Chapter 6
Response to community submissions

6. Response to community submissions

Chapter 6 of this Response to Submissions Report (this report) details the key issues and sub-issues raised in the community submissions received during the exhibition period of the Environmental Impact Statement (EIS). Moorebank Intermodal Company's (MIC) response to each of the issues raised is provided throughout this chapter.

This chapter has been structured to reflect the order of the EIS, with issues relevant to the chapters of the EIS grouped together and sub-issues grouped under each key issue. This order does not reflect the number of times a particular issue was raised. MIC's responses reference a number of sections, chapters and technical papers within the EIS. The structure and contents of the EIS is shown in Figure 1.2 in Chapter 1 - *Introduction* of this report.

6.1 Strategic context and need for the Project

A range of issues were raised in relation to the strategic context and need for the Project. These are detailed below:

6.1.1 Local community benefit

A number of submissions raised concerns regarding the benefits of the Project, with some submissions arguing the local community would not experience or receive any benefits, and would be subject to the adverse impacts.

In particular, some submissions state very few local jobs would be generated, as the additional jobs the Intermodal Terminal (IMT) would create may not suit the local population skills and experience base. Others argue that jobs are awarded based on skills and experience, not on where a person lives.

A number of submissions claim the employment opportunities from an alternative proposal would provide greater local and regional benefits. Examples given include a technology park or a commercial development/light industry which were considered more suited and could provide more employment opportunities than an IMT. In particular, submission 223 argues that light industrial complexes are more labour intensive than warehousing as these could contain a number of businesses (i.e. motor mechanics, panel beaters, kitchen installers). Submission 223 states that where a 10 unit light industrial block may employ 20–25 people, one warehouse would employ two people and most.

Submission number(s)

10, 98, 125, 138, 142, 145, 153, 178, 216, 223 and 224.

MIC response

The Project is in the public's best interest as its residual impacts will be localised and managed; however its benefits will be significant and widespread for the entire community. The benefits include a major contribution to jobs and productivity growth, supply chain efficiency and reduced congestion growth. The local community will receive a share of these benefits as well as a local benefits program. In addition, the public interest is also served by the IMT in terms of its contribution to government policy, the lack of suitable alternative sites; and the unique characteristics of the site which are not needed for other land uses but make it ideal for an IMT. While some local community members oppose the Project, the broader community interest is reflected by strong support from government and industry stakeholders.

Given the clear suitability of the Project site for an intermodal terminal, and the lack of economically efficient alternatives, it would be inappropriate and mostly inefficient to use the site for an alternative purpose (e.g. residential or commercial), as these land uses would have greater impacts on the local environmental and community While MIC acknowledges the suggestions for alternative uses of the Project site these alternatives have not been assessed in any level of detail for the following reasons:

- As detailed in Chapter 15 – *Contamination and soil* of the EIS, the site is contaminated and is not suitable for sensitive land development (such as residential development). With the current levels of contamination, the site is only suitable for industrial or commercial land uses. While former Defence land has in the past been remediated for residential development (e.g. at Wattle Grove), the cost of doing so is substantial and would affect the value of the land, were it sold for residential development.

- Development for residential purposes could house more than 40,000 people in 16,500 dwellings, which could generate around 3,154 passenger vehicle trips (inbound and outbound) in the morning peak hour (based on Roads and Maritime Services (RMS) methodology as discussed in section 4.4 of Technical Paper 1 – *Traffic, Transport and Accessibility Impact Assessment* of the EIS). This compares to the Project which, at full capacity, would generate around 422 vehicle trips (inbound and outbound) in the morning peak hour. Traffic generated by the terminal during peak hours would be a fraction of the traffic that would be generated by a residential development. This proportion would be higher at other times of the day (as the intermodal terminal spreads heavy vehicle traffic across the day, while residential traffic is focused on the peak hours.

- Development for commercial/light industrial purposes could generate around 888 passenger vehicle trips (inbound and outbound) in the morning AM peak hour. Traffic generated by the terminal during peak hours would be a fraction of the traffic that would be generated by a commercial development. This proportion would be higher at other times of the day (the intermodal terminal spreads heavy vehicle traffic across the day), while commercial traffic is focused on the peak hours.

The comprehensive site assessment undertaken in the EIS conclusively demonstrated the suitability of the proposed site for the proposed intermodal activities; the essential requirement for the decision making.

A further discussion of public benefits is provided in section 2.5 of Chapter 2 – *Assessment of the issues raised by the NSW Planning Assessment Commission.*

6.1.2 Viability of short haul freight for Moorebank

Questions were raised with regards to the viability of providing a freight rail link between Port Botany and Moorebank as opposed to trucks, given the distance between the two locations.

Submission number(s)

Form letter 2, 142, 208 and 223.

MIC response

A business case was prepared for the Project which assessed the Project's feasibly and determined that an IMEX facility with capacity for approximately 1.05 million TEU at Moorebank would be economically viable. The business case considered, among other things, the distance to freight markets, containers destinations and costs of development of the Project. Chapter 2 – *Assessment of the issues raised by the NSW Planning Assessment Commission* of this report, provides a further justification of the demand for intermodal capacity in the Moorebank precinct.

As noted in section 3.4 of Chapter 3 – *Strategic context and need for the Project* of the EIS, Deloitte's demand analysis (2013) determined that rail transport via Moorebank should be cost competitive compared to road transport and also compared with rail via other IMEX terminals in Sydney. Moorebank's main catchment area is predominantly south-west and western Sydney. For these areas, the modelling indicates it should be cost competitive to move containers by rail to Moorebank, with a final short road movement to the north or west using the M5 and M7 Motorways.

6.1.3 Container destinations and freight demands

A series of submissions raised concerns with regards to the location of the freight market and the final destination for freight through the Moorebank IMT. Issues include:

- concerns the IMT is being built where there is insufficient demand. In particular, one submission (224) states that 45% of the freight goes to Eastern Creek and argues that once Eastern Creek, Enfield, Minto and the southern intermodals are operational; there should be no need for the Moorebank IMT;
- submission 163 argues that a modelling study undertaken on behalf of the community showed that two thirds of all containers from Port Botany are destined for the western suburbs, approximately 26 to 35 km west of the Moorebank IMT. This is not consistent with MIC claims that the majority of containers would be delivered within a radius of 20 km from the IMT; and
- inconsistencies in the annual growth rates for containers referenced in the Technical Report 1 – *Traffic, Transport and Accessibility Impact Assessment* (with one figure of 4.2% and another of 7%). Submissions 223 and 224 refers to the Freight Infrastructure Advisory Board, Transport for NSW (TfNSW) and the Department of Transport and Regional Services growth rates, which are said to be around 4%.

Submission number(s)

25, 37, 41, 125, 142, 153, 160, 163, 184, 223 and 224.

MIC response

The Moorebank precinct needs to be developed to a total intermodal capacity of 1.55 million TEU, comprising 1.05 million TEU in IMEX capacity and 500,000 TEU in interstate freight capacity for the following reasons:

- To achieve the NSW Government rail share target beyond 2020. The current NSW 28% rail mode share target will be most effectively achieved by maximising the efficient use of existing IMTs and by investing in additional intermodal capacity in locations that are attractive to the freight market. These measures would fill the shortfall between the future capacity of existing terminals and the capacity needed to handle 28% of Port Botany's total throughput.

- No other site has been identified that is practicably feasible in the timeframe required and able to deliver the same operational efficiency (including the efficiency benefit of competition between terminal users under the terminal open access arrangement). Therefore, only the Moorebank precinct creates an opportunity to increase Sydney metropolitan container movements by rail.

- The full IMEX capacity of 1.05 million TEU will be needed if the rail mode share from Port Botany is permitted to grow in line with demand, or if the NSW Government were to pursue a higher target (e.g. 40%, as recommended by the Freight Infrastructure Advisory Board) beyond 2020 to enable the Port to continue to grow. A cap of 500,000 TEU on IMEX throughput would:

  > limit the ability of importers and exporters to choose the most efficient freight transport mode for their needs;

  > reduce the efficiency of planned investment in intermodal capacity at Moorebank, requiring further investment before it is economically efficient, and potentially discouraging investment in intermodal capacity;

  > be inconsistent with NSW and Commonwealth Government objectives to increase freight transfers by rail to reduce reliance on the road network, enabling continued growth in Port Botany throughput and encourage productivity growth; and

  > only be warranted if the environmental impacts beyond the cap could not be managed, which other parts of this report, and the EIS, demonstrate is not the case.

- The Moorebank precinct also needs to provide 500,000 TEU of interstate capacity (i.e. in addition to the 1.05 million TEU of IMEX capacity). The Commonwealth Government has been investing heavily in the freight rail network to increase its reliability and transit times. A network of large, modern intermodal facilities, including at Moorebank is required to complement this investment and encourage more interstate freight to travel by rail. An improved interstate rail freight network would compete on cost and reliability with road, thereby encouraging more interstate freight to travel by rail.

- An assessment of the cumulative impacts of the Moorebank precinct on the road network, notes there are a number of intersections that, as a result of background traffic growth will operate at an unacceptable level of service. As such, a series of intersection mitigation measures have been presented that demonstrate that, providing the treatments are undertaken, a precinct wide total of 1.55 million TEU as well as 600,000 sq. m of warehousing can be accommodated for all assessed cumulative scenarios.

- The interstate freight rail network has adequate capacity for the 500,000 TEU of interstate freight planned for the Moorebank precinct. An assessment of the freight rail line between Port Botany and Moorebank found that an upgrade (construction of two new passing loops) is needed to enable it to handle the 1.05 million TEU of IMEX freight planned for Moorebank, on top of demand from other users. ARTC is already planning these upgrades, which are considered practically and economically feasible and will be required by around 2020.

In response to the comment on annual containerised freight growth rates, there are two figures referenced in the EIS:

- average growth in rates in container movements in NSW over the last 15 years, which has been around 7% per annum (NSW Government 2013); and

- forecast container trade through Port Botany which is expected to grow at an annual growth rate of 4.25% by 2030 (Australian Government's Bureau of Infrastructure, Transport and Regional Economics (BITRE) forecasts).

The first figure relates to annual growth rates from past years while the second figure relates to the predicated growth rates up to 2030.

For further response relating to the viability of an IMT at Moorebank, refer to section 6.1.2 of this report.

6.1.4 Economic viability of the proposal

Some submissions question the economic viability of the Project if the same capacity restrictions were placed on the Moorebank IMT as have been placed on the SIMTA project. The SIMTA concept plan was approved by the Planning Assessment Commission (PAC) subject to a restriction on the capacity of 250,000 TEU per year, with an additional 250,000 TEU per year if the road network can accommodate the volume of heavy traffic.

Submission number(s)

Form letter 2 and 142.

MIC response

MIC notes the capacity restrictions placed on the SIMTA Project (which relate to IMEX freight only), recognising that these restrictions relate to the potential impacts of the IMT, most notability the impacts on the road network. Section 2.3 in Chapter 2 – *Assessment of the issues raised by the NSW Planning Assessment Commission* of this report presents an analysis of the Moorebank precinct demand for both IMEX and Interstate intermodal capacity with a specific focus on the conclusions made by the PAC in their assessment report for the SIMTA concept approval. The analysis draws upon and expands on the demand assessment presented in Chapter 3 – *Strategic context and need for the project* in the EIS and aligns these with the NSW Government objectives to double the proportion of container freight moved by rail through NSW Ports by 2020.

As noted in section 2.2 of Chapter 2 - *Assessment of the issues raised by the NSW Planning Assessment Commission* of this report, an agreement has been reached for a precinct-wide IMT facility to be developed by SIMTA on the MIC and SIMTA sites. In recognition of freight catchment demands, and capacity constraints of the Southern Sydney Freight Line (SSFL), the precinct-wide development proposes an IMEX terminal with a maximum capacity of 1.05 million TEU per year and an interstate terminal with a maximum capacity of 500,000 TEU per year (refer to section 7.3 of this report).

The PAC's decision on the SIMTA site has a number of implications for this Project, the most significant being the suggested cap on intermodal capacity that would restrict the precinct as a whole to a long-term capacity cap of 500,000 TEU per annum. The cap relates to the PAC's concerns about the ability of the road network to accommodate a greater throughput and a perception that such a cap would be sufficient to accommodate long term demand and therefore meet the Government objective of a doubling of rail freight mode share (currently 14% for freight entering Port Botany) by 2020.

The PAC additionally expressed regret that a more integrated approach (including a master plan) has not to date been provided for the precinct.

6.1.5 Funding of infrastructure upgrades

Concern has been raised with regards to the costs of the Project, with questions raised about who would fund the cost of the upgrades. Submissions mainly focused around upgrades required for local roads and key transport networks (i.e. the M5 Motorway).

