in the MPW Concept EIS include the import, placement and stockpiling of approximately 1,600,000 $m^3$ of clean general fill. Under the Amended Modification Proposal, the importation of clean general fill is to be undertaken as part of Stage 2 of the MPW Project during extended working hours as described in section 6 of this RtS. This worst-case scenario is indicative only as there is the potential for Stage 2 of the MPW Project to be amended as part of detailed design.

### Sensitive receivers

Sensitive receivers identified within the MPW Concept Assessment were reviewed and refined for the purposes of this construction assessment. Three residential receivers and five non-residential receivers (two educational and three industrial) were identified as the most potentially affected. These locations are listed in Table 7-13 and shown in Figure 7-3.

*Table 7-13 Potentially affected receivers*

| Receiver / Suburb | Category |
|---|---|
| Casula | Residential |
| Glenfield | |
| Wattle Grove | |
| All Saints Senior College (S1) | Educational |
| Casula Powerhouse (S2) | |
| MPE (I1) | Industrial |
| DJLU (I2) | |
| ABB Site (I3) | |

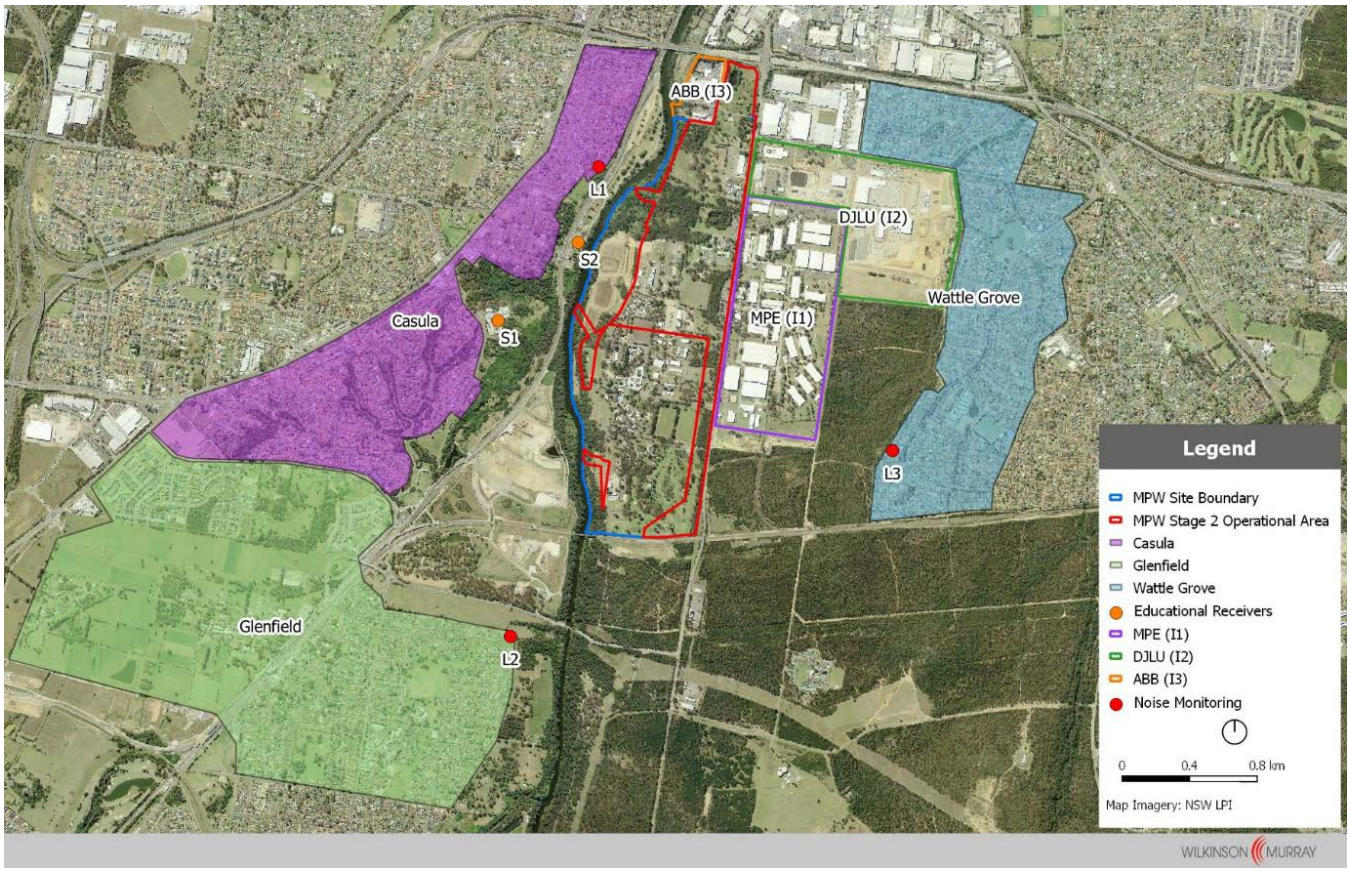


*Figure 7-3 Sensitive receiver and noise monitoring locations in relation to Proposal site*

Existing ambient noise levels at key residential receivers were established through existing monitoring undertaken by SLR Consulting for the MPW Concept Approval. The monitoring was undertaken in accordance with the *NSW Industrial Noise Policy* (INP), for residential receivers within Casula, Glenfield and Wattle Grove. Locations are presented in Figure 7-3 and detailed below in Table 7-30.

*Table 7-14 Ambient existing noise levels at sensitive residential receivers*

| Suburb | Monitoring Location | Noise Levels (dBA) | | | | | |
|---|---|---|---|---|---|---|---|
| | | RBL | | | $L_{Aeq}$ | | |
| | | Day[1] | Evening[1] | Night[1] | Day[1] | Evening[1] | Night[1] |
| Casula | L1 | 39 | 39 | 33 | 55 | 54 | 53 |
| Glenfield | L2 | 35 | 37 | 33 | 48 | 47 | 44 |
| Wattle Grove | L3 | 35 | 36 | 32 | 55 | 49 | 46 |

1. Daytime 7:00am–6:00pm; Evening 6:00pm–10:00pm; Night 10:00pm 7:00am.

### Construction Noise Management Levels

The NSW EPA's *Interim Construction Noise Guideline* (DECC, 2009) (ICNG) recommends noise management levels (NML) to reduce the likelihood of noise impacts arising from construction activities. The ICNG NML for residential receivers are shown in Table 7-15.

*Table 7-15 Construction Noise Management Levels at Residences*

| Time of Day | Management Level $L_{Aeq,15min}$ (dBA) | How to Apply |
|---|---|---|
| **Recommended Standard Hours:**<br>Monday to Friday<br>7am to 6pm<br>Saturday<br>8am to 1pm<br>No work on Sundays or Public Holidays | Noise affected<br>RBL + 10dBA | The noise affected level represents the point above which there may be some community reaction to noise.<br>Where the predicted or measured $L_{Aeq,(15min)}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to minimise noise.<br>The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details. |
| | Highly noise affected<br>75dBA | The highly noise affected level represents the point above which there may be strong community reaction to noise.<br>Where noise is above this level, the proponent should consider very carefully if there is any other feasible and reasonable way to reduce noise to below this level.<br>If no quieter work method is feasible and reasonable, and the works proceed, the proponent should communicate with the impacted residents by clearly explaining the duration and noise level of the works, and by describing any respite periods that would be provided. |
| Outside recommended standard hours | Noise affected<br>RBL + 5 dB | A strong justification would typically be required for works outside the recommended standard hours.<br>The proponent should apply all feasible and reasonable work practices to meet the noise affected level.<br>Where all feasible and reasonable practices have been applied and noise is more than 5dB(A) above the noise affected level, the proponent should negotiate with the community.<br>For guidance on negotiating agreements see section 7.2.2. |

Based on the RBL presented in Table 7-14, the NML for residential receivers are presented in Table 7-16. Table 7-16 includes NML for the following working periods:

- Standard hours: 7am – 6pm weekdays, 8am – 1pm Saturdays (all construction activities[9])
- OOH Period 1: 6:00am – 7:00am weekdays (materials deliver only)
- OOH Period 2: 6:00pm – 10:00pm weekdays (materials delivery, direct placement and stockpiling)
- OOH Period 3: 7:00am – 8:00am Saturday (materials delivery, direct placement and stockpiling)
- OOH Period 4: 1:00pm – 6:00pm Saturday (materials delivery, direct placement and stockpiling).

*Table 7-16 Noise Management Levels for Residential Receivers*

| Receiver | Noise Management Levels | | | | |
|---|---|---|---|---|---|
| | **Standard Hours** | **OOH Period 1** | **OOH Period 2** | **OOH Period 3** | **OOH Period 4** |
| Casula | 49 | 44 | 44 | 44 | 44 |
| Glenfield | 45 | 40 | 40 | 40 | 40 |
| Wattle Grove | 45 | 40 | 40 | 40 | 40 |

The ICNG also recommends NML for other sensitive land uses, such as schools, hospitals and places of worship. Pertinent to this assessment, the recommended NML for schools and other educational institutions is an internal $L_{Aeq, 15min}$ noise level of 45 dBA. It is conservative to assume that noise levels are attenuated by approximately 10 dBA through normally open windows. Therefore, an external $L_{Aeq, 15min}$ noise level of 55 dBA is an equivalent NML for receivers All Saints Senior College (S1) and Casula Powerhouse (S2). The NML for S1 and S2 apply only during the working periods when these facilities are in use.

Finally, the ICNG recommends an external NML of 75 dBA at industrial premises, such as I1, I2 and I3.

To ascertain a worst-case scenario for construction noise impacts during construction hours a conservative approach has been undertaken. It is anticipated that the importation of clean general fill would be undertaken concurrently with a number of other works such as the installation of OSDs, drainage and utilities installation and the establishment of a concrete batching plant, which is considered a likely works period during Stage 2 of the MPW Project[10]. A breakdown of the indicative sound power level (SWL) for the construction noise scenario, comprising of indicative plant used is provided in Table 7-17.

*Table 7-17 Indicative sound power levels per works period*

| Works Period | Equipment | **Sound Power Level per Item (dBA)** ($L_{Aeq, 15min}$) | **Sound Power Level per Works Period (dBA)** ($L_{Aeq, 15min}$) |
|---|---|---|---|
| Noise construction scenario | Loaders | 112 | 128 |
| | Static and vibratory rollers | 109 | |
| | Excavators | 110 | |
| | Excavators with hammers | 122 | |
| | Backhoes | 105 | |

[9] Those included in the construction noise scenario discussed above.
[10] The scenario assessed differs from that discussed in the traffic impact assessment above as this scenario is more suited to specifically determining the additional impacts associated with the potential construction noise impacts for the importation of fill.

| Works Period | Equipment | Sound Power Level per Item (dBA) ($L_{Aeq, 15min}$) | Sound Power Level per Works Period (dBA) ($L_{Aeq, 15min}$) |
|---|---|---|---|
| | Crushing plant | 118 | |
| | Air compressors | 100 | |
| | Dozers | 118 | |
| | Mulchers | 118 | |
| | 20-40 tonne articulated tipper trucks | 110 | |
| | | 110 | |
| | Scrapers | 109 | |
| | Graders | 105 | |
| | Water Trucks | | |

**Construction impact assessment**

The predicted $L_{Aeq, 15min}$ noise levels at sensitive receivers during standard hours for the noise construction scenario are identified within Table 7-18.

*Table 7-18 Predicted Construction Noise Levels During Standard Hours*

| Receiver | Predicted $L_{Aeq, 15min}$ Noise Level | NML (dBA) |
|---|---|---|
| Casula | **50** | 49 |
| Glenfield | 36 | 45 |
| Wattle Grove | 37 | 45 |
| All Saints Senior College (S1) | 49 | 55 |
| Casula Powerhouse (S2) | 48 | 55 |
| MPE (I1) | 51 | 75 |
| DJLU (I2) | 44 | 75 |
| ABB Site (I3) | 53 | 75 |

Table 7-18 confirms that the $L_{Aeq, 15min}$ construction noise levels at the most sensitive residential receivers at the majority of locations would not exceed the established NML. The only exceedance is in Casula which is predicted to exceed the established NML by up to 1 dB, which is considered negligible and therefore does not require mitigation.

For the purposes of assessing the OOH Period 1, $L_{Aeq, 15min}$ noise levels at sensitive receivers have been predicted where all plant is operating simultaneously, with a modelled sound power level (SWL) of 117 dBA over the MPW site. The predicted levels are presented in Table 7-19.

*Table 7-19 Predicted Construction Noise Levels During OOH Period 1*

| Receiver | Predicted $L_{Aeq, 15min}$ Noise Level | NML | Exceedance |
|---|---|---|---|
| Casula | 39 | 44 | 0 dB |
| Glenfield | 26 | 40 | 0 dB |
| Wattle Grove | 26 | 40 | 0 dB |
| All Saints Senior College (S1) | 38 | 55 | 0 dB |
| Casula Powerhouse (S2) | 47 | 55 | 0 dB |

Table 7-19 indicates that construction noise levels are not predicted to exceed the applicable NML at sensitive receivers during OOH Period 1.

For the purposes of assessing the OOH Period 2, 3 and 4, $L_{Aeq, 15min}$ noise levels at sensitive receivers have been predicted where all plant is operating simultaneously, with a modelled SWL of 122 dBA over the MPW site. The predicted levels are presented in Table 7-20.

*Table 7-20 Predicted Construction Noise Levels During OOH Period 2, 3 and 4*

| Receiver | Predicted $L_{Aeq, 15min}$ Noise Level | NML | Exceedance |
|---|---|---|---|
| Casula | 44 | 44 | 0 dB |
| Glenfield | 31 | 40 | 0 dB |
| Wattle Grove | 35 | 40 | 0 dB |
| All Saints Senior College (S1) | 44 | 55 | 0 dB |
| Casula Powerhouse (S2) | 43 | 55 | 0 dB |

Table 7-20 indicates that construction noise levels are not predicted to exceed applicable NML at sensitive receivers during OOH Period 2, 3 and 4.

**Summary**

As identified above, the construction noise scenario assessed which included the importation, placement and stockpiling of clean general fill (and other overlapping construction activities) is anticipated to result in the following noise impacts:

- Standard Hours: No exceedance at most of the sensitive receivers. 1 dB noise exceedance ($L_{Aeq, 15min}$) at Casula which is considered negligible and therefore does not require mitigation
- OOH Periods 1 – 4: No noise exceedance ($L_{Aeq, 15min}$) at any of the sensitive receivers.

As discussed above, the MPW Concept Approval identified that noise levels at the assessed receivers were predicted to mostly comply with the adopted NMLs, for which no additional noise mitigation is anticipated. Some activities undertaken at these sites in conjunction with worst case background levels may trigger the potential requirement for noise mitigation.

Overall, the importation of clean general fill to the MPW site during construction, under the Amended Modification Proposal, would result in impacts that are slightly above those identified in the MPW Concept Approval. These noise impacts are considered to be able to be managed through the preparation and implementation of CEMP (as identified in REMM 1B of the MPW Concept Approval) applicable to the relevant future stage of development in which the works are to be constructed in.

## Operation

A summary of the key findings of the further noise impact assessment, from an operational perspective, are provided in Table 7-21. Where required, further assessment of these potential operational noise impacts is provided below.

*Table 7-21 Summary of operational noise impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the operation of the Amended Modification Proposal would result in an adjustment to the building formation level for the MPW site. This has the potential to result in operational impacts, above the MPW Concept Approval, with buildings and infrastructure being located at a higher elevation than identified in the MPW Concept EIS. Further assessment has been provided below. |
| Altered construction footprint | The amendment to the construction footprint has the potential to result in minor noise impacts generated by maintenance works to be undertaken during operation on this additional land. The works to be undertaken on these parcels of land result in a minor reduction (of approximately 5-10 m) in separation distances from sensitive receivers (DJLU (east) and ABB site, Casula (west)). The works at these locations would be generally consistent with the types of works anticipated for the MPW Concept Approval. Based on the minor alteration to the separation distances, the existing buffers to the MPW site and the type of works to be undertaken it is anticipated that any additional noise impacts would be minor and can be managed through the preparation of an OEMP (as required by REMM 1B of the MPW Concept Approval). |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal would facilitate for a minor re-distribution of heavy vehicles to turn right from the MPW site onto Moorebank Avenue, which has the potential to alter the noise impacts identified within the MPW Concept EIS. These noise impacts are not anticipated to result in a considerable impact above that presented within the MPW Concept Approval in that the change to traffic movements is confined to a section of Moorebank Avenue which is approximately 400m in length (i.e. between the MPW site and MPE site proposed entrances).<br>The only receiver that could be potentially impacted by these movements, from a noise perspective, is anticipated DJLU which is located adjacent to this part of Moorebank Avenue. As the truck movements are anticipated to be relatively minor in the context of the total truck movements for the MPW Project and the existing background traffic, the noise generated by these movements is not anticipated to considerably increase the noise impacts identified within the MPW Concept Approval. These additional noise impacts can be managed through the preparation and implementation of an OEMP (as required by REMM 1B of the MPW Concept Approval). Further, the number of operational heavy vehicles accessing and leaving the MPW site would not change and consequently no substantial change in noise emissions is anticipated. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), reconfiguration of truck parking and OSDs would result in an alteration to operational activities within the MPW site. The alteration to operational activities would predominately relate to vehicle movements associated with the freight village and truck loading parking areas that would, under the Amended Modification Proposal, be mainly integrated into the warehousing and IMT facility. Overall the noise impact associated with the rearrangement of these approved uses is considered to be minor in the context of the full build MPW Project, in that this rearrangement would not result in an intensification of these uses and generally increase their separation distance from surrounding sensitivity residential receivers. |
| Maximum building heights | The alteration to the maximum building heights, has the potential to result in additional noise impacts above those identified within the MPW Concept Approval. Further assessment has been provided below. |
| Staging of future applications | The staging of future applications, would alter the operational activities undertaken for future operational stages of the MPW Project. In particular, additional operational activities (and therefore noise emissions) would be evident during the Stage 2 of the MPW Project as |

| Item | Assessment |
|---|---|
| | a result of additional built form being operational in this stage. Notwithstanding this, there would be anticipated to be a corresponding reduction in operational activities (and therefore noise emissions) during the Stage 3. Overall, these noise impacts although altering the individual noise impacts per stage are not considered to result in a substantial increase to the noise impacts of the MPW Project at full build. |
| Subdivision | Overall, subdivision would not result in any additional noise impacts during operation of the MPW Project, above that identified within the MPW Concept Approval. |

### Importation of clean general fill and maximum building heights

The key additional potential noise impacts of the Amended Modification Proposal not assessed within the MPW Concept Approval are the adjustment to the final building formation levels of the MPW site and the changes to function of the IMT facility. These adjustments have the potential to alter noise emissions from the MPW Project.

Stage 2 of the MPW Project has the potential to experience a change to the noise impacts identified in the MPW Concept Approval as the construction of this stage would bring the building formation levels to final levels for the full build MPW Project. Stage 2 of the MPW Project has therefore been used for the purposes of an interim worst case scenario. The assessment for the Stage 2 of the MPW Project is based on an intermodal terminal to support a container freight throughput volume of 500,000 TEUs per annum, warehousing of 215,000 $m^2$ GFA, a freight village of 800 $m^2$ GFA and associated infrastructure[11]. This worst-case scenario is indicative only as there is the potential for aspects of Stage 2 of the MPW Project to be amended as part of detailed design.

MCoA E1 (Schedule 4) of the MPW Concept Approval requests that future development applications consider the need for a noise barrier on the western side of the haul road, to mitigate operational noise impacts. It is noted that warehouses and other nearby buildings are likely to provide some level of shielding to sensitive receivers. The following buildings have been included in the operational noise model:

- Proposed warehouse buildings to be included within Stage 2 of the MPW Project
- Warehouse buildings on the MPE site, not proposed to be demolished under the MPE Stage 1 Proposal
- Existing large buildings associated with ABB, DJLU and the industrial area to the north of the DJLU.

In addition to shielding from buildings, a noise wall, approximately 5 metres high, has been utilised for the purposes of this operational noise modelling. The specific extent of this noise wall would be identified as part of future stages of development under the MPW Project (as required by MCoA E1).

**Operational Noise Sources and modelling scenarios**

A 'worst case scenario' was developed to assess the amenity noise impacts associated with operation of Stage 2 of the MPW Project, which is expressed in $L_{Aeq\ period}$. A 'worst case 15 minute scenario' was developed to assess the intrusive noise impacts of operation of Stage 2, which is described in terms of $L_{Aeq15min}$.

The dominant sources of noise associated with the operation of the Stage 2 include:

- Trucks accessing the IMT facility and warehouse areas
- Container handling equipment, specifically reach stackers
- Locomotives idling and moving within the IMT terminal and the Rail link connection.

A worst-case scenario of truck movements along both the IMT facility and warehouse access roads during the daytime, evening and night time have been modelled, based on distribution data (refer to truck movements identified in the traffic impact assessment above).

For the purposes of the intrusiveness noise impact assessment, it was assumed that all 12 reach stackers would be operating during the worst-case 15 minute period, with a combined SWL of 117 dBA. This SWL was applied to the daytime, evening and night time periods. These reach stackers would be used to transfer

[11] This is based on the same operational scenario undertaken for the traffic impact assessment above.

containers to and from rail wagons. Regarding locomotives, the wort-case 15 minute scenario assumes that eight locomotives are all moving within the terminal, representing a combined SWL of 115 dBA, operating during the daytime, evening and night time. The trucks and reach stackers were distributed around the Stage 2 operational area in accordance with internal road arrangements.

The modelling of reach stackers for the amenity scenario is based on 6 reach stackers operating simultaneously (100% of the time), with a combined SWL of 114 dBA, on a 24/7 basis.

It was assumed that, on average, there would be eight locomotives within the IMT facility simultaneously. Some of the locomotives would be idling and stationary, while some would be moving along the length of the IMT facility. The locomotives have been modelled as an area source over the extent of the rail siding, with a combined SWL of 111 dBA, operating on a 24/7 basis.

Table 7-22 shows the main noise sources that would be operating during Stage 2 operational activities.

*Table 7-22 Operational source sound power levels*

| Source | Sound Power Level at Octave Band Centre Frequency | | | | | | | | | Overall SWL (dBA) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 31.5 | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | |
| Reach Stacker (diesel) | 110 | 111 | 107 | 103 | 105 | 101 | 97 | 96 | 87 | 106 |
| Car – 40 km/h | 98 | 102 | 93 | 87 | 88 | 87 | 83 | 74 | 64 | 91 |
| Truck – Idling | 98 | 97 | 94 | 91 | 90 | 91 | 88 | 80 | 72 | 95 |
| Truck – 10km/h | 100 | 103 | 101 | 99 | 98 | 99 | 96 | 90 | 79 | 103 |
| Truck – 40 km/h | 91 | 101 | 103 | 104 | 103 | 101 | 98 | 94 | 86 | 106 |
| Locomotive – Idling | 103 | 107 | 104 | 101 | 98 | 93 | 89 | 88 | 90 | 100 |
| Locomotive – 10km/h | 142 | 126 | 113 | 99 | 91 | 86 | 83 | 80 | 80 | 106 |
| Locomotive Shifter | 75 | 80 | 82 | 85 | 89 | 89 | 89 | 85 | 83 | 95 |

Regarding sleep disturbance, transient noise events including horns, tonal reversing alarms, pneumatic trailer brakes, and 'banging' noises associated with moving containers have been identified as occurring during site operations with the potential to create sleep disturbance as assessed below.

**Modelled outcomes**

The predicted $L_{Aeq,\ period}$ and $L_{Aeq,\ 15min}$ operational noise levels at nearby sensitive receivers are presented below in Table 7-23 and Table 7-24 respectively, alongside relevant criteria recommended by the INP (refer to above). Noise levels are presented for calm isothermal conditions and meteorological conditions that enhance noise levels.

*Table 7-23 Predicted Amenity LAeq, period Operational Noise Levels*

| Receiver | Predicted $L_{Aeq, period}$ Noise Level (dBA) | | | | Criteria (dBA) | | | Exceedance |
|---|---|---|---|---|---|---|---|---|
| | Day[1] | Evening[1] | Night[1] | | Day[1] | Evening[1] | Night[1] | |
| | | | Calm[2] | Adverse[3] | | | | |
| Casula | 33 | 33 | 32 | 36 | 54 | 45 | 40 | 0 dB |
| Glenfield | <20 | <20 | <20 | <20 | 54 | 45 | 40 | 0 dB |
| Wattle Grove | 29 | 29 | 28 | 33 | 54 | 45 | 40 | 0 dB |
| S1 | <20 | <20 | <20 | 22 | 45 (external, when in use) | | | 0 dB |
| S2 | 24 | 24 | 23 | 27 | 45 (external, when in use) | | | 0 dB |
| I1 (MPE) | 60 | 60 | 60 | 60 | 70 (external, when in use) | | | 0 dB |
| I2 (DJLU) | 56 | 56 | 56 | 57 | 70 (external, when in use) | | | 0 dB |
| I3 (ABB) | 51 | 48 | 48 | 48 | 70 (external, when in use) | | | 0 dB |

1. Daytime 7:00am–6:00pm; Evening 6:00pm – 10:00pm; Night 10:00pm-7:00am.
2. CONCAWE Category 4
3. CONCAWE Category 6

*Table 7-24 Predicted Intrusive $LA_{eq, 15min}$ Operational Noise Levels*

| Receiver | Predicted $L_{Aeq,15min}$ Noise Level (dBA) | | | | Criteria (dBA) | | | Exceedance |
|---|---|---|---|---|---|---|---|---|
| | Day[1] | Evening[1] | Night[1] | | Day[1] | Evening[1] | Night[1] | |
| | | | Calm[2] | Adverse[3] | | | | |
| Casula | 36 | 36 | 35 | **39** | 44 | 44 | 38 | Up to 1 dB |
| Glenfield | <20 | <20 | <20 | <20 | 40 | 40 | 38 | 0 dB |
| Wattle Grove | 28 | 28 | 28 | 33 | 40 | 40 | 37 | 0 dB |

1. Daytime 7:00am–6:00pm; Evening 6:00pm – 10:00pm; Night 10:00pm-7:00am.
2. CONCAWE Category 4.
3. CONCAWE Category 6.

As shown in Table 7-23 and Table 7-24 the potential operation of Stage 2 of the MPW Project as modelled under the assumptions listed above (indicating a worst case scenario) is not expected to result in any exceedance to either the amenity or intrusive noise criteria in Glenfield and Wattle Grove, under both neutral and adverse meteorological conditions. However, during periods where noise levels are enhanced by meteorological conditions, operational noise levels are predicted to exceed the established night time intrusiveness criterion at the most affected receivers in Casula. At six residential receivers in Casula, the noise levels are predicted to exceed the criterion by up to 1 dB. Exceedances of up to 1 dB are considered negligible and can be effectively mitigated.

Regarding operational noise levels on sleep disturbance, the loudest $L_{Amax}$ noise source, with potential to cause sleep disturbance impacts, is pneumatic trailer brakes on trucks. The $L_{Amax}$ SWL of a truck trailer brake is up to 122 dBA. It should be noted that this is significantly louder than a tonal reversing alarm.

The predicted $L_{Amax}$ noise levels at nearby receivers due to pneumatic trailer brakes is shown in and Table 7-25. This indicates that the predicted $L_{Amax}$ noise levels at sensitive receivers are less than, and therefore comply with, sleep disturbance screening levels at all monitoring locations.

*Table 7-25 Predicted $LA_{max}$ noise levels at sensitive receivers*

| Receiver | Predicted $L_{Amax}$ Noise Level (dBA) | | Sleep Disturbance Screening Level (dBA) | Exceedance |
|---|---|---|---|---|
| | Calm[1] | Adverse[2] | | |
| Casula | 43 | 47 | 48 | 0 dB |
| Glenfield | <20 | 23 | 48 | 0 dB |
| Wattle Grove | 20 | 24 | 47 | 0 dB |

**Summary**

As identified above, the operational noise scenario assessed which considered the adjustment to the building formation level for the MPW site is anticipated to result in the following noise impacts:

- No exceedance to either the amenity or intrusive noise criteria in Glenfield and Wattle Grove, even under adverse meteorological conditions for most of the sensitive receivers. 1 dB noise where noise levels are enhanced by meteorological conditions at Casula which is considered negligible and can be effectively mitigated.
- Predicted $L_{Amax}$ noise levels at sensitive receivers are less than, and therefore comply with, sleep disturbance screening levels at all monitoring locations.

The MPW Concept Approval identified the following:

- At full build of the project during neutral meteorological conditions, operations at the interstate terminal (termed IMT facility as a part of the Amended Modification Proposal) would result in occasional exceedances of the noise assessment criteria at the nearest sensitive receivers in Casula and Wattle Grove
- Operations would comply with sleep disturbance objectives at the nearest receivers in Casula, Wattle Grove and Glenfield.

Overall, the adjustment to the building formation level for the MPW site, under the Amended Modification Proposal, would result in impacts that are generally consistent with those identified in the MPW Concept Approval. These noise impacts are considered to be able to be managed through the OEMP to be prepared for future stages of development as identified in REMM 1B of the MPW Concept Approval.

## Mitigation measures

As required under REMM 1A and 4I (below) a CEMP would be prepared, which is anticipated to detail management controls to be implemented to avoid or minimise construction noise impacts. The CEMP would be approved by the DP&E prior to commencement of construction and would be implemented during the Amended Modification Proposal as applicable to the relevant future stages of development.

### Construction

Table 7-26 lists the applicable mitigation measures identified within the MPW SRtS and the MCoA for the MPW Concept Approval to be implemented for the appropriate management of noise impacts associated with the Amended Modification Proposal during construction.

*Table 7-26 REMMs applicable to construction noise management for the Proposal*

| REMM | Mitigation measure |
|---|---|
| **REMM 4I** | A construction noise and vibration management plan (CNVMP) (or equivalent) would be developed for construction activities. |
| **REMM 4J** | The appropriateness of the noise and vibration management and mitigation measures in 5C to 5T[12] are to be further investigated as part of the future development applications. These measures, or their replacement measures, are to be implemented through the CNVMP (or equivalent) prior to and during all noise-generating construction works for each of the Project phases. |

## Operation

As required under REMM 1A an OEMP would be prepared, which is anticipated to detail management controls to be implemented to avoid or minimise operational noise impacts. The OEMP would be approved by the DP&E prior to commencement of operation and would be implemented during the Amended Modification Proposal as applicable to the relevant future stages of development.

Table 7-27 lists the applicable mitigation measures identified within the MPW SRtS and the MCoA for the MPW Concept Approval to be implemented for the appropriate management of noise impacts associated with the Amended Modification Proposal during operations.