Some community submissions were concerned that the costs of the Project have not been adequately considered, including the costs of infrastructure maintenance. Others argue that greater transparency of total costs is required.

Submission number(s)

25, 41, 138, 145, 147, 153, 189, 190, 213, 219, 220, 221, 222, 223, 224, 235, 237 and form letter 3.

MIC response

An additional traffic impact assessment has been conducted to further identify the measures required to mitigate the traffic impact of the Project on intersections in the surrounding area and to assess the traffic impacts as a result of the changed concept layout. This assessment has determined whether the intersections will operate better or worse than without Project traffic. MIC is in the process of discussing the results of the traffic impact assessment with TfNSW and RMS and if agreed will contribute to the cost of intersection upgrades in proportion to the extent that the Project contributes to the traffic through that intersection. The results of these assessments are reported in Chapter 7 – *Proposed amendments to the development* of this report and the revised Traffic Impact Assessment (revised TIA) provided in Appendix E of this report.

A Voluntary Planning Agreement with TfNSW will 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. A commitment to an agreement is normally required as part of the concept approval with the detail agreement being part of the Stage 2 State significant development (SSD) approval application.

As identified in section 4.2.1 of Chapter 4 – *Planning and statutory requirements* of the EIS, the estimated capital cost of the Project is approximately $930 million. This estimate has been prepared by a qualified quantity surveyor based on the concept design. The estimate will be refined at the following Stage 2 SSD approval stage(s).

6.1.6 Project benefits

Some submissions generally agree with the idea of an IMT on the basis that it would provide benefits by:

- using rail as opposed to road and therefore reducing congestion and energy consumption;
- creating employment opportunities; and
- addressing freight and logistic demands in Sydney.

However, these submissions do not necessarily provide support for the IMT at Moorebank, but rather support the concept of an IMT in general.

Submission number(s)

147, 188, 189, 190, 196, 199, 213 and 237.

MIC response

The Moorebank IMT will significantly benefit Sydney, NSW and Australian communities, particularly at its full proposed capacity of 1.55 M TEU p.a. As outlined in Chapter 3 – *Strategic context and need for the project,* the Project's benefits relate to:

- its contribution to productivity, reduced business costs, reduced road congestion and environmental outcomes – these benefits have been estimated at around $9 billion;
- the unique characteristics of the terminal site, which provide a once-in-a-generation opportunity for a transformative freight project;
- the project's consistency with Commonwealth, and State planning and infrastructure strategies and policies;
- The terminal will have some local impacts and, for this reason, some members of the local community oppose the Project. However, once the effect of mitigation measures is taken into account, the residual impact will be relatively minor and within established criteria and regulatory requirements. In addition, a package of local benefits will be progressed in consultation with the local community. On balance, therefore, the project is in the public interest.

As discussed in section 6.1.1, the Project is in the public interest because its residual impacts will be localised and managed but its benefits will be significant and widespread for the entire community. The benefits include a major contribution to jobs and productivity growth, supply chain efficiency, and reduced congestion growth. The local community will receive a share of these benefits as well as a local benefits program. In addition, the public interest in the IMT is reflected by its contribution to government policy; the lack of suitable alternative sites; and the unique characteristics of the site which are not needed for other land uses but make it ideal for an intermodal. While some local community members oppose the Project, the broader community interest is reflected by strong support from government and industry stakeholders.

A further discussion of public benefits is provided in section 2.5 of Chapter 2 – *Assessment of the issues raised by the NSW Planning Assessment Commission.*

6.2 Planning and statutory requirements

A number of issues were raised in relation to the Project approval and assessment process, as discussed below:

6.2.1 Concern regarding the approval process

Some submissions state that as the Moorebank IMT and the SIMTA projects are being assessed separately, this has created confusion in the community, with the impacts of the Projects not being fully understood by community members. Coupled with the Australian Government's support for a joint SIMTA and Moorebank Project, which was confirmed during the exhibition phase of the EIS, one submission (237) argues that both projects should be placed on exhibition again so that community members are given another opportunity to respond to the IMT precinct.

One submission (208) raises concerns in relation to the staged approval process and argues that environmental impacts should be assessed upfront, with the design planned and modelled. Other concerns related to the fact that the Project is seeking full approval for Early Works, without having received an overall approval for the Project.

Submission number(s)

99, 136, 142, 150, 208 and 237.

MIC response

Prior to the EIS exhibition, the Moorebank IMT project was being developed as a stand-alone project and was therefore necessary to assess the environmental impacts independently of the SIMTA project within the EIS. This assessment approach was a requirement of the NSW Secretary's Environmental Assessment Requirements (SEARs) and the Department of Environment's (DoE) EIS guidelines.

Chapter 27 – *Cumulative impacts* of the EIS assessed the cumulative impacts of both the Moorebank IMT in conjunction with the SIMTA IMT and other planned or proposed developments in the local area. In recognition of community and approval agencies concerns regarding the prospect of both projects being developed; three scenarios (as detailed in section 27.1 of Chapter 27 – *Cumulative impacts*), were assessed in the EIS (assuming a combined IMT precinct across both sites). The cumulative scenarios assessed in the EIS were developed in consultation with NSW Department of Planning and Environment (NSW DP&E), and in consideration of the capacity of the Southern Sydney Freight Line (SSFL) and freight demands (which were developed in consultation with Transport for NSW (TfNSW)).

Since the exhibition of the EIS, an agreement has been reached between MIC and SIMTA for an integrated precinct-wide intermodal facility and associated warehousing across both the MIC and SIMTA sites. This Response to Submission Report incorporates proposed amendments to the development, including details on the proposed layout and associated impacts of a precinct-wide intermodal facility (including the selection of the southern rail access option for the combined precinct) (refer to Chapters 7 to 9 of this Response to Submissions Report (this report)). The indicative layout would be further developed during detailed design and details would be provided as part of the Stage 2 State significant development (SSD) applications. This report will be exhibited for the public to review and make further submissions before NSW DP&E grants approval of the Stage 1 SSD application for the Project. The community will have the opportunity to provide further comment during the Stage 2 SSD application process. This Stage 1 SSD only relates to development on the Moorebank site, and if approved, the Stage 1 SSD approval would only approve the Project's 'concept' on the Moorebank site.

Approval to construct and operate an IMT across either the SIMTA or the Moorebank site would be considered and assessed during the Stage 2 SSD application process.

Updated management and mitigation measures (as a result of the changed site layout and selection of the southern rail access option) are provided in Chapter 9 – *Revised environmental management measures* of this report. Subsequent Stage 2 SSD applications will provide further assessment of the required management and mitigation measures once the detailed design for the precinct has been developed and the environmental impacts associated with this design can be assessed.

MIC acknowledges the comments provided in submission 208 in relation to the staged approval process and the suggestion that all environmental impacts should be assessed up front, with the design planned and modelled. While it is recognised this would provide greater certainly to the community if the design of the IMT was completed for the entire Project, in practice this approach is not appropriate given the complexity and detail of the work involved in completing the design (time, cost and resource) required to support a detailed assessment and approval process. The Project would be progressively developed over 15 years. The NSW *Environmental Planning and Assessment Act 1797* (EP&A Act) recognises that for significant projects such as this one, a staged approach is necessary to allow for detailed design to occur progressively as development phases arise over time. The community will have an opportunity to review and comment on future Stage 2 SSD applications, which will be produced once the detailed design work is completed for each stage.

Approval for the Early Works is being sought without the need for further approval, to facilitate demolition and relocation works, contaminated land remediation, utility terminations and diversions, establishment of the conservation area and heritage impact mitigation works. As such, the impacts of the Early Works activities have been specifically detailed in the EIS, providing the community with certainty on the type of activities and impacts of this phase of development. These impacts are identified within each technical assessment chapter (Chapters 11–26 of the EIS). The Early Works development phase includes some site remediation activities which would have positive long-term environmental impacts.

6.2.2 Recommends that a master plan be prepared

A number of submissions recommended that a master plan should be prepared for the Moorebank precinct (which was also recommended by the Freight Advisory Board), to provide greater clarity around both the SIMTA project and the Moorebank IMT. It is suggested that a Master Plan would have been useful for residents to better understand the impacts of the Project.

Submission number(s)

Form letter 2, 142 and 175.

MIC response

As noted in section 6.2.1 above, this report contains proposed amendments to the development which details the proposed layout and associated impacts of a precinct-wide intermodal facility. However, it's important to note that the SIMTA and Moorebank IMT proposals are still being developed as stand-alone proposals and the environmental impacts are being independently assessed. The SIMTA project received its concept approval in September 2014, subject to a number of conditions discussed in section 6.1.4.

This Response to Submissions Report will be exhibited for the public to review and make further submissions prior to NSW DP&E approval of the Stage 1 SSD approval for the Project. Furthermore, this Response to Submissions Report is being exhibited in parallel with the SIMTA Stage 1 SSD application (for its first stage of development), further allowing for the development of the two sites to be considered together.

6.2.3 Confusion over the DNSDC project

Some confusion has arisen in the community over the Defence National Storage Distribution Centre (DNSDC) relocation project and its relationship to the Moorebank IMT Project. Some submissions note this has led to the misconception that the Moorebank IMT Project has already commenced.

Submission number(s)

Form letter 2 and 142.

MIC response

As noted in the EIS Executive Summary (section 10.1), section 2.2 of Chapter 2 – *Site context and environmental values*, and in Chapter 8 – *Project development phasing and construction* of the EIS, the DNSDC has until recently occupied a substantial portion of the SIMTA site, to the east of Moorebank Avenue and it is currently in the process of being relocated to a site in West Wattle Grove. The relocation of the DNSDC is not part of this Project, and does not directly affect the Moorebank IMT site. It is therefore not assessed as part of the EIS.

In addition, the School of Military Engineering (SME) which currently occupies the Project site is being relocated to the nearby Holsworthy Barracks with training facilities, offices, facilities for explosive detection dogs, classrooms and accommodation to be provided at this new site. As noted within section 8.1 of Chapter 8 – *Project development phasing and construction* of the EIS, this is also a separate Project that has been subject to a separate approval process.

6.2.4 Concerns regarding transparency and adequacy of impact assessments

Some submissions raised concerns regarding the transparency and adequacy of the EIS impact assessments. Some submissions argue the full impacts of the Project have not been adequately described in the EIS.

Submission number(s)

136, 186, 189 and 190.

MIC response

The EIS was prepared by experienced professionals in accordance with all relevant environmental and planning legislation and other relevant procedures and guidelines required by government agencies, including the NSW Secretary's Environmental Assessment Requirements (SEARs) and the Department of Environment's (DoE) EIS guidelines. Independent technical peer reviews were also undertaken for selected technical studies to endorse the assessment process and findings of the technical assessments. Four technical peer reviews were completed for local air quality, human health impact,

noise and vibration impact and traffic and transport assessment. Letters from peer reviewers endorsing the technical papers are provided in Appendix G of the EIS (Volume 2).

Finally, the health impact assessment undertaken for the EIS was scoped and undertaken under the direction of a working group consisting of representatives of Liverpool City Council (LCC), Campbelltown City Council (CCC) and key state agencies, further enhancing the rigour and transparency of the study.

6.2.5 Accuracy of ownership and property details

One submission states the property details provided in the EIS do not include a description of land owned by other parties which may need to be acquired for the Project.

Submission number(s)

150.

MIC response

Section 23.2.1 of Chapter 23 – *Property and infrastructure* of the EIS identifies the land required temporarily (for construction of the IMT) as well as land required permanently for operational of the facility and associated rail access option. Figures 23.2–23.4 show the land requirements associated with each rail access options and IMT layout.

6.3 Community consultation

A number of community submissions raised some concerns with regard to the adequacy of consultation activities, including those undertaken to date and future (planned) consultations. Details of the issues raised are provided below.

6.3.1 Adequacy of community consultation

Some community members raised concerns about the information sessions, noting timing issues (i.e. timing of information sessions and community members not feeling they had adequate time to ask the questions they wanted answers to) and consistency in information. In particular, the community felt that the figures and statistics presented at community information sessions were not consistent across all sessions (i.e. different messages were presented).

One submission (237) argues that further time should have been provided for the community to review and respond to the EIS (more than 60 calendar days).

In addition, one submission argues that community engagement has been low and that there are many people who do not speak English and have therefore not been engaged in the consultation process.

Submission number(s)

Form letter 2, 142, 175, 178, 185 and 237.

MIC response

MIC's community consultation on the EIS has exceeded the requirements set out in NSW DP&E's *Guidelines for Major Project Community Consultation* (NSW DP&E 2007). These guidelines outline the community and stakeholder consultation expected from major projects prior to, during and after assessment of an EIS. As outlined in Chapter 5 – *Stakeholder and community consultation* of the EIS, a comprehensive community consultation program was implemented for the Project prior to and during the exhibition of the EIS.

Consultation activities during the exhibition are presented in Chapter 3 – *Consultation* of this report, in summary, information on the EIS was made available via a number of channels:

- the EIS itself was available online and in hard copy at community centres;
- information boards were available to view and topic specialists were available to speak with (either one-on-one or in question and answer sessions) at three information sessions;
- a 24-page booklet was available at the information sessions and in community centres;
- a brochure was distributed to 12,000 homes in Wattle Grove, Moorebank and Casula two weeks before the first information session; and
- further information was available on the MIC website.

Questions or feedback could also be provided via email through the MIC website (http://www.micl.com.au/contact-us.aspx), or by telephone to the Project information line (1300 382 239).

The information sessions were held on different days, at different times and were scheduled to run between two and three hours, although all sessions ran significantly over time to allow plenty of opportunity for participants to have their questions answered. For example, the final session closed three hours after the scheduled finish time.

The figures and data presented at the community sessions, along with all other material, were thoroughly reviewed by MIC and its advisers to ensure consistency with the EIS. MIC is not aware of any inconsistencies and no specific examples have been provided in the submission. The discussion and question time for each of the three community sessions were slightly different in response to the different questions raised.

The NSW DP&E guidelines specify that an environmental assessment for a major project must be publically exhibited for a minimum of 30 calendar days. DoE requires an EIS to be exhibited for 40 business days. In recognition of the scale and complexity of the EIS and considering the statutory requirements from both NSW DP&E and DoE, the Moorebank EIS was placed on public exhibition for 60 calendar days.

Interpreting services are available to community members interested in the Project with the services specifically advertised during the EIS exhibition period via the MIC website and the community brochure. The MIC website also has a 'Google Translate' function to provide immediate translation of information on the website. Section 3.4 of this Response to Submission Report provides further discussion on the issue of translation services.

6.3.2 Response time to complaints/concerns during operation

One submission argues that a 24 hour response time to any complaints or concerns raised by members of the community is reasonable. Submission requests confirmation that this would be met by the future operators of the IMT.

Submission number(s)

228.

MIC response

The IMT operator will adopt a complaints system to respond, in a timely manner, to any complaint or concern raised by members of the community. This complaint system will operate during both construction and operation of the terminal.

6.3.3 Adequacy of Citizens' Jury

One submission raises concerns regarding the Citizens' Jury as follows:

- Compensation package is not adequate to address the impacts of the Project.
- Selection area for panel members was too broad. Argues that people as far away as 10 km were provided with the opportunity to apply to be on the panel.

Submission number(s)

237.

MIC response

The Moorebank Intermodal Citizens' Jury was asked to develop a package of measures to benefit people living near the future Moorebank IMT. The proposed local benefits package recognises that the terminal will benefit the wider community through billions of dollars in productivity gains and lower traffic growth in parts of Sydney. The public benefits package is not intended to address the impact of the terminal, which will be addressed through mitigation measures (e.g. local intersection upgrades, noise walls and locomotive standards to reduce noise and diesel emissions). Appropriately, the value of these mitigation measures will go far beyond the funding that MIC allocates to local public benefit measures.

MIC decided to deliver a public benefit package in recognition that people living near the terminal will experience most of its impacts but receive the same share of the terminal's broader benefits as other parts of Sydney. Because of MIC's decision, people living near the terminal will receive:

- a share of the broader benefits of the terminal – e.g. jobs growth, reduced congestion growth, increased productivity; and
- all of the benefit of the MIC's contribution to local programs and services – i.e. the public benefits package.

The Citizens' Jury was independently appointed and randomly selected from suburbs near the terminal site. Half the participants were drawn from people living within a 5 km radius of the site and half from within a 10 km radius. These boundaries were chosen so the jury would comprise people with a range of views, but with the focus being on people who live close by. Around 4,000 people were invited to

participate in the jury and the final group of participants was matched to a profile of the community (based on age, gender, location etc.).

Members of the community were also invited to make a submission to the jury on what they see as a positive benefit for those most affected. Certain meetings of the Citizens' Jury were open to interested members of the community.

6.4 Project alternatives

A number of submissions questioned the need for an IMT at Moorebank and made suggestions for alterative locations or options to meet Sydney's freight demands. These are outlined in the sections below:

6.4.1 Alternative sites for IMT

Community submissions suggest a number of alternative sites for an IMT, including Badgerys Creek, Eastern Creek, Chullora, Mittagong, Auburn-Clyde-Granville, Enfield and Port of Newcastle.

Alternative site at Badgerys Creek

A total of 106 submissions argue that the IMT should be located at Badgerys Creek as opposed to Moorebank. Submitters provide a number of arguments for the Badgerys Creek, including that:

- Badgerys Creek is located near a planned Airport and therefore more suitable as a freight intermodal;
- it is located within an non-residential area and therefore avoids impacts to residents;
- the airport would require substantial road and rail infrastructure and the IMT could utilise this infrastructure, resulting in cost savings (i.e. economies of scale);
- it is located 21.9 km from Eastern Creek which represents a large proportion of where containers are destined;
- there are no existing traffic congestion issues at Badgerys Creek;
- there is surplus land at Badgerys Creek, with room to expand the IMT in the future if required (greater land supply than Moorebank);
- the area already has good road connections, with access to the M7 and M5 Motorways and the planned WestConnex project;
- it represents an opportunity for an 'agglomeration of industry';
- it is strategically located in an area where a new rail line is planned for the airport;
- an IMT would create jobs in close proximity to new developments such as Leppington;
- Badgerys Creek would be more suitable when taking a more holistic view of freight logistics;
- It is located in close proximity to the Western Sydney Employment Area and future industrial areas (this is where two-thirds of container freight is destined; and

- the land is already owned by the Australian Government.

Submission number(s)

5, 6, 7, form letter 1, 16, 25, 40, 44, 45, 46, 51, 52, 54, 56, 57, 59, 60, 64, 65, 69, 70, 71, 73, 76, 77, 78, 81, 84, 85, 87, 88, 89, 91, 92, 93, 94, 96, 101, 105, 109, 111, 112, 113, 114, 116, 120, 122, 123, 124, 126, 127, 128, 130, 131, form letter 2, 134, 135, 136, 137, 139, 140, 141, 142, 144, 147, 153, 154, 157, 158, 159, 160, 162, 164, 170, 171, 175, 180, 185, 187, 189, 190, 191, 197, 202, 203, 205, 206, 207, 208, 209, 210, 212, 213, 214, 216, 219, 220, 221, 222, 228, 229, 234, 235, 238, 239, 240 and form letter 3.

Alternative site at Eastern Creek

Some submissions argue it would be more appropriate to locate an IMT at Eastern Creek on the basis that this is where the majority of freight is destined and the land is appropriately zoned.

Submission number(s)

81, 138, 147, 153, 189, 190, 211, 213 and 235.

Capacity of Chullora

Some submissions argue that the capacity of the existing Chullora IMT site should be further investigated. Submitters note Asciano's announcement in 2014 that it would increase capacity at Chullora up to 800,000 TEU.

Submission number(s)

Form letter 2, 137, 142, 153, 159, 175, 187, 197 and 228.

Alternative location at Mittagong

One submission argues there is capacity at Mittagong to provide for an IMT to service Sydney's freight demand.

Submission number(s)

53.

Alternative site at Auburn-Clyde-Granville

One submission argues that an IMT at Auburn-Clyde-Granville site would be suitable for maritime containers and road/rail connections.

Submission number(s)

129.

Capacity of Enfield

One submission notes that Enfield IMT is expected to provide capacity for 300,000 TEU. The submission states that NSW's freight target of 28% would be met once Enfield is operational.

Submission number(s)

223.

Capacity of Port Newcastle

One submission suggests that freight destined for Newcastle or northern areas of NSW could go through this port, reducing the need for IMTs in Sydney. This submission suggests further investigations should be undertaken to investigate this alternative. The submission also questions why the capacity restriction on Port of Newcastle is so low.

Submission number(s)

224.

Alternative location for IMT – general

Some submissions raised general concerns regarding an IMT at Moorebank. These submissions reasoned that an:

- IMT at Moorebank is not suitable and should be located at an alternative site; and
- IMT should be located in a non-populated area/residential area.

Submission number(s)

2, 7, 53 and 241.

MIC response (combined response to all issues relating to alternative sites)

The need for an IMT in south-western Sydney was described in detail in Chapter 3 – *Strategic context and need for the Project* of the EIS, with section 3.3 in particular detailing why the Moorebank site was selected.

The Moorebank site was selected due to its strategic positioning, with good access to existing major freight and rail corridors (SSFL, the M5 Motorway and near to the M7 Motorway and Hume Highway), and is centrally located relative to major freight markets in the west and south west of Sydney. The size of the site was also a significant factor in site selection, with the requirement to accommodate interstate trains which can be up to 1,800 m long and the need for the site to be large enough to handle the number of containers expected (a total throughput capacity of 1.55 million TEU a year including up to 1.05 million TEU a year of IMEX).

The MIC notes that Badgerys Creek has been suggested by many community members as a suitable alternative site for the IMT. However, this site would be located too far west of current Sydney freight markets to be commercially viable as an intermodal facility and does not currently have adequate road or rail supporting infrastructure.

MIC is not aware of any existing Commonwealth land in the vicinity of Badgerys Creek that is currently suitable for an intermodal facility as the new airport site is unlikely to have spare space for this purpose. A new freight rail line would also need to be constructed in addition to the planned passenger line. It would not be practical for freight trains to share the planned passenger line to the new airport since passenger trains receive priority on the passenger network, which would undermine the efficiency and reliability of a rail freight service via Badgerys Creek. Even if land was available at Badgerys Creek, the planning and environmental approval process to assess the sites' suitability from an environment, social and economic perspective can take years. Given the demand for intermodal facilities in western Sydney the Moorebank IMT site is considered the most appropriate to service the current demand.

Predicted demand in containerised goods suggests that a number of intermodal facilities will be required and that Badgerys Creek may be suitable long-term future intermodal sites. Given the demand for a western Sydney intermodal exists now, the Moorebank IMT site is considered the most appropriate site for an intermodal facility, as described in Chapter 6 – *Project development and alternatives* of the EIS and in Chapter 2 – *Assessment of the issues raised by the NSW Planning Commission* of this report.

Other alternative sites suggested in community submissions include Chullora, Eastern Creek and Enfield. As noted in section 3.1.1 of Chapter 3 – *Strategic context and need for the Project of* the EIS and in Chapter 2 – *Assessment of the issues raised by the NSW Planning Commission* of this report, IMTs serve a defined geographic catchment and there is clear demand for Moorebank from a catchment area that is different to that served by existing IMTs. Also, Sydney's estimated total future IMEX intermodal capacity at existing terminals is not sufficient to meet government rail freight targets or expected rail freight demand at Port Botany. This includes the potential future capacity provided by the Yennora, MIST (Minto) and Villawood terminals approved capacity at the Enfield IMT and the recently announced new IMEX capacity at Chullora.

If the NSW rail freight target of 28% is to be met, almost 800,000 TEU would be transported to and from Port Botany by rail by 2020, increasing to almost 1.18 million TEU by 2030 and to 1.64 million TEU by 2040. Under a conservative set of assumptions, the shortfall in IMEX intermodal capacity needed to achieve this target would be around 415,000 TEU in 2020. The proposed Stage 1 of the precinct (i.e. 250,000 TEU capacity) would partially satisfy this shortfall. By 2030, the shortfall would be a little over 530,000 TEU and by 2040, it would be around 810,000 TEU. Under a less conservative scenario, the shortfall would be around 1.3 million TEU in 2030 and 1.7 million TEU in 2040. Additional capacity therefore will be required (on top of the 1.05 million TEU Moorebank IMEX terminal) to maintain the 28% rail share target, possibly before 2030. Further capacity will be required if a rail freight target of 40% is pursued, consistent with the NSW Freight Infrastructure Advisory Board recommendation in 2005. If this occurs, the 1.05 million TEU IMEX terminal will be needed at Moorebank soon after 2030, under conservative assumptions, and well before 2030 under less conservative forecasts.

MIC is aware of the announcements made last year by Asciano highlighting an investment to upgrade the Chullora IMT to handle 600,000 TEU by 2015, and 800,000 TEU in the longer term, as referred to in a number of the community submissions. MIC acknowledges future plans for Chullora could have an impact on the timing and development of an interstate facility at Moorebank however, sensitivity testing undertaken as part of the forecasting reported by Deloitte (2013) predicted that even if Chullora remains operational with a capacity of approximately 350,000 TEU, there would still be demand for handling up to 107,000 TEU for the interstate market through the Project site in the short to medium term. While MIC recognises the intention to upgrade Chullora to handle 600,000 TEU, no commitment has been made regarding the timing for the upgrade. Chullora would also be subject to a rigorous planning and

assessment process before upgrade works can commence. It is not clear whether any additional capacity at Chullora would service the interstate or IMEX markets (or both).