*Table 7-27 REMMs applicable to operational noise management for the Proposal*

| REMM | Mitigation measure |
|---|---|
| **REMM 5U** | To achieve the noise reductions outlined in Table 7.30 of the *Response to Submissions report* and the *Revised Project Noise and Vibration Impact Assessment report* in Appendix F, mitigation treatments may be required to reduce noise from all dominant noise sources. The Project would implement reasonable and feasible noise mitigation to control potential noise levels. In the event that the Project does not meet the assessment criteria at receptors, if the Project has reduced noise levels to be as low as practicable, the NSW Industrial Noise Policy (INP) (EPA 2000b) notes that:<br>2 achievable noise limits can be negotiated with regulators and the community; and<br>3 the Project specific noise mitigation measures and noise levels outlined in Table 7.30 of this report and in the Noise and Vibration Assessment (Appendix F) should not automatically be interpreted as conditions for approval without consideration of other factors (environmental, social and economic) consistent with the objectives of the EP&A Act. In this regard, where appropriate, the INP notes that noise limits can be set above the Project specific noise levels |
| **REMM 5AD** | Noise walls or noise barriers would be installed within the main IMT site where required<br>In regard to noise walls or barriers, if required:<br>• Noise walls/barriers would need to be solid structures, typically constructed of concrete or similar material.<br>• Additional absorptive material could be applied to the internal facades of the noise walls/barriers to reduce reflected noise from the wall/barriers.<br>• TEU containers could be used as noise barriers where they are stacked, to effectively impede the direct line of sight to nearest receptors.<br>• Onsite noise walls/barriers would be constructed at the earliest opportunity in the Project development to provide noise attenuation during all subsequent construction and operation phases.<br>Subject to further consideration of environmental, social and economic impacts, earth mounding could be considered as an alternative to, or in conjunction with, noise walls/barriers to attenuate the propagation of noise between the site and nearest affected receptors. For the southern rail access, |

[12] 5C – T are considered relevant and have been provided in Section 8 of this RtS.

| REMM | Mitigation measure |
|---|---|
| | it is proposed that earth mounding be considered on the main IMT site, at the western extent of the IMEX and interstate rail lines. |
| **REMM 5AF** | Before the start of each phase of operations, an operational noise and vibration management plan (ONVMP) (or equivalent) would be developed and implemented. The ONVMPs would detail the operation of the relevant Project phase, the potential offsite operational noise levels as determined during the detailed design process, and all measures to manage and mitigate operational noise and vibration. |
| **REMM 5AG** | As a minimum, the ONVMP (or equivalent) would include:<br>• the operational noise criteria/limits as defined by the relevant Project approvals and Environmental Protection Licence;<br>• identification of all surrounding receptors and land use that would be potentially sensitive to noise and vibration;<br>• identification of all noise and vibration generating operations and the timing of these operations;<br>• the location and specification of any onsite and offsite noise mitigation, including the requirement for future mitigation as part of the staged operation;<br>• detailed measures for managing operational noise, including checklist and auditing procedures to ensure measures are implemented before the start of noise generating activity;<br>• procedures for the monitoring and reporting of operational noise and vibration;<br>• procedures for consultation with the community regarding operational noise and vibration; and<br>4 complaint handling procedures. |

## 7.1.3 Biodiversity

### MPW Concept Approval

The biodiversity impacts of the MPW Concept were assessed by Parsons Brinckerhoff (PB) in an Ecological Impact Assessment (PB 2014) prepared for the MPW Concept EIS, and in a separate Framework for Biodiversity Assessment (FBA) prepared as part of the RtS (PB 2015). The technical papers prepared for the MPW Concept EIS addressed the biodiversity values and assessed potential impacts across the development footprint of the entire MPW site at full build.

The MPW Concept EIS was also prepared to address the *Environmental Protection Biodiversity Conservation Act 1999* (EPBC Act) assessment requirements for impacts to Matters of National Environmental Significance, including threatened species and ecological communities. The MPW Project was granted approval as a controlled action under the EPBC Act in mid-2016 (MPW EPBC Approval).

The vegetation within the development site consists predominantly of remnant and regrowth vegetation that has been subjected to weed invasion in some areas. Four vegetation communities were identified by PB (2014) on the development site, all of which correspond with threatened ecological communities (TECs) listed under the *Threatened Species Conservation Act 1995* (TSC Act) (Table 7-28).

*Table 7-28 Vegetation communities identified on the MPW Site by PB (2014)*

| Vegetation community | Plant Community Type (PCT) | Corresponding Threatened Ecological Community |
|---|---|---|
| Castlereagh Scribbly Gum Woodland | Hard-leaved Scribbly Gum – Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin | Castlereagh Scribbly Gum Woodland in the Sydney Basin bioregion |
| Castlereagh Swamp Woodland | Parramatta Red Gum woodland on moist alluvium of the Cumberland Plain, Sydney Basin | Castlereagh Swamp Woodland |

| Vegetation community | Plant Community Type (PCT) | Corresponding Threatened Ecological Community |
|---|---|---|
| Alluvial Woodland | Forest Red Gum – Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin | River-flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South-east Corner bioregions. |
| Riparian Woodland | Sydney Blue Gum X Bangalay – Lilly Pilly moist forest in gullies and on sheltered slopes, southern Sydney Basin | |

The remainder of the development site outside of the mapped PCTs has low vegetation cover consisting chiefly of a sparse canopy composed of a mixture of planted and remnant indigenous and introduced trees within areas of cleared and disturbed land. PB (2014) considered that these areas of land no longer contain the native species diversity or vegetation structure to be classified as native vegetation communities.

Two threatened flora species were recorded within the development site: *Persoonia nutans* (listed as Endangered under the EPBC Act and TSC Act) and *Grevillea parviflora* subsp. *parviflora* (listed as Vulnerable under the EPBC Act and TSC Act). Populations of these species were recorded in patches of Castlereagh Scribbly Gum Woodland adjacent to Moorebank Avenue in the east of the development site. Six additional threatened flora species were considered to have a moderate likelihood of occurrence on the development site, based on the presence of suitable habitat and historical records of these species from the locality.

A total of 92 fauna species were recorded on the development site, comprising 87 native species and five introduced species. One threatened fauna species, Grey-headed Flying-fox (*Pteropus poliocephalus*) (listed as Vulnerable under the EPBC Act and TSC Act) was recorded flying over the development site. Ultrasonic bat call surveys on site detected probable recordings of calls of the threatened microbat species Southern Myotis (*Myotis macropus*), Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*) and Greater Broad-nosed Bat (*Scoteanax rueppellii*), all listed as Vulnerable under the TSC Act. The development site was also considered likely to provide habitat for 23 additional threatened fauna species of animals not detected during surveys; most would only be likely to utilise the intact riparian habitats adjoining the Georges River, which forms an important part of the local and regional corridor network (PB 2014).

Four fauna habitat types were identified on the development site based on field verification: riparian vegetation along the Georges River; fragmented patches of shrubby woodland; highly disturbed areas containing large remnant trees; and artificial wetlands.

No aquatic surveys were undertaken for the assessment of the MPW Concept; the results of the aquatic ecology assessment prepared for the neighbouring SIMTA Project (Hyder Consulting 2014) and another study previously conducted for the Georges River catchment (Gehrke *et al.* 2014) were reviewed. No species currently listed under the NSW *Fisheries Management Act 1994* (FM Act) were recorded in the Georges River catchment.

The biodiversity impacts of the MPW Project at full build was considered and assessed in the MPW Concept EIS Technical Paper (PB 2014) and those considered included:

- Vegetation clearing and habitat loss
- Loss of roosting and breeding habitat in hollow bearing trees
- Direct mortality
- Loss of foraging resources
- Fragmentation and loss of connectivity
- Increased edge effects
- Noise impacts on fauna
- Light impacts to fauna
- Dust pollution
- Introduction and spread of weeds, pests and pathogens
- Fire regimes

- Increased edge effects
- Disturbance of aquatic habitat
- Disturbance of groundwater dependent ecosystems

Impact significance assessments for threatened species populations and threatened ecological communities were prepared, considering the potential impacts of the MPW Concept and proposed mitigation measures. Based on these assessments, no threatened species population or threatened ecological community listed under either the Commonwealth EPBC Act or the NSW TSC Act was considered likely to be significantly impacted.

A variety of mitigation measures were proposed to reduce and offset impacts. This included retention and enhancement of substantial areas of vegetation along the Georges River riparian corridor (including a permanent conservation area within the MPW site), and implementation of an offset strategy to mitigate unavoidable residual impacts.

The RtS for the MPW Project included assessment of the impacts of project amendments on biodiversity values. These were largely focused on changes to the rail alignment and biodiversity offset areas as a result of selection of a preferred rail access option, and revised calculation of impacts and offsets for Riparian Forest (adjacent to the Georges River).

The revised biodiversity assessment considered changes in biodiversity assessment and offsetting requirements under the NSW Framework for Biodiversity Assessment (FBA). The FBA Assessment in Appendix C of the RtS (PB 2015) addresses impacts to native vegetation communities and threatened species.

The Supplementary Response to Submissions (SRtS) included a revised Biodiversity Offset Strategy to incorporate changes made in response to submissions received during the EIS exhibition phase, as well as the results of additional surveys conducted within the proposed offset lands.

Although the technical papers prepared for the MPW Concept EIS addressed the biodiversity values and potential impacts across the entire development site, the impacts on biodiversity values of only the Early Works component of the proposal is approved under the MPW Concept EIS.

The Proposal needs to consider all impacts to threatened ecological communities and threatened species within the development site, given that the MPW Concept Approval excludes any impacts to native vegetation communities. Changes to the construction footprint of the MPW Project as a result of design development for the Proposal would require a revised calculation of biodiversity impacts under the FBA.

## Impact Assessment – Amended Modification Proposal

### Construction

A summary of the key findings of the additional biodiversity impact assessment, from a construction perspective, are provided in Table 7-29.

*Table 7-29 Summary of construction biodiversity impacts for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of clean general fill during construction of Stage 2 of the MPW Project would not result in an impact to biodiversity, and therefore would not alter the biodiversity impact assessment provided within the MPW Concept EIS. |
| Altered construction footprint | The altered construction footprint for construction of the MPW Project would not require additional clearance of native vegetation communities within or near the MPW site, (including those listed as threatened under the EPBC Act and/ or TSC Act).<br>It is not expected that impacts to biodiversity during construction of the MPW Project would change from those previously considered in the MPW Concept EIS, including impacts relating to:<br>• Vegetation clearing and habitat loss |

| Item | Assessment |
|---|---|
| | • Loss of roosting and breeding habitat in hollow bearing trees<br>• Direct mortality<br>• Loss of foraging resources<br>• Fragmentation and loss of connectivity<br>• Increased edge effects<br>• Noise impacts on fauna<br>• Light impacts to fauna<br>• Dust pollution<br>• Introduction and spread of weeds, pests and pathogens<br>• Fire regimes<br>• Increased edge effects<br>• Disturbance of aquatic habitat<br>• Disturbance of groundwater dependent ecosystems.<br>There is the potential for a small number of trees to be removed at the ABB site entrance and along Moorebank Avenue to the north of Bapaume Road; however, this vegetation is considered to be exotic (and planted), and is not mapped as forming part of a native vegetation community. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE site to interact during construction, within the MPW Concept Approval. |
| Changes to approved function and re-arrangement of existing approved uses | The changes to approved function and re-arrangement of existing approved uses, including the rearrangement of OSDs would not result in an impact to biodiversity during construction of the MPW Project, and therefore would not alter the biodiversity impact assessment provided within the MPW Concept EIS. |
| Maximum building heights | The alteration to the maximum building heights would not result in an impact to biodiversity during construction of the MPW Project, and therefore would not alter the biodiversity impact assessment provided within the MPW Concept EIS. |
| Staging of future applications | Changes to the staging of future applications would not result in an impact to biodiversity during construction of the MPW Project, and therefore would not alter the full build biodiversity impact assessment provided within the MPW Concept EIS. |
| Subdivision | Subdivision of the MPW site would not result in an impact to biodiversity during construction of the MPW Project, and therefore would not alter the biodiversity impact assessment provided within the MPW Concept EIS. |

## Operation

A summary of the key findings of the further traffic impact assessment, from an operational perspective, are provided in Table 7-30.

*Table 7-30 Summary of operational biodiversity impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | Fill would be imported and deposited during the construction of Stage 2 of the MPW Project and would be deposited within the MPW site as identified within the MPW Concept Approval. As a result, the importation of fill would not alter the biodiversity impact assessment provided within the MPW Concept EIS for operation of the MPW Project. |

| Item | Assessment |
|---|---|
| Altered construction footprint | Biodiversity impacts from the altered construction footprint would occur during construction of the Proposal, and no additional impacts relating to this change in footprint would occur as a result of the operation of the MPW Project. The biodiversity impact assessment provided within the MPW Concept EIS for operation of the MPW Project would not be altered as a result of the altered construction footprint. |
| Interaction between the MPW and MPE sites | The interaction between the MPW and MPE sites during operation of the MPW Project would not result in an impact to biodiversity, and therefore would not alter the biodiversity impact assessment provided within the MPW Concept EIS. |
| Changes to approved function and re-arrangement of existing approved uses | The changes to approved function and re-arrangement of existing approved uses during operation of the MPW Project would not result in an impact to biodiversity, and therefore would not alter the biodiversity impact assessment provided within the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights during operation of the MPW Project would not result in an impact to biodiversity, and therefore would not alter the biodiversity impact assessment provided within the MPW Concept EIS. |
| Staging of future applications | Changes to the staging of future applications during operation of the MPW Project would not result in an impact to biodiversity, and therefore would not alter the biodiversity impact assessment provided within the MPW Concept EIS. |
| Subdivision | Subdivision of the MPW site during operation of the MPW Project would not result in an impact to biodiversity, and therefore would not alter the biodiversity impact assessment provided within the MPW Concept EIS. |

### Mitigation measures

The MPW Concept Approval includes MCoAs and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal as applicable to the relevant future stages of development. A full list of these REMMs is provided in Section 8 of this RtS.

No additional mitigation measures are required for the construction or operation of the Amended Modification Proposal with regards to biodiversity.

## 7.1.4 Hazards and Risks

### MPW Concept Approval

The preliminary risk assessment (PRA) (Parsons Brinckerhoff, 2014) undertaken as part of the MPW Concept Approval comprised of the following components:

- Hazard identification
- Dangerous goods screening under SEPP 33
- Preliminary risk assessment
- Preliminary hazard analysis (PHA)
- Overall risks assessment

The assessment identified potential hazards associated with the MPW Project, noting that these would comprise:

- Construction and commissioning activities
- Transport of equipment and materials to site
- Rail traffic and logistics
- Road traffic and logistics

- Container loading and unloading
- Container storing
- Equipment and maintenance
- Mobile plant refuelling
- Locomotive refuelling
- Service station
- Waste disposal
- Transport of material.

The potential hazards that may arise from these activities were identified as:

- Gas leaks (natural gas, liquefied natural gas (LNG) and liquefied petroleum gas (LPG)) as a result of weld/cylinder failure, equipment failure, impact, corrosion, drive-away during loading or refuelling, other operational error, malicious damage or sabotage
- Loss of containment of flammable/combustible or corrosive liquids as a result of impact, unloading, operational error or equipment failure
- Vehicle accident during transport of a potentially hazardous material to the Project site, caused by poor road access or visibility, road conditions, other vehicles, vehicle or tank fault or driver fatigue
- Flooding as a result of extreme weather
- Inappropriate waste disposal as a result of lack of safety training and/or use of uncertified contractors.

Dangerous goods were identified as being explicitly excluded from the types of freight that the MPW Project would handle, and therefore would also be excluded from warehouses, freight container storage and transit areas. However, for operation of the MPW Project, a range of hazardous materials would be stored and used on site for refuelling, commercial use and maintenance/firefighting purposes.

Screening under SEPP 33 was undertaken as part of the MPW Concept EIS for a range of dangerous goods that would be stored on the MPW site for operational purposes. The assessment found that LNG would be the only material that would be stored or handled on site in sufficient quantity to exceed the screening limits under SEPP 33, triggering the requirement for a PHA. The PHA showed that the potential area of impact from the LNG storage location would be small, and no potential impact to sensitive land uses or residential areas was identified. More broadly the PHA indicated that the storage of diesel and flammable and combustible liquids would not pose an unacceptable level of risk to the surrounding community and would be within the recommended risk levels under the SEPP 33 guidelines. As no major effects would be felt outside the MPW site from these materials, there was considered to be little likelihood of fatality or risk to individuals or society.

## Impact Assessment – Amended Modification Proposal

### Construction

A summary of the key findings of the further hazards and risks assessment, from a construction perspective, are provided in Table 7-31.

*Table 7-31 Summary of construction hazards and risks for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would not result in additional hazards and risks above those identified within the MPW Concept Approval. Although there would be an increase in the number of vehicles transporting fill to the MPW site, the hazards and risks resulting from these movements would be consistent with those previously assessed in the MPW Concept EIS. Further, as only clean general fill would be imported, there is no additional contamination risk associated with the increased importation of fill. |

| Item | Assessment |
|---|---|
| Altered construction footprint | The amendments to the construction footprint would not result in significant changes to the proposed construction activities for the MPW Project, therefore would not alter the hazards and risks assessment provided within the MPW Concept EIS. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE sites to interact during construction, within the MPW Concept Approval. There is the potential for there to be interfacing between the MPW and MPE sites during construction, i.e. with construction vehicles and equipment being used concurrently on both sites. This interface has previously been assessed as part of the cumulative assessment provided in the MPW Concept Approval, which considered cumulative hazards and risks. This cumulative assessment concluded that it was unlikely that the construction of the two projects (i.e. MPW and MPE projects) would have a cumulative impact in terms of hazards and risks. Hazardous materials, dangerous goods and bushfires would be managed and controlled locally at each site in accordance with appropriate management plans. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) and reconfiguration of truck parking and OSDs (within the MPW site) would result in an alteration to the location of construction activities and traffic movements within the MPW site (and their associated hazards and risks). However, the construction activities and materials/plant required would remain consistent with those assessed in the MPW Concept EIS and the proposed re-arrangement would not result in any additional hazards and risks. Overall, this potential impact is considered temporary, minor and would not impact on the potential hazards and risks above that identified within the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights would not result in any changes to potential hazards and risks during construction as construction methods and materials/plant required for building construction would remain consistent as those assessed in the MPW Concept EIS, regardless of building heights. Therefore, the hazard and risk assessment provided within the MPW Concept EIS is still considered suitable. |
| Staging of future applications | The staging of future applications would not result in changes to the potential hazards and risks resulting from the MPW Project. Although additional construction works may be undertaken during the Stage 2 of the MPW Project and less construction works may be undertaken during Stage 3 of the MPW Project, no hazards or risks in addition to those already identified in the MPW Concept EIS would occur. In addition, as the overall MPW Project (full build) development scenario would remain the same regardless of the proposed staging, no further assessment is considered necessary. |
| Subdivision | Overall, subdivision would not result in any additional hazards or risks during construction of the MPW Project, above that identified within the MPW Concept Approval. No further assessment is considered necessary. |

## Operation

A summary of the key findings of the further hazards and risks assessment, from an operational perspective, are provided in Table 7-32.

*Table 7-32 Summary of operational hazards and risks for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would not result in operational impacts to hazards or risks. |
| Altered construction footprint | The amendments to the construction footprint would not result in any changes to potential hazards and risks during operation and therefore would not alter the hazards and risks assessment provided within the MPW Concept EIS. |
| Interaction between the | The Amended Modification Proposal seeks approval for the MPW and MPE sites to interact during operation, within the MPW Concept Approval. This interface has previously been assessed as part of the cumulative assessment provided in the MPW Concept Approval, |

| Item | Assessment |
|---|---|
| MPW and MPE sites | which considered cumulative hazards and risks. This cumulative assessment concluded that it was unlikely that the operation of the two projects (i.e. MPW and MPE projects) would have a cumulative impact in terms of hazards and risks. Hazardous materials, dangerous goods and bushfires would be handled and controlled locally at each site in accordance with appropriate management plans. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), and reconfiguration of truck parking and OSDs (within the MPW site) would result in an alteration to the location of some operational activities and traffic movements within the MPW site. However, these land use changes would not alter the assessed operations, the total number of vehicles travelling to the MPW site, or the goods and materials located within the site during operations. Therefore, the hazard and risk assessment provided within the MPW Concept EIS is still considered suitable. |
| Maximum building heights | The alteration to the building heights would not result in any changes to potential operational hazards and risks and therefore would not alter the hazard and risk assessment provided within the MPW Concept EIS. |
| Staging of future applications | The staging of future applications would not result in changes to the potential hazards and risks resulting from the MPW Project. Although additional operational activities may be undertaken during the Stage 2 of the MPW Project, as a result of additional works being undertaken in this stage, no hazards or risks in addition to those already identified in the MPW Concept EIS would occur. In addition, as the overall MPW Project (full build) development scenario would remain the same regardless of the proposed staging, no further assessment is considered necessary. |
| Subdivision | The inclusion of subdivision within the MPW Project would not result in any changes to the proposed operations of the MPW Project. Therefore, subdivision would not result in any additional hazards or risks during operation of the MPW Project, above that identified within the MPW Concept Approval. |

### Mitigation Measures

The MPW Concept Approval includes MCoAs and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal as applicable to the relevant future stages of development. A full list of these REMMs is provided in Section 8 of this RtS.

No additional mitigation measures are required for the construction or operation of the Amended Modification Proposal regarding hazards and risks.

## 7.1.5 Soils and Contamination

### MPW Concept Approval

#### Geology and soils

Geology and soils of the MPW Concept Approval were considered in the *Phase Two Environmental Site Assessment (ESA)* (Parsons Brinkerhoff, 2014) for the MPW Concept EIS. The assessment identified the following characteristics relating to the geology and soils of the MPW Project:

- The MPW site and surrounding area is underlain by tertiary fluvial deposits composed of clayey sand and clay to depths of 10 m in places.
- There are two main aquifer systems on the Proposal site; a perched system with alluvial soils, and a deeper aquifer from within the bedrock. Groundwater in the shallower aquifer flows towards the Georges River
- Fill material with a general depth between 0.5 m and 1 m below ground level (BGL) (with maximum depths of over 3.2 m BGL at certain locations) is present around the MPW site as a result of works undertaken during prior development on the MPW site.

- The recent alluvial soils within or close to the Georges River are characterised by high acid sulphate soils risk potential
- Drilling works revealed saturated horizons between 7 and 15 m BGL within the natural alluvium aquifer. Groundwater levels were subsequently measured at depths of between 5.2 and 12.4 m BGL (1.7 and 9.11 m Australian Height Datum (AHD)). Groundwater flow is inferred to be west to the north-west towards the Georges River
- A review of historical site land use reveals that the Proposal site has undergone considerable development over time to facilitate the makeup of the Moorebank and Steele Barracks since 1930. The soils of the site as a whole therefore are largely disturbed to facilitate the construction of roads, residential development, industrial structures, landfilling and quarrying
- Across the Proposal site, there is a potential for erosion of soils exposed through vegetation clearing, stockpiled materials, drainage lines and earthworks, and sedimentation into the surrounding Georges River and Anzac Creek. Early Works activities would not be expected to have an impact on the local stormwater catchments as existing drainage would continue to be used during this phase.

### Land contamination

A *Phase Two Environmental Site Assessment (P2 ESA)* (2014a) was prepared by Parsons Brinkerhoff to inform the MPW Concept EIS for land contamination aspects.

Desktop investigations informing the P2 ESA identified a potential for subsurface contamination to have occurred as a result of prior land uses, which included military training, demolition and reconstruction of buildings, use and storage of potentially harmful chemicals. Potential contamination sources that were identified adjacent to the MPW site include:

- ABB site (to the north-west): Volatile organic compounds (VOCs), including trichloroethylene (TCE) were identified in soil and groundwater in the north western portion of the site. A Tier 2 quantitative risk assessment (QRA) was completed by Golders (2015) and the overall risks associated with the VOCs were considered low and acceptable for the land use consistent to the MPW Concept Approval, which includes roads, road verges, stormwater infrastructure and woodland/riparian conservation areas
- MPE site to the east: Contamination impacts including chemical wastes have been identified in groundwater sampled from monitoring wells on the western boundary of the DNSDC site

Contamination issues were subsequently verified via onsite investigations as part of the *Phase Two ESA* investigations. Intrusive soil sampling, in accordance with the requirements of the NSW *Contaminated Land Management Act 1997* (CLM Act), was carried out between 24 January and 10 February 2011 to ascertain the potential extent of onsite contamination, and potential soil, sediment and groundwater impacts across the MPW Site. Additionally, an unidentified explosive ordinance (UXO) specialist contractor was engaged to undertake an assessment of potential UXO in the subsurface environment, and a geophysical survey specialist was engaged to undertake a seismic refraction survey (SRS) to assess the extent of fill at various locations across the MPW Site.

The results of these P2 ESA investigations and associated studies confirmed and identified:

- Several localised areas of soil contamination with concentrations of hydrocarbons, dissolved metals and heavy metals detected above the adopted (commercial/industrial) screening criteria
- Soils with acid generating potential (potential acid sulphate soils (PASS) are located within the Georges River
- Several locations containing anthropogenic fill materials were identified with these locations containing building rubble, plastics, bricks, concrete and asbestos containing materials (ACMs) (fragments, sheeting, pipes/conduit)
- Areas with potentially contaminating infrastructure (underground fuel storage systems, waste oil tanks and water separators).

Overall, the majority of the MPW site was considered to have a low risk of contamination, or had contaminant concentrations below the adopted (commercial/industrial) screening criteria. UXO investigations concluded there was a very low potential for UXO occurrence on the MPW site.

The public exhibition period of the EIS resulted in a number of submissions in relation to the *P2 ESA* and *Preliminary Remediation Action Plan* (RAP) prepared by PB (2014) and to address these issues and other data gaps, Golder (2015) a *Post-Phase Two ESA* (PP2 ESA). The results of the PP2 ESA were included in the MPW Concept Response to Submissions Report. Issues relevant to the Amended Modification Proposal were primarily related to the potential impact of contaminated runoff into the Georges River. These further investigations gathered the information required to develop a *Remediation Specification* document to instruct the preferred remedial approach for existing areas of contamination and establish criteria for the remediation of the site. The summarised findings of the PP2 ESA are provided in Table 7-33.

*Table 7-33 PP2 summarised findings*

| Contaminant/item of concern | Risk | Extent | Further Action |
|---|---|---|---|
| Acid Sulfate Soils (ASS) | When exposed to air, sulfides react with oxygen to form sulfuric acid | High potential acid sulfate soil (PASS) risk present along the banks of the Georges River. Acidic soils were additionally identified on the MPW site, yet do not appear to be associated with the oxidisation of sulphates. | Management of areas within the development footprint impacting on PASS areas would be required during construction. |
| (Trichloroethylene [TCE]) | Carcinogenic | Detected in soil, groundwater and soil vapour in a localised area in the north western corner of the site | Impact to Georges River unlikely, however further investigation required for management during the MPW Project |
| Underground Storage Tanks (UST) | Leakage of hazardous materials into surrounding soils and groundwater | The UST audit identified 2 steel USTs, 10 in-ground concrete tanks and 2 concrete septic tanks | Actions required to remediate and validate these areas would be presented in the updated Remediation Specification and Validation Plan (forming the approved RAP), to be carried out during Stage 1 (Early Works) of the MPW Project. |
| benzo(a)pyrene (B(a)P) | Carcinogenic | Four samples within general fill throughout the MPW site (in accordance with adopted commercial/industrial environmental screening levels) | Management required to ensure B(a)P materials are not placed in the shallow soil profile (i.e. the upper 2m depth) within an ecologically sensitive area on the site during redevelopment |
| Asbestos | Lung cancer, mesothelioma, asbestosis and other non-malignant lung and pleural disorders. | Friable asbestos found in uncontrolled fill and waste stockpile areas around the MPW site | Actions required to remediate and validate these areas would be presented in the Remediation Specification and Validation Plan and carried out during Stage 1 (Early Works) and Stage 2 |

| Contaminant/item of concern | Risk | Extent | Further Action |
|---|---|---|---|
| Heavy Metals/Metalloids (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc) | Impaired function of vital cellular components | Within the vicinity of the riparian area and grit blasting facility around the centre of the site (above the ecological screening levels [ESLs]) | Remediation of identified heavy metals to be undertaken during Stage 1 (Early Works). Unexpected finds to be managed under protocol outlined under the CEMP |
| Organochlorides (OCP) | Can bioaccumulate and cause reproductive problems | OCP impacted materials were detected beneath Building 51 and potentially occurring beneath many untested buildings across the MPW site | To be remediated during demolition of these buildings in Stage 1 (Early Works) in accordance with Remediation Specification and validation strategy presented in the Validation Plan |
| Polychlorinated biphenyls (PCB) | Persistent organic pollutant | Six electrical substations were identified around the MPW site. There is potential for PCBs to be occurring within cable fluid servicing these areas. | Disconnection of transformers, validation of potentially contaminated land and remediation if required to occur during Stage 1 (Early Works). |
| Perfluoroalkyl and polyfluoroalkyl substances (PFAS) | Contamination of ground and drinking water | Several locations at the site where fire-fighting training was carried out and adjacent to Georges River. | A staged management approach to be prepared and included in a Long Term Environmental Management Plan (LTEMP) which would identify the extent and risk and propose management measures throughout Stage 1 (Early Works) and the future stages of the MPW Project. |
| Polycyclic aromatic hydrocarbons (PAH) | PAH compounds are carcinogenic and mutagenic, and persist in the environment. | Found throughout the site at levels exceeding ecological screening levels (ESL) but below health screening criteria | To be remediated as part of Stage 1 (Early Works) in accordance with the procedures set out under the Remediation Specification and Validation Plan |

In addition, the PP2 ESA investigations concluded the following:

- Former PRA Yard Investigation: It was found that no intrusive investigations had been undertaken for the former PRA Yard and the status of UST presence was uncertain. A contingency protocol for managing the discovery and remediation of previously unidentified USTs (and associated pipework) would be included in the *Remediation Specification*. The area would be tested, remediated if necessary, and validated as part of Stage 1 (Early Works)
- Former Village Training Area: No significant volumes of anthropogenic fill materials, or contaminated materials were encountered during intrusive investigations, however it is likely that the materials used to

construct the training tunnels remain in-situ. Therefore, the Remediation Specification would allow for possible management and/or remediation of contaminated fill materials in this area during Stage 1 (Early Works).

It was noted within the MPW Concept EIS that Stage 1 (Early Works) would include wide scale rehabilitation and remediation of contaminated areas. A Remediation Specification and Validation Plan and associated documentation, as mentioned above, would be prepared for these remediation works.

Specific remediation activities undertaken as part of Stage 1 (Early Works) would include:

- Rehabilitation of the excavation/earthmoving training area (i.e. 'dust bowl')
- Remediation of contaminated land and hotspots and the removal of:
  - Underground storage tanks (USTs)
  - Unexploded ordnance (UXO) and explosive ordnance waste (EOW) if found
  - Asbestos contaminated buildings
- Establishment of a conservation area along the Georges River, including seed banking and planting
- Vegetation removal, including the relocation of hollow-bearing trees, as required for remediation and demolition purposes.

In general, the only isolated areas of land contamination not remediated during Stage 1 (Early Works), are those areas occurring within endangered ecological communities (EEC).

## Impact Assessment – Amended Modification Proposal

### Construction

Further investigations have been undertaken to assess the items within the Amended Modification Proposal with regards to the geology, soils and contamination of the MPW site. The key findings and further assessment, from a construction perspective, are provided in Table 7-34.

*Table 7-34 Construction impact assessment for the Amended Modification Proposal relating to geology, soils and contamination*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation and placement of clean general fill would intensify earthworks activities above those previously identified for the MPW Concept Approval. The following impacts have the potential to be exacerbated under the Amended Modification Proposal:<br>• Erosion of the levelled site<br>• Generation of sediment laden runoff and potential impacts on Anzac Creek and Georges River<br>• Fouling of stockpiled material through the unwanted growth of vegetation<br>The large volume of soil entering the MPW site for construction works, despite the flat topography, means that the stockpile areas may become susceptible to a high erosion risk if not properly managed. Stockpiles located on the MPW site for the purpose of clean general fill import would be placed, prepared and compacted to minimise erosion impacts created from loose materials, steep slopes and drainage conditions. The surface area and length of time upon which the importation and placement of clean general fill would occur may lead to the unwanted spread and growth of vegetation degrading the quality of the stockpiled material (fouling), which would be addressed through the preparation of an *Earthworks Specification,* included as an additional mitigation measure below.<br>Construction works are unlikely to expose acid sulfate soils or potential acid sulfate soils, as the area on which fill is to be placed is located outside of the Georges River riparian corridor (where potential acid sulfate soils is evident). |

| Item | Assessment |
|---|---|
| | Further, the majority of remediation works for the MPW Project are to be undertaken as part of Stage 1 (Early Works), with minor works inside EEC to be undertaken during Stage 2. It is not anticipated that the importation and placement of clean general fill would pose any added contamination threat that has not previously been identified in the MPW Concept Approval. Therefore, it is considered that the activities proposed under the Amended Modification Proposal would benefit the overall MPW Project in a number of ways, including:<br>• Provision of a more consistent, less moisture sensitive working platform<br>• Provision of a more consistent cross-sectional layer for which pavement design can be developed, which may translate to economic savings in pavement design.<br>Overall, the Amended Modification Proposal would not result in additional impacts associated with soils, geology or land contamination above those identified within the MPW Concept Approval. |
| Altered construction footprint | The Amended Modification Proposal would marginally extend the construction footprint beyond that approved under the MPW Concept would not generate any additional geology, soils or land contamination issues that have not already been identified and considered as part of historical studies undertaken for the site (namely the P2 and PP2 site investigations undertaken for the MPW Concept Approval). |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE site to interact during construction, within the MPW Concept Approval. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) reconfiguration of truck parking and OSDs would result in a minor alteration of the built form of the MPW site, compared to the MPW Concept Approval. Overall, the re-arrangement of approved uses would not generate any additional impacts to the geology, soils or existing land contamination as identified in the MPW Concept Approval. |
| Maximum building heights | The alteration to the building heights, would not result in any additional impact to the geology, soils or land contamination on or within the MPW site, compared with that approved within the MPW Concept Approval. |
| Staging of future applications | The staging of future applications as per the Amended Modification Proposal would potentially amend the timescales and the order of construction activities to that proposed under the MPW Concept Approval. Notwithstanding this, Stage 1 (Early Works) and Stage 2 of the MPW Project remediation activities would not be altered. As a result, the alteration to the staging of approved uses would not generate any additional impacts to the geology, soils or existing land contamination as identified in the MPW Concept Approval. |
| Subdivision | Overall, subdivision would not impact upon on the geology or soils, and would not create additional land contamination risks for the MPW site. |

## Operation

Further investigations have been undertaken to assess the items within the Amended Modification Proposal with regards to the geology, soils and contamination of the MPW site. The key findings and further assessment, from an operational perspective, are provided in Table 7-35.