In terms of an Eastern Creek facility, an IMT at this site has been proposed; however, it is yet to be confirmed. Even if an IMT was to be developed at this location, taking into account container destinations, we expect that this facility would largely service its local market around the west and north-west of Sydney. As such, there would still be a need for a facility in south-western Sydney.

Mittagong is not a current intermodal facility. Additionally, MIC is not aware of any planned intermodal sites at Auburn-Clyde-Granville. The NSW long-term transport master plan and the NSW State Infrastructure strategy has not identified Auburn-Clyde-Granville or Mittagong as a future intermodal faculties. Therefore MIC has not considered these sites within the EIS.

One community submission suggests that the Port of Newcastle should be considered as alternatives to the Project site. As discussed in section 3.4 of Chapter – *Strategic context and need for the Project* of the EIS, approximately 93% of import containers traded through Port Botany are destined for locations within the Sydney greater metropolitan area. On this basis, even if the capacity of Port of Newcastle was increased (which MIC is not aware of any plans to do so), this site would not be suitable as would be too far away from containers destinations.

Furthermore, while a number of sites and options have been considered (as discussed above), the obligation on proponents and decision makers is to assess the impacts associated with the proposed development. Therefore, the EIS has focused on the impacts of the Project at the Moorebank IMT site.

6.4.2 Suitability of IMT at Moorebank site

68 submissions argue that the SME site at Moorebank is not suitable for the purposes of an IMT for the following reasons:

- Proximity of site to an existing residential area and the impacts on surrounding residents (noise, air, traffic, health, quality of life, visual);
- Surrounding area contains a high number of schools, child care centres and aged care facilities;
- Located within an area where the roads are already congested;
- The site is constrained by environmental assets (Georges River), with no space to expand in the future;
- IMT at the Project site may not be economically viable due to the SSFL restrictions and the limits placed by the PAC for the SIMTA site;
- Air quality is already an issue for this area and an IMT would exacerbate this;
- There is no access to public transport, forcing staff to drive to work;
- Significant infrastructure upgrades would be required to surrounding infrastructure, which would be costly;
- Issues associated with traffic safety, with trucks leaving and entering the M5 Motorway to access the Project site; and
- IMT would impact on recreational areas and community facilities (Casula Powerhouse and Parklands).

Submission number(s)

10, form letter 1, 18, 25, 40, 51, 60, 62, 64, 66, 71, 75, 78, 79, 85, 87, 91, 94, 95, 96, 97, 98, 99, 100, 105, 112, 113, 114, 118, 121, 122, 123, 124, form letter 2, 137, 142, 146, 147, 148, 150, 153, 159, 160, 161, 165, 166, 174, 175, 180, 187, 189, 190, 197, 208, 210, 211, 213, 218, 219, 220, 221, 222, 223, 224, 228, 232, 237, 239 and 241.

MIC response

MIC notes that many submissions argue the Project site is not suitable given its proximity to existing residential development and the associated impacts on residents, existing congestion issues and environmental constraints.

In determining the suitability for an IMT at the Moorebank site, MIC engaged a number of technical specialists to prepare and assess the social, environmental and economic impacts of the IMT in this location. The findings of the impact assessments were presented in the EIS (Chapters 11–26 of the EIS), with detailed discussion provided on the unmitigated and mitigated environmental risks.

The EIS assessed a range of impacts including traffic and transport, noise and vibration, human health, air quality, heritage and others, and determined that while impacts would occur, there would be no more than moderate residual impacts once mitigation measures are implemented. MIC has also committed to ongoing monitoring to investigate and implement new or additional measures as required.

In addition, responses provided throughout this Response to Submission Report address many of the arguments raised by community members in relation to the suitability of the site for the purposes of an IMT. In particular:

- section 6.4.1 discusses the site selection process and the positioning and size requirements for the IMT;
- section 6.7.6, section 6.11.6 and section 6.17.1 addresses proximity to and impact on sensitive receptors;
- section 6.6.4 addresses traffic congestion;
- section 6.8.2 and section 6.10.2 addresses the impacts to Georges River;
- section 6.11.2 addresses concerns relating to existing air quality;
- section 6.1.5 addresses requirements for, and costs of, infrastructure upgrades;
- section 6.15.1 addresses recreational impacts; and
- section 6.1.4 addresses the economic viability of the Project given capacity restrictions imposed by PAC on the SIMTA project.

6.4.3 Alternative uses for SME site

A number of submissions make alternative suggestions for the future use of the SME site. Suggestions include:

- Development of land for residential purposes to address the housing crisis identified in the draft Metropolitan Strategy for Sydney. The site is suitably positioned for residential development being adjacent to a watercourse.
- Establishing the area as a public recreation/conservation area alongside the Georges River.
- Use of the site for the purposes of a commercial hub in close proximity to residential development.

Submission number(s)

9, 69, 81, 105, 121, 122, 125, form letter 2, 136, 137, 142, 147, 148, 150, 153, 159, 160, 161,162, 178, 189, 190, 197, 213, 228, 229, 235, 237, 239 and form letter 3.

MIC response

Chapter 3 – *Strategic context and need for the Project* of the EIS provides a detailed description of the need for an IMT at the Moorebank site, this discussions is expanded in Chapter 2 – *Assessment of the issues raised by the NSW Planning Commission* of this report.

While MIC acknowledges the suggestions for alternative uses of the Project site, these alternatives have not been assessed in any level of detail for the following reasons:

- As detailed in Chapter 15 – *Contamination and soil* of the EIS, the site is contaminated and is not suitable for sensitive land development (such as residential development). With the current levels of contamination, the site is only suitable for industrial or commercial land uses. While former Defence land has in the past been remediated for residential development (e.g. at Wattle Grove), the cost of doing so is substantial and would affect the value of the land, were it sold for residential development.
- Development for residential purposes could house more than 40,000 people in 16,500 dwellings, which could generate around 3,154 passenger vehicle trips (inbound and outbound) in the AM peak hour (based on RMS methodology as discussed in section 4.4 of Technical Paper 1 – *Traffic, Transport and Accessibility Impact Assessment* of the EIS). This compares to the Project which, at full capacity, would generate around 422 vehicle trips in the AM peak hour (inbound and outbound). Traffic generated by the terminal during peak hours would be a fraction of the traffic that would be generated by a residential development. This proportion would be higher at other times of the day (because the intermodal terminal spreads heavy vehicle traffic across the day, while residential traffic is focused on the peak hours.
- Development for commercial/light industrial purposes could generate around 888 passenger vehicle trips (inbound and outbound) in the morning AM peak hour. Traffic generated by the terminal during peak hours would be a fraction of the traffic that would be generated by a commercial development. This proportion would be higher at other times of the day (the intermodal terminal spreads heavy vehicle traffic across the day), while commercial traffic is focused on the peak hours.
- Converting the entire site into a recreation/conservation area is not economically viable as this land use would generate little economic return and would require ongoing maintenance.

No other known site in Sydney has the same unique characteristics to efficiently accommodate the type of activities being proposed. The availability of the site for development represents a once-in-a-generation opportunity for a transformational freight infrastructure project. Given the clear suitability of the Project site for an IMT and the lack of economically efficient alternatives, it would be inappropriate and mostly inefficient to use the site for an alternative purpose (e.g. residential or commercial), as these land uses would have greater impacts on the local environment and community.

6.4.4 Confusion over combined proposal for SIMTA and Moorebank IMT

Submissions argue that the way the Project has been presented to the community has created confusion, particularly in regards to how the Projects would operate with the SIMTA project.

Submission number(s)

Form letter 1, 125, form letter 2, 142, 150, 153, 175, 189, 190, 210, 237, and 239.

MIC response

Response to this issue is covered in MIC's response in section 6.2.1.

6.4.5 Capacity restrictions for SIMTA proposal

Submissions note the capacity restrictions placed on the SIMTA project by the PAC, being 250,000 TEU and an additional 250,000 TEU subject to the ability of the road network to cater for the additional traffic. Some submissions question the economic viability of the Project if the same limits that were placed on SIMTA were placed on Moorebank IMT.

Submission number(s)

25, 37, 43, form letter 2, 142, 175 and 228.

MIC response

Response to this issue is covered in MIC's response in section 6.1.4 and in Chapter 2 – *Assessment of the issues raised by the NSW Planning Assessment Commission* of this report. In summary, should the same initial capacity restrictions be placed on the Project, the Project would remain economically viable and MIC/SIMTA would seek to increase the capacity of the terminal to the maximum capacity through future planning approvals and ongoing discussions with NSW DP&E and TfNSW regarding infrastructure upgrade requirements.

6.4.6 Need for a whole of precinct approach

Submissions argue that the Project needs to be considered in combination with the SIMTA development, and that a collaborative approach should be taken to presenting the development of an IMT on both sites.

Submission number(s)

125, form letter 2, 142, 153, 185 and 188.

MIC response

As noted in section 6.2.1, since exhibition of the EIS, MIC and SIMTA have reached in-principle agreement (subject to certain conditions) for SIMTA to develop and operate a precinct-wide intermodal facility and associated warehousing across the Moorebank and SIMTA sites. SIMTA would develop and operate both sites under a commercial agreement with MIC. As part of that agreement, the Australian Government would retain ownership of the Moorebank site, with SIMTA occupying the site under a long-term lease. However, it's important to note that the SIMTA and Moorebank proposals are still being developed as stand-alone proposals and the environmental impacts are being independently assessed. Further details on this approach are provided in Chapter 7 – *Proposed amendments to the proposal* of this report.

6.4.7 Capacity of the SSFL

One submission questions whether the SSFL can feasibility achieve the 1 million TEU IMEX capacity and notes that the Port Botany freight rail lines only have capacity in the vicinity of 480,000 TEU per year. The submission then further states that MIC claims that two passing lanes on the current rail lines will rectify this situation and increase the capacity to 1 million.

Submission number(s)

25.

MIC response

As noted in section 1.6.2 of Chapter 1 – *Introduction* of the EIS, the SSFL has capacity to accommodate the rail movements generated by the Project. In 2014, MIC completed a rail capacity study of the freight line from Port Botany to Moorebank which concluded that additional passing loops would be required to accommodate the final throughput planned for the Moorebank precinct. The study was completed by specialist rail consultants and involved detailed modelling of the current and future timetable on existing and future infrastructure. Subsequently Australian Rail Track Corporation (ARTC) has completed its own study and concluded that passing loops are required, which is consistent with MIC's study. Both studies are internal reports and are not publically available documents. ARTC is responsible for the planning, design and construction of these passing loops. Any work on these passing loops will require their own planning approvals.

6.4.8 Electrification of the SSFL

One submission suggests the electrification of the SSFL should be considered as a means to reduce air quality impacts and facilitate the use of clean electric locomotives.

Submission number(s)

98.

MIC response

MIC is not aware of any plans for the electrification of the SSFL. This matter is therefore outside of the scope of the EIS.

6.5 Project development phasing and construction

The following issues were raised in regards to the Project's proposed phasing, timing and construction:

6.5.1 Concern regarding 24 hour IMT operations

Some submissions were concerned with the proposed 24 hour, 7 day a week operations of the IMT, with some submissions arguing that the impacts of 24 hour operations would be unbearable for some residents.

Submission number(s)

105, 211, 237 and 238.

MIC response

The IMT is required to operate 24 hours a day, 7 days a week to meet the demands of the freight market. It is noted that heavy vehicles would only access the site for 16 hours a day, 5.5 days per week until the Project reaches Full Build, at which time trucks would also access the site 24 hours day, 7 days a week.

In recognition of the 24 hour operations, a range of mitigation measures are proposed to mitigate the impacts of 24 hour operations on the surrounding community, particularly the impacts at night. These mitigation measures include:

- minimise light spill to surrounding areas including:
  - > designing lighting to minimise impacts;
  - > the use of shields on luminaire lighting to minimise brightness effects;
  - > selecting asymmetric light distribution-type floodlights as part of the proposed lighting design;
  - > the use of low-reflection pavement surfaces to reduce brightness; and
  - > minimising the quantity of light and energy consumption in parts of the IMT site.
- minimise noise impacts including:
  - > design/layout to minimise noise (e.g. procurement of mechanical plant with lowest available noise emissions, use of noise reduction barriers, restricting track turn radii);
  - > ongoing community consultation/complaints management system;
  - > ongoing monitoring to continually evaluate Project noise emissions and, as required, implement additional noise mitigation; and

- measures to control potential wheel squeal including:
  - The turn radius of curved track sections would be greater than 500 m to reduce tight turns in the alignment.
  - Track greasing systems would be investigated on curved sections of track to lubricate and reduce friction at the wheel–rail interface.
  - 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 adjustment of bogie-suspension tracking and brake system set up.

6.5.2 Concerns regarding construction period

Two submissions raised concerns regarding the time period/length of construction works, occurring over many years.

Submission number(s)

9 and 150.

MIC response

The IMT would be constructed progressively in line with market demand. Construction of each phase of development would commence only once it can be demonstrated that there is sufficient demand for additional IMT capacity.

Therefore, as shown in Figure 8.3 in Chapter 8 – *Project development phasing and construction* of the EIS, and in Figure 7.3 of Chapter 7 – *Proposed amendments to the development* of this report, construction would not be continuous, but rather phased up until 2030. There will be significant periods of time when no construction activity would occur. The proposed construction activity described in Section 7.5 of this report avoids the need for land disturbance/impacts prior to there being the need/demand for the next phase of the IMT and the intensity of construction activities would be reduced (i.e. intensity of impacts would be greater if the entire IMT was constructed at one time).

6.6 Traffic, transport and access

Many submissions raised concerns relating to the traffic transport and access impacts of the Project. This included impacts on local roads and major arterials and the associated social, environmental and economic impacts. These are discussed below:

6.6.1 Impacts on local roads

Submitters raised concerns about the traffic and congestion impacts on local roads including Cambridge Avenue, Newbridge Road, Moorebank Road, Nuwarra Road, Anzac Road, Wattle Grove Drive and Heathcoat Road. There is also some concern that drivers will use local roads and suburbs to avoid congestion on the M5 Motorway (i.e. rat runs).

Questions were raised around the upgrades required for local roads and whether these would be provided as part of the Project. In particular, a number of submitters questioned why no upgrades have been proposed for Cambridge Avenue. One submitter (90) suggested upgrading Cambridge Avenue to a four lane road to cater for an increase in light vehicle traffic.

Submission number(s)

1, 3, 7, 10, 90, 95, 96, 98, 99, 100,105, 115, form letter 2, 142, 153, 178, 224, 208, 237 and 239.

MIC response

The traffic impacts of the Project have been assessed as detailed in Chapter 11 – *Traffic, transport and access* and Technical Paper 1 – *Traffic, Transport and Accessibility Impact Assessment* of the EIS. The traffic study was undertaking in consultation with and input from TfNSW and RMS. An independent peer review of Technical Paper 1 – *Traffic, Transport and Accessibility Impact Assessment* has been undertaken and a letter endorsing the technical paper and the approach is included in Appendix G of the EIS (Volume 2).

Traffic impacts on the wider network, including local roads have been assessed using intersection performance modelling software (Signalised and unsignalised Intersection Design and Research Aid (SIDRA)) for a number of intersections within and surrounding the Project site including the:

- Hume Highway and Orange Grove Road;
- Hume Highway and Elizabeth Drive;
- Hume Highway and Memorial Avenue;
- Hume Highway, Hoxton Park Road and Macquarie Street;
- Hume Highway and Reilly Street;
- Moorebank Avenue and Newbridge Road;
- Moorebank Avenue and Heathcote Road;
- Moorebank Avenue and Industrial Park Access;
- Moorebank Avenue and Church Road;
- Heathcote Road, Wattle Grove Road and Nuwarra Road;
- Newbridge Road and Nuwarra Road;
- Newbridge Road, Governor Macquarie Drive and Brickmakers Drive;
- Moorebank Avenue and M5 Motorway interchange;
- Hume Highway and M5 Motorway interchange;
- Cambridge Avenue, Canterbury Road, Glenfield Road and Railway Parade;
- Moorebank Avenue and Bapaume Road;

- Moorebank Avenue and Anzac Road;
- Moorebank Avenue and Defence Support access;
- Moorebank Avenue and DNSDC access;
- Moorebank Avenue and Chatham Avenue; and
- Moorebank Avenue and proposed Moorebank IMT accesses.

The SIDRA modelling rates intersection performance based on a Level of Service (LoS). Table 6.1 below shows this LoS criteria (also found in Table 11.2 in Chapter 11 – *Traffic, transport and access* of the EIS.

Table 6.1 LoS criteria for intersections

LoS	Average delay (seconds per vehicle)	Traffic signals, roundabout	Give-way and stop signs
A	Less than 14	Good operation.	Good operation.
B	15 to 28	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
C	29 to 42	Satisfactory	Satisfactory, but accident study required.
D	43 to 56	Operating near capacity.	Near capacity and accident study required.
E	57 to 70	At capacity. At signals, incidents will cause excessive delays; roundabouts require other control mode.	At capacity; requires other control mode.
F	Greater than 71	Unsatisfactory with excessive queuing.	Unsatisfactory with excessive queuing; requires other control mode.

Source: RMS *Guide to Traffic Generating Developments*, Version 2.2, 2002

The results of the modelling are provided in Table 11.16 of Chapter 11 – *Traffic, transport and access* of the EIS. MIC acknowledges that the traffic modelling shows road network upgrades would be required to maintain all intersections in the vicinity of the Project site to an acceptable level of service, except the Hume Highway and Reilly Street intersection and Moorebank Avenue and M5 Motorway interchange. These upgrades are required to accommodate future background traffic growth (without the Project); however, there are no significant changes to intersection performance between the 'with and 'without' Project scenarios as the network in 2030 is predicated to be congested based on background growth associated with urban and population growth in the region.

As noted in section 6.1.5, further investigations have been conducted to identify measures required to mitigate the impact of traffic generated from the Project on intersections in the surrounding area. The results of this investigation are presented in Chapter 7 – *Proposed amendments to the development* of this report and the revised Traffic Impact Assessment (revised TIA) provided in Appendix E of this report. This assessment has determined the level of service that the affected intersections will operate at with and without the Project traffic. The analysis additionally shows for each affected intersection what treatment would be required by when, to ensure that for intersections operating at below LoS D, the 'with Moorebank' performance at 2030 is maintained at or below the 'without Moorebank' LoS. This assessment has determined whether the intersections will operate better or worse than without Project traffic. MIC is in the process of discussing the results of the traffic impact assessment with TfNSW and

RMS and if agreed will contribute to the cost of intersection upgrades in proportion to the extent that the Project contributes to the traffic through that intersection.

The upgrade of Cambridge Avenue is not being considered as part of the Project as the traffic modelling concluded that only low volumes of light vehicles associated with staff movement would use Cambridge Avenue to access the Project site. Access into and out of the Moorebank terminal site will be via the intersection of Moorebank Avenue and Anzac Road. The intersection will be signalised with physical barriers to prevent heavy vehicles from turning right onto Moorebank Avenue. This will force all vehicles particularly heavy vehicles to turn left onto Moorebank Avenue to access the M5 Motorway/ Hume Highway. Similar measures will prevent trucks from entering the site from the south along Moorebank Avenue. As such, trucks associated with the terminal will be unable to access the southern end of Moorebank Avenue and Cambridge Avenue. In the event of an accident on the M5 Motorway/ Moorebank Avenue north of the terminal, the terminal will need to shut down until the traffic is cleared.

Section 11.2.1 of Chapter 11 – *Traffic, transport and access* of the EIS notes that a number of 'rat-runs' have developed through the area to avoid the M5 Motorway. In particular, turning volumes from Cambridge Avenue to Moorebank Avenue indicate it is used as an alternative to the M5 Motorway for access from the Hume Highway and suburbs further south. In addition, Anzac Road may be used to access Heathcote Road to avoid using the M5 Motorway. While MIC recognises the use of these local roads will continue into the future, the IMT will be subject to road network restrictions that will require all truck traffic to access the site via Moorebank Avenue from the north. Travel along Moorebank Avenue and Cambridge Avenue for heavy vehicles would be prevented through intersection design and road rules. Light traffic, including staff vehicles, may access the wider network, depending on the origins of light freight and IMT employees, however the impacts are not likely to be significant.

More extensive modelling is currently being planned (to be undertaken and reported as part of the Stage 2 SSD application) to examine rat running and the changes to traffic routes as a result of the presence of Project traffic on the network. This modelling will identify what mitigation measures are required to reduce the likelihood of rat running through residential areas. For truck traffic, MIC is proposing to introduce a ban on heavy vehicles (except for access) along the eastern section of Anzac Road. Details of the form of this control are to be confirmed.

6.6.2 Traffic impacts on the M5 Motorway

The following concerns were raised in relation to the traffic impacts on the M5 Motorway:

- Concerned with existing traffic levels on the M5 Motorway and the impact the Project will have on traffic congestion.
- Concerned trucks will ‘bank up’ along the M5 Motorway.
- Concerned the Project will result in more trucks on the M5 Motorway than without the Project.

Submission number(s)

3, 51, 54, 72, 75, 81, 100, 105, 108, form letter 2, 213, 230 and 235.

MIC response

The Project would result in an increase in trucks travelling along the M5 Motorway during both construction and operation of the Project. As illustrated in Figure 6.6 and Figure 6.7 of Technical Paper 1 (EIS Volume 3) – *Traffic, Transport and Accessibility Impact Assessment*, it is anticipated that around 65% of the truck traffic from the Project would use the M5 Motorway to the west of Moorebank Avenue. MIC recognises that this part of the M5 Motorway is forecast to experience congestion resulting from background traffic growth and the inadequate weave distance between Moorebank Avenue and the Hume Highway without the presence of Project traffic. MIC is cooperating with TfNSW in its consideration of potential solutions to this and other regional traffic issues caused by the general growth in traffic. More sophisticated traffic modelling is being prepared to investigate this issue in greater detail.

The results of the traffic modelling presented in section 11.4.3 of Chapter 11 – *Traffic, transport and access* of the EIS show that the increase in traffic volumes on the M5 Motorway (between Heathcote Road and the Hume Highway) due to the Moorebank development is less than 3% of total M5 Motorway traffic during the 2030 AM and PM peak hours. This modelling considers predicted traffic growth of the region until 2030. The contribution of Project traffic to future M5 Motorway traffic is detailed in Table 6.6 of Technical Paper 1 – *Traffic, Transport and Accessibility Impact Assessment*. The impact on the operation of the network and traffic conditions on the strategic road network would be examined in greater detail at the next stage of approval (Stage 2 SSD application) once further details of the Project layout and phasing are confirmed.

The number of trucks on the M5 Motorway to the west of Moorebank Avenue will increase with the Project, however, as illustrated in Figure 6.3 of *Technical Paper 1 – Traffic, Transport and Accessibility Impact Assessment,* the Project also removes a significant number of truck movements from other parts of the Sydney road network which benefits users of the M5 Motorway east and M4 Motorway in particular.

6.6.3 Impacts on the Hume Highway

Some submissions argue that the Hume Highway is already congested and are concerned that the Project will increase congestion on this road corridor.

Some submissions argue that the Hume Highway in Liverpool has the worst accident spot in the area and that, as the EIS shows, 25% of all trucks will travel through this ‘accident spot’.

Submission number(s)

4, 81, 223 and 224.

MIC response

As presented in Figure 6.11 of Technical Paper 1 – *Traffic, Transport and Accessibility Impact Assessment,* the majority of the intersections along the Hume Highway are suffering from traffic congestion in 2030 even without the presence of Project traffic. The impact of Project traffic on the Hume Highway traffic is demonstrated in Figure 6.12 and Figure 6.13 of Technical Paper 1 – *Traffic, Transport and Accessibility Impact Assessment*. Elizabeth Drive, Hoxton Park Drive and Reilly Street are all forecast to be over capacity in the AM peak hour of 2030, even without the Project. The results suggest there would be minimal changes to the AM and PM performance of the Hume Highway intersections, and additional capacity would be required at all intersections to cater for future traffic growth.

As noted in section 6.1.5 investigations are currently underway to identify the measures required to mitigate the impact of Project traffic on intersections in the surrounding area. These investigations will determine the intersections that will deteriorate as a result of the Project (and those that will be unaffected). Should the intersections require extra mitigation measures to resolve congestion caused by the Project, MIC will discuss these with TfNSW and RMS and, if agreed, will contribute to the cost of these upgrades (in proportion to the extent that the Project contributes to the traffic through that intersection.

The presence of an accident blackspot on the Hume Highway is an issue for the RMS to resolve and MIC would work with the RMS in support of any safety treatment proposed.

6.6.4 Traffic congestion

Many submissions made a general comment about existing traffic congestion and the impacts the Project will have on traffic congestion on local roads and major arterials. Some submissions were concerned that traffic congestion would be 'moved' from Port Botany to Moorebank.

Some submissions noted that previous statements from Labour Minister Anthony Albanese claimed that the Moorebank IMT would take trucks off the M5 Motorway.