*Table 7-35 Summary of operational traffic impact assessment for the Amended Modification Proposal relating to geology soils and contamination*

| Item | Assessment |
|---|---|
| Importation of clean general fill | Once constructed, the fill imported for the Amended Modification Proposal would have minimal impact on soils as the MPW site would be stabilised with suitable materials. |

| Item | Assessment |
|---|---|
| | Stabilisation would include clean general fill materials, hardstand areas, railway ballast and landscaping, which would significantly reduce the risk of on-site erosion.<br><br>Once operational, the MPW site would be remediated to a level which is considered suitable for the operation of the Proposal. The Amended Modification Proposal would not alter the remediation to be undertaken, and therefore the final environmental quality of the MPW site would remain unchanged to that already assessed in the MPW Concept Approval. |
| Altered construction footprint | Once operational, the Amended Modification Proposal is not anticipated to result in any additional impacts on geology and soils in that these areas would have been stabilised with suitable materials during construction. Overall, the Amended Modification Proposal would not result in additional impacts associated with soils, geology or land contamination above those identified within the MPW Concept Approval. |
| Interaction between the MPW and MPE sites | This modification item does not change the physical nature of the works within the MPW site, and therefore does not generate any additional impacts associated with geology, soils and contamination as assessed in the MPW Concept EIS. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) reconfiguration of truck parking and OSDs would result in a minor alteration of the built form of the MPW site, compared to the MPW Concept Approval. Overall, the re-arrangement of approved uses would not generate any additional impacts to the geology, soils or existing land contamination as identified in the MPW Concept Approval. |
| Maximum building heights | The alteration to the building heights, would not result in any additional impact to the geology, soils or land contamination on or within the MPW site, compared with that approved within the MPW Concept Approval. |
| Staging of future applications | The amended staging included within the Amended Modification Proposal would not result in any differences to the operational functionality of the MPW site once fully built, when compared to the MPW Concept Approval. As a result, there is not anticipated to be any changes to the impacts to geology, soils and contamination identified and addressed in the MPW Concept Approval |
| Subdivision | Overall, subdivision would not impact upon on the geology or soils, and would not create additional land contamination risks for the MPW site. |

## Mitigation measures

The MPW Concept Approval includes Ministers Conditions of Approval (MCoAs) and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. The relevant REMMs and additional mitigation measures, as considered suitable, are discussed below.

In summary, through the implementation of the MPW Concept Approval REMMs, impacts associated with geology, soils and contamination associated with the Amended Modification Proposal are expected to be able to be adequately managed.

### Construction

Table 7-36 lists the applicable mitigation measures identified within the MPW SRtS and the MCoA for the MPW Concept Approval to be implemented for the appropriate management of geology, soils and contamination impacts associated with the Amended Modification Proposal during construction.

*Table 7-36 REMMs applicable to construction geology, soils and contamination management for the Proposal*

| REMM | Mitigation measure |
|---|---|
| **REMM 8B** | Before construction, a remediation program would be implemented in accordance with the Moorebank Intermodal Terminal Preliminary Remediation Action Plan (RAP) (or equivalent). The program would have been formally reviewed and approved by the Site Auditor under Part 4 of the NSW Contaminated Land Management Act 1997 (CLM Act). |
| **REMM 8C** | A CEMP would be prepared by the contractor for all excavation and remediation works and would include requirements for decontamination facilities at the Project site. |
| **REMM 8K** | Stockpiled soils would be stored on a sealed surface and the stockpiled areas would be securely bunded using silt fencing to prevent silt laden surface water from entering or leaving the stockpiles or the Project site. |
| **REMM 8M** | All asbestos removal, transport and disposal would be performed in accordance with the Work Health and Safety Regulation 2011 (WHS Regulation). |
| **REMM 8N** | The removal works would be conducted in accordance with the National Occupational Health and Safety Commission Code of Practice for the Safe Removal of Asbestos, 2nd Edition [NOHSC 2002 (2005)] (NOHSC 2005a). |
| **REMM 8O** | An appropriate asbestos removal licence issued by WorkCover NSW would be required for the removal of asbestos contaminated soil. |
| **REMM 8P** | Environmental management and WHS procedures would be put in place for the asbestos removal during excavation to protect workers, surrounding residents and the environment. |
| **REMM 8R** | An asbestos removal clearance certification would be prepared by an occupational hygienist at the completion of the removal work. This would follow the systematic removal of asbestos containing materials and any affected soils from the Project site, and validation of these areas (through visual inspection and laboratory analysis of selected soil samples). |
| **REMM 8U** | Stockpiles would be placed at approved locations and would be strategically located to mitigate environmental impacts while facilitating material handling requirements. Contaminated or potentially contaminated materials would only be stockpiled in un- remediated areas of the Project site or at locations that did not pose any risk of environmental impairment of the stockpile area or surrounding areas (e.g. hardstand areas). |
| **REMM 8V** | Stockpiles would only be constructed in areas of the Project site that had been prepared in accordance with the requirements of the Project Preliminary RAP in Appendix F of Technical Paper 5 – Environmental Site Assessment (Phase 2), Volume 5A and 5B. All such preparatory works would be undertaken before material is placed in the stockpile. Stockpiles must be located on sealed surfaces such as sealed concrete, asphalt, high density polyethylene or a mixture of these, to appropriately mitigate potential cross contamination of underlying soil. |
| **REMM 8Y** | Where required, contaminated materials and wastes generated from the Project remediation and construction works would be taken to suitable licensed offsite disposal facilities. |

An additional mitigation measure for the Amended Modification Proposal has been included below:

- Quality control aspects relating to permanent clean general fill and risks associated with temporary stockpiling would be addressed and managed by a site specific earthworks specification. This document is to be prepared in consideration of the final design layout adopted, and requirements relating to the stockpiling during the construction of the relevant stage of development of the MPW Project.
- All imported clean general fill would be accompanied by classification certificates identifying that it is suitable for the intended use (i.e. VENM/ENM).

### Operation

Once constructed, the operation of the Amended Modification Proposal would have minimal impact to geology, soils and contamination within the MPW site. The MPW Concept Approval includes MCoAs and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. No additional mitigation measures are required for the operation of the Amended Modification Proposal to address geology, soils and contamination as a result of the Amended Modification Proposal.

## 7.1.6 Stormwater and Flooding

### MPW Concept Approval

A Surface Water Assessment was prepared by Parsons Brinkerhoff (2014) to assess the Stormwater and Flooding key issues included in the SEARs for the MPW Concept EIS. The assessment included all phases of the MPW Concept Approval.

The assessment considered the potential surface water impacts associated with the establishment of construction facilities and demolition or relocation of existing buildings and structures including the following aspects:

- Change in hydrologic regime, in particular, change in flooding and stormwater runoff quantity
- The impact of the project on water quality, including sediment and erosion, stormwater quality and stormwater pollution (accidental spills etc.).

The assessment was based on conceptual scenarios assuming a worst-case scenario regarding disturbance of local surface water catchments during construction for Early Works activities. An assessment of the full Build operational scenario, using a conceptual stormwater management plan, was also undertaken.

The key findings from the investigations are summarised below into water quantity, flooding, and water quality and groundwater and these are described further below.

#### Water Quantity

At full build, the MPW Project would result in a substantial increase to the area of impervious surfaces, with subsequent risks for hydrology (flooding) and water quality impacts. A drainage strategy has been developed to manage this issue, including provision of overland flow paths across the site to detention basins and biofiltration systems/wetlands, from which treated water would be discharged to the Georges River through upgraded stormwater channels.

#### Flooding

Flooding impacts were assessed using a hydraulic model generated using HEC-RAS modelling software. The investigations were primarily desktop based, however they were informed by a site walkover and input from Liverpool City Council. Historical findings identified the MPW site has been affected by flooding from the Georges River as recently as 1988, and is most at risk of flooding in the lower terrace area of the eastern floodplain of the river. The peak 1% annual exceedance probability (AEP) (1 in 100 year ARI) levels range from 11.7 to 10.4 m above height datum (AHD) along the western boundary of the MPW site. An area of 23.6 hectares (12% of the MPW site area) was declared as ‘high flood risk’. Climate change was noted as an additional consideration that may exacerbate flooding risks in the future. The establishment of a dedicated conservation area between the Georges River and the 1% AEP flood level would minimise the potential flood risk associated with the MPW site.

The Response to Submissions report to the MPW Concept EIS, prepared by Parsons Brinkerhoff (May 2015) further addressed concerns raised by Bankstown City Council that the MPW Project is located in a high-risk flood zone. The response to this submission (Parsons Brinkerhoff, 2015) reiterated that the Project’s operations on the site would be located out of the high and medium flood risk zones of the Georges River catchment. The response also clarified that no development (nor any vegetation clearing) is proposed for the area of high flood risk along the lower terraces of the Georges River which exceeds the 1% AEP for a significant flood event. The response included a commitment that the internal site drainage system would be

designed to convey 10% AEP flood events, in accordance with the *LCC Drainage Design Specification Section* D5.04. For events above the 10% AEP, the site would be designed to safely convey overland flow to the detention ponds, which would be designed to attenuate the runoff from the site to pre-development levels up to the 1% AEP flood level.

### Water Quality and Groundwater

Baseline water quality data were derived from previous investigations and NSW Office of Water (NOW) water quality objectives and Australian and New Zealand Environment and Conservation Council (ANZECC) Guidelines. During construction, the key activities that have the potential to affect stormwater quality and downstream waterbodies include the potential mobilisation and erosion of soils on the MPW site due to land disturbance. Accidental spills of chemicals and other hazardous construction materials, and uncontrolled discharge of contaminants to receiving waterways could also have an adverse impact on water quality unless carefully managed. With appropriate management, the MPW Project is expected to provide water quality benefits for the Georges River, due to the proposed treatment of stormwater prior to discharge, which would lead to a reduction in the annual load of total suspended solids, hydrocarbons and total phosphorus discharged from the MPW site. This is predicted to be consistent with the objectives of the ANZECC Water Quality Guidelines.

Overall, recommendations for further assessment of potential drainage and flood impacts as part of future stages are outlined in mitigation measures included within the MPW Concept EIS, which have been included within Section 8 of the RtS Report.

## Impact Assessment – Amended Modification Proposal

Further stormwater and flooding impact assessment has been undertaken to assess differences in impact generated by the inclusion of items proposed under the Amended Modification Proposal, when compared to the MPW Concept Approval.

### Construction

A summary of the stormwater and flooding impact assessment for construction of the Amended Modification Proposal is provided below in Table 7-37. Where required, further assessment of potential construction related stormwater and flooding impacts is provided below this table.

*Table 7-37 Summary of construction stormwater and flooding impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of clean general fill during construction has the potential to result in impacts to surrounding waterbodies, namely the Georges River. Further assessment has been provided below. |
| Altered construction footprint | Additional impacts to four parcels of land would marginally extend the construction footprint beyond that approved under the MPW Concept Approval. This adjustment of the construction footprint would result in a minor intensification of erosion and sedimentation impacts to those previously identified with the MPW Concept Approval, and can be sufficiently managed through principles set out within the mitigation measures prescribed for the MPW Concept EIS, further assessment is therefore not considered necessary. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE site to interact during construction. This activity would result in no additional stormwater and flooding impacts to that previously assessed within the MPW Concept EIS. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) and reconfiguration of truck parking would result in a minor change to surface flow and flow velocities around the MPW site to reflect the adjusted building formation level. Notwithstanding this, these adjustments would not present additional surface water impacts, provided the mitigation measures prescribed in the MPW Concept EIS (included |

| Item | Assessment |
|---|---|
| | within Section 8 of this RtS) are implemented during construction. Overall, this potential impact is considered negligible from a construction flooding and stormwater perspective, when compared to that assessed within the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights would not impact on site conditions affecting the risk of flooding or stormwater during construction of the MPW Project, further assessment is therefore not considered necessary. |
| Staging of future applications | The staging of future applications has been amended from that approved under the MPW Concept Approval to better structure and sequence the development from both an operational efficiency and environmental impact perspective. The establishment of stormwater infrastructure, including OSDs during the preconstruction works, in addition to the mitigation measures outlined within the MPW Concept EIS would facilitate appropriate stormwater management throughout the course of construction of each stage of the MPW Project. |
| Subdivision | The inclusion of subdivision within the MPW Project would result in minor, if any, additional physical works to be undertaken. Overall, subdivision would not result in any additional stormwater and flooding impacts, above that identified within the MPW Concept Approval. |

### Importation of clean general fill

The importation of clean general fill during construction would involve the import, placement and stockpiling of clean general fill material across the MPW Project development footprint during Stage 2 of the MPW Project (as per the Amended Modification Proposal). The importation of general clean general fill would result in a considerable improvement to stormwater management across the MPW site (refer to Section 6 for further information). Overall, the importation of clean general fill would result in a considerable improvement to drainage within the MPW site, and the surrounding area. The drainage design associated with the importation of clean general fill has considered the MPW site and the surrounding area including the MPE site.

While the Amended Modification Proposal involves the importation of approximately 1,600,000 m3 of clean general fill across the MPW Project, as earthworks across the entire MPW Project have always been considered as a part of construction, the area of disturbance remains consistent with the existing MPW Concept Approval. The additional volume of clean general fill to be imported may be required to be temporarily stockpiled during construction, and this may result in an intensification of the potential erosion and sedimentation impacts identified in the approved MPW Concept EIS, including:

- Increased turbidity of waterways and drainage lines
- Increased nutrient loads to receiving waterways
- Changes to groundwater levels and systems
- Changed concentration of stormwater pollutants
- Changes to volume and velocities of surface water drainage
- Sedimentation of creeks and drainage lines

Mitigation measures identified within the MPW Concept Supplementary Response to Submissions (SRtS) (REMMs 9A-9S – provided below) would be implemented and tailored to address and manage these impacts. Among these measures is the requirement to prepare and implement a Construction Soil and Water Management Plan (CSWMP) prior to land disturbance. This plan is to include Erosion and Sediment Control Plans tailored to the site and prepared in accordance with the relevant Volumes of the “Blue Book” (Landcom, 2004).

Strategies to be considered as part of the CSWMP would include:

- Clean runoff from upstream undisturbed areas would be diverted around the Project site to minimise overland flow through the disturbed areas;
- Stabilised surfaces would be reinstated as quickly as practicable after construction;
- All stockpiled materials would be stored in bunded areas and away from waterways to avoid sediment-laden runoff entering the waterways;

- Sediment would be prevented from moving offsite and sediment laden water prevented from entering any watercourse, drainage line or drainage inlet;
- Erosion and sediment control measures would be regularly inspected (particularly following rainfall events) to monitor their effectiveness and stability;
- Erosion and sediment control measures would be left in place until the works are complete or areas are stabilised;
- Regional flood risk from the Georges River would be minimised during construction as the area of disturbance would be consistent with the MPW Concept Approval development footprint which is located above the 1% AEP Flood extent.

## Operation

A summary of the stormwater and flooding impact assessment for operation of the Amended Modification Proposal is provided in Table 7-38. Where required, further assessment of these potential construction impacts is provided below.

*Table 7-38 Summary of operational stormwater and flooding impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | This item would not generate additional operational impact to water quantity as there is no increase to the development footprint or the imperviousness of the site from that Proposed as per the MPW Concept Approval. Furthermore, operational water quality measures, such as raingardens and gross pollutant traps (GPTs) would be maintained as per the original Concept, resulting in no additional impact to water quality.<br>This item may however have the potential to modify flood risk associated with the site and the Georges River, for which further assessment is provided below. |
| Altered construction footprint | The amendment to the construction footprint and the works to be undertaken are anticipated to result in an overall improvement to the conveying of surface water throughout the MPW site and the surrounding lands. In particular, once operational, the drainage proposed through the ABB site would generally replicate existing surface water flow patterns and further reduce flood risk for the MPW site. Overall, the drainage works proposed would be consistent with the stormwater and flooding principles of the MPW Concept Approval and would not alter the stormwater and flooding assessment within the MPW Concept EIS. |
| Interaction between the MPW and MPE sites | The MPW Concept Approval considered the interaction of drainage between the two sites. The Amended Modification Proposal would not alter the drainage strategy identified within the MPW Concept Approval. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) and reconfiguration of truck parking is anticipated to result in a negligible change, if any, to the stormwater and flooding impacts identified within the MPW Concept EIS. In particular, there would be no significant change to the amount of hardstand, and therefore surface water drainage measures, provided on the MPW site. |
| Maximum building heights | The alteration to the building heights would not impact on site conditions affecting the risk of flooding or stormwater related impacts to the MPW site. |
| Staging of future applications | The staging of future applications has been amended from that approved under the MPW Concept Approval to better structure and sequence the development from both an operational efficiency and environmental impact perspective. Temporary alterations to the drainage strategy would be evident in individual stages however the overall drainage strategy for the full build of the MPW Project is not proposed to be altered. In particular, OSDs for the MPW site would be implemented early as part of Stage 2 of the MPW Project, formalising drainage flows and patterns, prior to the operation of Stage 3. The OSDs to be implemented during Stage 2 are anticipated to be suitable for drainage of Stage 3 thereby limiting works to be undertaken, and additional alteration to drainage patterns, during Stage 3. |

| Item | Assessment |
|---|---|
| Subdivision | No impacts to flooding and stormwater would be generated as a result of this amendment. |

### Importation of clean general fill

The importation, placement and spreading of clean general fill to facilitate site drainage requirements may have the potential to increase the flood risk to both the site and surrounding properties.

HEC-RAS Flood modelling has been undertaken to identify and manage the risk of regional flooding to the site and surrounding properties, generated from the activity of importing and spreading fill throughout the MPW site to achieve the lowest basin levels above the 1% AEP.

A base case HEC-RAS model was established, using an existing 2015 model, and extended upstream and downstream of the MPW site, to determine 'base case' flood levels along the Georges River[13], representative of the MPW Concept Approval conditions (modelling results are provided in Appendix B).

This "base-case" (HEC-RAS) model was adjusted to represent raising of the MPW site along the Georges River eastern overbank, representative of the Amended Modification Proposal.

The output results from the HEC-RAS modelling undertaken for the Proposal indicate that the potential flood impacts of raising the Proposal site would, up to a 100 year ARI event, be negligible, and very limited (in the order of 0.01 metres for a PMF event).

## Mitigation measures

The MPW Concept Approval includes Ministers Conditions of Approval (MCoAs) and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. The relevant REMMs and additional mitigation measures, as considered suitable, are discussed below.

In summary, through the implementation of the REMMs approved for the MPW Concept Approval identified below, stormwater and flooding impacts associated with the Amended Modification Proposal are expected to able to adequately managed in addition to those predicted within the MPW Concept EIS.

### Construction

Table 7-39 lists the applicable mitigation measures identified within the MPW SRtS and the MCoA for the MPW Concept Approval to be implemented for the appropriate management of stormwater and flooding impacts associated with the Amended Modification Proposal during construction.

*Table 7-39 REMMs applicable for the management of stormwater and flooding impacts for the Amended Modification Proposal*

| REMM | Mitigation measure |
|---|---|
| **REMM 9A** | A soil and water management plan (or equivalent) would be developed before work begins in the conservation area. This plan would include erosion and sediment control plans (ESCPs) and procedures to manage and minimise potential environmental impacts associated with developing this area. |
| **REMM 9B** | Site compounds, stockpiling areas and storage areas for sensitive plant, equipment and hazardous materials would be located above an appropriate design flood level, which would be determined based on the duration of the construction works. |

[13] "Base Case" flood levels from this model were verified using flood levels determined in the '*Upper Georges River Flood Study*' by Department of Land & Water Conservation in conjunction with Liverpool City Council, December 2000.

| REMM | Mitigation measure |
|---|---|
| **REMM 9K** | The following staging process would be considered to be implemented when constructing surface water drainage infrastructure:<br>• Biofiltration and detention basins that form part of the proposed stormwater management strategy would be excavated at the first phase of development, with the intention that the excavated basins would be used as temporary construction phase sedimentation basins. Once these construction phases become operational, these temporary construction phase sedimentation basins could be developed into the permanent biofiltration and detention basins.<br>• During the relevant phase of development, all major stormwater pipes and culverts (600 mm diameter and larger) and main channels and outlets would be installed. Minor drainage and upstream systems would then be progressively connected to the major drainage elements during each phase of construction as required. |
| **REMM 9L** | A soil and water management plan (or equivalent) would be developed before land was disturbed that would include erosion and sediment control plans (ESCPs) and procedures to manage and minimise potential environmental impacts associated with construction of the Project.<br>The ESCP(s) for the Project would be prepared in accordance with Volume 1 of Managing Urban Stormwater: Soils and Construction ('the Blue Book') (Landcom 2004), *Managing Urban Stormwater: Soils and Construction: Installation of Services, Volume 2A* (OEH 2008) and Managing Urban Stormwater: Soils and Construction – Main Road Construction, Volume 2D (OEH 2008). The ESCP(s) would be established before the start of each construction phase and would be updated as relevant to the changing construction activities.<br>Strategies to be considered as part of the plan include:<br>• clean runoff from upstream undisturbed areas would be diverted around the Project site to minimise overland flow through the disturbed areas;<br>• stabilised surfaces would be reinstated as quickly as practicable after construction;<br>• all stockpiled materials would be stored in bunded areas and away from waterways to avoid sediment-laden runoff entering the waterways;<br>• sediment would be prevented from moving offsite and sediment-laden water prevented from entering any watercourse, drainage line or drainage inlet;<br>• erosion and sediment control measures would be regularly inspected (particularly following rainfall events) to monitor their effectiveness and stability;<br>• erosion and sediment control measures would be left in place until the works are complete or areas are stabilised;<br>• temporary erosion control and energy dissipation measures would be installed to protect receiving environments from erosion; and<br>• vehicle movements would be managed during rainfall (or while the ground remains sodden) to minimise disturbance to the topsoil. |
| **REMM 9M** | Procedures to maintain acceptable water quality and to manage chemicals and hazardous materials (including spill management procedures, use of spill kits and procedures for refuelling and maintaining construction vehicles/equipment) would be implemented during construction. |
| **REMM 9N** | Vehicles and machinery would be properly maintained to minimise the risk of fuel/oil leaks. |
| **REMM 9O** | Routine inspections of all construction vehicles and equipment would be undertaken for evidence of fuel/oil leaks. |
| **REMM 9P** | All fuels, chemicals and hazardous liquids would be stored within an impervious bunded area in accordance with Australian Standards and NSW Environment Protection Authority guidelines. |
| **REMM 9Q** | Emergency spill kits would be kept onsite at all times. All staff would be made aware of the location of the spill kits and trained in their use. |
| **REMM 9S** | Construction plant, vehicles and equipment would be refuelled offsite, or in designated re-fuelling areas located at least 50 metres from drainage lines or waterways. |

### Operation

Table 7-40 lists the applicable mitigation measures identified within the MPW SRtS and the MCoA for the MPW Concept Approval to be implemented for the appropriate management of traffic impacts associated with the Amended Modification Proposal during operations.

*Table 7-40 REMMs applicable to operational stormwater and flooding management for the Amended Modification Proposal*

| REMM | Mitigation measure |
|---|---|
| **REMM 9U** | A stormwater management plan (or equivalent) would be developed in accordance with the detailed design. This includes the requirement to control the rate of stormwater runoff so that it does not exceed the pre-developed rate of runoff. |
| **REMM 9V** | The stormwater system would be designed such that flow from low order events (up to and including the 10% AEP event from the main part of the site, and up to and including the 2% AEP event for the rail access connection corridor) would be conveyed within the formal drainage systems. Flows from rarer events (up to the 1% AEP event) would be conveyed in controlled overland flow paths. |
| **REMM 9W** | • The onsite detention system proposed would detain flow and control discharge rates to the Georges River equal to pre- development discharge rates. |
| **REMM 9X** | • A stormwater treatment system would be implemented, incorporating sedimentation and bio-filtration basins upstream of the stormwater detention basins. |
| **REMM 9Y** | Use of onsite infiltration would be incorporated into the design through the distribution of swale drains and rain gardens across the Project site. |
| **REMM 9Z** | A number of other stormwater management opportunities would be considered during development of the detailed design in accordance with Liverpool City Council's Development Control Plan Part 2.4 Development in Moorebank Defence Lands and other relevant policies, including:<br>• polishing water runoff using dry creek gravel beds with macrophyte plants;<br>• using drainage swales to slow down stormwater runoff and increase onsite infiltration;<br>• collecting roof rainwater for re-use onsite;<br>• installing gross pollutant traps (GPTs) at the outlets of the pipe system before discharge into the sedimentation basins; and<br>incorporating impervious surfaces and vegetated areas into the design to increase sub-surface water flow during rain events and to reduce the discharge of stormwater pollutants. |

## 7.1.7 Air Quality

### MPW Concept Approval

Two air quality assessments were prepared as part of the MPW Concept EIS. A *Local Air Quality Impact Assessment* (2014) was prepared by Environ Australia Pty Ltd to assess local construction and operational air quality impacts for the MPW Project; and a *Regional Air Quality Assessment (2014)* was prepared by Todoroski Air Sciences to assess predicted operational air quality impacts at a "full build" Proposal scenario at 2030. Onsite air quality monitoring was carried out for a range of pollutants and compared with ambient air quality data at Liverpool and Chullora to quantify baseline air quality. Regional air quality impacts during the Early Works construction phase were not assessed as their potential impact on the regional air environment was deemed negligible[14].

The criteria used for the above assessments included the National Environment Protection (Ambient Air Quality) Measure national reporting standards (AAQ NEPM) (NEPC, 2015) and the NSW impact assessment

[14] Ambient air quality standards for the region (which are monitored by the NSW EPA) are rarely exceeded for extended periods and usually correlate with particular unexpected events such as bushfires and dust storms.

criteria for a range of air quality pollutants in accordance with *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (Approved Methods) (EPA, 2005).

The *Local Air Quality Assessment* identified the following key characteristics relating to the existing air environment:

- The local air drainage profile of the area is likely to be affected by katabatic drift[15]
- The annual wind distribution pattern for the OEH Liverpool monitoring station shows that the prevailing wind direction is from the west-south-west, with south-westerly and westerly winds also occurring frequently. These winds dominate during autumn, winter and spring. Airflow from the east and south-east is more prevalent during summer. A smaller percentage of winds originate from other directions, with the lowest frequency of winds originating from the north-eastern quadrant.
- Annual average $PM_{10}$ concentrations at both the onsite and OEH Liverpool stations are below the NSW EPA criterion of 30 µg/m3 (AAQ NEPM)
- The 1-hour average annual NOx data indicate that ambient concentrations are well below the relevant OEH criterion of 246 µg/m3 (Approved Methods)
- The 1-hour average CO concentration is well below the OEH criterion. All measured CO levels taken at the Liverpool monitoring station met the OEH criterion (Approved Methods)

The annual average PM2.5 concentration recorded during 2013 at the OEH Liverpool station was 9.4 µg/m³, which exceeds the NEPM advisory reporting goal of 8 µg/m³ (AAQ NEPM). This exceedance was a result of bushfires in 2013.

The Local Air Quality Assessment identified 38 discrete sensitive receivers surrounding the MPW site, as shown on Figure 7-4.

[15] Katabatic drift' is the term used to describe the downward motion of cold air from a high point. This can result in plume entrapment (i.e. poor dispersion of airborne pollutants) and the potential to cause greater off-site impacts.

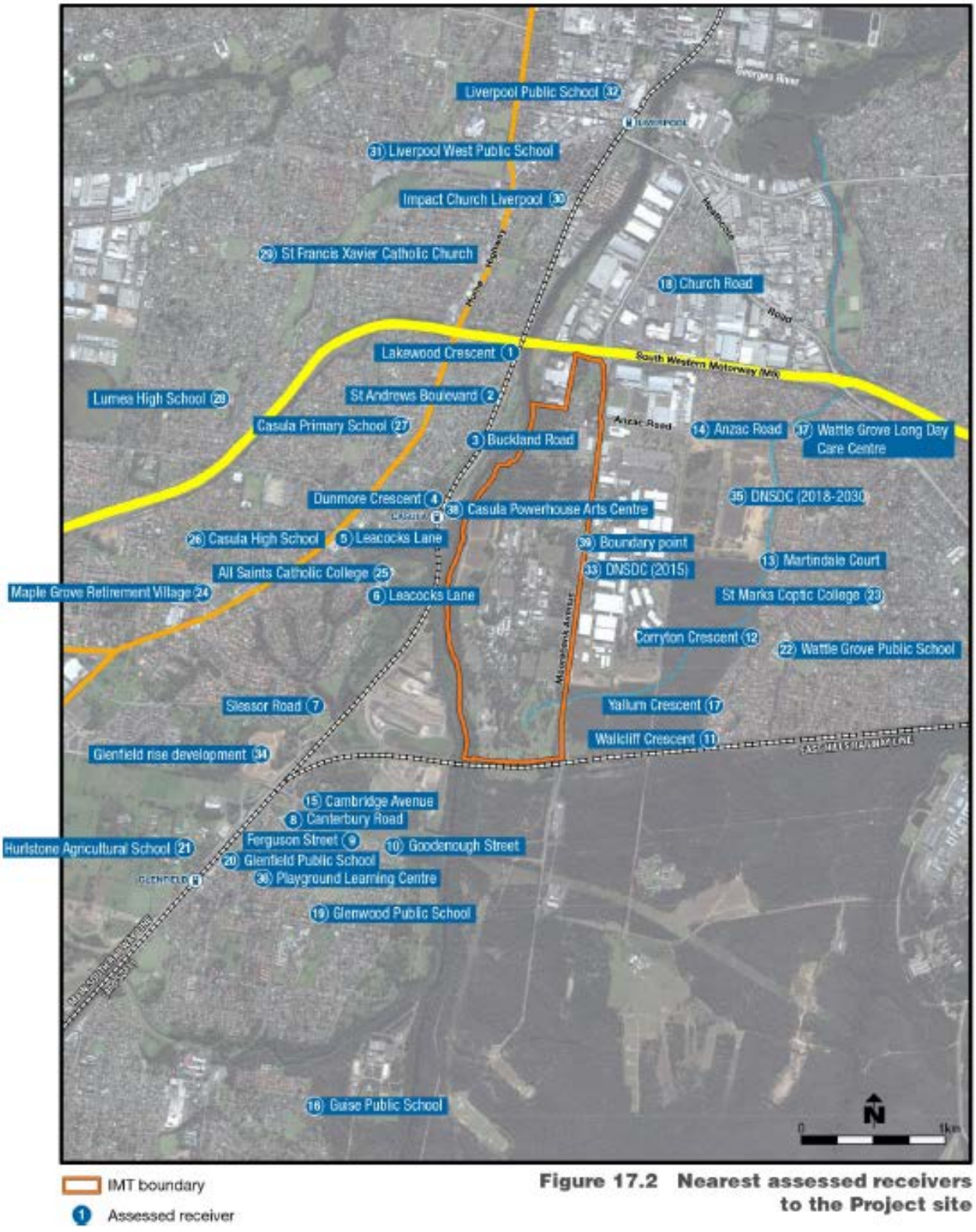


*Figure 7-4 Sensitive receivers identified for Concept Approval EIS investigation*

Atmospheric dispersion modelling was undertaken using the AMS/US-EPA regulatory model (AERMOD) for construction and operation of the MPW Project. The model considered the MPW Project (incremental) ground level concentrations and deposition rates, covering a seven kilometres squared area centred over the MPW site, with a grid resolution of 200 m. Additionally, model predictions were made at 38 sensitive receptor locations, representative of the local area. The following findings were identified:

Incremental air pollutant concentrations and dust deposition rates associated with all modelled construction and operational scenarios were predicted to be within NSW EPA criteria and NEPM advisory reporting goals at all surrounding receptor locations

Taking elevated background airborne PM concentrations into account, no exceedance days were predicted for 24-hour average PM10 and PM2.5 beyond those likely to be exceeded in bushfire events

Exceedance of the annual average NEPM advisory reporting goal for cumulative PM2.5 is predicted for one receptor (R33). R33 was the DNSDC facility, which is now the MPE site, located adjacent to the eastern boundary of the MPW site

All incremental cumulative and gaseous pollutants assessed were below applicable NSW EPA assessment criterion for all scenarios.

Changes to the management of the MPW site and the design, including changes to the layout, rail access and conservation area, informed a Revised Local Air Quality Impact Assessment (Ramboll, 2015), which was issued as part of the MPW Concept Response to Submissions report. Predicted impacts arising from the proposed changes show only minor variance from those originally reported, and the findings listed above, were retained.

## Impact Assessment – Amended Modification Proposal

### Construction

A summary of the key findings of the further air quality impact assessment, from a construction perspective, are provided in Table 7-41. Where identified in Table 7-41 as required, a more detailed assessment of potential construction impacts associated with the Amended Modification Proposal is provided below.

*Table 7-41 Summary of construction air quality impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal has the potential to result in impacts to air quality, above those identified within the MPW Concept Approval. Further assessment has been provided below. |
| Altered construction footprint | The amendments to the construction footprint would not result in significant changes to the proposed construction activities for the MPW Project therefore would not alter the air impact assessment provided within the MPW Concept EIS. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE sites to interact during construction, within the MPW Concept Approval. There is the potential for there to be interfacing between the MPW and MPE sites during construction, i.e. with construction vehicles and equipment being used concurrently on both sites. This interface has previously been assessed as part of the cumulative assessment provided in the MPW Concept Approval, which concluded that the likelihood of adverse impacts arising from the cumulative assessment is very low, therefore no further assessment is considered necessary. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) and reconfiguration of truck parking and OSDs (within the MPW site) would result in an alteration to the location of construction activities and traffic movements within the MPW site (and their associated air quality impacts). However, construction activities would still be limited to the central, rather than the southern part of the MPW site to construct this development as assessed in the MPW Concept EIS. In addition, these land use changes would not alter the assessed |

| | |
|---|---|
| | construction activities or the total number of construction vehicles travelling to the MPW site.<br>Overall, this potential impact is considered temporary, minor and would not result in potential impacts to air quality above those identified within the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights would not result in any changes to potential air quality impacts and therefore would not alter the air impact assessment provided within the MPW Concept EIS. |
| Staging of future applications | The staging of future applications, would result in minor changes to the potential air quality impacts resulting from each stage of construction for the MPW Project. For example, additional air quality impacts may be evident during Stage 2 of the MPW Project as a result of additional construction works being undertaken in this stage, however, there would be a reduction in construction activities and traffic movements, and subsequently a reduction in air quality impacts, during the Stage 3 of the MPW Project as a result of the reduction in works to be undertaken during this stage. As the overall MPW Project (full build) would remain the same regardless of the proposed staging, no further assessment is considered necessary. |
| Subdivision | Subdivision would not result in any additional air quality impacts during construction of the MPW Project above those identified within the MPW Concept Approval. No further assessment is considered necessary. |

## Importation of clean general fill

Key additional activities impacting air quality impacts during the MPW Project that were not assessed in the MPW Concept EIS include the import, placement and stockpiling of approximately 1,600,000 $m^3$ of clean general fill. Under the Amended Modification Proposal, the importation of clean general fill is to be undertaken during Stage 2 of the MPW Project, as detailed in Section 6 of this RtS.

An assessment of the potential air quality impacts associated with the importation of clean general fill has been undertaken and a summary of this assessment is included below.

### Methodology

An Air Quality Impact Assessment (AQIA) undertaken by Ramboll Environ (2016) assessed the potential air quality impacts arising from the importation of clean general fill during construction of Stage 2 of the MPW Project. These activities would potentially result in construction air quality impacts including generating dust emissions.

The approach to assess potential air impacts followed the guidelines recommended in the NSW Environment Protection Authority (EPA) *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* ("the Approved Methods") (NSW EPA, 2005). An overview of the approach to the assessment is as follows:

- Emissions are estimated for the Stage 2 construction activities, using best practice emission estimation techniques
- Dispersion modelling using a regulatory dispersion model is used to predict ground level concentrations for key pollutants from Stage 2, at surrounding sensitive receivers.
- Cumulative impacts are assessed, taking into account the combined effect of existing baseline air quality, other local sources of emissions, reasonably foreseeable future emissions and any indirect or induced effects.

Key emissions considered during the construction of Stage 2 of the MPW Project were fugitive dust or particulate matter (PM) generated principally through building demolition, site clearing and earthworks activities (including the importation of clean general fill).


*Figure 7-5 Sensitive receptor areas (Rambol, 2016)*

### Emissions inventory

Particulate matter and fugitive dust emissions are anticipated to generate the greatest impact with regard to air quality of the MPW site and surrounds (refer to Table 7-47) during site preparation, bulk earthworks (including the importation of fill), drainage, utilities and road work activity periods associated with the Proposal.

Expressed in terms of Total Suspended Particulate matter (TSP), $PM_{10}$ and $PM_{2.5}$, an emissions inventory was calculated for key Proposal construction activities (including the importation of fill), using emission

factors developed by the US EPA[16], and a number of assumptions relating to material quantities, utilisation of plant and equipment and the use of water carts along unsealed pavement areas. A summary of the estimated emissions for the duration of the Proposal is presented in Table 7-47.

*Table 7-42 Emissions estimates for construction of Stage 2 of the MPW Project (kg/annum)*

| Source / Activity | TSP (kg/annum) | $PM_{10}$ (kg/annum) | $PM_{2.5}$ (kg/annum) |
|---|---|---|---|
| **Stage 2 of the MPW Project Construction** | | | |
| Hauling on unsealed roads | 69,668 | 17,901 | 1,790 |
| Trucks unloading fill | 989 | 468 | 71 |
| Material handling (excavators, FEL, stockpiles) | 989 | 1,403 | 71 |
| Dozers (vegetation stripping, topsoil clearing, fill) | 20,966 | 4,421 | 2,201 |
| Graders on road construction | 9,926 | 3,468 | 308 |
| Diesel combustion (onsite equipment) | 1,555 | 1,555 | 1,469 |
| Wind erosion | 15,254 | 7,627 | 1,144 |
| On-road trucks diesel combustion | 93 | 93 | 90 |
| **Total** | **119,440** | **36,936** | **7,144** |

### Dispersion Modelling Results

Stage 2 of the MPW Project construction activities, including the importation of fill, were assessed in terms of potential impacts arising from dust, TSP, $PM_{10}$ and $PM_{2.5}$ generation. Dispersion modelling was carried out using AERMOD modelling system to predict ground level concentrations of key pollutants generated by Stage 2 of the MPW Project at surrounding sensitive receivers, based on atmospheric conditions.

The modelling results indicate that the predicted construction phase emissions comply with all relevant impact assessment criteria. As shown in Table 7-43 the maximum predicted increase in annual average $PM_{10}$ (1.3 µg/m³), $PM_{2.5}$ (0.5 µg/m³), TSP (1.7 µg/m³) and dust deposition (0.4 g/m2/month) are considered minor, when compared against existing background conditions. The highest predicted short-term impacts occur at Casula Powerhouse Arts Centre (corresponding to receptor R38) with a maximum 24-hour $PM_{10}$ of 4.3 µg/m³ and maximum 24-hour $PM_{2.5}$ of 2.6 µg/m³.

It is important to note that the modelling predictions are conservative, particularly for short-term impacts, as it takes the annual emission total and apportions this evenly across the year and excludes wet deposition modelling. Construction activities, including the importation of fill, would be staged and therefore only a proportion of the annual emission totals would be generated during each stage, resulting in conservatively high short-term (24-hour) predictions.

Cumulative predictions presented incorporate emission resulting from the concurrent construction of Stage 2 of the MPW Project (including the importation of fill) and the MPE Stage 1 Proposal. For cumulative 24-hour impacts, modelling predictions are paired with daily background $PM_{10}$ and $PM_{2.5}$ concentrations.

The background dataset contains existing exceedances of the impact assessment criteria (three days for $PM_{10}$ and two days for $PM_{2.5}$) that correspond to natural weather events that, if included, would skew the average background air pollution levels. The cumulative 24-hour average $PM_{10}$ is therefore presented as the 4th highest (excluding the three days already over) and the cumulative 24-hour average $PM_{2.5}$ is presented as the 3rd highest (excluding the two days already over). The results indicate that the construction for the Proposal (including the importation of fill) would result in no additional days over the criteria.

[16] United States Environmental Protection Agency (US EPA) AP-42 Compilation of Air Pollutant Emission Factors (US EPA, 1998b, US EPA, 2004, US EPA, 2006).

*Table 7-43 Construction phase - maximum modelling predictions for sensitive receptors*

| Pollutant | Period | | Air quality goal criteria | Receptor maximum | Receptor(s) |
|---|---|---|---|---|---|
| $PM_{10}$ (µg/m$^3$) | 24 hour maximum | Increment | 50 µg/m$^3$ | 4.3 µg/m$^3$ | R38 |
| | | Cumulative | | 48.5 µg/m$^3$ | R35 |
| | Annual average | Increment | 30 µg/m$^3$ | 1.3 µg/m$^3$ | R38 |
| | | Cumulative | | 20.7 µg/m$^3$ | R38 |
| $PM_{2.5}$ (µg/m$^3$) | 24 hour maximum | Increment | 25 µg/m$^3$ | 2.6 µg/m$^3$ | R38 |
| | | Cumulative | | 24.5 µg/m$^3$ | R38 |
| | Annual average | Increment | 8 µg/m$^3$ | 0.5 µg/m$^3$ | R38 |
| | | Cumulative | | 8.7 µg/m$^3$ | R38 |
| TSP (µg/m$^3$) | Annual average | Increment | 90 µg/m$^3$ | 1.7 µg/m$^3$ | R38 |
| | | Cumulative | | 50.1 µg/m$^3$ | R38 |
| Dust deposition | Annual average | Increment | 2 g/m$^2$/m | 0.4 g/m$^2$/m | R38 |
| | | Cumulative | 4g/m$^2$/m | 2.7 g/m$^2$/m | R38 |

The modelling results indicated that the construction phase emissions would comply with all relevant impact assessment criteria. The predicted increase in annual average $PM_{10}$, $PM_{2.5}$, TSP and dust deposition are considered minor, when compared against existing background conditions. Cumulative predictions are also presented and the results indicate that the construction for Stage 2 of the MPW Project would result in no additional days over the criteria.

**Summary**

Consistent with previous construction and operational air quality assessments undertaken for the MPW Concept Approval, the potential air quality impacts resulting from the importation of fill as part of the Amended Modification Proposal are, subject to the implementation of the mitigation measures outlined below, expected to result in no additional impact to those already assessed in the MPW Concept Approval.

## Operation

A summary of the key findings of the further air quality impact assessment, from an operational perspective, are provided in Table 7-44.

*Table 7-44 Summary of operational air quality impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would not result in operational impacts to air quality. Therefore, no further assessment is considered necessary. |
| Altered construction footprint | The amendments to the construction footprint would not result in any changes to potential air quality impacts during operation and therefore would not alter the air quality impact assessment provided within the MPW Concept EIS. Therefore, no further assessment is considered necessary. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal seeks approval for the MPW and MPE sites to interact during operation, within the MPW Concept Approval. These interactions may result in some minor changes to the dispersion of vehicle emissions at a local scale, with some vehicles travelling south onto Moorebank Avenue in the Amended Modification Proposal, whereas previously, under the MPW Concept Approval, they would have been travelling north on |

| Item | Assessment |
|---|---|
| | Moorebank Avenue. Overall, this alteration to vehicle movements is considered minor and therefore the impacts on air quality would be negligible. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), and reconfiguration of truck parking and OSDs (within the MPW site) would result in an alteration to the location of some operational activities and traffic movements within the MPW site. However, operational activities would still be limited to the central, rather than the southern part of the MPW site as assessed in the MPW Concept EIS. In addition, these land use changes would not alter the assessed operations or the total number of vehicles travelling to the MPW site during operations.<br>Overall, this potential impact is considered minor and would not impact on the potential air quality impacts above that identified within the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights would not result in any changes to potential operational air quality impacts and therefore would not alter the air quality impact assessment provided within the MPW Concept EIS. |
| Staging of future applications | The staging of future applications would result in an alteration of air emissions and potentially air quality impacts during each stage. Notwithstanding this, the staging of the Amended Modification Proposal would not impact on, or considerably alter, the full build development scenario identified within the MPW Concept Approval. In consideration of this, the air quality impacts for the Amended Modification Proposal would not result in any significant additional impacts during operations of the full build MPW Project above those identified within the MPW Concept Approval. |
| Subdivision | The inclusion of subdivision within the MPW Project would not result in any changes to the proposed operations of the MPW Project. Therefore, subdivision would not result in any additional air quality impacts during operation of the MPW Project above that identified within the MPW Concept Approval. |

## Mitigation Measures

The MPW Concept Approval includes MCoAs and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. The relevant REMMs and additional mitigation measures, as considered suitable, are discussed below.

### Construction

Mitigation measures identified within the MPW SRtS (i.e. the REMMs) for the MPW Concept Approval that are applicable to the management of air quality impacts and would be implemented during the Amended Modification Proposal (and future stages of development) are listed in Table 7-45. No additional mitigation measures are required.

*Table 7-45 Mitigation measures within the REMMs and MCoAs applicable to air quality management for the Amended Modification Proposal*

| REMM / MCoA No. | Mitigation Measure |
|---|---|
| **REMM 10A & MCoA (D20[e])** | A Dust Management Plan (DMP) (or equivalent) would be prepared as part of the CEMP. |
| **REMM 10C & MCoA (D20[e])** | Methods for management of emissions would be incorporated into Project inductions, training and pre-start talks. |
| **REMM 10D** | Activities with the potential to cause significant emissions, such as material delivery and load out and bulk earthworks, would be identified in the CEMP. Work practices that minimise emissions during these activities would be investigated and applied where reasonable and feasible. |

| REMM / MCoA No. | Mitigation Measure |
|---|---|
| **REMM 10E** | A mechanism for raising and responding to complaints would be put in place for the duration of the construction phase. |
| **REMM 10F** | Vehicle movements would be limited to designated entries and exits, haulage routes and parking areas. Project site exits would be fitted with hardstand material, rumble grids or other appropriate measures to limit the amount of material transported offsite (where required). |
| **REMM 10H & MCoA (B12[b])** | Dust would be visually monitored during construction and the following measures would be implemented where necessary:<br>• Apply water (or alternative measures) to exposed surfaces that are causing dust generation. Surfaces may include any stockpiles, hardstand areas and other exposed surfaces (for example recently graded areas). Regular watering would ensure that the soil is moist to achieve 50% control of dust emissions from scrapers, graders and dozers.<br>• Appropriately cover loads on trucks transporting material to and from the construction site. Securely fix tailgates of road transport trucks before loading and immediately after unloading.<br>• Prevent, where possible, or remove, mud and dirt being tracked onto sealed road.<br>• Apply water at a rate of >2 litres (L) per square metre per hour (L/m2/hr) to internal unsealed access roadways and work areas. Application rates would be related to atmospheric conditions (e.g. prolonged dry periods) and the intensity of construction operations. Paved roads should be regularly swept and watered when necessary. |
| **REMM 10I** | Where reasonable and feasible, dust generating activities (particularly clearing and excavating) would be avoided or minimised during dry and windy conditions. |
| **REMM 10J & CoA (B12[a])** | Project site speed limits of 20 km/h would be imposed on all construction vehicles travelling within the Project site. |
| **REMM 10K** | Graders would be limited to a speed of 8 km/h to reduce potential dust emissions. |
| **REMM 10M** | Exposed areas and stockpiles would be limited in area and duration. For example, vegetation stripping or grading would be staged where possible, unconsolidated stockpiles would be covered, or hydro mulch or other revegetation applicant applied to stockpiles or surfaces left standing for extended periods. |
| **REMM 10O** | Construction plant and equipment would be well maintained and regularly serviced so that vehicular emissions remain within relevant air quality guidelines and standards. |
| **REMM 10R** | All construction vehicles would be tuned to avoid releasing excessive smoke from the exhaust and would be compliant with OEH Smokey Vehicles Program under the NSW Protection of the Environment and Operations Act 1997 (POEO Act) and POEO Regulations (NSW) (2010). |

## Operation

No additional mitigation measures are required for operation of the Amended Modification Proposal.

Notwithstanding, as required under REMM 10V an Air Quality Management Plan (AQMP) would be prepared, which would detail management controls to be implemented to avoid or minimise air quality impacts. The AQMP would be approved by the DP&E prior to commencement of operations and would be implemented during the Amended Modification Proposal (and future stages of development).

# 7.1.8 Indigenous Heritage

## MPW Concept Approval

An Aboriginal Heritage Assessment, prepared by Navin Officer Heritage Consultants (NOHC, 2014) on behalf of Parsons Brinkerhoff, was undertaken to inform the MPW Concept EIS. This assessment comprised of a literature review, the preparation of an Aboriginal consultation program, field survey and testing procedures as well as a significance and impact assessment. Consultation, involving field survey participation was undertaken with the following registered Aboriginal parties (RAPs)

- Tharawal Local Aboriginal Land Council (TLALC)
- Cubbitch Barta Native Title Claimants Aboriginal Corporation (CBNTCAC)
- Darug Land Observations (DLO)
- Darug Custodian Aboriginal Corporation (DCAC)
- Darug Aboriginal Cultural Heritage Assessments (DACHA)
- Darug Aboriginal Landcare Incorporated (DALI)
- Banyadjaminga
- Gandangara Local Aboriginal Land Council (2010) (GLALC)
- Tocomwall Pty Ltd (2010).

The field survey identified five artefact sites (MA1-5), three scarred trees (MA6-8) and three potential archaeological deposits (MAPAD1, MAPAD2 and PAD2) as well as sampling three representative landforms according to the predictive statements made for the area (MRSA1-3).

NOHC (2014) established that Stage 1 (Early Works) activities, would result in potential impacts to the following recorded Aboriginal heritage items within the MPW Concept Approval:

- Artefact occurrences MA2, MA4 and MA5
- Portions of MA9, MA10 and MRSA2 (subsequently updated to MA14).

Based on the recommendations of the assessment, the following mitigation measures were proposed for the impacts caused by Stage 1 (Early Works):

**Design and Stage 1 (Early Works)**

- If the southern rail access option is selected, a combined geotechnical and archaeological assessment should be undertaken to assess the nature of any deposit and the need for further archaeological investigation and/or salvage
- Options for avoidance of impacts at MA6 and MA7 would be explored during the detailed design phase. If impacts cannot be avoided, consultation would be undertaken with the registered Aboriginal parties regarding options for specialist investigations (e.g. a suitably qualified specialist in eucalypts of the Sydney region and dendrochronology may be engaged to formally assess the age of the trees and their scars) and culturally appropriate mitigation strategies
- An archaeological salvage excavation program would be implemented to conserve archaeological deposits of moderate to high archaeological/scientific significance located within the construction footprint (items recorded at MA5 and MA9). Consideration would be given to conserving both sites in situ, within open space reserves, or an extension of the proposed conservation zone
- A surface salvage program would be carried out to conserve surface artefacts located within the construction footprint (items recorded at MA1, MA2, MA3 and MA4). Salvage of surface artefacts would be undertaken prior to any impacts in these areas
- No further archaeological investigations are warranted at MRSA3 or PAD2.

**Construction of future stages**

The MPW Concept EIS included an Unanticipated Discoveries Protocol (Appendix 9 of Technical Paper 10 – Aboriginal Heritage Impact Assessment in Volume 7), which would be followed in the event that historical items or relics or suspected burials are encountered during construction works of future stages.

**Operation and ongoing**

- Consultation would be ongoing with the registered Aboriginal parties throughout the life of the Project and would include:
  - Consultation on the future care and management of recovered Aboriginal objects
  - Methodologies for any future investigations; and finalisation of management and mitigation strategies subject to detailed design.

## Impact Assessment – Amended Modification Proposal

An assessment of the potential Indigenous heritage impacts of the Amended Modification Proposal, in consideration of those assessed for the MPW Concept Approval is provided below.

### Construction

A summary of the key findings of the additional Indigenous heritage impact assessment, from a construction perspective, are provided in Table 7-46.

*Table 7-46 Summary of construction Indigenous heritage impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill would be undertaken within the MPW site identified within the MPW Concept Approval and would not result in any additional impacts on Indigenous heritage. |
| Altered construction footprint | Alterations to the construction footprint would be minor and would not result in impacts to Indigenous heritage items as no additional heritage items would be located within the additional footprint of the Amended Modification Proposal. |
| Interaction between the MPW and MPE sites | Interaction between the MPW and MPE site would not alter the construction footprint of the Proposal and would not result in additional impacts to Indigenous heritage. No further assessment of indigenous heritage impacts for the Amended Modification Proposal for this item is considered necessary. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the Interstate terminal into a IMT facility (interstate and intrastate), relocation of the freight village (within the MPW site), reconfiguration of truck parking and OSDs would result in an alteration to the location of construction activities within the MPW site. Notwithstanding this, these changes would not alone alter the construction footprint and would not result in additional impacts to Indigenous heritage above those identified in the MPW Concept Approval. |
| Maximum building heights | The alteration to the building heights, would not result in an impact to the construction footprint and would not result in any additional impacts on Indigenous heritage. |
| Staging of future applications | The MPW Concept Approval identifies salvage of Indigenous heritage items are to be undertaken predominantly during Stage 1 (Early Works), with some residual salvage undertaken as part of Stage 2 of the MPW Project. The staging of future applications has changed, to align with constructability and operational efficiencies on the MPW Project and would not alter the timing of Indigenous heritage salvage.<br>The salvage of these items would remove heritage significant artefacts and scar trees from the MPW site (construction footprint). Changes to staging of future applications would not result in additional impacts to Indigenous heritage above those identified in the MPW Concept Approval. |
| Subdivision | Subdivision would not alter the construction footprint of the Proposal and would not result in additional impacts to Indigenous heritage. |

## Operation

A summary of the key findings of the additional Indigenous heritage impact assessment, from an operational perspective, are provided in Table 7-47.

*Table 7-47 Summary of operation Indigenous heritage impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would not result in operational impacts to Indigenous heritage. |
| Altered construction footprint | The amendments to the construction footprint would not result in any changes to potential Indigenous heritage impacts during operation and therefore would not alter the Indigenous heritage assessment provided within the MPW Concept EIS. |
| Interaction between the MPW and MPE sites | Interaction between the MPW and MPE site would not alter the operational footprint of the Proposal and would not result in additional impacts to Indigenous heritage. |
| Changes to approved function and re-arrangement of existing approved uses | The changes to approved function and re-arrangement of existing approved uses would not alter the operational footprint of the Proposal and would not result in additional impacts to Indigenous heritage. |
| Maximum building heights | Alterations to building heights would not alter the operational footprint of the Proposal and would not result in additional impacts to Indigenous heritage. |
| Staging of future applications | The MPW Concept Approval identifies salvage of Indigenous heritage items are to be undertaken predominantly during Stage 1 (Early Works), with some residual salvage undertaken as part of the Stage 2. The staging of future applications has changed, to align with operational efficiencies of the MPW Project and would not alter the timing of Indigenous heritage salvage.<br>The salvage of these items would remove heritage significant artefacts and scar trees from the MPW site (construction footprint). Changes to staging of future applications would not result in additional impacts to Indigenous heritage. |
| Subdivision | The inclusion of subdivision within the MPW Project would not result in any changes to the proposed operations of the MPW Project. Therefore, subdivision would not result in any additional Indigenous heritage impacts during operation of the MPW Project, above that identified within the MPW Concept Approval. |

## Mitigation Measures

The MPW Concept Approval includes MCoAs and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. Through the implementation of the REMMs approved for the MPW Concept Approval Indigenous heritage impacts associated with the Amended Modification Proposal would be adequately managed. No additional mitigation measures are required for the Amended Modification Proposal.

## 7.1.9 Non-Indigenous Heritage

### MPW Concept Approval

A Non-Indigenous Heritage Assessment was prepared by Navin Officer Heritage Consultants (NOHC, 2014) to inform the MPW Concept EIS which also included the Stage 1 (Early Works) activities.

The assessment for MPW Concept EIS comprised of a desktop review, field surveys, test excavations and a follow-up assessment of heritage significance and impacts to individual items for the MPW Project as a whole.

The following sites were identified as having nil or low significance and archaeological potential, and no further mitigation was proposed at these sites:

- Farm
- 19C Farm
- Orchard
- 1912-1 (former building)
- 1912-2 (former building)
- SM – 1 (Former loading stage)
- SM – 2 (Former siding and sand loading bins).

A number of items were recognised as potential items of interest. These items have been categorised into archaeological features, potential archaeological deposits, and LEP listed items within the vicinity of the site, and are categorised as such in the following sections.

**Archaeological Features**

Archaeological features identified on the MPW site include**:**

- MH1 - Explosive Detection Dog (EDD) Cemetery and Memorial Recording
- MH2 - Drainage ditches (military origin)
- MH3 - Portion of light rail (not in situ)
- MH4 - Portion of light rail (not in situ)
- MH5 - Large above ground concrete slab (military origin)
- MH6 - Commemorative garden
- MH7 – Liverpool Golf Course
- CUST Hut
- RAAF STRARCH Hangar
- Building 99 (B99)
- RAE Chapel elements remaining following the MUR Project.

**Potential Archaeological Deposits**

Potential Archaeological Deposits (PADs) identified on the MPW site include**:**

- MHPAD 1: Site thought to be the location of WWI and WWII period quarters
- MHPAD 2: Site corresponds to the former location of a number of WWII period buildings.

**Liverpool Local Environmental Plan 2008 listed items**

Liverpool Local Environment Plan 2008 (LLEP) listed items located within the vicinity of the Proposal site include:

- Kitchener House
- Glenfield Farm (Listed on the State Heritage Register and the Register of National Estate)
- The former Casula Power Station, located on the western side of the Georges River to the Project area
- Railway viaduct, Main Southern Railway Line (item 11), located approximately 200 m south of the former Casula power station
- Railway viaduct, Main Southern Railway Line (item 12), located adjacent to Woodbrook Road, Casula.

## Impact Assessment – Amended Modification Proposal

An assessment of the potential non-Indigenous heritage impacts of the Amended Modification Proposal, in consideration of those assessed for the MPW Concept Approval is provided below.

### Construction

A summary of the key findings of the additional non-Indigenous heritage impact assessment, from a construction perspective, are provided in Table 7-48.

*Table 7-48 Summary of construction non-Indigenous heritage impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill would be undertaken within the MPW site previously identified within the MPW Concept Approval and would not result in any additional impacts on non-Indigenous heritage. No further assessment is considered necessary. |
| Altered construction footprint | Alterations to the construction footprint would be minor and would not result in impacts to non-Indigenous heritage items as no additional heritage items would be located within the additional footprint. In the Amended Modification Proposal construction works for the upgrade of Moorebank Avenue would occur adjacent to the locally listed heritage item Kitchener House. The Proposal would not directly impact on this property but may have indirect impacts e.g. visual. These impacts would be temporary and short term and would be appropriately managed by the mitigation measures outlined in the MPW Concept Approval. |
| Interaction between the MPW and MPE sites | Interaction between the MPW and MPE site would not alter the construction footprint of the Proposal and would not result in additional impacts to non-Indigenous heritage. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the Interstate terminal into a IMT facility (interstate and intrastate), relocation of the freight village (within the MPW site), reconfiguration of truck parking and OSDs would result in an alteration to the location of construction activities. However, these changes would not modify the construction footprint and would not result in additional impacts to non-Indigenous heritage. |
| Maximum building heights | The alteration to the building heights, would not result in an impact to the construction footprint and would not result in any additional impacts on non-Indigenous heritage. |
| Staging of future applications | The staging of future applications has changed to align with constructability and operational efficiencies at the MPW and would not result in additional impacts to non-indigenous heritage. |
| Subdivision | Subdivision would not alter the construction footprint of the Proposal and would not result in additional impacts to non-Indigenous heritage. |

### Operation

A summary of the key findings of the additional non-Indigenous heritage impact assessment, from an operational perspective, are provided in Table 7-49 .

*Table 7-49 Summary of operational non-Indigenous heritage impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would not result in operational impacts to non-Indigenous heritage. |
| Altered construction footprint | The amendments to the construction footprint would not result in any changes to potential non-Indigenous heritage impacts during operation and therefore would not alter the non-Indigenous heritage assessment provided within the MPW Concept EIS. |
| Interaction between the MPW and MPE sites | Interaction between the MPW and MPE site would not alter the operational footprint of the Proposal and would not result in additional impacts to non-Indigenous heritage. |
| Changes to approved function and re-arrangement of existing approved uses | The changes to approved function and re-arrangement of existing approved uses may result in minor changes to the visual impacts on surrounding heritage items with views to the Proposal site (e.g. Glenfield Farm and Kitchener House). However, these impacts would not differ substantially from those identified in the MPW Concept Approval and would be appropriately managed by the REMMs. |
| Maximum building heights | Alterations to building heights may result in minor visual impacts to surrounding heritage items with views to the Proposal site (e.g. Glenfield Farm and Kitchener House). These impacts would not differ significantly from those identified in the MPW Concept Approval and would be managed by the REMMs. |
| Staging of future applications | The staging of future applications has changed to align with constructability and operational efficiencies at the MPW and would not result in additional impacts to non-indigenous heritage. |
| Subdivision | The inclusion of subdivision within the MPW Project would not result in any changes to the proposed operations of the MPW Project. Therefore, subdivision would not result in any additional non-Indigenous heritage impacts during operation of the MPW Project, above that identified within the MPW Concept Approval. |

### Mitigation measures

The MPW Concept Approval includes MCoAs and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. Through the implementation of the REMMs approved for the MPW Concept Approval non-Indigenous heritage impacts associated with the Amended Modification Proposal would be adequately managed. No additional mitigation measures are required for the Amended Modification Proposal.

## 7.1.10 Visual Amenity

### MPW Concept Approval

A Visual Impact Assessment (VIA), prepared by Clouston Associates, and a detailed light spill assessment, prepared by AECOM, were undertaken to inform the MPW Concept EIS.

The assessment for the MPW Concept Approval comprised of the following:

- A landscape character and visual impact assessment, comprising:
  - Site analysis and identification of landscape character zones
  - Assessment of landscape character impacts and visibility of the MPW Project

  - Identification of key representative viewpoints to the development
  - Assessment of potential visual impacts, in which the unmitigated impact of the MPW Project on views from key representative viewpoints was assessed qualitatively, considering the sensitivity of the view and magnitude of the development in that view
  - Assessment of the cumulative visual impact of other similar nearby developments and potential developments
  - Development of mitigation strategies to mitigate landscape character and visual impacts in the ongoing development of the design.
- Light spill assessment, which involved measurement of the existing environmental conditions with respect to light spill, calculation of the potential light spill from the indicative proposed lighting design for the Project, and assessment of the potential light spill impact in specific sensitive receptor areas.

The key findings of the VIA for the MPW Concept Approval in relation to their impact on the Proposal are outlined in Table 7-50.