Submission number(s)

11, form letter 1, 16, 18, 23, 31, 40, 50, 58, 60, 65, 67, 68, 71, 74, 75, 77, 85, 90, 93, 97, 99, 109, 114, 117,118, 119, 130, 131, form letter 2, 136, 141, 142, 147, 148, 153, 154, 155, 156, 159, 162, 175, 178, 197, 206, 208, 210, 211, 216, 219, 220, 221, 222, 224, 228, 232, 233, 236, 237, 238, 239 and form letter 3.

MIC response

MIC recognises there are existing traffic congestion issues along some of the local roads and regional arterials within the vicinity of the Project. In particular, the M5 Motorway near the Moorebank Avenue interchange acts as a bottleneck within the motorway network. This is an issue outside of the scope of this Project and needs to be addressed on a regional basis.

Truck movements from the IMEX and interstate operations are not new trips. Without the Project, these movements would be associated with trips taken to and from Port Botany and, therefore, would already be on the highway network.

Analysis of existing (2014) intersection performances indicates that intersections along Moorebank Avenue between Cambridge Avenue and the M5 Motorway are already near or at capacity. Future year background traffic growth on Moorebank Avenue resulting in increased traffic volumes on Moorebank Avenue would also result in deterioration in intersection performance. MIC recognises that the Project would place additional pressure on existing intersections along Moorebank Avenue and as such an upgrade to Moorebank Avenue between the M5 Motorway and Anzac Road is included as part of the Project.

As explained within Chapter 11 – *Traffic, transport and access* of the EIS, the Project is predicted to result in reductions in vehicle kilometres travelled (VKT) on the Sydney regional road network. By transferring freight movements to the Project site by rail for distribution, the regional network would experience reductions of approximately 56,125 truck VKT a day and 1,265 truck vehicle hours travelled a day. This is also expected to contribute to reducing heavy vehicle-related crashes.

A revised Traffic Impact Assessment (revised TIA) report is presented in Appendix E and the results are discussed in section 7.9.3. This revised TIA presents the changes in traffic impacts as a result of changes to the proposed development (these changes are presented in section 7.4 to 7.6 of this report). In addition to the proposed amendments to the development, further research into intermodal operations has resulted in modifications to some of the underlying assumptions about the rates of traffic generation. As a result, although the components of the development at 2030 are consistent with those in the EIS, the level of traffic generation has changed, for example the peak generation has increased slightly, but overall daily traffic generation has reduced.

As noted in section 6.6.1, additional modelling investigations are currently underway to identify measures required to mitigate the impact of traffic generated from the Project on intersections in the surrounding area. These investigations aim to ensure the intersections would operate no worse than they would without the Project. Should the intersections require extra mitigation measures to resolve congestion caused by the Project, MIC will discuss these with TfNSW and RMS and if agreed will contribute to the cost of these upgrades (in proportion to the extent that the Project contribute to the traffic through that intersection).

6.6.5 Traffic safety issues

The following comments were made on traffic safety:

- Concerned with trucks 'weaving' onto and off the M5 Motorway, causing a 'black spot' when driving which could be fatal.
- Concerned with trucks parking and using local roads will make the area unsafe.
- Concerned there will be additional westbound heavy vehicles travelling from Moorebank Avenue and moving right onto the M5 Motorway on an uphill grade, while westbound M5 Motorway traffic would be crossing the same lanes to exit the Hume Highway.
- Concerned with traffic queues on Moorebank Avenue from trucks waiting for arrival time slots.

Submission number(s)

Form letter 1, 60, 77, 78, 108, 115, form letter 2, 137, 142, 153, 160, 162, 206, 210, 217, 219, 220, 221, 222, 224 and 234.

MIC response

In response to the 'weaving' issue on the M5 Motorway, refer to MIC's response in section 6.6.2.

The indicative IMT layout provides a truck parking and holding area on site to accommodate up to 25 trucks, to serve as a layover facility for trucks that arrive early and need to wait for their allocated time slot. This would avoid the need for trucks to queue on Moorebank Avenue.

For truck traffic, MIC is proposing to introduce a ban on heavy vehicles (except for access) along the eastern section of Anzac Road. Details of the form of this control will be discussed with LCC and RMS and are yet to be confirmed.

6.6.6 Traffic impacts on Moorebank Avenue/M5 Motorway intersection

Two submissions raised general concerns relating to the traffic impacts on the Moorebank Avenue/ M5 Motorway intersection.

Submission number(s)

25 and 108.

MIC response

Section 11.4.3 of Chapter 11 – *Traffic, transport and access* of the EIS shows the results of the modelling of the Moorebank Avenue/M5 Motorway intersection. The intersection would operate at a LoS of B (good with acceptable delays and spare capacity) during the AM peak with or without the Project, and at a LoS of C (satisfactory) during PM peak with or without the Project. As such, no mitigation measures are considered necessary.

As noted in the sections above, additional investigations are being undertaken to identify the measures required to mitigate the impact of Project traffic on intersections in the surrounding area.

6.6.7 Traffic impacts as a result of trucks

A number of submissions raised concerns relating to the impacts of trucks using local and regional arterial roads. Submissions discussed matters including traffic congestion, safety issues and other impacts such as noise and air emissions.

Submission number(s)

31, 58, 63, 67, 97, 100, 105, 108, 115 and 208.

MIC response

These issues have been discussed in detail under other transport related sub-issues including 'traffic congestion', traffic safety issues' as well as issues related to noise and vibration and local air quality (refer to section 6.6.4, section 6.6.5, section 6.7 and 6.11 in this report).

More extensive modelling is currently being planned (to be undertaken and reported as part of the Stage 2 SSD applications) to examine the issue of 'rat running' and the changes to traffic routes as a result of the Project. This modelling will identify what mitigation measures will be required to reduce rat running through residential areas. For truck traffic, MIC is proposing to introduce a ban on heavy vehicles (except for access) along the eastern section of Anzac Road. Details of the form of this control are to be confirmed.

As noted in the sections above, additional investigations are being undertaken to identify the measures required to mitigate the impact of Project traffic on intersections in the surrounding area.

6.6.8 Impact on travel times

Some submissions were concerned there would be increased waiting and travel time for commuters and workers, resulting in flow on social impacts.

Submission number(s)

55, 93, 161 and 237.

MIC response

MIC acknowledges that increases in travel time as a result of traffic congestion can have negative social and economic impacts to individuals, the local community and businesses. However, as discussed in section 6.6.4 in this report, there are already congestion issues on both local and regional arterials in the vicinity of the Project site and these issues need to be addressed on a regional basis which is outside of the scope for the EIS. The Project is expected to reduce VKTs on the Sydney regional road network which in turn will benefit traffic flow on major Sydney arterials.

6.6.9 Traffic impacts on emergency services

Three submissions argued that increased congestion would reduce the ability of emergency vehicles to respond to emergencies in a timely manner.

Submission number(s)

71, 81 and 228.

MIC response

The proposed upgrade of Moorebank Avenue as part of the Project and the reduction in VKT by trucks on the Sydney Road network; should have a positive impact on overall road safety and should reduce the likelihood of vehicle accidents.

In terms of response to incidents, most regional arterials including Sydney's motorways have shoulders or dedicated emergency lanes that can be used by emergency vehicles responding to an incident. This avoids these vehicles being caught in traffic. As a result, the Project would not impact emergency vehicle response.

For the works on Moorebank Avenue, an emergency response plan would be prepared to ensure all emergency vehicles have access to the Project site at all times and to provide for emergency vehicles that currently use Moorebank Avenue as a transport route.

6.6.10 Traffic impacts on the M7 Motorway

Two submissions were concerned with the existing traffic levels and the impact the Project would have on congestion on the M7 Motorway.

Submission number(s)

75 and 81.

MIC response

As discussed in section 11.4.2 of Chapter 11 – *Traffic, transport and access* of the EIS, while an increase in articulated truck flows is expected on the M7 Motorway, based on the modelling undertaken for the EIS, only a small impact on vehicle speeds is expected. The addition of approximately 80 trucks per hour onto the M7 Motorway is unlikely to have a noticeable impact on congestion experienced on the motorway.

6.6.11 Impacts on public transport/opportunities for improvements

Some submissions note that the Project site has no access to passenger rail and that IMT staff would be required to drive to work. One submission (90) suggests a public bus service should be introduced to travel via Moorebank Avenue to suburbs further south to reduce southbound traffic.

Submission 196 also suggests that a bus service should be provided between Moorebank Avenue and Liverpool Station to provide for workers from the terminal.

Some submissions request confirmation on whether the Project would impact on the passenger rail line and travel times for passengers.

Submission number(s)

90, 142, 147, 196 and 237.

MIC response

Pedestrians using public bus services that stop along Moorebank Avenue would be catered for during the construction of the Project through negotiations with bus operators and with consideration of safety issues.

It is acknowledged the site does not have direct access to passenger rail. As such, MIC would consider the need for, and viability of, establishing a proponent-funded bus service at the Stage 2 SSD application process.

Staff movements associated with operation of the terminal occur outside of the AM and PM peak hours which subsequently reduces the need for enhanced public transport links.

As noted in section 23.2.4 of Chapter 23 – *Property and infrastructure* of the EIS, there would be no impact on the operation of the passenger rail lines. The passenger rail line is located to the west of the SSFL and is completely separate from it.

6.6.12 Timing of traffic surveys and peaks

Three submissions raised concern about the traffic surveys. These are as follows:

- Form letter 2 and submission 142 states that intersection surveys were undertaken on Tuesday 7 December 2010 and Tuesday 18 March 2014 in peak hours only. Concerned that both surveys were undertaken on the same days and the December survey was near a holiday.
- Submission 90 suggests that PM peak starts at around 2.30 pm and not 4.00 pm. Suggests the timing is inconsistent with the 'shifts' of the proposed IMT where there is a 'shift' change at 2.00 pm.

Submission number(s)

90, form letter 2 and 142.

MIC response

The surveys are used primarily to obtain the traffic counts that produce the observed levels of congestion and traffic queues to validate and calibrate the traffic models accordingly. This process provides confidence that the resulting intersection modelling accurately reflects the forecast congestion. The RMS collects data throughout the year at numerous count stations around Sydney. At the time of preparing the Traffic Impact Assessment for the EIS, the data requirements for analysis resulted in the decision to use December traffic counts rather than delay the counts until February or March. December counts are not typically used as the monthly traffic flow is higher than average. In many respects, using the data from December represents a conservative assessment adding traffic to an above average baseline. Data suggests that particularly low flows are experienced in the last week of December and early January.

Additional modelling work is being planned (to be undertaken and reported as part of the Stage 2 SSD application) which will require the data collection process to be repeated over a larger geographic area. These new traffic surveys will comprise 24 hours of data collection.

The surveys conducted for the EIS is based around the RMS requirement to consider the impact on the surrounding road network for the AM and PM peak hours. Analysis of the traffic profiles indicates the shift change at 2.00 pm occurs when the background traffic is relatively light. As such, the traffic generated when the background traffic is high represents the busiest time on the network. As discussed above, the next round of analysis will be associated with 24 hour traffic counts so this off peak analysis can be undertaken if required by RMS.

6.6.13 Restriction on southbound heavy vehicle movements during construction

One submission notes that during operation of the IMT, it is proposed to introduce a restriction on southbound heavy vehicle movements from the Project site. The submission suggests that similar restrictions should be imposed for the construction period.

Submission number(s)

90.

MIC response

Construction traffic will be managed through a Construction Traffic Management Plan (CTMP). These plans commonly include restrictions on when traffic can enter and leave the site and the routes heavy vehicles must use. The details of the construction process and sequence are currently not known and so the details of the truck movements are conceptual only. The CTMP will be finalised and agreed with LCC, TFNSW and RMS and would reflect their requirements to protect the local community and network operation for the temporary duration of the construction process. The CTMP will be further developed as part of Stage 2 SSD applications.

6.6.14 Opportunity for a bridge over Georges River

One submission argues that as the Casula railway station lies opposite the proposed IMT site, that a bridge over the Georges River would be suitable (if the site was used for a residential suburb or alternative use as an industrial park).

Submission number(s)

98.

MIC response

Assessing this option is outside the scope of the EIS. As discussed in section 6.4.3, development of the site for residential purposes is not feasible and would create additional impacts particularly in relation to traffic generation.

6.6.15 Adequacy of traffic assessment

The following issues were raised regarding the adequacy of the traffic impact assessment:

- Modelling:
  - > Suggestions that the modelling does not include the predicted growth of the region.
  - > Questions about how the EIS arrived at the 3% figure for the increase in traffic volumes on the M5 Motorway.
  - > Discrepancies identified in the modelling approach between SIMTA and this Project.
- Figures:
  - > Some submissions argued that 8,160 heavy vehicles and 5,724 light vehicle trips referenced in the EIS (with the Project at Full Build in 2030) is too low.
  - > Some submissions argued traffic volumes are underestimated.