*Table 7-50 Visual impact assessment - MPW Concept Approval*

| Visual impact assessment (summary) |
|---|
| **Construction** |
| Impacts are predicated to range from negligible to moderate/high for different receptors. |
| Moderate/high impacts were predicted for many viewpoints due to the impact of tall construction equipment such as cranes that would be visible above the treeline during construction of both the IMEX and interstate IMT facilities. Other construction impacts would be associated with earthworks, clearing and vegetation removal and construction of the warehousing. Along Moorebank Avenue there would be localised visual impacts from construction fencing and the warehousing development area would be highly visible. |
| The majority of construction activities would occur during standard daytime construction hours and would not require lighting; however, some out of hours construction work may be required. Lighting would be contained and positioned to avoid light spill to surrounding areas. |
| **Operation** |
| Impacts are predicted to range from negligible to moderate/high for different receptors. |
| The greatest visual impact of the Full Build development would be on public park and residential receptors on the elevated areas to the west of the Georges River and residential properties backing onto the SSFL. |
| For some residential locations that overlook the MPW Project site, these receptors would also experience a noticeable change in the brightness of the area on clear nights. |
| The warehousing development would front Moorebank Avenue and would dominate views towards the MPW site from the east. The visual impacts would reduce as landscaping is established. |

## Impact Assessment – Amended Modification Proposal

A Visual Impact Assessment has been prepared by Reid Campbell and is included at Appendix C. An assessment of the potential visual impacts of the Amended Modification Proposal, in consideration of those assessed for the MPW Concept Approval is provided below.

### Construction

A summary of the key findings of the further visual impact assessment, from a construction perspective, are provided in Table 7-51. Where required, further assessment of these potential construction impacts is provided below.

*Table 7-51 Summary of construction visual impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would result in an adjustment to the building formation level for the MPW site. Existing riparian vegetation along the Georges River and the retained conservation area would assist in screening a substantial amount of the construction activities for viewpoints west of the river. Overall, given the low rise and temporary nature of the construction works and the limited views to the MPW site from surrounding sensitive receivers, the potential visual impact of the Amended Modification Proposal is anticipated to be minor and further assessment is not considered necessary. |
| Altered construction footprint | The amendment to the construction footprint would result in a minor intensification of construction activities at the ABB site, DJLU and on Moorebank Avenue. The additional works may result in a temporary visual impact on the ABB site, DJLU and Moorebank, as a result of hoarding and equipment however this would be relatively short term. Due to their distance and screening from residential areas the view impact during construction, from these works and associated lighting, are considered to be minor. Therefore, works on additional land would not in significant changes to the visual landscape to that already assessed as part of the MPW Concept Approval. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE site to interact during construction, within the MPW Concept Approval. There is the potential for there to interfacing between the MPW and MPE site's during construction, i.e. with construction vehicles related to each site, accessing Moorebank Avenue. Notwithstanding this, this interface has previously been assessed as part of the cumulative assessment provided in the MPW Concept Approval and would not result in a change in the identified visual impacts. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) and reconfiguration of truck parking would result in an alteration to construction traffic movements within the MPW site. Generally, the key change between the MPW Concept Approval and the Amended Modification Proposal is that construction vehicle movement, construction compounds and associated lighting may shift within the footprint of the MPW site. These visual impacts are considered to result in a minor change to that assessed within the MPW Concept Approval and further assessment is not considered necessary. |
| Maximum building heights | The alteration to the building heights would not result in a considerable alteration to the visual impacts identified during construction within the MPW Concept Approval. Existing riparian vegetation along the Georges River and the retained conservation area would assist in screening a substantial amount of the construction activities for viewpoints west of the river. Overall, given the low rise and temporary nature of the construction works and the limited views to the MPW site from surrounding sensitive receivers, the potential visual impact of the Amended Modification Proposal is anticipated to be minor. |
| Staging of future applications | The staging of future applications, would alter the construction activities to be undertaken on the MPW site. Generally, there would be anticipated to be an increase in construction activities during Stage 2 of the MPW Project and a corresponding reduction in construction activities during Stage 3 of the MPW Project. Visual impacts during construction are considered to be temporary and would not result in a substantial change to that assessed within the MPW Concept Approval and further assessment is not considered necessary. |
| Subdivision | The inclusion of subdivision within the MPW Project would result in minor, if any, additional physical works to be undertaken. Overall, subdivision would not result in any additional visual impacts during construction of the MPW Project, above that identified within the MPW Concept Approval. |

## Operation

A summary of the key findings of the further visual impact assessment, from an operational perspective, are provided in Table 7-52. Where required, further assessment of these potential construction impacts is provided below.

*Table 7-52 Summary of operational visual impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the operation of the Amended Modification Proposal would result in an adjustment to the building formation level for the MPW site. The importation of fill would not result in an increase to height of lighting with heights remaining consistent with those identified in the MPW Concept Approval. A Visual Impact Assessment has been prepared and is included at Appendix C. Further assessment has been provided below. |
| Altered construction footprint | The amendment to the construction footprint would result in a minor alteration to the visual landscape of minor parts of the ABB site, DJLU and Moorebank Avenue. Generally, the works undertaken would be minor and involve the installation of infrastructure (roads and drainage) which would integrate into the surrounding visual context. Overall, these visual impacts are considered to result in a minor change to that assessed within the MPW Concept Approval and further assessment is not considered necessary. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE site to interact during construction, within the MPW Concept Approval. There is the potential for there to interfacing between the MPW and MPE site's during construction, i.e. with construction vehicles related to each site, accessing Moorebank Avenue. Notwithstanding this, this interface has previously been assessed as part of the cumulative assessment provided in the MPW Concept Approval and would not result in a change in the identified visual impacts. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) and reconfiguration of truck parking would result in an alteration to visual appearance of the MPW site, with some of the built form elements relocated. The items to relocated are generally of low rise and therefore the relocation of these items is considered to result in a minor visual impact above that assessed within the MPW Concept Approval. A further assessment of the potential visual impacts of the approved uses, in the context of the increased maximum building heights is provided below. |
| Maximum building heights | The alteration to the building heights has the potential to result in an alteration to the visual landscape and therefore the visual impacts of the MPW Project, identified in the MPW Concept Approval. A Visual Impact Assessment has been prepared and is included at Appendix C. Further assessment has been provided below. |
| Staging of future applications | The staging of future applications, would alter the operational activities to be undertaken on the MPW site at any one stage. Generally, there would be anticipated to be an increase in operational activities (and therefore built form) during Stage 2 of the MPW Project and a corresponding reduction in operational activities (therefore built form) during Stage 3 of the MPW Project. The Amended Modification Proposal would result in a temporary change to the visual impacts as the MPW Project is progressively developed. Overall, the staging of future applications would not impact on the impacts of the full build of the MPW Project identified within the MPW Concept Approval. |
| Subdivision | The inclusion of subdivision within the MPW Project would result in minor, if any, additional physical works to be undertaken. Overall, subdivision would not result in any additional visual impacts during operation of the MPW Project, above that identified within the MPW Concept Approval. |

## Importation of clean general fill and maximum building heights

A Visual Impact Assessment has been prepared and is included at Appendix C of this RtS. A Statement of Development Standard Exception (refer to Appendix D of this this RtS) has also been prepared to facilitate an exception to the development standard regarding maximum building heights related to adjustment of the building formation level (in accordance with the *Liverpool Local Environmental Plan 2008*).

There is the potential for some buildings to extend beyond the current height restriction after adjustment to the building formation level. The Visual Impact Assessment provides an assessment of the modified built form (including, height, bulk, scale, view loss and visual amenity) generated as a result of adjusting the building formation level. The visual impact of the selected viewpoints in this study have been evaluated on a qualitative basis and based on those included within the MPW Concept Approval. The viewpoints selected for the Amended Modification Proposal are shown in Figure 7-6.


Figure 7-6 *Viewpoint locations*

The Visual Impact Assessment provides assess the visual impact of the Amended Modification Proposal from the above identified key viewpoints with a focus on the potential additional visual impacts evident from the MPW Concept Approval. Montages comparing the approved height, within the MPW Approval, against the additional height, within the Amended Modification Proposal, have been provided in Figure 7-7, Figure 7-8 and Figure 7-9.

A summary of the visual impact assessment comparison between the Amended Modification Proposal and the MPW Concept Approval has been provided in Table 7-53 (further information is provided within Appendix C).

Table 7-53 *Visual impact assessment – MPW Concept Approval comparison with Amended Modification Proposal*

| Viewpoint | Context | Impact Assessment comparison | |
|---|---|---|---|
| | | **MPW Concept Approval** | **Amended Modification Proposal** |
| View 01: Southern section of Leacock Regional Park | Viewpoint is from Leacock Regional Park, a public open area. At this location, the landscaped park slopes up from the street level toward a ridge which overlooks the MPW site. Dense vegetation exists in the area limiting clear lines of sight beyond. The park is frequented by local residents. There are no residential properties within the park. The view shows primarily riparian vegetation that sits in the background with the MPW site further beyond. In the foreground is the Southern Sydney Freight Line (SSFL) and the Glenfield Waste Facility. | Moderate | Moderate |
| View 02: Leacock Regional Park looking east towards development site | This viewpoint is taken from Leacock Regional Park looking east toward the MPW site. The view is from an elevated location which sits above the MPW site overlooking vegetation in the foreground, the Georges River, and more vegetation beyond. | Moderate/high | Moderate/high |
| View 03: Carroll Park looking east | This viewpoint is taken from an elevated location in Carroll Park in the west looking down toward the SSFL. The view is densely vegetated with tall trees and medium to small bushes that can be seen in the foreground and middle ground. | Moderate/high | Moderate/high |

Figure 7-7 *View 01: Southern section of Leacock Regional Park*

Figure 7-8 *View 02: Leacock Regional Park looking east towards development site*

Figure 7-9 *View 03: Carroll Park looking east*

The assessment concluded that Amended Modification Proposal would not result in significant changes to the visual landscape to that already assessed as part of the MPW Concept Approval. Overall the additional height would generally result in consistent visual impacts already identified and assessed as part of the MPW Concept Approval. Therefore, the outcomes and recommendations of the assessment undertaken for the MPW Concept Approval are still considered relevant and appropriate for the assessment of the Amended Modification Proposal.

### Mitigation measures

The MPW Concept Approval includes MCoAs and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. Through the implementation of the REMMs approved for the MPW Concept Approval visual impacts associated with the Amended Modification Proposal would be adequately managed. No additional mitigation measures are required for the Amended Modification Proposal.

## 7.1.11 Property and Infrastructure

### MPW Concept Approval

The MPW Concept EIS included a number of technical specialist studies and information to provide an assessment on the potential impacts of the MPW Project on affected properties, utilities and infrastructure.

The MPW Project is located on the MPW site, which is on Commonwealth Land. The MPW Project also involves work on portions of Anzac Road, the Commonwealth Hourglass land and Bootlands, Moorebank Avenue and Bapaume Road, which are RMS, Commonwealth and council-owned roads respectively. Consultation with all of these land owners was undertaken as part of the preparation of the MPW Concept EIS.

Section 7.11 of the MPW Concept EIS provides details on the existing utility services for the MPW site and the potential for augmentation and/or adjustments to deliver the necessary utility servicing to support the MPW Project. The report identified that the MPW Project would require connection to a number of key utilities.

Table 7-54 provides a summary of the utility connections required and the potential impacts associated with these connections. Consultation was also undertaken with each of the service providers during the preparation of the MPW Concept EIS.

*Table 7-54 Utility requirements for the MPW Project*

| Utility | Capacity potential |
|---|---|
| Electricity Supply (Endeavour Energy) | Endeavour Energy advised that supply would be able to be provided for the MPW Project from the Anzac Village Substation. |
| Gas (Jemena) | Natural gas would be available to the Project site from the existing gas main located along Moorebank Avenue |
| Water (Sydney Water) | The water supply main (DN200 water main) servicing the terminals, administration, maintenance and repair and warehousing buildings would enter the MPW site from Moorebank Avenue near Anzac Road. A water supply main would be sufficient to meet the operational demands of the MPW Project. A separate water main would be provided for fire-fighting requirements |
| Sewer | Sydney Water advised that a sewer line would need to be constructed for the MPW Project to connect to the existing Sydney Water network |
| Telecommunications (Telstra) | The site would be able to receive connection to telecommunications. |

The MPW Concept EIS concluded that existing infrastructure is suitable to service the estimated demands of the MPW Project either with augmentation or in its current condition.

## Impact Assessment – Amended Modification Proposal

### Construction

A summary of the key findings of the further property and infrastructure assessment, from a construction perspective, are provided in Table 7-55.

*Table 7-55 Summary of construction property and infrastructure impacts for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would not result in additional property and infrastructure impacts above those identified within the MPW Concept Approval. The importation of clean general fill would not result in any changes to approved or surrounding land uses and would not further impact on utilities, therefore it would not alter the property and infrastructure assessment provided within the MPW Concept EIS. |
| Altered construction footprint | The amendments to the construction footprint would result in minor additions to the construction footprint assessed in the MPW Concept EIS. The altered footprint within the ABB site would only be minor and temporary in nature to enable drainage construction works and would not result in any alterations to the existing land use or ownership of the ABB site. The altered construction footprint around the Moorebank Avenue/Anzac Road intersection and DJLU would also only relate to a small portion of land required to enable the proposed intersection works. The construction activities, and the associated impacts, occurring within this footprint would be generally consistent to those assessed in the MPW Concept EIS. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE sites to interact during construction, within the MPW Concept Approval. There is the potential for there to be interfacing between the MPW and MPE sites during construction, i.e. with construction activities being concurrently undertaken on both sites, however these concurrent activities would |

| Item | Assessment |
|---|---|
| | have no impact on existing land uses, property ownership or utilities as assessed in the MPW Concept EIS. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), reconfiguration of truck parking and OSDs (within the MPW site) would result in an alteration to the location of construction activities and traffic movements within the MPW site. However, there would be no additional property or infrastructure related impacts as these uses would still be within the MPW site as previously assessed in the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights would not result in any changes to potential property and infrastructure impacts during construction as utility requirements, property ownership and land uses would remain consistent as those assessed in the MPW Concept EIS. Therefore, the property and infrastructure assessment provided within the MPW Concept EIS is still suitable. |
| Staging of future applications | The staging of future applications would not result in changes to the potential property and infrastructure impacts resulting from the MPW Project in that the overall MPW Project at full build development scenario would remain the same regardless of the proposed staging, including the proposed land uses, property ownership and utility requirements. |
| Subdivision | Subdivision would not result in any additional property and infrastructure impacts during construction of the MPW Project, above that identified within the MPW Concept Approval. |

## Operation

A summary of the key findings of the further property and infrastructure assessment, from an operational perspective, are provided in Table 7-56.

*Table 7-56 Summary of operational property and infrastructure impacts for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would not result in operational impacts to property and infrastructure. |
| Altered construction footprint | The amendments to the construction footprint would not result in any changes to potential property and infrastructure impacts during operation and therefore would not alter the property and infrastructure assessment provided within the MPW Concept EIS. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal seeks approval for the MPW and MPE sites to interact during operation, within the MPW Concept Approval. These interactions however would have no impact on existing land uses, property ownership or utilities as assessed in the MPW Concept EIS. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), and reconfiguration of truck parking and OSDs (within the MPW site) would result in an alteration to the location of some operational activities and traffic movements within the MPW site. However, these changes would not alter the assessed operations, utility requirements, property ownership or overall land uses within the MPW site. Therefore, the property and infrastructure assessment provided within the MPW Concept EIS is still applicable and no further assessment is required. |
| Maximum building heights | The alteration to the building heights would not result in any changes to potential operational property and infrastructure impacts and therefore would not alter the assessment provided within the MPW Concept EIS. |
| Staging of future applications | The staging of future applications would not result in changes to the potential property and infrastructure impacts resulting from the MPW Project in that the overall MPW Project full build development scenario would remain the same regardless of the proposed staging, including the proposed land uses, property ownership and utility requirements |
| Subdivision | The inclusion of subdivision within the MPW Project would not result in any changes to the proposed operations of the MPW Project as assessed within the MPW Concept EIS. |

| Item | Assessment |
|---|---|
| | Therefore, subdivision would not result in any additional property and infrastructure impacts during operation of the MPW Project, above that identified within the MPW Concept Approval. |

### Mitigation Measures

The MPW Concept Approval includes MCoAs and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. Through the implementation of the REMMs approved for the MPW Concept Approval property and infrastructure impacts associated with the Amended Modification Proposal would be adequately managed. No additional mitigation measures are required for the Amended Modification Proposal.

## 7.1.12 Human Health

### MPW Concept Approval

A desktop based Health Impact Assessment (HIA) and Human Health Risk Assessment (HRA) were prepared by Environmental Risk Services (EnRisks, 2014) on behalf of Parsons Brinkerhoff for the MPW Concept EIS to address the SEARs. The HIA methodology was guided by the Centre for Health Equity Training, Research and Evaluation (CHETRE), and involved a 'rapid assessment' under the HIA guidelines adopted for the assessment[17]. The assessment evaluated both direct and indirect impacts of all aspects of the Proposal on the health and wellbeing of the community, both regionally and locally (including sensitive receivers such as schools, residential areas and retirement homes) for a construction and an operations scenario. The construction scenario was selected for the assessment based on 'typical' construction impacts likely to be encountered throughout the various works periods according to available information at the time of the assessment. The operational 'full build' scenario was based on a conservative 'worst case' approach in terms of the operational footprint and other impacts.

The HIA screening approach identified three key environmental aspects that have the potential to pose a risk to human health, thereby warranting a further detailed assessment. These items included:

- Traffic, transport and access
- Noise
- Air quality.

Baseline data were extracted from existing sources, including results from the Traffic, Noise and Air Quality investigations undertaken respectively for the MPW Concept EIS. A health impact scoping exercise was initially undertaken as part of the assessment, which involved input from key stakeholders to evaluate the potential health implications of particular environmental, socioeconomic and sustainability aspects of the Proposal in light of relevant stakeholder concerns, including those raised during community consultation.

The demographic and socioeconomic context upon which the MPW site is situated was assessed, revealing a range of community aspects that have been shown to directly influence vulnerability to a range of health risks potentially generated by the MPW Project. The results of the assessment were compared against health based guidelines derived from epidemiological studies that measure the association between specific pollutants and health outcomes. The assessment concluded that:

- Traffic congestion has the potential to contribute to health impacts such as stress and anxiety. This would affect users of Moorebank Avenue during construction; however, once proposed mitigation measures are implemented, the MPW Project is anticipated to have net positive health outcomes in relation to traffic congestion

[17] The defining feature of a rapid assessment is that no new health data is collected, i.e. no project-specific epidemiological studies or health surveys are undertaken.

- The upgrade of Moorebank Avenue and a reduction in heavy vehicle traffic on roads within the wider network are anticipated to improve road safety
- Noise can have a range of health impacts such as sleep disturbance and cardiovascular health problems. Without mitigation, construction and operation of the MPW Project would potentially lead to health concerns; however, provided that the proposed mitigation measures are implemented, the noise levels should remain within the acceptable levels, with the likelihood of any health impact being negligible
- Emission levels of key air quality indicators generated during the construction and operation of the MPW Project are estimated to be within acceptable limits. Gaseous pollutants, including oxides of nitrogen, sulfur dioxide, carbon monoxide, VOCs and PAHs were all estimated to be low and acceptable. Particulate matter emissions are predicted to be dominated by larger particulates ($PM_{10}$) during the early construction phases (e.g. earthworks), while smaller particle emissions ($PM_{2.5}$) would increase as the use of diesel combustion sources increases over the life of the Project.
- Overall, the HIA found that the potential health risks and impacts imposed by the Project would be low, and that impacts on human health during Stage 1 (Early Works) would be negligible.

Based on these findings, the mitigation measures proposed for local air quality, noise and vibration and, traffic and access in the MPW Concept EIS, RtS and SRtS would ensure that any human health impacts associated with the MPW Project remain within acceptable levels.

## Impact Assessment – Amended Modification Proposal

### Construction

A summary of the key findings of the further human health impact assessment, from a construction perspective, are provided in Table 7-57.

*Table 7-57 Summary of construction human health impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal has the potential to result in impacts to air quality and noise, and therefore human health, as detailed in Sections 7.1.2 and 7.1.7 of this RtS. These additional assessments determined that the importation of clean general fill to the MPW site during construction would result in noise impacts that are slightly above those identified in the MPW Concept Approval. However, these noise impacts are considered to be able to be managed through the preparation and implementation of a CEMP (as identified in REMM 1B of the MPW Concept Approval) applicable to the relevant future stage of development in which the works are to be constructed in. In addition, the potential air quality impacts resulting from the importation of fill as part of the Amended Modification Proposal are expected to be low risk and short-term in nature, given the implementation of the mitigation measures detailed in Section 8 of this RtS. |
| Altered construction footprint | The amendments to the construction footprint would not result in significant changes to the proposed construction activities for the MPW Project therefore would not alter the air quality impact assessment provided within the MPW Concept EIS.<br><br>The amendment to the construction footprint has the potential to result in minor noise impacts generated by works to be undertaken on this additional land, as detailed in Section 7.1.2 of this RtS, however it is anticipated that any additional noise impacts would be minor and can be managed through the preparation of a CEMP (as required by REMM 1B of the MPW Concept Approval).<br><br>These potential construction noise impacts would not alter the human health impact assessment provided within the MPW Concept EIS, therefore no further assessment is considered necessary. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE site to interact during construction, within the MPW Concept Approval. There is the potential for there to be interfacing between the MPW and MPE site's during construction, i.e. with construction vehicles/equipment related to each site, accessing Moorebank Avenue. Notwithstanding this, this interface has previously been assessed as part of the cumulative assessment provided in the MPW Concept Approval. No further human health assessment is considered necessary. |

| Item | Assessment |
|---|---|
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), reconfiguration of truck parking and OSDs would result in an alteration to construction traffic movements and compound locations within the MPW site. Generally, the key change between the MPW Concept Approval and the Amended Modification Proposal is that construction vehicle movements would be limited to the central, rather than, the southern part of the MPW site. Notwithstanding this, the re-arrangement of existing approved use would not increase the total number of construction vehicles travelling to, or equipment being used on, the MPW site identified in the MPW Concept Approval. Overall, this potential construction impact is considered temporary, minor and would not substantially increase the human health impacts of the MPW Project identified within the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights, would not alter construction activities on the MPW site and therefore would not alter the noise or air quality impacts, and consequently the associated human health impacts, identified for the MPW Project within the MPW Concept EIS. Therefore, no further human health assessment is considered necessary. |
| Staging of future applications | The staging of future applications, would result in minor changes to the potential noise and air quality impacts (and the resultant human health impacts) resulting from each stage of construction for the MPW Project. For example, additional noise and air quality impacts may be evident during Stage 2 of the MPW Project as a result of additional construction works being undertaken in this stage, however, there would be a reduction in construction activities and traffic movements, and subsequently a reduction in air quality and noise impacts, during Stage 3 of the MPW Project as a result of the reduction in works to be undertaken at this stage. As the overall MPW Project (full build) would remain the same regardless of the proposed staging, no further human health assessment is considered necessary. |
| Subdivision | The inclusion of subdivision within the MPW Project would result in minor, if any, additional physical works to be undertaken. Overall, subdivision would not result in any additional noise or air quality impacts during construction of the MPW Project, above that identified within the MPW Concept Approval. Therefore, no further human health assessment is considered necessary. |

## Operation

A summary of the key findings of the further human health impact assessment, from an operational perspective, are provided in Table 7-58.

*Table 7-58 Summary of operational human health impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would not result in operational impacts to air quality, however the resultant adjustment to the building formation level for the MPW site has the potential to result in operational noise impacts, above the MPW Concept Approval, with buildings and infrastructure being located at a higher elevation than identified in the MPW Concept EIS. As detailed in Section 7.1.2 of this RtS, it is concluded that the adjustment to the building formation level for the MPW site, under the Amended Modification Proposal, would result in operational noise impacts that are generally consistent with those identified in the MPW Concept Approval. Therefore, no further assessment human health assessment is considered necessary. |
| Altered construction footprint | The amendments to the construction footprint would not result in any changes to potential air quality impacts during operation, however there is the potential for minor noise impacts generated by maintenance works to be undertaken during operation on this additional land. As detailed in Section 7.1.2 of this RtS, the works to be undertaken on these parcels of land result in a minor reduction (of approximately 5-10 m) in separation distances from sensitive receivers (DJLU (east) and ABB site, Casula (west)). The works at these locations would be generally consistent with the types of works anticipated for the MPW Concept Approval. Based on the minor alteration to the separation distances, the existing buffers to the MPW site and the type of works to be undertaken, it is anticipated that any additional noise impacts would be minor and can be managed through the an OEMP (as required by REMM 1B of the MPW Concept Approval). |

| Item | Assessment |
|---|---|
| | These potential operational noise impacts would not alter the human health impact assessment provided within the MPW Concept EIS, therefore no further assessment is considered necessary. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal seeks approval for the MPW and MPE sites to interact during operation, within the MPW Concept Approval. These interactions may result in some minor change to the dispersion of vehicle emissions and road noise at a local scale, with some vehicles travelling south onto Moorebank Avenue in the Amended Modification Proposal, whereas previously, under the MPW Concept Approval, they would have been travelling north on Moorebank Avenue. Overall, the impacts relating to air quality and noise resulting from this alteration to vehicle movements is considered minor (as detailed in Section 7.1.7 and 7.1.2 of this RtS) and therefore the impacts on human health would be negligible. No further assessment is considered necessary. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), and reconfiguration of truck parking and OSDs (within the MPW site) would result in an alteration to the location of some operational activities and traffic movements within the MPW site. However, operational activities would still be limited to the central, rather than the southern part of the MPW site as assessed in the MPW Concept EIS. In addition, these land use changes would not alter the assessed operations or the total number of vehicles travelling to the MPW site during operations, therefore negligible changes to the proposed noise and air quality impacts during operations are anticipated.<br><br>Overall, this potential impact is considered minor and would not impact on the potential human health impacts above that identified within the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights would not result in any additional operation air quality impacts, however there is the potential for additional noise impacts above those identified within the MPW Concept Approval. As detailed in Section 7.1.2 of this RtS, it is concluded that the adjustment to the building formation level for the MPW site would result in operational noise impacts, and consequently associated human health impacts, that are generally consistent with those identified in the MPW Concept Approval. Therefore, no further assessment human health assessment is considered necessary. |
| Staging of future applications | The staging of future applications would result in an alteration of air emissions and potentially noise impacts at each stage. Notwithstanding this, the staging of the Amended Modification Proposal would not alter the full build development scenario identified within the MPW Concept Approval. In consideration of this, the air quality and noise impacts, and consequently the human health assessment, for the Amended Modification Proposal would not be substantially altered from that provided within the MPW Concept EIS. |
| Subdivision | The inclusion of subdivision within the MPW Project would not result in any changes to the proposed operations of the MPW Project. Therefore, subdivision would not result in any additional human health impacts during operation of the MPW Project, above that identified within the MPW Concept Approval. |

## Mitigation Measures

The MPW Concept Approval includes MCoAs and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. Through the implementation of the REMMs approved for the MPW Concept Approval human health impacts associated with the Amended Modification Proposal would be adequately managed. No additional mitigation measures are required for the Amended Modification Proposal.

# 7.1.13 Greenhouse Gas

## MPW Concept Approval

A greenhouse gas assessment was undertaken by Parsons Brinkerhoff as part of the MPW Concept Approval. The assessment described the potential GHG emissions and impacts which were projected to be generated as a result of the construction and operational phases of the MPW Project. The assessment considered emissions from the sources outlined in *Table 7-59.*

*Table 7-59 Emissions sources used in the MPW Concept EIS Greenhouse Gas Assessment*

| Phase | Scope | Emission Source |
|---|---|---|
| Construction | Scope 1 | Transportation of materials (via heavy vehicles)<br>Light vehicles for staff use<br>Stationary energy including fuel use for construction equipment and diesel onsite generator<br>Woody vegetation clearing |
| | Scope 2 | Consumption of purchased energy from the grid |
| Operation | Scope 1 | Operational fuel usage in locomotives, vehicles and equipment<br>Liquefied natural gas<br>Municipal wastewater<br>Synthetic gases used in refrigeration |
| | Scope 2 | Consumption of purchased energy from the grid |

The assessment also considered the changes in GHG emissions due to the replacement of heavy vehicle freight traffic between Port Botany and Moorebank with rail freight. It assessed these emissions in terms of vehicle kilometres travelled for project-related heavy and freight vehicles and the redistribution of background traffic (i.e. light and non-heavy vehicles driven by the general public).

## Impact Assessment – Amended Modification Proposal

### Construction

A summary of the key findings of the further GHG assessment, from a construction perspective, are provided in Table 7-60. Further assessment of these potential construction impacts is provided below, with particular focus on where there is a deviation between the Amended Modification Proposal and what was considered under the MPW Concept Approval.

*Table 7-60 Summary of construction greenhouse gas impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal has the potential to result in additional greenhouse gas emissions being produced. Further assessment has been provided below. |
| Altered construction footprint | The amendment to the construction footprint would not substantially alter the nature or extent of construction activities and would therefore be unlikely to generate additional GHG emissions. |

| Item | Assessment |
|---|---|
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE site to interact during construction, within the MPW Concept Approval. There is the potential for there to be interfaces between the MPW and MPE site's during construction, i.e. with construction vehicles related to each site, accessing Moorebank Avenue. The extent and nature of construction activities would not be substantially altered and no additional GHG emissions are anticipated to be generated, therefore further assessment is not considered necessary. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into an IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), reconfiguration of truck parking and OSDs would result in an alteration to construction traffic movements within the MPW site. Generally, the key change between the MPW Concept Approval and the Amended Modification Proposal is that construction vehicle movements would be limited to the central, rather than, the southern part of the MPW site. Notwithstanding this, the re-arrangement of existing approved use would not increase the total number of construction vehicles travelling to the MPW site. Consequently, there is not anticipated to be any increase in GHG emissions produced. |
| Maximum building heights | The alteration to the building heights, would not result in an increase in the volume of GHG emissions produced and therefore would not alter the GHG impact assessment provided within the MPW Concept EIS. |
| Staging of future applications | The staging of future applications, would alter the amount of traffic movements undertaken for each stage of construction for the MPW Project. In particular, additional traffic movements would be evident during Stage 2 of the MPW Project as a result of additional works being undertaken in this stage. Notwithstanding this, there would be anticipated to be a reduction in traffic movements during Stage 3 as a result of the reduction in works to be undertaken during this stage. Consequently, while the volume of GHG emissions produced may increase in Stage 2 of the MPW Project, the associated reduction in emissions produced in Stage 3 would result in no additional overall emissions than those identified under the MPW Concept EIS. |
| Subdivision | The inclusion of subdivision within the MPW Project would result in minor, if any, additional physical works to be undertaken. Overall, subdivision would not result in substantial additional GHG emissions produced above that identified within the MPW Concept Approval. |

### Importation of clean general fill

The scoping processes used for the assessment of GHG emissions for the Amended Modification Proposal are based on the following guidelines and regulations:

- The World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD) The Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard Revised Edition (WRI/WBCSD, 2004)
- *National Greenhouse and Energy Reporting (Measurement) Determination 2008* (DoE, 2014a)
- The Department of Environment (DoE) National Greenhouse and Energy Reporting System Measurement: Technical Guidelines for the Estimation of Greenhouse Gas Emissions by Facilities in Australia (DoE, 2014b)
- National Greenhouse Accounts (NGA) Factors (DoE, 2016a).

The MPW Concept Approval identifies the number of vehicle movements associated with each phase of construction, which was based on volume of imported clean general fill that is considerably less than that to be imported within the Amended Modification Proposal (refer to Section 6 of this RtS). The number of heavy vehicle movements for the MPW Concept approval at its peak was identified as 1,390 heavy vehicle movements per day.

Key additional activities impacting GHG emissions during the construction of the MPW Project that were not assessed in the MPW Concept EIS include the import, placement and stockpiling of approximately 1,600,000 $m^3$ of clean general fill. Under the Amended Modification Proposal, the importation of clean general fill is to be undertaken during the construction of Stage 2 of the MPW Project. The highest number (per day) of truck movements (heavy vehicles) anticipated for the construction of the Stage 2 of the MPW Project are expected to be attributed to the importation of clean general fill, with approximately 740 truck movements (i.e. 1,480

trips) per day. This is an additional 90 trips per day (over a 9 month period) than that identified in the MPW Concept Approval.

The additional heavy vehicle trips associated with the importation of clean general fill would result in additional fuel combustion, and consequently the generation of GHG emissions. The additional 90 trips (return) per day over a 9 month period would result in the generation of approximately 1,188 $tCO_2$-e of GHG emissions. This would be an additional 3.6 per cent of GHG emissions assessed for the construction of Stage 2 of the MPW Project.

When compared to the ongoing emissions associated with the operation of the MPW Project, construction emissions were considered negligible in the MPW Concept EIS the. Therefore, the increase in GHG emissions from the importation of clean general fill is considered to have a minimal additional GHG emission impact to that already assessed in the MPW Concept EIS.

## Operation

The Amended Modification Proposal is not anticipated to result in any additional GHG impacts to those assessed under the MPW Concept Approval. A summary of the key findings of the further GHG impact assessment, from an operational perspective, are provided in Table 7-61.

*Table 7-61 Summary of operational GHG impact assessment for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would not result in any additional operational GHG emissions. |
| Altered construction footprint | The amendments to the construction footprint would not result in any changes to potential GHG impacts during operation and therefore would not alter the GHG impact assessment provided within the MPW Concept EIS. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal seeks approval for the MPW and MPE sites to interact during operation, within the MPW Concept Approval. The Amended Modification Proposal would result in an alteration to the characteristic of operational vehicle trips, with some heavy vehicles travelling south to the MPE site (on Moorebank Avenue) when, under the MPW Concept Approval, all vehicles would have travelled north (towards the M5 Motorway). The number of operational heavy vehicles accessing and leaving the MPW site would not change and consequently no substantial change in GHG emissions is anticipated. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into an IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), reconfiguration of truck parking is anticipated and OSDs (within the MPW site) would result in an alteration to the location of some operational activities and traffic movements within the MPW site. However, operational activities would still be limited to the central, rather than the southern part of the MPW site as assessed in the MPW Concept EIS. In addition, these land use changes would not alter the assessed operations or the total number of vehicles travelling to the MPW site during operations. Consequently, there is not anticipated to be any increase in GHG emissions produced. |
| Maximum building heights | The alteration to the building heights would not result in any changes to potential operational GHG emissions and therefore would not alter the GHG impact assessment provided within the MPW Concept EIS. |
| Staging of future applications | The staging of future applications would result in an alteration of GHG emissions and potentially GHG emissions produced at each stage. Notwithstanding this, the staging of the Amended Modification Proposal would not alter the full build development scenario identified within the MPW Concept Approval. In consideration of this, the GHG impacts for the Amended Modification Proposal would not be substantially altered from that provided within the MPW Concept EIS. |
| Subdivision | The inclusion of subdivision within the MPW Project would not result in any changes to the proposed operations of the MPW Project. Therefore, subdivision would not result in any additional GHG emissions being produced during operation of the MPW Project, above that identified within the MPW Concept Approval. |

### Mitigation Measures

#### Construction

In summary, a minimal increase in construction GHG emissions would be generated as a result of the Amended Modification Proposal. Through the implementation of the mitigation measures approved for the MPW Project (i.e. the REMMs), the potential GHG impacts associated with the Amended Modification Proposal are expected to be consistent with the impacts predicted within the MPW Concept EIS. No additional mitigation measures are required.

#### Operation

In summary, no substantial additional source of GHG emissions have been identified for operation associated with the Amended Modification Proposal from those assessed in the MPW Concept EIS, MPW RtS and SRtS and no additional mitigation measures are required.

## 7.1.14 Socio-economic

### MPW Concept Approval

A *Social Impact Assessment Report and Economic Assessment* (2014) was undertaken by PB to inform the MPW Concept EIS. The assessment identifies the social and economic implications of the Proposal at a local and regional level, and also provides a cumulative assessment to predict the level of impact of these implications when viewed in conjunction with other surrounding developments.

Construction phase impacts were assessed for only the Stage 1 (Early Works) period, while operational impacts were assessed at only the “full build” scenario. Findings from the assessment are summarised below:

- Both Stage 1 (Early Works) construction and full build operation would have a positive impact on employment, many of which would support the local skills base. These employment opportunities may also be linked to wider socio-economic benefits, including financial security, and improvements to health and well-being
- The Stage 1 (Early Works) construction and operational full build would not significantly modify the demographics of the local area, or result in a shift in demand for essential community infrastructure services, such as education or healthcare
- Social amenity impacts, relating to traffic, air quality and noise and vibration to surrounding suburbs, although minor, are expected during the construction of Stage 1 (Early Works), for which mitigation strategies would be required
- No significant direct impacts on local businesses are predicted as a result of Stage 1 (Early Works) activities or full build operation
- The MPW Project at full build is expected to boost freight transport efficiency, thereby contributing towards benefits for the regional and national economy.

In summary, social and economic implications arising from Stage 1 (Early Works) are considered to have a minor effect on the surrounding environment, limited to a minor temporary change in existing conditions relating to noise, traffic and visual amenity and negligible impacts to the local population or demand for community services. Similarly, operational socio-economic impacts are anticipated to be localised along Moorebank Avenue and the MPW site and considered unlikely to impact on the surrounding neighbouring suburbs.

## Impact Assessment – Amended Modification Proposal

### Construction

A summary of the key findings of the further socio-economic assessment, from a construction perspective, are provided in Table 7-62.

*Table 7-62 Summary of construction socio-economic impacts for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would potentially result in additional amenity impacts, relating to traffic, air quality and noise and vibration. These potential impacts are assessed in detail in their respective sub-sections of this Section 7 of this RtS (refer above).<br>In addition, the importation of fill would potentially result in an increase in employment opportunities during construction, which would represent a short-term benefit. |
| Altered construction footprint | The amendments to the construction footprint would not result in significant changes to the proposed construction activities for the MPW Project, therefore would not alter the socio-economic assessment provided within the MPW Concept EIS. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal does not seek approval for the MPW and MPE sites to interact during construction, within the MPW Concept Approval. There is the potential for there to be interfacing between the MPW and MPE sites during construction, i.e. with construction activities being concurrently undertaken on both sites. This interface has previously been assessed as part of the cumulative assessment provided in the MPW Concept Approval. |
| Changes to approved function and re-arrangement of existing approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site) and reconfiguration of truck parking and OSDs (within the MPW site) would result in an alteration to the location of construction activities and traffic movements within the MPW site. However, there would be no additional socio-economic impacts as the construction activities would still be within the MPW site as previously assessed in the MPW Concept EIS. |
| Maximum building heights | The alteration to the building heights would potentially result in additional socio-economic impacts during construction associated with reduced visual amenity. This is further discussed in the Visual Assessment section (above) of this RtS and Appendix C, which concludes that the visual impact of the Amended Modification Proposal is expected to be minor and not substantially above that identified in the MPW Concept Approval. |
| Staging of future applications | The staging of future applications would not result in changes to the potential socio-economic impacts resulting from the MPW Project. In particular, this alteration to staging is likely to increase construction related employment (within this stage) during Stage 2 of the MPW Project and correspondingly reduce construction related employment (within this stage) during Stage 3 of the MPW Project. As the overall MPW Project full build development scenario would remain the same regardless of the proposed staging no overall alteration to socio-economic impacts is considered to be evident. |
| Subdivision | The inclusion of subdivision within the MPW Project would result in minor, if any, additional physical works to be undertaken. Overall, subdivision would not result in any additional socio-economic impacts during construction of the MPW Project, above that identified within the MPW Concept Approval. |

## Operation

A summary of the key findings of the further socio-economic assessment, from an operational perspective, are provided in Table 7-63.

*Table 7-63 Summary of operational socio-economic impacts for the Amended Modification Proposal*

| Item | Assessment |
|---|---|
| Importation of clean general fill | The importation of fill during the construction of the Amended Modification Proposal would not result in operational socio-economic impacts. |
| Altered construction footprint | The amendments to the construction footprint would not result in any changes to potential socio-economic impacts during operation and therefore would not alter the socio-economic assessment provided within the MPW Concept EIS. |
| Interaction between the MPW and MPE sites | The Amended Modification Proposal seeks approval for the MPW and MPE sites to interact during operation, within the MPW Concept Approval. These interactions however would not alter the socio-economic impacts as assessed in the MPW Concept EIS. |
| Changes to approved function and re-arrangement of approved uses | The alteration of the function of the interstate terminal into a IMT facility (interstate, intrastate and port shuttle rail freight), relocation of the freight village (within the MPW site), and reconfiguration of truck parking and OSDs (within the MPW site) would result in an alteration to the location of some operational activities and traffic movements within the MPW site. However, these changes would not alter the assessed operations or resulting potential socio-economic impacts. Therefore, the socio-economic assessment provided within the MPW Concept EIS is still applicable and no further assessment is required. |
| Maximum building heights | The alteration to the building heights would potentially result in additional social impacts during operation associated with visual amenity. This is further discussed in the Visual Assessment section (above) of this RtS and Appendix C, which concludes that the visual impact of the Amended Modification Proposal is expected to be minor and not substantially above that identified in the MPW Concept Approval. |
| Staging of future applications | The staging of future applications would not result in changes to the potential socio-economic impacts resulting from the MPW Project. In particular, this alteration to staging is likely to increase operational related employment (within this stage) during Stage 2 of the MPW Project and correspondingly reduce operational related employment (within this stage) during Stage 3 of the MPW Project. As the overall MPW Project full build development scenario would remain the same regardless of the proposed staging no overall alteration to socio-economic impacts is considered to be evident. |
| Subdivision | The inclusion of subdivision within the MPW Project would not result in any changes to the proposed operations of the MPW Project. Therefore, subdivision would not result in any additional socio-economic impacts during operation of the MPW Project, above that identified within the MPW Concept Approval. No further assessment is considered necessary. |

## Mitigation Measures

The MPW Concept Approval includes MCoAs and REMMs which predominantly remain relevant and would be implemented as part of the Amended Modification Proposal. Through the implementation of the REMMs approved for the MPW Concept Approval potential social amenity impacts relating to noise, traffic and visual amenity impacts associated with the Amended Modification Proposal would be adequately managed. No additional mitigation measures are required for the Amended Modification Proposal.

## 7.2 Planning Assessment

Section 96(2) of the EP&A Act allows a consent authority to modify a development consent, provided that *'it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all).*'

It is understood that previously concern was raised by agencies that the Modification Proposal was not considered 'substantially the same development' as it proposed a considerable increase to the quantum of fill to be imported to the MPW site as part of Stage 1 (Early Works). The key concern was identified that as this activity was not fully envisaged during Stage 1 (Early Works) of the MPW Project in the previous approvals documentation (MPW EIS, RtS, SRtS).

The Amended Modification Proposal includes the importation of clean general fill as part of future development applications (Stage 2 of the MPW Project) and also other associated modifications which are required to improve the operational and environmental outcomes of the MPW Project as a whole. Detailed justification for each of the amendments included within the Modification Proposal has been provided in Section 6 of this RtS. In addition to this, detailed further assessment of the potential environmental issues associated with the Amended Modification Proposal, from all environmental aspects considered in the MPW Concept Approval, has been provided in Section 7.1 (above).

Overall, the importation of clean general fill would result in a considerable improvement to drainage within the MPW site, and the surrounding area. The additional works would result in a temporary intensification of construction works approved under Stage 1 (Early Works) of SSD_5066. The timing for the importation of this clean general fill, within Stage 2 of the MPW Project, more closely aligns with the maximum construction traffic vehicles presented within the MPW Concept Approval which is considered the key potential environmental impact posed by this modification. In particular, the Amended Modification Proposal would result in only an additional 90 vehicle movements per day over a short duration (in the context of the overall development) which could be adequately managed through controls to be included within the CEMP for the MPW Project (refer to REMM 1B, identified within the MPW Concept Approval) (refer to further assessment above).

Overall, the modification (Amended Modification Proposal) would not result in any substantial environmental impacts with these potential impacts being able to be adequately managed through the implementation of the MCoA and the REMMs provided within the MPW Concept Approval and additional mitigation measures identified in Section 7 of this RtS. Further, the Amended Modification Proposal proposes a development which in essence is 'substantially the same' as that provided within the MPW Concept Approval in that it would facilitate for the development of an intermodal terminal facility with the same IMT throughput limitations, warehousing GFA, freight village, truck parking and other ancillary development as provided within the MPW Concept Approval. On this basis, the Amended Modification Proposal is considered substantially the same development and can be considered for approval under s96(2) of the EP&A Act.

# 8 REVISED COMPILATION OF MITIGATION MEASURES

The MPW Concept EIS identified a range of environmental impacts and recommended management and mitigation measures to avoid, remedy or mitigate these impacts, which were compiled in Chapter 7 of the Supplementary Response to Submissions Report (PB, 2015). Additional mitigation measures were also identified in the Modification Proposal.

These mitigation measures have been revised in response to the submissions received during the public exhibition of the Modification Proposal and to address the Amended Modification Proposal. For ease of reference, words proposed to be deleted are shown in ***~~bold italic strike through~~*** and words to be inserted are shown in ***underlined bold italics***. These revised mitigation measures represent the final Compilation of Mitigation Measures for the MPW Concept Approval and are provided in Table 8-1.

In addition to this final compilation of mitigation measures, the proposed amendments to the MPW Concept Approval conditions are included in Section 6.3 of this RtS.

The 'implementation stage' column of Table 8-1 details the timing as to when the specific mitigation measures will be implemented. For example, a CEMP might be prepared prior to construction, but will not be 'implemented' until the construction phase.