Submission number(s)

10, form letter 1, 60, 77, 81,100, 119, form letter 2, 142,153, 175, 210, 212, 219, 220, 221, 222, 223 and 224.

MIC response

The modelling undertaken for the EIS did take into account regional traffic growth. As explained in section 6.3.4 and presented in Table 6.8 of Technical Paper 1 – *Traffic, Transport and Accessibility Impact Assessment* (Volume 3 of the EIS), the modelling used growth rates supplied by RMS for the network in the vicinity of the Project site. These annual RMS growth rates reflect RMS' view on how the traffic will grow in the vicinity of the Project site in response to new developments and population increases. These growth rates were applied to the observed traffic counts, the majority of which were collected in 2014.

The derivation of the total change in M5 Motorway traffic is detailed in section 6.3.2 of Technical Paper 1 – *Traffic, Transport and Accessibility Impact Assessment*. The total generated traffic from the Project when compared to the forecast increase in background M5 Motorway traffic represents an increase of no more than 3% in either of the peak hours.

The SIMTA traffic analysis was undertaken by a different consultant modelling a different operation and so discrepancies are to be expected. Overall the two proposals are different. The Moorebank IMT proposal includes an interstate intermodal operation which is not included in the SIMTA development. There are differences in the assumed operation of the terminal and warehouses which impact on traffic. For example, MIC envisages a relatively uniform distribution of traffic over a 24 hour period, while SIMTA has assumed a higher concentration of traffic around specific peaks. The assessments undertaken for the Moorebank IMT EIS were conservative in their assumptions regarding container to pallet loading on trucks, while the SIMTA assessments have used a different approach based on their industry experience. While the daily totals of generated traffic between the Moorebank and SIMTA projects are different (for like terminal infrastructure), the AM and PM peak hour volumes are very similar.

Given the agreement between MIC and SIMTA to develop a precinct solution for Moorebank, as discussed in section 6.4.6, further research into the intermodal operations has resulted in modification to some of the underlying assumptions about the rates of traffic generation. As a result, levels of traffic generation had changed, these modifications are discussed in section 7.9.3.

In relation to traffic volumes, a key determinant of the rate of traffic generated per unit of warehousing floorspace is the nature of the warehousing that is expected to operate on the IMT site. The proposed warehouses would have a direct relationship and access to the container terminal and it is expected that this facility will be attractive to major distribution centres similar to the Big W distribution centre at Hoxton Park. These major distribution warehouses are not associated with the movement of small vans as they deal with the bulk movement of freight across their distribution chain. The assumed daily trip generation from warehouses is similar to the generation rates observed at the Big W distribution centre at Hoxton Park. The goods are moved by rigid or articulated vehicles only.

6.6.16 Potential spills during construction and operation

Two submissions were concerned about the safety issues as a result of potential spills during construction and operation.

Submission number(s)

108 and 211.

MIC response

Chapter 14 – *Hazards and risks* of the EIS identifies and assesses the potential hazards and risks arising from construction and operation of the Project. Spills/leaks of flammable and combustible liquids during transportation are identified as a potential risk. Measures to mitigate the risks are outlined in section 14.6 of Chapter 14 – *Hazards and risks* of the EIS and include:

- materials would be transported according to the Australian Dangerous Goods (ADG) Code and relevant standards and regulations; and
- contractors delivering Liquefied natural gas (LNG) and Liquefied Petroleum Gas (LPG) would be trained, competent and certified by the relevant authorities.

6.6.17 Degradation of road assets (pavements and bridge)

One submission was concerned about the potential for degradation of road assets.

Submission number(s)

108.

MIC response

MIC acknowledges that the increase in truck numbers may result in increased asset degradation; however, it is expected that the majority of truck movements will be on RMS roads which are designed to cater for truck movements. The impact of Project truck movements on local council owned roads will be assessed in detail in the next round of detailed traffic assessment, as part of the Stage 2 SSD approval application.

6.6.18 Traffic impact on the WestConnex project in combination with this Project

Some submissions stated that traffic figures do not take into account the WestConnex project and the implications on the M5 Motorway during construction.

Submission number(s)

Form letter 2, 142 and 224.

MIC response

WestConnex is included in the future year analysis as described in Chapter 5 of *Technical Paper 1 – Traffic, Transport and Accessibility Impact Assessment* (Volume 4) of the EIS. The road improvements assumed to occur by 2031 are presented in Table 5.2 which indicates that WestConnex is assumed to be operational in 2021.

6.6.19 Traffic impacts – general

There were general concerns in submissions regarding traffic impacts as a result of the Project.

Submission number(s)

1, 2, 5, 6, 10, 11, 36, 52, 56, 59, 73, 81, 95, 102, 103, 128, 137, 171,180, 185, 189, 190, 191, 212, 213, 214, 218, 226 and 234.

MIC response

The potential traffic impacts of the Project are discussed in detail in Chapter 11 – *Traffic, transport and access* of the EIS. These impacts were subsequently updated as presented in Chapter 7 – *Proposed amendments to the development* of this report in section 7.9.3.

As identified in Table 29.6 of Chapter 29 – *Environmental risk analysis* of the EIS, the traffic impacts of the Project (unmitigated) are likely to be moderate to high. This rating is acknowledging the expected increased traffic volumes from construction and operation and the associated impacts on the M5 Motorway and local roads. A number of mitigation measures are proposed and revised management of traffic and mitigation measures are presented in Table 9.1 of this report. Implementation of these measures, it is expected to reduce the overall impacts to 'low-moderate'.

6.6.20 Benefits to toll operators on the M7 Motorway

The Project would result in freight travelling by rail to Moorebank and then via the M7 Motorway up to Eastern Creek. Two submission questions whether a 'deal has been done' with the operators of the privately owned toll road.

Submission number(s)

223 and 224.

MIC response

MIC has not engaged in any discussion or negotiations with toll operators regarding the use of the M7 Motorway.

6.6.21 Impacts of induced traffic

Submission 224 argues the induced traffic that occurs between warehouses has not been included in the EIS.

Submission number(s)

224.

MIC response

All the traffic directly associated with the Project has been included in the assessment. Should other developments occur elsewhere in Sydney, these projects would be subject to separate assessment and approval. MIC is committed to complying with the Commonwealth and NSW regulatory requirements; however, assessment of (as yet unidentified) induced developments is outside of the scope of the EIS.

6.7 Noise and vibration impacts

Many submissions were concerned about the noise impacts of the Project, during both the construction and operational phases. The issues raised and MIC's response is provided below.

6.7.1 Noise impacts – general

A number of general concerns were raised about the noise impacts of the Project. Issues included:

- proximity of residential receptors to IMT;
- exceedance of noise assessment criteria; and
- noise impacts on the community – health and lifestyle.

Submission number(s)

5, 6, 9, 10, 11, 36, 45, 56, 59, 74, 87, 93, 96, 102, 109, 117, 128, 139, 153, 185, 191, 201, 206, 214, 234 and 238.

MIC response

It is acknowledged that a number of residents live close to the Project site and there is a concern regarding exceedance of noise assessment criteria and the impacts this has on health and lifestyle. Construction and operation noise from the Project would be regulated through the Project approvals (Stage 1 and Stage 2 SSD approvals) and in accordance to relevant acoustic legislation, policy and guidelines (including the NSW *Industrial Noise Policy*, the NSW *Road Noise Policy and the Interim Construction Noise Guideline*). The regulations have been developed to control noise levels in order to manage potential health impacts on the community.

To minimise noise emissions and comply with the Project approval and regulations, the Project would be designed and constructed with reasonable and feasible noise mitigation measures to control noise emissions within the surrounding communities. A number of noise mitigation measures were presented in the EIS and have been updated in Table 9.1 of this report. The appropriateness of the noise mitigation measures will be further assessed during the Stage 2 SSD applications, once the detailed design is developed and the mitigation measures can be adopted to reflect the final design.

6.7.2 Noise impacts at night

A number of submissions were concerned about the impact of IMT operations at night, arguing the Project has the potential to cause sleep disturbance.

Submission number(s)

Form letter 1, 25, 43, form letter 2, 142, 210, 212, 216, 217,219, 220, 221, 222, 228 and 237.

MIC response

As discussed in section 12.5 of Chapter 12 – *Noise and vibration* of the EIS, operations on the main IMT site were predicted to comply with sleep disturbance objectives at the nearest receptors in Casula, Wattle Grove and Glenfield. In regard to sleep disturbance caused by IMEX and interstate train movements on the rail access connection, the maximum noise levels are predicted to be within 80 dB(A) L_{Amax} (the commonly used maximum noise objective for rail) at the nearest receptors in Casula, Wattle Grove and Glenfield for the southern rail access connection layouts. As the southern rail access option is now the preferred option, impacts of the other rail access options (northern and central) have not been discussed further.

The design and construction of the Project will include measures to reduce and control night-time noise levels and specifically control noise from short lived or high noise events which may otherwise have the potential to disturb sleep (refer to section 12.4 of Chapter 12 – *Noise and vibration* of the EIS*).*

6.7.3 Noise impacts from IMT operations

Some submissions made particular comments on IMT operations, referring to specific activities that have the potential to generate noise. These are as follows:

- Concern with impacts from unloading/loading and movement of containers and locomotives idling.
- Concern with noise from the movement, breaking and shunting of trains.
- Concern with impact from truck movements and reversing beepers.

Submission number(s)

4, Form letter 1, 43, 60, 91, 98, 130, form letter 2, 142, 147, 150, 201, 210, 217, 219, 220, 221, 222, 230, 233 and 236.

MIC response

The EIS considers noise from IMT operations on the Project site, including the potential noise from unloading/loading and movements of containers and the breaking and shunting of trains. Events such as breaking and shunting of trains and dropping of containers would occur intermittently and are not expected to be a significant contribution above all other operational noise sources. In addition, noise from trains idling within the IMT site would not be a significant contribution to noise concentrations over and above other sources such as the gantry cranes, intermodal vehicles and trucks. The EIS recommends the application of noise control measures such as broadband alarms to control noise from reversing beepers and one-way routes to reduce the need for vehicles to reverse. These measures and other best practice mitigation measures would be considered during the planning and design of the IMT and will be assessed further during the Stage 2 SSD application.

To minimise noise emissions and comply with the Project approvals (Stage 1 and Stage 2 SSD approvals) and regulations, the 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 EIS and updated in table 9.1 of this report. The appropriateness of the noise mitigation measures will be further assessed during the State 2 SSD applications once the detailed design is developed and the mitigation measures can be adopted to reflect what will actually be built on the site.

6.7.4 Wheel squeal

Some submissions were concerned about the potential noise impacts of wheel squeal and argued that mitigation measures would not be effective in reducing impacts.

Submission number(s)

Form letter 1, 43, 60, form letter 2, 142, 201, 210, 211 and 237.

MIC response

Section 12.4.3 of Chapter 12 – *Noise and vibration* the EIS recommends a range of noise control measures to limit the potential for noise from wheel squeal, including designing the Project to avoid tight radius curves and implementing track greasing systems.

The EIS has presented reasonable and feasible noise mitigation measures to control noise emissions within the surrounding communities. Once the detailed design is developed, the appropriateness of the noise mitigation measures will be further considered and assessed during the Stage 2 SSD approval application process. The actual noise and mitigation measured adopted for the Project will be designed based on what will be built, the level of noise being omitted during construction and operation and best practice mitigation.

6.7.5 Adequacy of noise assessment

A number of submissions raised issues relating to the accuracy of the noise assessment, and in particular, noise predictions.

In addition, submission 43 argues the use of the word 'hypothetical' doesn't give the community confidence in the reliability of the predicted impacts.

Submission number(s)

43, 100, 105 and125.

MIC response

The EIS is seeking approval of a concept design, (as a Stage 1 SSD application) and as such, the noise mitigation scenario is presented as a hypothetical mitigation. The EIS has presented reasonable and feasible noise mitigation measures to control noise emissions within the surrounding communities. Once the detailed design is developed, the appropriateness of the noise mitigation measures will be further developed during the Stage 2 SSD approval application. The actual noise and mitigation measured adopted for the project will be designed based on what will be built, and the level of noise being omitted during construction and operation.