*Table 8-1 Revised consolidated list of mitigation measures*

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| **General environmental management** | | | | | |
| **1A** | An EMS that complies with AS/NZS ISO 140001:2004 would be developed and implemented on the Project site. | Detailed design, early works, construction and operation | Y | Y | Y |
| **1B** | EMPs including CEMPs and OEMPs (or equivalent) would be prepared for the Project. At this point, Provisional EMPs (included in Volume 2, Appendix H of the EIS) have been prepared and would be updated as more is known about the Project phasing including detailed design, construction and operation. | Detailed design and/or Early Works, construction, operation where relevant | Y | Y | Y |
| **Consultation** | | | | | |
| **2A** | A Community Engagement Plan (CEP) (or equivalent) would be prepared to outline community involvement and consultation activities during early works, construction and operation phases.<br>As a minimum, the CEP would include appropriate measures for community involvement, including:<br>• a direct telephone number (24 hour);<br>• an email address;<br>• a postal address;<br>• regular project updates;<br>• a community liaison representative; and scheduled meetings with a local representative body such as a community consultative (or liaison) committee.<br>The CEP would also set out a guide on expectations for responding to relevant information received from community members. | Early Works, construction and operation | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| **2B** | The CEP would be prepared to ensure:<br>• the community and stakeholders have a high level of awareness of all processes and activities associated with the Project;<br>• accurate and accessible information is made available; and<br>• a timely response is given to issues and concerns raised by stakeholders and the community. | Early Works, construction and operation | Y | Y | Y |
| **Sustainability** | | | | | |
| **3A** | The final design would (as a minimum) provide for sustainability outcomes generally in accordance with the sustainability initiatives identified in Table 9.4 in Section 9 – Project sustainability of the MPW Concept Approval EIS. | Detailed design | Y | Y | Y |
| **3B** | Implementation of sustainability initiatives would be monitored in accordance with the monitoring framework developed as part of the EMS for the next stage of approvals. This framework would identify sustainability indicators for monitoring. | Detailed design Early Works, construction and operation | Y | Y | Y |
| **Traffic, transport and Access** | | | | | |
| **4A** | The Project team would continue to liaise with the Australian Rail Track Corporation, Transport for NSW and other stakeholders responsible for the management of the rail freight network regarding the capacity of the network related to the project. | Detailed design and future development applications | Y | Y | |
| **4B** | As part of the Stage 2 SSD approval(s) process further analysis would be undertaken to determine likely demand distribution and capacity across the rail freight network as it relates to the project. | Detailed design and future development applications | Y | Y | |
| **4C** | Install a variable message signage system within the Project site to direct heavy vehicles and facilitate safe and efficient access and navigation. | Detailed design, construction and operation | Y | | |
| **4D** | Consider the provision of pedestrian and cyclist connections from Moorebank Avenue into the Project site. | Detailed design, construction and operation | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| **4E** | Consider the provision of staff storage and shower areas to promote cycling, jogging and walking as modes of transport. | Detailed design, operation | Y | | Y |
| **4F** | Negotiate with bus operators for the provision of additional bus stops and increased bus services between the Project site and nearby public transport interchange hubs to reduce the volume of light vehicles generated by staff. This would be determined based on staff numbers and likely patronage numbers. | Detailed design | Y | | |
| **4G** | Undertake detailed design and staging of the Project rail link construction works to ensure:<br>• connection with the Southern Sydney Freight Line (SSFL) is designed to minimise construction impacts on SSFL operations;<br>• connection with the SSFL would allow trains to exit and enter the SSFL main line at a maximum design speed of 45 kilometres per hour (km/h);<br>• trains entering and leaving the Project site endeavour to minimise adverse disruption to other operations on the SSFL; and<br>• the Project's internal train control system and signalling integrates with the SSFL system where required. | Detailed design and construction | Y | Y | |
| **4H** | Prior to all future development application stages, in consultation with Transport for NSW and other relevant agencies of NSW Government, ensure that adequate arrangements are in place to ensure that:<br>• The impacts of additional traffic associated with the future development application stages will minimise Project related traffic impacts and consider the capacity of the road network, taking account of background traffic growth and planned road network improvements.<br>• Arrangements are in place (irrespective of funding source) for the on-time delivery of the necessary road network improvements referred to in point 1 above.<br>The contribution of MIC towards road network improvements as envisaged by this mitigation measure would be subject to the following conditions: | Detailed design and future development applications | | | |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| | • That certain throughput levels at the terminal had been achieved. These throughputs are outlined in column 1 of Table 7.20 of the Response to Submissions report.<br>• That it can be further demonstrated (as part of any subsequent planning approval stage) that the intersection performance would have deteriorated to a Level of Service E or worse (where previously operating at a LoS D or above) were it not for the implementation of the upgrades outlined in Table 7.20 of the Response to Submissions report. | | | | |
| ***Amended Modification Proposal*** | ***Road Safety Audit on Cambridge Avenue to be undertaken prior to the commencement of the Modification Proposal works period to identify the traffic safety risks and determine appropriate mitigations which would need to be implemented (e.g. truck movements to occur outside peak hours, driver awareness and safety training, speed monitoring and reporting protocols, etc.).*** | ***Construction*** | ***Y*** | ***Y*** | ***Y*** |
| **Traffic Management Plans** | | | | | |
| **4I** | Reducing the volumes of construction vehicles travelling during peak periods, especially if the increase in traffic generated by construction activities impedes on the operation of Moorebank Avenue. | Early Works and construction | Y | | |
| **4J** | Maintain access to neighbouring properties. It is particularly important that the ABB site has access throughout the construction stages. | Early Works and construction | Y | | Y |
| **4K** | In addition to the Community Engagement Plan (or equivalent) (Refer to 2A), a communication plan will be developed to provide information to the relevant authorities and bus operators in addition to the local community. The communication plan will need to incorporate a contact list with the chain of command. | Early Works, construction and operation | Y | Y | Y |
| **4L** | Implement relevant traffic control measures to inform drivers of the construction activities and locations of heavy vehicle access locations. | Early Works and construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| **4M** | Obtain Road Occupancy Licences (ROLs) as necessary. | Construction | Y | Y | |
| **4N** | Develop an emergency response plan for the modification of Moorebank Avenue. During this phase, emergency vehicles using Moorebank Avenue as a transport route would need to be considered, as well as emergency access to adjoining properties. | Construction of the modification to Moorebank Avenue | Y | | |
| **4O** | Traffic on Moorebank Avenue would be monitored during peak periods to ensure that queuing at intersections does not impact on other road users. | Early Works | Y | | |
| **4P** | Modify access locations in response to the development of the Moorebank Avenue modification. | Construction of modification to Moorebank Avenue | Y | | |
| **4Q** | Provision of alternate suitable pedestrian and cycle and facilities during the construction of Moorebank Avenue modifications retaining well defined and well signed routes and paths. | Construction of modification to Moorebank Avenue | Y | | |
| **Construction Noise and Vibration** | | | | | |
| **5A** | A construction noise and vibration management plan (CNVMP) (or equivalent) would be developed for construction activities. | Construction | Y | Y | Y |
| **5B** | The appropriateness of the noise and vibration management and mitigation measures in 5C to 5T are to be further investigated as part of the future development applications. These measures, or their replacement measures, are to be implemented through the CNVMP (or equivalent) prior to and during all noise-generating construction works for each of the Project phases. | Future development applications and construction | Y | Y | Y |
| **5C** | Construction activities associated with the Development shall be undertaken during the following standard construction hours:<br>• 7.00 am to 6.00 pm Mondays to Fridays, inclusive; and<br>• 8.00 am to 1.00 pm Saturdays<br>• at no time on Sundays or public holidays. | Construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| | ***Works may be undertaken outside of standard construction hours, subject to future development applications (including noise assessments).*** | | | | |
| **5D** | Construction works outside of the standard construction hours identified in REMM 5C may be undertaken in the following circumstances:<br>• construction works that generate noise that is:<br>- no more than 5 dB(A) above rating background level at any residence in accordance with the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009); and<br>- no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) at other sensitive receivers; or<br>• for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or<br>- where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm;<br>- works approved through an EPL, or<br>- works as approved through the out-of-hours work protocol outlined in the CEMP. | Construction | Y | Y | Y |
| **5E** | During site inductions and toolbox talks, all site workers (including subcontractors and temporary workforce) are to be made aware of the hours of construction and how to apply practical, feasible and reasonable measures to minimise noise and vibration when undertaking construction activities. | Construction | Y | Y | Y |
| **5F** | Quieter and less vibration-emitting construction methods would be applied where feasible and reasonable. For example, when piling is required, bored piles rather than impact-driven piles would minimise noise and vibration impacts. | Construction | Y | Y | Y |
| **5G** | The construction site would be arranged to minimise noise impacts by locating potentially noisy activities away from the nearest receivers wherever possible. | Construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| **5H** | Where possible, equipment that emit directional noise would be oriented away from sensitive receptors. | Construction | Y | Y | Y |
| **5I** | Reversing of vehicles and mobile equipment would be minimised so as to prevent nuisance caused by reversing alarms. This could be achieved through one-way traffic systems and the use of traffic lights which could also limit the use of vehicle horns. | Construction | Y | Y | Y |
| **5J** | Where work is proposed in the vicinity of residences, potentially affected residents would be advised, at least two weeks prior to the commencement of works, of the potential noise and vibration levels and the proposed management measures to control environmental impacts. | Construction | Y | Y | Y |
| **5K** | Whenever possible, loading and unloading areas would be located away from the nearest residences. | Construction | Y | Y | Y |
| **5L** | Broadband reversing alarms would be considered instead of tonal reversing alarms, in particular outside standard working hours (such as during night-time rail possession works). | Construction | Y | Y | Y |
| **5M** | Equipment that is used intermittently would be shut down when not in use for extended periods of time. | Construction | Y | Y | Y |
| **5N** | Where possible, all engine covers would be kept closed while equipment is operating. | Construction | Y | Y | Y |
| **5O** | Where possible, trucks associated with the work would not be left standing with their engines operating in streets adjacent to or within residential areas. | Construction | Y | Y | Y |
| **5P** | Traffic speeds would be signposted. All drivers would be expected to comply with speed limits and to implement responsible driving practices to minimise noise associated with unnecessary acceleration and braking. Traffic movements should be scheduled to minimise continuous traffic flows (convoys). | Construction | Y | Y | Y |
| **5Q** | The site manager (as appropriate) should provide a community liaison phone number and permanent site contact so that any noise and/or vibration related complaints can be received and addressed in a timely manner. Consultation and cooperation between the site and its neighbours would assist in limiting | Construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| | uncertainty, misconceptions and adverse reactions to noise and vibration. | | | | |
| **5R** | Attended noise and ground vibration measurements would be undertaken at monthly intervals in areas within close proximity to sensitive receivers and upon receipt of adverse comment/complaints during the construction program, to confirm that noise and vibration levels at adjacent communities and receptors are consistent with the predictions in this assessment and any approval and/or licence conditions. | Construction | Y | Y | Y |
| **5S** | If noise generating construction works are undertaken outside the standard daytime construction hours and/or measured construction noise levels at nearest residences are greater than 75 dB(A) LAeq, the following additional noise mitigation measures would be considered:<br>• Localised acoustic screens, comprising a solid structure such as plywood fencing to surround noise generating construction plant or work locations. To be effective for ground level noise, the screens would be lined with acoustic absorptive material, at least 2 m in height and installed within 5 m of the noise source.<br>• Dominant noise-generating mechanical plant would be fitted with feasible noise mitigation controls such as exhaust mufflers and engine shrouds.<br>• Respite periods of one hour are recommended for every continuous three-hour period of work; alternatively, daytime works would be scheduled between 9.00 am and 12.00 pm, and between 2.00 pm and 5.00 pm<br>• Where practical, and when night works are being undertaken, noisy construction work would be undertaken during the less sensitive 6.00 pm to 10.00 pm evening period | Construction | Y | Y | Y |
| **5T** | Depending on the specific construction works undertaken, construction noise mitigation may need to be implemented:<br>• where piling works (required for all rail access connection options) are undertaken within approximately 600 m of residences in Casula and within approximately 800 m of residences in Glenfield; | Construction | | Y | |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| | • for rail access connection works where daytime construction works undertaken within 450 m of nearest receptors in Casula; and where rail construction is required up to 1400 m from residences outside the standard daytime hours, such as during track possession works. | | | | |
| **Operational Noise and Vibration** | | | | | |
| **5U** | To achieve the noise reductions outlined in Table 7.30 of the *Response to Submissions report* and the *Revised Project Noise and Vibration Impact Assessment report* in Appendix F, mitigation treatments may be required to reduce noise from all dominant noise sources. The Project would implement reasonable and feasible noise mitigation to control potential noise levels. In the event that the Project does not meet the assessment criteria at receptors, if the Project has reduced noise levels to be as low as practicable, the NSW Industrial Noise Policy (INP) (EPA 2000b) notes that:<br>• achievable noise limits can be negotiated with regulators and the community; and<br>• the Project specific noise mitigation measures and noise levels outlined in Table 7.30 of this report and in the Noise and Vibration Assessment (Appendix F) should not automatically be interpreted as conditions for approval without consideration of other factors (environmental, social and economic) consistent with the objectives of the EP&A Act. In this regard, where appropriate, the INP notes that noise limits can be set above the Project specific noise levels | Detailed design and operation | Y | Y | Y |
| **5V** | Where practical operational plant and equipment would be selected to reduce noise emissions. | Operation | Y | | Y |
| **5W** | Mechanical components on fixed and mobile equipment, such as motors, gearboxes and exhausts, would include enclosures and acoustic insulation (lagging) (as necessary) to limit noise emissions. | Operation | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| **5X** | Where feasible, motors and mechanical noise-generating components of the rail mounted gantries (RMGs) would be located near to ground level rather than at the top of the gantry. | Detailed design and operation | Y | | |
| **5Y** | Where reasonable and feasible, and where it would produce a lower noise emission, electric motors would be operated instead of diesel powered equipment. | Operation | Y | | Y |
| **5Z** | The following measures would be considered and where possible incorporated into the design and operation of the freight trains on the rail track on the main IMT site to control potential operational noise:<br>• The track on the rail access connection would be designed to minimise adverse changes in vertical alignment, to reduce the requirement for locomotives to operate at high throttle on the ascent or under heavy braking on the descent. | Detailed design and operation | Y | | |
| | • The rail access connection bridge would be designed as a concrete or composite/concrete structure or more suitably noise mitigating structure to minimise potential re-radiated noise from vibrating sections of the elevated track. Detailed noise analysis would be undertaken to identify both airborne and re-radiated noise contributions, to effectively mitigate total noise emissions. | Detailed design and operation | Y | | |
| | • Locomotives accessing the main IMT site should have approval to operate on the network consistent with the noise limits for locomotives detailed in the ARTC Environmental Protection Licence No. 3142. | Operation | Y | | |
| **5AA** | Unless for health and safety reasons, heavy vehicles should avoid the use of horns within the main IMT site. | Operation | Y | | |
| **5AB** | To further control potential rail noise from wheel squeal the following measures are proposed:<br>• Track greasing systems should be investigated on curved sections of track to lubricate and reduce friction at the wheel– rail interface.<br>• The track maintenance system would include measures such as grinding to remove rail roughness, treatment of roughness on the wheels of locomotives and wagons, and | Detailed design and operation | Y | Y | |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| | adjustment of bogie-suspension tracking and brake system set up. | | | | |
| **5AC** | Where feasible, all rail tracks would be designed to maximise the separation distance between rail lines and the nearest residences. | Detailed design | Y | Y | |
| **5AD** | Noise walls or noise barriers would be installed within the main IMT site where required<br>In regard to noise walls or barriers, if required:<br>• Noise walls/barriers would need to be solid structures, typically constructed of concrete or similar material.<br>• Additional absorptive material could be applied to the internal facades of the noise walls/barriers to reduce reflected noise from the wall/barriers.<br>• TEU containers could be used as noise barriers where they are stacked, to effectively impede the direct line of sight to nearest receptors.<br>• Onsite noise walls/barriers would be constructed at the earliest opportunity in the Project development to provide noise attenuation during all subsequent construction and operation phases.<br>• Subject to further consideration of environmental, social and economic impacts, earth mounding could be considered as an alternative to, or in conjunction with, noise walls/barriers to attenuate the propagation of noise between the site and nearest affected receptors. For the southern rail access, it is proposed that earth mounding be considered on the main IMT site, at the western extent of the IMEX and interstate rail lines. | Detailed design and operation | Y | | |
| **5AE** | Where feasible, all onsite buildings and structures would be designed and constructed to impede noise from ground level operation of heavy vehicles, side picks and ITVs. | Detailed design | Y | | Y |
| **Operational Noise Management** | | | | | |
| **5AF** | Before the start of each phase of operations, an operational noise and vibration management plan (ONVMP) (or equivalent) would be developed and implemented. The ONVMPs would detail the operation of the relevant Project phase, the potential | Pre-operation and operation | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| | offsite operational noise levels as determined during the detailed design process, and all measures to manage and mitigate operational noise and vibration. | | | | |
| **5AG** | As a minimum, the ONVMP (or equivalent) would include:<br>• the operational noise criteria/limits as defined by the relevant Project approvals and Environmental Protection Licence;<br>• identification of all surrounding receptors and land use that would be potentially sensitive to noise and vibration;<br>• identification of all noise and vibration generating operations and the timing of these operations;<br>• the location and specification of any onsite and offsite noise mitigation, including the requirement for future mitigation as part of the staged operation;<br>• detailed measures for managing operational noise, including checklist and auditing procedures to ensure measures are implemented before the start of noise generating activity;<br>• procedures for the monitoring and reporting of operational noise and vibration;<br>• procedures for consultation with the community regarding operational noise and vibration; and<br>• complaint handling procedures. | Pre-operation and operation | Y | Y | Y |
| **5AH** | During detailed design, where practical and feasible to do so, consideration would be given to:<br>• undertaking locomotive maintenance during the daytime and evening period between 7.00 am and 10.00 pm;<br>• operating heavy vehicles to limit the requirement for reversing and audible reversing alarms; and<br>• appropriate management measure – either contractual or operational – that rail operators accessing the site would be required to undertake regular maintenance of all trains to address wheel flat spots and locomotive exhausts. | Pre-operation and operation | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **Further Assessment** | | | | | |
| **5AJ** | The noise and vibration measures described in 5U–5AH above would be subject to further consideration during detailed design. At that point, the predicted noise impacts and the likely effectiveness of the measures (or equivalent alternative measures) would be further investigated. This further investigation would include consideration of potential environmental, social and economic impacts of the measures.<br>It is also proposed that the following points be considered in the further assessment of potential impacts and design of mitigation measures:<br>• Assessment of potential noise emissions from any concrete batching plant, and implementation of any required noise mitigation, would be undertaken by the appointed construction contractor upon confirmation of the design and operation of the concrete batching plant.<br>• During detailed design of the Project, consideration of either an automated container handling area or electrically powered plant for the interstate terminal (as per the IMEX terminal), or alternatively the use of plant with the lowest available noise emissions.<br>• During the detailed design of the Project, more detail on the operating plant and machinery for the Project may be known. This may include the provision of one-third octave band noise emission data from equipment vendors to facilitate a detailed assessment of annoyance characteristics in accordance with the NSW Industrial Noise Policy (INP) (EPA 2000b).<br>• To the west of the site, consideration of a noise barrier 4.5 m in height at the haul road to mitigate noise from trucks operating within the Project site using a combination of acoustic barriers, solid walls or earth mounding to fully impede the line of sight between the nearest receptors in Casula and the haul road.<br>• To verify the predicted noise levels and recommended noise mitigation in the noise and vibration assessment, the | Detailed design | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | predictive assessment of potential noise levels would be revised for the detailed design of the construction and operation of the southern rail access. This would include an assessment of sleep disturbance impacts from rail spur operations. Where deemed necessary, mitigation measures may be required to reduce and control maximum noise events from sources such as locomotive exhausts and wagon bunching.<br>• The specific vibration propagation characteristics can be highly variable depending on the ground conditions at a given location. It is recommended that ground vibration impacts be reviewed during the detailed design, particularly where Project rail track would pass within 50 m of residences. | | | | |
| **Noise and Vibration Monitoring** | | | | | |
| **5AJ** | The ambient noise monitoring surveys within Casula, Wattle Grove and Glenfield would be continued throughout the construction and operation of the Project (with annual reporting of noise results up to two years beyond the completion of Full Build). The noise surveys would quantify any potential noise from the Project and identify any trends/changes in the ambient noise environment during the progressive development.<br>The measured noise levels and contribution from the operation of the Project would be continually applied to the detailed design of the Project to ensure it includes appropriate mitigation measures to reduce and control noise during construction and operation. The monitoring data would also include any changes to the ambient noise environment from new or changed developments in the area.<br>In the event of any noise or vibration related complaint or adverse comment from the community, noise and ground vibration levels would be measured at the potentially affected premises, where reasonable and feasible. In accordance with procedures in the CNVMP and ONVMP, the measured noise and/or vibration levels would then be assessed to ascertain if remedial action is required | Detailed design, construction and operation | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **Biodiversity** | | | | | |
| **6A** | Following detailed design and before construction, detailed flora and fauna mitigation measures would be developed and presented as part of the CEMP. These detailed measures would incorporate the measures listed in 6B to 6W. The CEMP would address:<br>• general impact mitigation;<br>• staff/contractor inductions;<br>• vegetation clearing protocols;<br>• pre-clearing surveys and fauna salvage/translocation;<br>• rehabilitation and restitution of adjoining habitat;<br>• weed control;<br>• pest management; and<br>• monitoring.<br>The plans would include clear objectives and actions for the Project including how to:<br>• minimise human interferences to flora and fauna;<br>• minimise vegetation clearing/disturbance;<br>• minimise impact to threatened species and communities;<br>• minimise impacts to aquatic habitats and species; and<br>• undertake flora and fauna monitoring at regular intervals. | Early Works construction | Y | Y | Y |
| **6B** | Vegetation clearing would be restricted to the construction footprint and sensitive areas would be clearly identified as exclusion zones. | Early Works and construction | Y | Y | Y |
| **6C** | The exclusion zones would be marked on maps, which would be provided to contractors, and would also be marked on the ground using high visibility fencing (such as barrier mesh). | Early Works and construction | Y | Y | Y |
| **6D** | A trained ecologist would accompany clearing crews to ensure disturbance is minimised and to assist in relocating any native fauna to adjacent habitat. | Early Works and construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **6E** | A staged habitat removal process would be developed and would include the identification and marking of all habitat trees in the area.<br>Where reasonable and feasible, clearing of hollow-bearing trees would be undertaken in March and April when most microbats are likely to be active (not in torpor) but are unlikely to be breeding or caring for young, and when threatened hollow-dependent birds in the locality are also unlikely to be breeding.<br>Pre-clearing surveys would be conducted 12 to 48 hours before vegetation clearing to search for native wildlife (e.g. reptiles, frogs, Cumberland Land Snail) that can be captured and relocated to the retained riparian vegetation of the Georges River corridor.<br>Vegetation would be cleared from a 10 m radius around habitat trees to encourage animals roosting in hollows to leave the tree. A minimum 48 hour waiting period would allow animals to leave.<br>After the waiting period, standing habitat trees would be shaken (where safe and practicable) under the supervision of an ecologist to encourage animals roosting in hollows to leave the trees, which may then be felled, commencing with the most distant trees from secure habitat.<br>Felled habitat trees would either be immediately moved to the edge of retained vegetation, or left on the ground for a further<br>24 hours before being removed from the construction area, at the discretion of the supervising ecologist.<br>All contractors would have the contact numbers of wildlife rescue groups and would be instructed to coordinate with these groups in relation to any animal injured or orphaned during clearing.<br>Within areas of high quality intact native vegetation proposed to be removed:<br>• topsoil (and seedbank) is to be collected from native vegetation that are to be permanently cleared and used in the revegetation of riparian areas; and | Early Works and construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | • Native plants in areas that are to be permanently cleared are to be relocated and transplanted in riparian areas identified for rehabilitation. | | | | |
| **6F** | Relocation of fauna to adjacent retained habitat would be undertaken by an ecologist during the supervision of vegetation removal. | Early Works and construction | Y | Y | Y |
| **6G** | An ecologist would supervise the drainage of any waterbodies on the Project site and would relocate native fish (e.g. eels), tortoises and frogs to the edge of the Georges River and/or the existing pond at the northern end of the IMT site. | Early Works and construction | Y | Y | Y |
| **6H** | The design of site fencing and any overhead powerlines would consider the potential for collision by birds and bats and minimise this risk where practicable. | Early Works and construction | Y | Y | Y |
| **6I** | The potential for translocation of threatened plant species as individuals or as part of a soil translocation process would be considered during the detailed development of the CEMP. | Early Works and construction | Y | Y | Y |
| **6J** | Consideration would be given to fitting roost boxes to the bridge over the Georges River to provide roost sites for the Large-footed Myotis and other species of microbats (e.g. Eastern Bentwing-bat) which may utilise such structures. Provision of roost boxes under bridges has been identified as priority action for the recovery of the Large-footed Myotis. | Detailed design | | Y | |
| **6K** | Important habitat elements (e.g. large woody debris) would be moved from the construction area to locations within the conservation area which would not be cleared during the Project, or to stockpiles for later use in vegetation/habitat restoration. | Pre-construction | Y | Y | Y |
| **6L** | Winter-flowering trees would be preferentially planted in landscaped areas of the Project site to provide a winter foraging resource for migratory and nomadic nectar-feeding birds and the Grey-headed Flying-fox. | Construction | Y | Y | Y |
| **6M** | A bridge/viaduct or similar design would be used for the railway crossing of the Georges River. This may allow connectivity of terrestrial habitat along the river banks underneath the bridge. | Detailed design | | Y | |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **6N** | Options for maintaining habitat connectivity would be investigated, and may include establishing native vegetation and placing habitat elements such as rock piles and large woody debris under the bridge to provide cover for fauna.<br>Where reasonable and feasible options to allow light and moisture to penetrate under the Georges River bridge will be incorporated into the detailed design | Detailed Design | Y | Y | Y |
| **6O** | Erosion and sediment control measures such as silt fencing and hay bales would be used to minimise sedimentation of streams and resultant impacts on aquatic habitats and water quality. | Early works and construction | Y | Y | Y |
| **6P** | The detailed design process for the bridge over the Georges River would consider disturbance to aquatic habitat and fish passage conditions. The design would as a minimum adhere to the fish friendly passage guidelines (Fairfull & Witheridge 2003) for waterway crossings. | Detailed design | | Y | |
| **6Q** | Opportunities for planting of detention basins with native aquatic emergent plants and fringing trees would be explored in the detailed design of the Project and, if practicable, implemented so that they would provide similar habitat in the medium term to that lost through the removal of existing basins. | Detailed design | Y | | |
| **6R** | The CEMP (or equivalent) would include detailed measures for minimising the risk of introducing weeds and pathogens. | Construction | Y | Y | Y |
| **6S** | The Project would include a long-term program for the duration of the Project operation of weed removal and riparian vegetation restoration within parts of the Georges River corridor, which would include monitoring landscaped areas for the presence of noxious and environmental weeds. A preliminary weed management strategy is provided in Appendix E of Technical Paper 3 – Ecological Impact Assessment in Volume 4 of the EIS, setting out the principles for the management of the riparian zone. | Pre-construction, construction and operation | Y | | |
| **6T** | Appropriate design and landscape/vegetation management measures would be implemented to reduce the bushfire risk and threat to biodiversity. | Detailed design | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **6U** | The management of the conservation area along the Georges River would include management of fire regimes to promote biodiversity conservation. | Pre-construction, construction and operation | Y | Y | |
| **6V** | The detailed design process would consider the potential groundwater impacts on ground-dependent ecosystems. In most cases, these impacts would be mitigated at the design phase. | Detailed design | Y | Y | Y |
| **6W** | The management plan for the Georges River riparian corridor (refer to Appendix E of Technical Paper 3 – Ecological Impact Assessment in Volume 4 of the EIS) would be implemented and would include a monitoring program designed to detect operational impacts. | Operation | Y | | |
| **6X** | Ongoing monitoring of macroinvertebrate communities will be undertaken prior to, during and following construction upstream and downstream of the proposed impact at the Georges River Bridge and reference locations to assist identify any changes in aquatic communities. | Pre-construction and construction | Y | Y | |
| ***Amended Modification Proposal*** | ***Directional lighting will be used where lighting is required within the construction area. Lights would be directed away from the riparian vegetation adjoining the Georges River as far as is practicable.*** | ***Construction*** | ***Y*** | ***Y*** | ***Y*** |
| **Biodiversity Offset Strategy** | | | | | |
| **6Y** | The Biodiversity Offsets Strategy detailed in Appendix C of the Response to Submissions report will be implemented. | Detailed design, construction and operation | Y | Y | Y |
| **6Z** | A riparian restoration plan (or equivalent) for the Georges River riparian zone and Casula offset area would be implemented. This plan includes areas outside the Conservation Area, including areas along the western bank of the Georges River The objectives of the plan include: | Detailed design, construction and operation | Y | | |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | • improved habitat values for native animals and plants, particularly threatened species; and<br>• management of undesirable fauna species including introduced animal species and some Australian native animals which may be detrimental to the biodiversity of the Project site. | | | | |
| **6AA** | Measures to manage undesirable fauna species include:<br>• monitoring of the site for the presence of introduced and undesirable animal species as part of fauna monitoring;<br>• cooperating with government bodies, interest groups and adjacent landowners in regional pest management programs including the NSW Department of Primary Industries and the NSW Office of Environment and Heritage;<br>• managing the use of nest boxes by undesirable species by removing the eggs and/or young of introduced animals<br>• (e.g. Black Rat and Common Myna) under appropriate permit conditions;<br>• removing any insect colonies (bees, wasps, termites, ants found in nest boxes); and<br>• modifying or moving nest boxes to discourage use by undesirable species. | Construction and operation | Y | Y | Y |
| **Hazards and Risks** | | | | | |
| **7A** | To minimise the risk of leakages involving natural gas, liquid natural gas (LNG) and flammable and combustible liquids to the atmosphere:<br>• appropriate standards for a gas reticulation network, including AS 2944-1 (2007) and AS 2944-2 (2007), would be referred to in the detailed design process;<br>• correct schedule pipes would be used;<br>• a fire protection system would be installed if necessary for gas users;<br>• cathodic protection would be installed for external corrosion if appropriate; and | Detailed design, construction and operation | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | • access to the Project site would be secure. | | | | |
| **7B** | To minimise the risks of leakage of LNG and liquid petroleum gas (LPG) and flammable liquids during transport:<br>• materials would be transported according to the Australian Dangerous Goods (ADG) Code, relevant standards and regulations; and<br>• contractors delivering the gas would be trained, competent and certified by the relevant authorities. | Detailed design, construction and operation | Y | Y | Y |
| **7C** | To minimise hazards associated with venting of natural gas, LNG and LPG:<br>• LNG storage would be designed to AS/NZS 1596-2008 standards;<br>• access to the Project site would be secure; and<br>• significant separation distances to residences and other assets would be put in place. | Detailed design, construction and operation | Y | Y | Y |
| **7D** | Storage of flammable/combustible liquids would be carried out in accordance with AS 1940, with secondary containment in place and location away from drainage paths. | Detailed design, construction and operation | Y | Y | Y |
| **7E** | Standby or emergency generators and transformers would all have secondary containment. | Detailed design, construction and operation | Y | Y | Y |
| **7F** | Oil coolers would generally be located in areas where leaks and runoff are appropriately controlled at source or in a retention basin. | Detailed design, construction and operation | Y | Y | Y |
| **7G** | All systems would be designed in accordance with good engineering practice. | Detailed design | Y | Y | Y |
| **7H** | Appropriate testing, alarm systems, and workplace health and safety (WHS) safety precautions would be implemented. | Detailed design | Y | Y | Y |
| **7I** | No hazardous or regulated wastes would be disposed of onsite. | Construction and operation | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **7J** | All offsite disposals would be carried out by approved transport operators and to approved facilities. | Construction and operation | Y | Y | Y |
| **7K** | Other dangerous goods, including any waste materials present on the Project site, would be suitably contained, with secondary containment and runoff controls implemented where appropriate to prevent leaks or spills migrating to environmentally sensitive areas, in particular via stormwater systems that drain to the Georges River. | Construction and operation | Y | Y | Y |
| **Bushfire Risks** | | | | | |
| **7L** | The aims and objectives of 'Planning for Bush Fire Protection' (RFS 2006) would be further considered, and the Rural Fire Service (RFS) consulted, during detailed design. | Detailed design | Y | Y | Y |
| **7M** | A bushfire management plan (or equivalent) would be prepared for the Project site to develop the bushfire management measures in detail, in consultation with the RFS. The bushfire management plan (or equivalent) would detail the interaction between the Project footprint and biodiversity offset areas.<br>In the event that no vegetation clearing is undertaken, the bushfire risk assessment and bushfire management plan (or equivalent) would be updated and appropriate mitigation measures provided in the design of the IMT. | Detailed design | Y | Y | Y |
| **7N** | Internal roads would be designed to enable safe access for emergency services and to allow crews to work with equipment aboard the vehicle, including providing:<br>• two-wheel drive, sealed all weather roads;<br>• internal perimeter road to be at least two lanes wide (8 m kerb to kerb);<br>• a minimum vertical clearance of 4 m;<br>• curves with a minimum inner radius of 6 m; and<br>• roads with capacity to carry fully loaded fire-fighting vehicles (15 tonnes). | Detailed design | Y | Y | Y |
| **7O** | Water supplies for fire-fighting would be easily accessible and located at regular intervals, including: | Detailed Design | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | • reticulated water supply using a ring main system for the perimeter road;<br>• fire hydrant spacing, sizing and pressures complying with AS 2419.1–2005;<br>• location of hydrants outside of any road carriageway; and<br>• ensuring all aboveground water pipes external to buildings are metal, including any taps. | | | | |
| **7P** | Electricity services would be located to limit the possibility of ignition of surrounding bushland or the fabric of buildings, including:<br>• where practicable, locating electrical transmission lines underground;<br>• where overhead electrical transmission lines are proposed, lines would be installed with short pole spacing (30 m); and<br>• no part of a tree would be closer to a power line than the distance set out in the specifications of Vegetation Safety Clearances issued by Energy Australia (NS179, April 2002). | Detailed design | Y | Y | Y |
| **7Q** | Gas services would be located to avoid ignition of surrounding bushland or the fabric of buildings, including:<br>• ensuring all aboveground gas service pipes external to buildings are metal (including connections); and<br>• ensuring reticulated or bottled gas is installed and maintained in accordance with AS 1596 and the requirements of relevant authorities. | Detailed design | Y | Y | Y |
| **7R** | A fuel management plan (or equivalent) would be developed for the conservation zone and offset areas taking into consideration the ecological values of this area, including the presence of threatened biodiversity. | Detailed design | Y | | |
| **7S** | A landscape management plan (or equivalent) would be developed for any landscaped gardens within the Project site. | Detailed design | Y | | Y |
| **7T** | A fire safety and evacuation plan (or equivalent) would be developed that would:<br>• include training requirements for staff on fire prevention and safety; | Detailed design | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | • provide a fire escape plan (designated meeting points and escape routes), and require regular fire drills;<br>• outline provision of a functional fire alarm system;<br>• outline equipment use restrictions during fire bans; and<br>• outline measures for arson prevention, including provision of adequate lighting and security to deter trespassers. | | | | |
| **7U** | A more detailed bushfire risk assessment would be undertaken following finalisation of design and layout, in consultation with the NSW Rural Fire Service. | Detailed design | Y | Y | Y |
| **Contamination and Soils** | | | | | |
| **8A** | Further investigations for the southern rail access would be undertaken including a targeted intrusive investigation to gather data on soils and groundwater quality so that management and/or remediation options can be evaluated. | Detailed design | | Y | |
| **8B** | Before construction, a remediation program would be implemented in accordance with the Moorebank Intermodal Terminal Preliminary Remediation Action Plan (RAP) (or equivalent). The program will have been formally reviewed and approved by the Site Auditor under Part 4 of the NSW Contaminated Land Management Act 1997 (CLM Act). | Detailed design and Early Works | Y | Y | Y |
| **8C** | A CEMP would be prepared by the contractor for all excavation and remediation works and would include requirements for decontamination facilities at the Project site. | Detailed design and Early Works | Y | Y | Y |
| **8D** | An unexploded ordnance (UXO) management plan (or equivalent) would be developed for the Project site. This plan would detail a framework for addressing the discovery of UXO or explosive ordnance waste (EOW) to ensure a safe environment for all Project staff, visitors and contractors. | Early Works | Y | | Y |
| **8E** | An ASS management plan (or equivalent) would be developed in accordance with the ASSMAC Assessment Guidelines (1998), with active ongoing management through the construction phases. Offsite disposal would need to be in accordance with the NSW Waste Classification Guidelines Part 4: Acid Sulfate Soils (2009). | Detailed design | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **8F** | Further testing of residual sediments would be undertaken to gather data to inform the management of sediments likely to be disturbed/dewatered during construction. | Detailed design | Y | | Y |
| **8G** | Ground penetrating radar (GPR) or similar techniques would be used to locate and document all existing and underground tank infrastructure across the Project site. | Detailed design | Y | | Y |
| **8H** | A management tracking system for excavated materials would be developed to ensure the proper management of the material movements at the Project site, particularly during excavation works. | Detailed design | Y | Y | Y |
| **8I** | Contaminated soil/fill material present will be 'chased out' during the excavation works based on visual, olfactory and preliminary field test results. | Early works and construction | Y | Y | Y |
| **8J** | Excavated soil would be temporarily stockpiled, sampled and analysed for waste classification processes. Subject to receipt of waste classification results, the material would be transported to a licensed offsite waste disposal facility as soon as practicable to minimise dust and odour issue through storage of materials on site. | Early works and construction | Y | Y | Y |
| **8K** | Stockpiled soils would be stored on a sealed surface and the stockpiled areas would be securely bunded using silt fencing to prevent silt laden surface water from entering or leaving the stockpiles or the Project site. | Early works and construction | Y | Y | Y |
| **8L** | All excavation works associated with potential contaminated lands would be undertaken by licensed contractors, experienced in remediation projects and the handling of contaminated soils. | Early works and construction | Y | Y | Y |
| **8M** | All asbestos removal, transport and disposal would be performed in accordance with the Work Health and Safety Regulation 2011 (WHS Regulation). | Early works and construction | Y | | Y |
| **8N** | The removal works would be conducted in accordance with the National Occupational Health and Safety Commission Code of Practice for the Safe Removal of Asbestos, 2nd Edition [NOHSC 2002 (2005)] (NOHSC 2005a). | Early Works and construction | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **8RO** | An appropriate asbestos removal licence issued by WorkCover NSW would be required for the removal of asbestos contaminated soil. | Early Works and construction | Y | | Y |
| **8P** | Environmental management and WHS procedures would be put in place for the asbestos removal during excavation to protect workers, surrounding residents and the environment. | Early Works and construction | Y | | Y |
| **8Q** | Temporary stockpiles of asbestos containing material (ACM) soils would be covered to minimise dust and potential asbestos release. | Early Works and construction | Y | | Y |
| **8R** | An asbestos removal clearance certification would be prepared by an occupational hygienist at the completion of the removal work. This would follow the systematic removal of asbestos containing materials and any affected soils from the Project site, and validation of these areas (through visual inspection and laboratory analysis of selected soil samples). | Early Works and construction | Y | | Y |
| **8S** | Asbestos fibre air monitoring would be undertaken during the removal of ACMs and in conjunction with the visual clearance inspection. The monitoring would be conducted in accordance with the National Occupational Health and Safety Commission Guidance Note on the Membrane Filter Method For the Estimating Airborne Asbestos Fibre, 2nd Edition [NOHSC 3003 (2005)] (NOHSC 2005b). | Early Works and construction | Y | | Y |
| **8T** | All stockpiles would be maintained in an orderly and safe condition. Batters would be formed with sloped angles that are appropriate to prevent collapse or sliding of the stockpiled materials. | Early Works and construction | Y | Y | Y |
| **8U** | Stockpiles would be placed at approved locations and would be strategically located to mitigate environmental impacts while facilitating material handling requirements. Contaminated or potentially contaminated materials would only be stockpiled in un- remediated areas of the Project site or at locations that did not pose any risk of environmental impairment of the stockpile area or surrounding areas (e.g. hardstand areas). | Early works and construction | Y | Y | Y |
| **8V** | Stockpiles would only be constructed in areas of the Project site that had been prepared in accordance with the requirements of the Project Preliminary RAP in Appendix F of Technical Paper 5 | Early works and construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | – Environmental Site Assessment (Phase 2), Volume 5A and 5B. All such preparatory works would be undertaken before material is placed in the stockpile. Stockpiles must be located on sealed surfaces such as sealed concrete, asphalt, high density polyethylene or a mixture of these, to appropriately mitigate potential cross contamination of underlying soil. | | | | |
| **8W** | Any stockpiles of contaminated material would be covered with a waterproof membrane (such as polyethylene sheeting) to prevent increased moisture from rainwater infiltration and to reduce wind- blown dust or odour emission. | Early works and construction | Y | Y | Y |
| **8X** | Before the reuse of any material on site, it would be validated so that the lateral and vertical extent of the contamination is defined. | Early Works and construction | Y | Y | Y |
| **8Y** | Where required, contaminated materials and wastes generated from the Project remediation and construction works would be taken to suitable licensed offsite disposal facilities. | Early Works and construction | Y | Y | Y |
| **8Z** | Where necessary, consider undertaking further investigations to determine whether other buildings have organochlorine pesticides (OCP) impacts subgrade materials, and to quantify the volume of OCP impacted materials across the site. | Early Works and construction | Y | | Y |
| **8AA** | Additional Aqueous Film Forming Foam Assessment (AFFF) be undertaken to determine if any direct remedial and/or management actions are required. A stage approach is considered appropriate and is detailed in the Preliminary AFFF Assessment (Golder Associates 2015b). | Early Works and construction | Y | | |
| ***Amended Modification Proposal*** | ***Quality control aspects relating to permanent clean general fill and risks associated with temporary stockpiling would be addressed and managed by a site specific earthworks specification. This document is to be prepared in consideration of the final design layout adopted, and requirements relating to the stockpiling during the construction of the relevant stage of development of the MPW Project.*** | ***Construction*** | ***Y*** | ***Y*** | ***Y*** |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| ***Amended Modification Proposal*** | ***All imported clean general fill would be accompanied by classification certificates identifying that it is suitable for the intended use (i.e. VENM/ENM).*** | ***Construction*** | ***Y*** | ***Y*** | ***Y*** |
| **Hydrology, Groundwater and Water Quality** | | | | | |
| **9A** | A soil and water management plan (or equivalent) would be developed before work begins in the conservation area. This plan would include erosion and sediment control plans (ESCPs) and procedures to manage and minimise potential environmental impacts associated with developing this area. | Early Works | Y | | |
| **9B** | Site compounds, stockpiling areas and storage areas for sensitive plant, equipment and hazardous materials would be located above an appropriate design flood level, which would be determined based on the duration of the construction works. | Early Works and Construction | Y | | |
| **Regional Flooding** | | | | | |
| **9C** | Implement a staged construction process for the building of the Georges River bridge that minimises temporary obstruction of flow in the main channel and floodplain where reasonable and feasible. | Construction | | Y | |
| **9D** | For the building of the Georges River bridge, design temporary works to resist forces and pressures that could occur during the design flood event adopted for the Project construction. | Construction | | Y | |
| **9E** | For all site works, provide temporary diversion channels around temporary work obstructions to allow low and normal flows to safely bypass the work areas. | Construction | Y | Y | Y |
| **9F** | The potential effects of various flood events on construction phase works would be further investigated during detailed design and preparation of the Stage 2 SSD approval(s). | Detailed design | Y | Y | Y |
| **9G** | The design of the Georges River bridge would ensure structural stability under an appropriate upper limiting flood event, typically the 1 in 2000 year AEP event or other event of similar magnitude. | Detailed design | | Y | |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **9H** | A detailed scour assessment of the structure would be undertaken and a scour protection scheme for the bridge abutments and piers would be designed to ensure structural stability and to avoid erosion of the channel and floodplain bed local to the structure. | Detailed design | | Y | |
| **9I** | Further design optimisation of the bridge would consider reducing the afflux impacts as far as possible. The bridge piers would be designed to minimise obstruction to flow and associated afflux under potential blockage and/or debris build-up scenarios. | Detailed design | | Y | |
| **9J** | Further hydraulic modelling would be undertaken to quantify the impact of climate change on afflux caused by the bridge and on hydraulic loading on the bridge structure. | Detailed design | | Y | |
| **Onsite stormwater and surface water quality** | | | | | |
| **9K** | The following staging process would be considered to be implemented when constructing surface water drainage infrastructure:<br>• Biofiltration and detention basins that form part of the proposed stormwater management strategy would be excavated at the first phase of development, with the intention that the excavated basins would be used as temporary construction phase sedimentation basins. Once these construction phases become operational, these temporary construction phase sedimentation basins could be developed into the permanent biofiltration and detention basins.<br>• During the relevant phase of development, all major stormwater pipes and culverts (600 mm diameter and larger) and main channels and outlets would be installed. Minor drainage and upstream systems would then be progressively connected to the major drainage elements during each phase of construction as required. | Construction | Y | | Y |
| **9L** | A soil and water management plan (or equivalent) would be developed before land was disturbed that would include erosion and sediment control plans (ESCPs) and procedures to manage | Construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | and minimise potential environmental impacts associated with construction of the Project.<br>The ESCP(s) for the Project would be prepared in accordance with Volume 1 of Managing Urban Stormwater: Soils and Construction ('the Blue Book') (Landcom 2004), *Managing Urban Stormwater: Soils and Construction: Installation of Services, Volume 2A* (OEH 2008) and Managing Urban Stormwater: Soils and Construction – Main Road Construction, Volume 2D (OEH 2008). The ESCP(s) would be established before the start of each construction phase and would be updated as relevant to the changing construction activities.<br>Strategies to be considered as part of the plan include:<br>• clean runoff from upstream undisturbed areas would be diverted around the Project site to minimise overland flow through the disturbed areas;<br>• stabilised surfaces would be reinstated as quickly as practicable after construction;<br>• all stockpiled materials would be stored in bunded areas and away from waterways to avoid sediment-laden runoff entering the waterways;<br>• sediment would be prevented from moving offsite and sediment-laden water prevented from entering any watercourse, drainage line or drainage inlet;<br>• erosion and sediment control measures would be regularly inspected (particularly following rainfall events) to monitor their effectiveness and stability;<br>• erosion and sediment control measures would be left in place until the works are complete or areas are stabilised;<br>• temporary erosion control and energy dissipation measures would be installed to protect receiving environments from erosion; and<br>• vehicle movements would be managed during rainfall (or while the ground remains sodden) to minimise disturbance to the topsoil. | | | | |
| **9M** | Procedures to maintain acceptable water quality and to manage chemicals and hazardous materials (including spill management | Construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | procedures, use of spill kits and procedures for refuelling and maintaining construction vehicles/equipment) would be implemented during construction. | | | | |
| **9N** | Vehicles and machinery would be properly maintained to minimise the risk of fuel/oil leaks. | Construction | Y | Y | Y |
| **9O** | Routine inspections of all construction vehicles and equipment would be undertaken for evidence of fuel/oil leaks. | Construction | Y | Y | Y |
| **9P** | All fuels, chemicals and hazardous liquids would be stored within an impervious bunded area in accordance with Australian Standards and NSW Environment Protection Authority guidelines. | Construction | Y | Y | Y |
| **9Q** | Emergency spill kits would be kept onsite at all times. All staff would be made aware of the location of the spill kits and trained in their use. | Construction | Y | Y | Y |
| **9S** | Construction plant, vehicles and equipment would be refuelled offsite, or in designated re-fuelling areas located at least 50 metres from drainage lines or waterways. | Construction | Y | Y | Y |
| **9T** | If landfill cells at the Glenfield Waste site are to be affected, then a detailed assessment must be prepared including targeted intrusive investigations to determine contamination pathways and to develop mitigation, management and/or remediation options based on those investigations. No works within this licensed premise without EPA's written approval. | Detailed design | | Y | |
| **9U** | A stormwater management plan (or equivalent) would be developed in accordance with the detailed design. This includes the requirement to control the rate of stormwater runoff so that it does not exceed the pre-developed rate of runoff. | Detailed design | Y | Y | Y |
| **9V** | The stormwater system would be designed such that flow from low order events (up to and including the 10% AEP event from the main part of the site, and up to and including the 2% AEP event for the rail access connection corridor) would be conveyed within the formal drainage systems. Flows from rarer events (up to the 1% AEP event) would be conveyed in controlled overland flow paths. | Detailed design | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| **9W** | The onsite detention system proposed would detain flow and control discharge rates to the Georges River equal to pre-development discharge rates. | Detailed design | Y | | Y |
| **9X** | A stormwater treatment system would be implemented, incorporating sedimentation and bio-filtration basins upstream of the stormwater detention basins. | Detailed design, construction, operation | Y | | Y |
| **9Y** | Use of onsite infiltration would be incorporated into the design through the distribution of swale drains and rain gardens across the Project site. | Detailed design | Y | | Y |
| **9Z** | A number of other stormwater management opportunities would be considered during development of the detailed design in accordance with Liverpool City Council's Development Control Plan Part 2.4 Development in Moorebank Defence Lands and other relevant policies, including:<br>• polishing water runoff using dry creek gravel beds with macrophyte plants;<br>• using drainage swales to slow down stormwater runoff and increase onsite infiltration;<br>• collecting roof rainwater for re-use onsite;<br>• installing gross pollutant traps (GPTs) at the outlets of the pipe system before discharge into the sedimentation basins; and<br>• incorporating impervious surfaces and vegetated areas into the design to increase sub-surface water flow during rain events and to reduce the discharge of stormwater pollutants. | Detailed design | Y | | Y |
| **Groundwater** | | | | | |
| **9AA** | Concrete structures and other subsurface infrastructure in areas that may potentially interact with local groundwater would be constructed from sulfate resistant cement and materials. | Detailed design and construction | Y | | Y |
| **9AB** | Where required, water access entitlements such as groundwater licences would be obtained for dewatering activities, in | Pre-construction | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | accordance with the requirements of NSW Office of Water's proposed Aquifer Interference Policy. | | | | |
| **9AC** | Groundwater quality would be tested to determine salinity levels and inform potential design measures to ensure the design life of any infrastructure is achieved. | Detailed design | Y | | Y |
| **9AD** | Suitable groundwater monitoring where required would be established and undertaken before construction, during construction and during operation of the Project. | Pre-construction, construction and operation | Y | | Y |
| **9AE** | To prevent the contamination of groundwater during Project construction and operation, suitable water treatment, water retention, water proofing and ground treatments would be investigated and implemented where required. | Detailed design, construction and operation | Y | | Y |
| **9AF** | Potential impacts on two existing groundwater bores in the vicinity of the proposal would be further investigated during detailed design. Mitigation measures to minimise these impacts would also be developed as required. | Detailed design | Y | | Y |
| **9AG** | The following groundwater assessments would be carried out:<br>• an overall assessment of pre-construction groundwater quality and levels;<br>• characterisation of local and regional groundwater flow systems, including the groundwater contours and flow conditions;<br>• consideration of potential groundwater supply options, if required;<br>• assessment of impacts on groundwater levels and quality during construction and ongoing operation;<br>• confirmation of management and mitigation solutions for potential groundwater impacts; and<br>• assessment of the potential salinity impacts that may result from the Project. | Detailed Design | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| **Air Quality - Construction** | | | | | |
| **10A** | A Dust Management Plan (DMP) (or equivalent) would be prepared as part of the CEMP. | Early Works and construction | Y | Y | Y |
| **10B** | Dust minimisation measures would be developed and implemented before commencement of construction. The NSW Coal Mining Benchmarking Study: Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining (OEH 2011) would be considered. | Early Works and construction | Y | Y | Y |
| **10C** | Methods for management of emissions would be incorporated into Project inductions, training and pre-start talks. | Early Works and construction | Y | Y | Y |
| **10D** | Activities with the potential to cause significant emissions, such as material delivery and load out and bulk earthworks, would be identified in the CEMP. Work practices that minimise emissions during these activities would be investigated and applied where reasonable and feasible. | Early Works and construction | Y | Y | Y |
| **10E** | A mechanism for raising and responding to complaints would be put in place for the duration of the construction phase. | Early Works and construction | Y | Y | Y |
| **10F** | Vehicle movements would be limited to designated entries and exits, haulage routes and parking areas. Project site exits would be fitted with hardstand material, rumble grids or other appropriate measures to limit the amount of material transported offsite (where required). | Early Works and construction | Y | Y | Y |
| **10G** | Work site compounds and exposed areas would be screened to assist in capturing airborne particles and reduce potential entrainment of particles from areas susceptible to wind erosion. | Early Works and construction | Y | Y | Y |
| **10H** | Dust would be visually monitored during construction and the following measures would be implemented where necessary:<br>Apply water (or alternative measures) to exposed surfaces that are causing dust generation. Surfaces may include any stockpiles, hardstand areas and other exposed surfaces (for example recently graded areas). Regular watering would ensure | Early Works and construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | that the soil is moist to achieve 50% control of dust emissions from scrapers, graders and dozers.<br>Appropriately cover loads on trucks transporting material to and from the construction site. Securely fix tailgates of road transport trucks before loading and immediately after unloading.<br>Prevent, where possible, or remove, mud and dirt being tracked onto sealed road.<br>Apply water at a rate of >2 litres (L) per square metre per hour (L/m2/hr) to internal unsealed access roadways and work areas. Application rates would be related to atmospheric conditions (e.g. prolonged dry periods) and the intensity of construction operations. Paved roads should be regularly swept and watered when necessary. | | | | |
| **10I** | Where reasonable and feasible, dust generating activities (particularly clearing and excavating) would be avoided or minimised during dry and windy conditions. | Early Works and construction | Y | Y | Y |
| **10J** | Project site speed limits of 20 km/h would be imposed on all construction vehicles travelling within the Project site. | Early Works and construction | Y | Y | Y |
| **10K** | Graders would be limited to a speed of 8 km/h to reduce potential dust emissions. | Early Works and construction | Y | Y | Y |
| **10L** | Material stockpiles would not exceed an area of 1 ha and would be regularly watered to achieve 50% control of potential dust emissions. | Early Works and construction | Y | Y | Y |
| **10M** | Exposed areas and stockpiles would be limited in area and duration. For example, vegetation stripping or grading would be staged where possible, unconsolidated stockpiles would be covered, or hydro mulch or other revegetation applicant applied to stockpiles or surfaces left standing for extended periods. | Early Works and construction | Y | Y | Y |
| **10N** | Revegetation or rehabilitation activities would proceed once construction activities were completed within a disturbed area. | Early Works and construction | Y | Y | Y |
| **10O** | Construction plant and equipment would be well maintained and regularly serviced so that vehicular emissions remain within relevant air quality guidelines and standards. | Early Works and construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **10P** | Excavation works in potentially contaminated soils should be managed to ensure that they are completed during optimal dispersive conditions to minimise odorous emissions. | Early Works and construction | Y | Y | Y |
| **10Q** | Emissions from trucks would be regulated in accordance with the requirements prescribed in the National Environmental Protection Measure (NEPM) (Diesel Vehicle Emissions) (NEPC 2001) or suitably relevant standards. | Early Works and construction | Y | Y | Y |
| **10R** | All construction vehicles would be tuned to avoid releasing excessive smoke from the exhaust and would be compliant with OEH Smokey Vehicles Program under the NSW Protection of the Environment and Operations Act 1997 (POEO Act) and POEO Regulations (NSW) (2010). | Early Works and construction | Y | Y | Y |
| **10S** | All on-road trucks are to comply with the Euro V emission standards or suitably relevant standards. | Early Works and construction | Y | Y | Y |
| **10T** | All new off-road construction equipment would be required to meet, at minimum, the US Environmental Protection Agency (EPA) Tier 3 emission standards (or suitably relevant standards) for non- road diesel engines. | Early Works and construction | Y | Y | Y |
| **10U** | Establishment of Action Response Levels (ARLs) for use with real- time dust management. These aid in the assessment of impact potential, and establish an early warning system during adverse trends, reducing complaint potential and non-compliance issues. An ARL trigger would be a defined measurement of elevated dust levels for a prolonged period. | Early Works and construction | Y | Y | Y |
| **Air Quality - Operation** | | | | | |
| **10V** | An air quality management plan (AQMP) (or equivalent) would be prepared for the operation of the Project. | Pre-operation | Y | Y | Y |
| **10W** | Manage Project site traffic to minimise the possibility of trucks queueing along public roads adjacent to the Project site. This can be achieved through the implementation and enforcement of an idling limit for trucks on site and provision for a troubled truck parking area. | Operation | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| **10X** | Investigate the possibility of reducing locomotives' idling times on site. | Pre-operation | Y | | |
| **10Y** | Optimise the use of trucks capable of transporting multiple TEU containers simultaneously to achieve maximum efficiency onsite and reduce air emissions. | Operation | Y | | |
| **10Z** | Vehicles would be maintained to not release excessive levels of smoke from the exhaust and to be compliant with OEH's Smokey Vehicles Program under the *POEO Act* and POEO Regulations. | Operation | Y | | Y |
| **10AA** | Emissions from the operators' trucks would be regulated by the NEPM (Diesel Vehicle Emissions) (NEPC 2001). | Operation | Y | | |
| **10AB** | Emissions from locomotives would follow international standards, such as those provided for under United States legislation 'Final Rule: Control of Emissions of Air Pollution from Locomotives and Marine Compression-Ignition Engines Less Than 30 Litres per Cylinder' (US EPA 2012) and should meet the Tier 2+ or above emission standard for all new locomotives entering the Project site (No emission standards are available under the NSW or Federal legislative framework for locomotives). | Operation | Y | Y | |
| **10AC** | Emissions from shunting engines would follow international standards, such as those provided for under United States legislation 'Final Rule: Control of Emissions of Air Pollution from Locomotives and Marine Compression-Ignition Engines Less Than 30 Litres per Cylinder' (US EPA 2012) and should meet the Tier 2+ or above emission standard. Older locomotives should upgraded to meet Tier 1 or Tier 2+ emission standards where reasonable and feasible. (No emission standards are available under the NSW or Federal legislative framework for shunting engines). | Operation | Y | Y | |
| **Cleaner fuel technology** | | | | | |
| **10AD** | During detailed design the following measures would be further investigated<br>• electrically powered refrigerated on site containers; | Detailed Design | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | • site only cars to be hybrid (electric/liquefied natural gas (LNG)/compressed natural gas (CNG), liquefied petroleum gas (LPG));<br>• older diesel trucks be installed with the latest emission reduction technology, where allowed (e.g. retrofitting of particle filters, installation of catalytic convertors or replacement with newer, less polluting diesel engines to ensure emissions requirements conform to the Australian Design Rule ADR80/03);<br>• requiring all on-road trucks to comply with the Euro V emission standards;<br>• all new off-road construction equipment to meet, at minimum, the US EPA Tier 3 emission standards for non-road diesel engines (US EPA Tier 4 emission standard equipment should be adopted where available);<br>• use of hybrid locomotives or cleaner fuels for locomotives (e.g. locomotives powered by batteries with a small diesel engine for recharging the batteries and for additional power (as currently used on the Burlington Northern Santa Fe railway, California, USA)); and<br>• use of fuel cells, LNG and electric powered locomotives. | | | | |
| **Strategic Planning and management** | | | | | |
| **10AE** | The following proposals would be considered as part of an effective and integrated strategic management plan:<br>• investigation of the feasibility of increasing the proportion of container traffic that moves by rail;<br>• implementation of terminal appointment systems and appropriate time slots for Project site access for truck and rail deliveries to avoid unnecessary onsite air emissions during peak periods;<br>• minimisation of the potential for fluctuating demand forecasts for equipment among carriers, railways and the terminal through effective communication;<br>• utilisation of the latest information technologies such as Intelligent Transportation Systems (ITS) applied to | Detailed design | Y | Y | |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | transportation operations which can result in improved transportation efficiency and a reduced environmental impact; and<br>• use of a virtual container yard to assist with incorporating onsite operational efficiencies to ensure air emissions are minimised. | | | | |
| **Miscellaneous** | | | | | |
| **10AF** | The following measures would be further investigated at detailed design stage:<br>• All chemicals and fuels would be stored in sealed containers as per appropriate regulations and guidelines.<br>• The onsite storage of fuel would be kept to a minimum to minimise vapour emission levels.<br>• Unloading of fuels (diesel or liquefied natural gas) would be vented via return hoses that recirculate vapours from delivery to receiver.<br>• Tanks would be fitted with a conservation vent (to prevent air inflow and vapour escape until a pre-set vacuum or pressure develops).<br>• Strategies would be put in place to reduce the usage of chemical and fuels in addition to using alternative fuel technologies as recommended in the NSW Action for Air (DECCW 2009). Particular focus would be on those products with the potential to release high levels of air toxics. | Detailed design | Y | | Y |
| **Odour** | | | | | |
| **10AG** | Odour emissions would be controlled through the implementation of best management practice (BMP). The following mitigation measures and safeguards are recommended for the operational works:<br>• providing covering for inlet works;<br>• extraction of inlet works foul air gases to a soil bed filter for treatment; and | Detailed design and operation | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | • contingencies in place for potential loss of aeration (backup generator for power supply and storage of lime for dosing to the process units in the event that anaerobic conditions occur). | | | | |
| **Future Monitoring** | | | | | |
| **10AH** | It is also proposed that ambient air quality monitoring be undertaken as part of the Project's construction phase right through to operation. This would include:<br>• onsite monthly dust deposition monitoring during construction to measure dust fallout from the Project at boundary points and selected sensitive receiver locations. This would include comparison of concentrations with the air quality criteria; and<br>• annualised average monitoring after operations commence to ensure that the ambient air quality criteria are met. | Construction and Operation | Y | Y | Y |
| **Greenhouse Gases** | | | | | |
| **11A** | Where possible, establish and maintain areas of native flora and vegetation within the Project site to generate significant carbon sequestration benefits. | Early Works, construction and operation | Y | | |
| **11B** | Where possible, implement the use of biofuels (e.g. biodiesel, ethanol, or blends such as E10 and B880) to reduce GHG emissions from plant and equipment. | Early Works, construction and operation | Y | | Y |
| **11C** | Consider the use of vehicles with minimum GHG emissions ratings of 7.5 for passenger vehicles and 6 for light commercial vehicles, as described in the Green Vehicle Guide (http://www.greenvehicleguide.gov.au/GVGPublicUI/home.aspx). | Early Works, construction and operation | Y | | Y |
| **11D** | Energy-efficient guidelines for operational work, such as minimal idling time for machinery or complete shut off, would be considered and implemented where appropriate. | Operation | Y | | Y |
| **11E** | Establish an Environmental Management System (EMS) that involves regular monitoring, auditing and reporting on energy, | Operation | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | resource use and GHG emissions from all relevant activities; include energy audits with a view to progressively improving energy efficiency and investigation of renewable energy sources (e.g. onsite solar generation), where feasible. | | | | |
| **11F** | Investigate methods to reduce losses from industrial processes (refrigerants and SF6). | Operation | Y | | Y |
| **11G** | Investigate and, where possible, implement key performance indicators (KPIs) for plant efficiency and GHG intensity. | Operation | Y | | Y |
| **11H** | Consider and implement, where possible, the mitigation options for further reducing energy and GHG emissions detailed in Table 9.4 in Section 9 – Project sustainability. | Detailed design, construction and operation | Y | Y | Y |
| **Aboriginal Heritage** | | | | | |
| **12A** | Where reasonable and feasible, options would be explored to conserve moderate to high significance sites in situ. | Detailed design and Early Works | Y | Y | Y |
| **12B** | An Aboriginal heritage interpretation strategy for the Project would be developed in close consultation with the registered Aboriginal parties. | Detailed design and Early Works | Y | Y | Y |
| **12C** | Options for managing impacts at sites MA6 and MA7 would be explored during the detailed design phase in consultation with registered Aboriginal parties (RAP). If the scars are considered to be of Aboriginal origin, possible management options include:<br>• Conservation of the tree(s) in situ. This would involve designing the project to ensure that the tree(s) would not be impacted.<br>• Salvage and conservation of the tree(s), or the scarred portion of the tree's trunk, at a location outside the project area.<br>In the event there is not a consensus of views among all of the RAPs, it is recommended that a precautionary approach be taken. This would involve acting upon statements of the tree(s) holding cultural value, even if only a minority of RAPs view either or both trees as holding cultural value. | Detailed design and Early Works | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| **12D** | An archaeological salvage excavation program would be implemented to preserve archaeological deposits of moderate to high archaeological/scientific significance located within the construction footprint (items recorded at MA5 and MA9).<br>Consideration would be given to conserving both sites in situ, within open space reserves, or as an extension of the proposed conservation zone | Detailed design and Early Works | Y | | Y |
| **12E** | A surface salvage program would be carried out to conserve surface artefacts located within the construction footprint (items recorded at MA1, MA2, MA3 and MA4). Salvage of surface artefacts would be undertaken before any impacts in these areas. | Detailed design and Early Works | Y | | Y |
| **12F** | The Unanticipated Discoveries Protocol described in Appendix 10 of Technical Paper 10 – Aboriginal Heritage Impact Assessment in Volume 7 of the EIS, would be followed in the event that historical items or relics or suspected burials are encountered during construction works. | Construction | Y | Y | Y |
| **12G** | Consultation would be ongoing with the registered Aboriginal parties during construction of the Project and would include:<br>• consultation on the future care and management of recovered Aboriginal objects;<br>• methodologies for any future investigations; and<br>• finalisation of management and mitigation strategies subject to detailed design. | Construction | Y | Y | Y |
| **European Heritage** | | | | | |
| **13A** | Road names within the School of Military Engineering (SME) would be retained where possible. | Detailed design | Y | | Y |
| **13B** | Continued commemoration of significant events and individuals would be considered through the naming of buildings, streets and the rail bridge proposed for construction as part of the Project. | Detailed design | Y | Y | Y |
| **13C** | Where reasonable and feasible options exist for avoiding impacts on one or more identified heritage items, preference | Detailed design | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| | would be given to conserving items of Commonwealth or State significance. | | | | |
| **13D** | Where avoidance of impacts on a heritage item is not reasonable or feasible, mitigation works inclusive of archival recordings, salvage of archaeological deposits, relocation of significant elements of the built environment and/or adaptive reuse would be undertaken. | Early Works | Y | Y | Y |
| **13E** | A European heritage interpretation strategy would be developed in close consultation with local historical societies, former and current staff and military personnel. | Early Works | Y | Y | Y |
| **13F** | No impacts would occur within the potential archaeological deposits (PAD) boundaries of Moorebank Historical Potential Archaeological Deposit (MHPAD) 1 and MHPAD2 without prior archaeological salvage, as these sites contain archaeological deposits, inclusive of in-situ building remains, that are assessed to be of local significance in the context of the history of military housing and training at Moorebank. | Early Works | Y | | Y |
| **13G** | In addition to archival recording of the Transport Compound Workshop (B99), consideration would be given during the detailed design stage to the in-situ conservation or adaptive reuse of this structure within the Project site. This would assist with mitigation of heritage impacts on the structure itself and the Moorebank Cultural Landscape as a whole. | Early Works | Y | | |
| **13H** | In addition to archival recording, the Dog Cemetery (MH1) would be repositioned and the individual graves reinterred. This would be carried out in accordance with the wishes of the SME's Explosive Detection Dogs unit and respecting the social value of the site. | Early Works | Y | | Y |
| **13I** | In addition to archival recording, consideration would be given during detailed design to the in-situ conservation of the Commemorative Garden (MH6). If in situ conservation is not possible, the plaques and planting should be relocated to an alternative location on public display within the Project. | Early Works | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| | | | IMT | Rail | Warehousing |
| **13J** | For the southern rail access, heritage item Railway viaduct, Main Southern Railway Line (Item 12) should be noted on all plans and maps during construction and all care taken to avoid this item. | Detailed design and construction | | Y | |
| **13K** | The Unanticipated Discoveries Protocol (detailed in Appendix 7 of Technical Paper 11 – European Heritage Impact Assessment in Volume 8) would be followed in the event that historical items or relics or suspected burials are encountered during excavation works. | Early Works and construction | Y | Y | Y |
| **13L** | The Unanticipated Discoveries Protocol (detailed in Appendix 7 of Technical Paper 11 – European Heritage Impact Assessment in Volume 8) would be followed in the event that historical maritime items or relics are encountered during bridge works within the Georges River. | Early Works and construction | | Y | |
| **13M** | Further consideration would be given to options for the retention and/or relocation and adaptive reuse of the CUST Hut and the RAAF STRARCH Hangar to mitigate impacts on heritage values associated with these structures and to broaden their cultural landscape.<br>Options considered for mitigation in order of preference are:<br>• Relocation (either offsite or onsite) and conserve/adaptive reuse – this would be investigated further as part of the detailed design and any future development applications.<br>• Interpretive commemoration utilising materials/elements from the building this may be required but would be determined by the findings from investigations in option 1 above.<br>• Demolition may be required but would be determined by the findings from investigations in option 1 above.<br>• The first preference would be to retain and adaptively re-use these items on the redeveloped Project site (within the precinct but outside the secure area, as part of the administrative facilities or similar). If this is not feasible or practicable, the second preference would be for relocation to another appropriate location, potentially with adaptive reuse. | Detailed design and Early Works | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
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| **Visual and urban design** | | | | | |
| **14A** | Visual mitigation measures to be considered during the detailed design of the Project include:<br>• avoiding clearing of the conservation area which currently obscures and filers views into the Project site;<br>• enhancing existing native vegetation adjoining the Georges River;<br>• enhancing existing native trees with extended and consolidated planting; and<br>• conserve the natural character and streetscape along Moorebank Avenue and allow for effective landscaping. | Detailed design | Y | Y | Y |
| **14B** | The following additional visual mitigation measures would be considered during detailed design:<br>• Consider the siting of development to minimise vegetation clearing.<br>• Consider options for permeable tree planting adjoining buildings to reduce visual impacts and to cast shadows.<br>• Enhance vegetation adjoining water bodies.<br>• Maximise integration of the terminal facilities and the associated warehousing precinct by providing vegetation screening, way-finding throughout the Project site, breakout space for the public and staff, and visual relief.<br>• Provide additional native trees to the car park areas to maximise the opportunity for shade and to provide a landscape frontage that is scaled to complement the new buildings.<br>• Provide landscaping along Moorebank Avenue, including extensive tree and shrub planting on road frontages that provides visual relief from the industrial appearance of the warehousing, with a layered approach along the streetscape.<br>• Consider localised earth mounding and native canopy tree planting to internal landscape areas on the western side of | Detailed design | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| | the new buildings to mitigate visual impacts on residential areas.<br>• Choose finishes and materials that limit contrast with the surrounding landscape, with the preferred use of muted colours.<br>• Take opportunities to start early rehabilitation and supplementary planting of endemic species to the conservation area on the western boundary.<br>• Consider options for tree planting adjacent to buildings, to reduce visual impacts (while also considering any required security constraints and rail line fell distances).<br>• Consider the building design further during the detailed design process and be consistent with controls outlined in the Liverpool Development Control Plan 2008, Part 7 Development in Industrial Areas (LCC 2008c), including facade treatment, materials, building design and lighting. | | | | |
| **Light Spill** | | | | | |
| **14C** | Lighting required during construction of the Project would be designed and located to minimise the effects of light spill on surrounding sensitive receivers, including residential areas and the proposed conservation area. | Construction | Y | Y | Y |
| **14D** | Design lighting to minimise impacts on surrounding existing and future residents and the proposed conservation zone. | Detailed design | Y | | Y |
| **14E** | Consider use of shields on luminaire lighting to minimise brightness effects. | Detailed design | Y | Y | Y |
| **14F** | Select asymmetric light distribution-type floodlights as part of the proposed lighting design (which means the light is directed specifically to the task with minimal direct light spill to the surrounding area). | Detailed design | Y | | Y |
| **14G** | Consider low reflection pavement surfaces to reduce brightness. | Detailed design | Y | | Y |
| **14H** | Minimise the quantity of light and energy consumption in parts of the Project site that are not active, while retaining safe operation. | Detailed design | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| **Property and Infrastructure** | | | | | |
| **15A** | Undertake further investigations into the location of existing utilities and the likely impact on these utilities. This would include consultation with asset owners to determine the appropriate measures for relocation. | Detailed design | Y | Y | Y |
| **15B** | Implement 'dial before you dig' protocols for all potential utilities affected by the Project. | Early Works and construction | Y | | Y |
| **Social and Economic Impacts** | | | | | |
| **16A** | A Project contact phone number and website would be maintained during construction and operation to enable the community, including local business owners and/or operators, to access information on the Project and receive responses to any concerns. | Early Works and construction and operation | Y | Y | Y |
| **16B** | A complaints line and resolution process would be set up and maintained. | Early Works, construction and operation | Y | Y | Y |
| **Human health risks and impacts** | | | | | |
| **17A** | Annualised average monitoring for air quality and noise would be regularly reviewed against the guidelines developed in the specialist studies supporting this EIS, as they are based on protecting the health of the community. Should exceedances be identified in these key indicators as a result of the Project, then a further and more targeted monitoring and management program would be developed as required. | Construction and operation | Y | Y | Y |
| **Waste management - Construction** | | | | | |
| **18A** | A construction waste management plan (or equivalent) would be prepared as part of the overall CEMP. This would implement key principles of relevant waste guidelines, and the waste | Early Works and construction | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| | management hierarchy of reduction, reuse, recycling and recovery. | | | | |
| **18B** | The waste hierarchy would be investigated and implemented where possible with avoidance of waste, re-use and recycling incorporated into construction methodologies. | Early Works and construction | Y | Y | Y |
| **18C** | Consideration would be given to the selection of materials for use in construction to minimise waste generated throughout their lifecycle. | Early Works and construction | Y | Y | Y |
| **18D** | Where practicable, construction materials that contain minimal embodied energy would be preferred. | Early Works and construction | Y | Y | Y |
| **18E** | Opportunities would be explored where practicable to recycle or re-use materials arising from demolition works, with a preference for onsite re-use where possible (or recycling through an appropriate recycling contractor). | Early Works and construction | Y | Y | Y |
| **18F** | Where possible, site disturbance and unnecessary excavation would be minimised. | Early Works and construction | Y | Y | Y |
| **18G** | Formwork would be re-used where possible. | Early Works and construction | Y | Y | Y |
| **18H** | Sewage waste would be disposed of by a licensed waste contractor in accordance with Sydney Water and OEH requirements. | Early Works and construction | Y | Y | Y |
| **Waste Management – Operational waste** | | | | | |
| **18I** | A waste management plan (or equivalent) would be prepared and implemented to govern the overall use of materials, categorisation of wastes, and re-use and recycling process. | Operation | Y | Y | Y |
| **18J** | The waste hierarchy would be investigated and implemented where possible with avoidance of waste, re-use and recycling incorporated into the design, purchasing and procurement. | Operation | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| **18K** | Consideration would be given to the selection of materials for use in operation to minimise waste generated throughout their lifecycle. | Operation | Y | | Y |
| **18L** | Materials used onsite would be recycled where possible, including steel, batteries, electronics and paper. | Operation | Y | | Y |
| **18M** | Future recovery of waste would be encouraged through site design, including provision for storage areas and appropriate paths for waste containers. | Operation | Y | | Y |
| **18N** | Dedicated recycling storage areas and recycling bins would be located throughout the Project site, with clear signage and convenient access for waste recycling service providers. This would include bins for paper, plastics, glass, metals and compost. | Operation | Y | | Y |
| **18O** | Where required, separate bunded storage area would be established for liquid wastes (e.g. oils), along with drainage to grease trap if required. | Operation | Y | | Y |
| **18P** | A waste management system would be developed to include calculations of anticipated waste volumes from the office, landscaped areas, refuelling facilities and warehousing and distribution activities for ongoing comparison and monitoring. | Operation | Y | | Y |
| **18Q** | Onsite waste management infrastructure would, as a minimum, cater for the following three waste streams:<br>• recovered waste (for re-use or recycling);<br>• residual waste (for disposal or alternative waste technology); and<br>• hazardous waste (wastes that are toxic, corrosive, flammable, explosive or reactive). | Operation | Y | | Y |
| **18R** | Water efficient fixtures and fittings would be installed wherever possible, including in all basins, wash down areas and offices and general amenities areas. | Operation | Y | | Y |
| **18S** | Where possible, rainwater harvesting and surface water runoff management would be utilised for watering of gardens and landscaping. | Operation | Y | | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| **18T** | The use of grey water and black water recycling would be investigated. Recycling water would most likely be used for toilet flushing and/or landscape irrigation. If used, it would comply with the relevant guidelines and agency approval. | Operation | Y | | Y |
| **18U** | Where possible, fire test water from the Project site would be collected for re-use. Washdown water from vehicle and train washdown facilities (if required) would also be collected for re-use. | Operation | Y | | Y |
| **18V** | Where reasonable and feasible, water meters would be installed on all major water uses (air conditioning cooling towers, irrigation, domestic hot water, amenities, washdown, rainwater collection and recycled water system). | Operation | Y | | Y |
| **18W** | Water reduction targets would be considered for office areas, in line with the National Australian Built Environment Rating System (NABERS) Water protocol for office buildings (refer discussion in Section 9 – Project sustainability). | Operation | Y | | Y |
| **Use of resources** | | | | | |
| **18X** | Opportunities to utilise recycled building materials in the overall structure of the Project would be explored. Development of the design would seek to use construction materials that have been made with a post-consumer recycled content of 50% or greater. | Detailed design and operation | Y | Y | Y |
| **18Y** | Measures to minimise the use of energy and fuel would be investigated and implemented where appropriate. These may include using non-renewable sources such as petroleum, diesel, natural gas and liquefied natural gas. | Early Works, detailed design and construction | Y | Y | Y |
| **18Z** | Where practicable, water would be re-used onsite, including water stored in sediment basins. | Early Works, detailed design and construction | Y | Y | Y |
| **Use of resources - operation** | | | | | |
| **18AA** | Initiatives in Table 9.4 in Section 9 – Project sustainability of MPW Concept EIS would be considered and implemented | Detailed design and operation | Y | Y | Y |

| REMM | Mitigation Measure | Implementation Phase | Applicability | | |
|---|---|---|---|---|---|
| | | | IMT | Rail | Warehousing |
| | where practicable to minimise the use of energy and fuel during the operation of the Project. | | | | |
| **Cumulative Traffic impacts** | | | | | |
| **19A** | The intersection treatments and delivery timing for all cumulative scenarios are presented in Table 7.37 of the Response to Submission report; a number of these treatments would be required for a Moorebank project only scenario by 2030. | Detailed design and operation | Y | | |
| **Cumulative Air and Noise** | | | | | |
| **19B** | The design and implementation of air quality and noise mitigation would need to be determined for the final staged operations during the detailed design phase and, as required, be included in the environmental assessment for the Stage 2 SSD approval(s). | Detailed design and operation | Y | | Y |

# 9 CONCLUSION

A modification application was prepared on behalf of SIMTA, which sought approval to modify the MPW Concept Project and Stage 1 (Early Works) (SSD_5066) (the Modification Proposal). The Modification Proposal was prepared pursuant to Section 96(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and was publicly exhibited, in accordance with clause 83 of the *Environmental Planning and Assessment Regulations 2000,* between 7 July 2016 and 22 August 2016. During the public exhibition period a number of submissions were received from government agencies and the community and this Response to Submission (RtS) report has been prepared to address those submissions received (refer to Sections 4 and 5), along with providing further information and justification for the Modification, where possible, to respond and satisfy the submissions received.

This RtS has also described and assessed amendments to the Modification Proposal (the Amended Modification Proposal), which are detailed in Section 6 of this RtS, to address comments received during the public exhibition period and to reflect design development of the MPW Project.

The mitigation measures provided within the MPW Concept EIS (Chapter 7 of the sRtS) have been updated to respond to the submissions received (refer to Section 8 of this RtS) and address the scope of the Amended Modification Proposal. These updated mitigation measures would further reduce the overall environmental impacts, during both the construction and operation of the Amended Modification Proposal.

## 9.1 Overview of submissions and consultation

During the public exhibition period of the Modification Proposal, submissions were invited from all stakeholders including members of the community and government stakeholders. A total of 371 public submissions have been received from the community, including landowners, occupants and special interest groups. A total of nine submissions have been received from government agencies.

It should be noted, as demonstrated within Section 5 of this RtS, that a large number of community submissions received were not directly relevant to the scope of the Modification Proposal, but rather were submitted in relation to the overall MPW Project in general.

The key issues which have been raised for the Modification Proposal, by the community and government stakeholders, include:

- Traffic and transport (201 submissions, 54% of overall submissions)
- Site selection (116 submissions, 31% of overall submissions)
- General environment (111 submissions, 30% of overall submissions)
- Community (110 submissions, 30% of overall submissions)
- Human health (99 submissions, 27% of overall submissions).

Government agencies raised similar concerns to that provided by the community. These submissions were collated, analysed and included within this RtS (refer to Section 4 and 5 of this RtS).

This RtS includes consideration of all comments raised and provides additional information, where necessary, to respond to and close out concerns raised by all stakeholders. Further, where necessary and suitable, the mitigation measures (previously provided within Chapter 7 of the SRtS) have been updated and included within this RtS (refer to Section 8 of this RtS).

## 9.2 Proposal Amendments

The Amended Modification Proposal, the subject of this RtS, includes a number of amendments to various stages of the MPW Project. A summary of the Amended Modification Proposal, for which approval is sought is:

- Importation of clean general fill – importation of 1,600,000m$^3$ of clean general fill for the purposes of site formation
- Altered construction footprint – impact on additional parcels of land for the purposes of construction of the MPW Project
- Interaction between MPW and MPE sites – transfer of operational vehicles between the MPW and MPE sites for the purposes of container handling between the IMT's and warehouses on each site
- Land use changes – amendment of form and function of the Interstate terminal into a Multipurpose terminal and other site land use adjustments (freight village, truck loading and OSDs)
- Maximum building heights – increase of building heights (identified in the MPW Project) associated with the importation of fill
- Staging of future applications – alteration to future staging of the MPW Project for the purposes of addressing market demand
- Subdivision – subdivision of the MPW site to facilitate for long-term leases for proposed development.

As a result, the Amended Modification Proposal would include some changes to the project description provided in the MPW Concept EIS. These changes are generally minor in nature and are generally consistent with the descriptions and assessments provided within the MPW Concept EIS (for construction and operation). A description of these changes has been provided within Section 6 of this RtS.

An additional environmental assessment has been undertaken, within Section 7 of this RtS, for each of the amendment components to identify any impacts that differ from those assessed within the MPW Concept EIS and also provide an overall impact assessment. Supplementary technical specialist studies have been provided, as relevant, to further discuss the potential impacts of the Amended Modification Proposal and are included as Appendices to this RtS.

The assessment identifies that the Amended Modification Proposal would, subject to the implementation of updated mitigation measures (refer to Section 8 of this RtS), result in no substantial environmental impacts in addition to those identified within the MPW Concept EIS.