6.7.6 Accuracy and adequacy of identifying/locating sensitive receptors

Some submissions identify issues with the selection of sensitive receptors:

- There are a number of sensitive receivers within Casula, Glenfield and Wattle Grove; however, only one receiver in Casula was used for the basis of assessment.
- Buckland Road, Casula is neither near the northern rail access option or the central rail access option.
- Questions why Buckland Road, Casula was the only noise monitoring location selected.
- Form letter 2 argues that noise measurements have been taken from areas along train lines and major roads, and are not representative of nearby sensitive receptors in Casula, Wattle Grove and North Glenfield.
- Some submissions suggest that Lakewood Crescent is an ideal location to measure noise as it is near the SSFL, the M5 Motorway and the proposed northern rail access option.

Submission number(s)

43, form letter 2, 186 and 237.

MIC response

The noise and vibration assessment for the Project was undertaken by firstly establishing the existing background noise levels and then assessing the impacts of the Project (impact of adding the Project noise to the existing background noise levels).

The long term noise monitoring locations used for the noise impact assessment were selected after an initial site visit to identify areas within Casula, Wattle Grove and Glenfield that were considered representative of the quiet noise environments. That is, a location where noise from the surrounding road and rail networks was not significantly influencing the measured background noise levels. By measuring noise levels at the quietest noise environments, the noise assessment criteria and the assessment of potential impacts are considered to be representative for the most sensitive communities. Only one sensitive receiver (e.g. Buckland Road, Casula) is required to measure background noise levels and this location is considered representative of all sensitive receivers, hence multiple monitoring locations within each suburb are not necessary to define background noise levels.

The determination of background noise levels has been based on two years' of noise monitoring data which has provided a robust and reliable dataset to determine daytime, evening and night-time noise background levels in the surrounding environment.

In response to the comment stating noise measurements have been taken from background along train lines and major roads and are therefore not a good representative of sensitive receptors. The noise monitoring locations were taken from the nearest residential communities. As described above, impacts from the Project site will decrease with increased distance from the site. The modelled outputs considered a range of receptors including nearest receptors and other locations further away from the site. An assessment of the noise impacts at the closest receivers provides a conservative assessment of impacts further away.

Lakewood Crescent would not be an ideal location as background noise levels are to be measured at locations representative of the more sensitive (quietest) noise environments, not higher noise environments adjacent to transport corridors.

6.7.7 Adequacy and feasibility of mitigations

Submissions seek clarification on what mitigation measures would be provided for nearby residents to mitigate noise, how effective these would be and how these would be enforced. Some submissions seek clarification on what operational changes would result if exceedances are encountered as a result of the ongoing noise monitoring.

Some submissions argue there has been no mitigation for noise from the SSFL operation and question the government's commitment to provide mitigation for this Project.

Submission 237 notes the EIS states that noise limits would be exceeded occasionally on days with average meteorological conditions. Submission seeks clarification on what 'occasionally' means.

Submission 147 notes that no noise mitigation has been proposed on the eastern side of Moorebank Avenue.

Submission number(s)

43, 105, 147, 185, 186, 189, 190, 196, 213 and 237.

MIC response

As discussed in Chapter 12 – *Noise and vibration* and Technical Paper 2 (EIS Volume 3) – *Noise and Vibration Impact Assessment* of the EIS, a range of reasonable and feasible noise mitigation measures can be implemented to control noise from the IMT and the associated rail freight movements. These measures include limiting source noise emissions, impeding the propagation of noise from the site through barriers and addressing specific noise issues such as wheel squeal from the freight trains.

MIC recognises the importance of the proposed noise mitigation and the future operator of the IMT would be required to implement the measures as required by the Project approvals (Stage 1 and Stage 2 SSD approvals) and any conditions of approval.

In terms of enforcement, it will be a requirement of the IMT operator to undertake the necessary noise monitoring from construction and operations. If an exceedance is detected, it is normal practice to report the exceedance to the relevant regulatory authority. The IMT operator will need to investigate the exceedance and if the exceedance is attributed to site practices, modify the operations to ensure compliance is maintained.

MIC is unable to comment on the proposed mitigation and management for the SSFL operation. We understand that the SSFL was approved subject to certain mitigation and management, and that the required management has been implemented in order for the project to operate in accordance with its approval conditions.

In response to the comment regarding the reference to 'occasionally' in the summary of findings in Chapter 12 – *Noise and vibration*, the EIS assessed the noise impacts at neutral and adverse metrological conditions during Full Build, assuming a worst case scenario, with all plant and equipment operating simultaneously. The outcomes of the assessment determined that at Full Build of the Project in approximately 2030, without any noise mitigation and under neutral metrological conditions for all three

layout options, noise levels from operations at the main IMT site are predicted to exceed the noise assessment criteria at the nearest residential receivers in Casula and Wattle Grove. However, depending on activities undertaken, it is not likely that all plant and equipment would be operating at the same time and therefore the exceedances are only likely to occur occasionally (i.e. on days with all plant and equipment operating simultaneously). If the appropriate noise mitigation measures are implemented, which will be further explored during the Stage 2 SSD approvals process, then the likelihood of an exceedance would be low.

In response to the comment regarding mitigation requirements to the east of Moorebank Avenue, findings from the Noise and Vibration Assessment (Chapter 12 – *Noise and vibration)* indicate that noise levels at all non-residential areas would comply with the amenity noise criteria. This includes receptors directly east of Moorebank Avenue (all of which are non-residential land uses directly east of Moorebank Avenue). As such, noise walls are not considered necessary or proposed to the east of Moorebank Avenue. Other mitigation measures as detailed in section 12.5 of Chapter 12 – *Noise and vibration* of the EIS and in Table 9.1 of this report would be considered and implemented during detailed design and construction and operation to mitigate noise impacts for receptors immediately adjacent to the site and nearby communities (i.e. Wattle Grove).

6.7.8 Noise impacts during the day for people needing to sleep

Submission 86 argues there a number of shift workers who live in the surrounding area and that these people need to sleep during the day. This submission expressed concern with the daytime noise impacts form the Project.

Submission number(s)

86.

MIC response

An assessment of potential sleep disturbance noise impacts for the night-time was undertaken in accordance with NSW Environmental Protection Agency (EPA) guidelines and the NSW *Industrial Noise Policy*. The assessment determined that noise levels from transient and high noise generating activities would be expected to comply with the sleep disturbance guidelines. The assessment identified a requirement to further assess potential sleep disturbance impacts from rail freight operations during the detailed design phase when the location of the rail access connection has been confirmed.

The assessment of noise impacts during the daytime period determined that with the implementation of appropriate noise mitigation, the NSW *Industrial Noise Policy* noise criteria would be achieved at the surrounding communities. As such the daytime noise levels would achieve the NSW *Industrial Noise Policy* objectives to minimise disturbance and preserve acoustic amenity within the community. There are no specific regulatory noise criteria for sleep disturbance during the daytime as the majority of people within residential communities are awake between the hours of 7.00 am and 6.00 pm.

The design and construction of the Project would include measures to reduce and control noise levels during the day and night time and specifically control noise from short lived or high noise events which may otherwise have the potential to disturb sleep.

6.7.9 Impacts on surrounding suburbs and further afield

Form letter 2, submission 41 and submission 175 argued that Casula, Wattle Grove and North Glenfield are the closest communities to the Project site, but that these communities would not be the only locations affected by noise.

These submissions state that residents around Port Botany living as far as 3 km from the Port are affected, noting that residents in Chifley have been very vocal about sleep disturbance. Form letter 2 provides the example that the noise surrounding Port Botany, which was previously thought to meet the noise criteria, in fact exceed the sleep disturbance criteria.

Submission number(s)

Form letter 2, 41 and 175.

MIC response

The noise impacts of the Project were assessed at the nearest residential communities. Impacts from the Project site will decrease with increased distance from the site. As such, an assessment of the noise impacts at the closest receivers provides a conservative assessment of impacts further away. The noise mitigation measures have been identified to mitigate noise at the nearest residential receivers and as such would also mitigate noise further afield.

MIC is not able to comment on management and mitigation of noise emissions from the Port Botany site. The operations at Port Botany are different to the operations proposed at Moorebank as such, a direct comparison between the two projects is not possible. The EIS has presented reasonable and feasible noise mitigation measures to control noise emissions from the Project. Once the detailed design is developed, the appropriateness of the noise mitigation measures will be further developed during the Stage 2 SSD applications.

6.7.10 Noise impacts on the community

A number of submissions note that noise can have health impacts including annoyance, sleep disturbance, performance issue, cardiovascular health problems, hearing problems and mental health and general health impacts.

Submission number(s)

Form letter 2.

MIC response

MIC acknowledges the community is concerned about noise and the potential health impacts this may cause. The impact of noise on the community has been considered and discussed within Chapter 25 – *Human health risks and impacts* of the EIS and Technical Paper 15 (EIS Volume 9) – *Human Health Risk Assessment* (HHRA) and Technical Paper 16 (EIS Volume 9) – *Health Impact Assessment* (HIA) of the EIS.

The regulatory policy and guidelines applied in the Noise and Vibration Impact Assessment (Technical Paper 2 – *Noise and Vibration Impact Assessment* – EIS Volume 3) of the EIS have been developed with a primary objective of minimising the potential health impacts from unwanted noise. The guidelines are identified in section 12.3.1 of Chapter 12 – *Noise and vibration* of the EIS. As such, the Project would be designed and constructed to comply with the noise regulations and any off site noise from the Project is expected to minimise the potential for human health issues.

6.8 Biodiversity

Issues raised through the community submissions relating to biodiversity and the impacts of the Project on flora and fauna are discussed in the following sections:

6.8.1 Impacts on flora and fauna

A number of submissions were concerned about the impact of the Project on the flora and fauna within the Project site and surrounding area. In particular, concerns included:

- General concern that native flora and fauna would be impacted during construction and operation of the IMT. Submissions argue there are many wildlife species within Georges River and surroundings.
- Submissions argue the clearing of vegetation would have a significant adverse impact on vegetation including the riparian zone. Clearing would result in a significant loss of high value and intact vegetation and biodiversity.
- Some submissions argue the bridge piers would likely impact on vegetation connectivity, however, have not been considered in the connectively assessment.
- Some submissions argue there is no commitment to replace habitat lost from the removal of the existing detention basins and the EIS recommends exploring this at detailed design.
- Some submissions request confirmation that the offsets proposed would be provided – how will this be secured?
- Some submissions argue that flora and fauna to the west of the Georges River could be impacted through vibration, noise and disturbances.
- Some submissions state there is a lack of protection for Cumberland Plain Woodland.
- Some submissions argue that mitigation should be considered and agreed as part of this process.

In addition to the general comments provided above, specific comments provided by individual submissions included:

- Submission 150 argues the EIS lacks detail around the indirect impacts (i.e. impacts on the roosting and feeding habits of fauna species, impacts as a result of fine particles in the water).
- Submission 194 argues that no surveys have been undertaken for aquatic habitat and aquatic threatened species. Information relied on in the EIS is from previous studies. EIS assumes that aquatic habitat is in a degraded condition and native species are likely to be disturbance tolerant. Submission questions this assumption.

- Submission 194 notes that offsets proposed for the Alluvial Woodland (0.6 to 0.9:1) falls below the acceptable ratio of 2:1 to 2.6:1.

- Submission 194 notes that two plant species listed under the Commonwealth *Environment Protection and Biodiversity Act 1999* (EPBC Act) would be impacted: *Persoonia nutans*; and *Grevillia parviflora*. There are also other species with a moderate likelihood of occurrence at the site. The EIS states that translocation would be considered during detailed design. Submission argues this should be considered as part of the proposal concept.

- Submission 194 argues there are inconsistent statements in the EIS as section 3.5.2 states that there is low to moderate chance of threatened plant species occurring in the rail options; however the other sections note that the riparian zone contains threatened vegetation communities.

Submission number(s)

4, 9, form letter 1, 51, 87, 93, 142, 150, 153, 171, 178, 185, 194, 210, 212, 214, 228, 237 and 238.

MIC response

Chapter 13 – *Biodiversity* of the EIS provides a summary of the potential impacts on the existing biodiversity within and surrounding the Project, which is based on the findings of the Ecological Impact Assessment contained in Volume 4 of the EIS. The Project will result in vegetation clearing and habitation disturbance, the impacts of which are irreversible. Table 29.6 in Chapter 29 – *Environmental risk analysis* of the EIS identifies that without any mitigation the consequence of the impacts are major, however, the impacts are expected to reduce to 'moderate' if the mitigation measures as detailed in the EIS and updated in Table 9.1 of this report are put in place. This includes: retention of the conservation area along the Georges River; measures to minimise the likelihood of flora and fauna injury or mortality identified and implemented as part of the Construction Environmental Management Plan (CEMP); and development and implementation of a biodiversity offset strategy.

The indirect impacts of the Project on biodiversity and ecological communities are discussed in section 13.3.3 and 13.3.4 of Chapter 13 – *Biodiversity*. This includes consideration of indirect impacts to fauna within the Georges River and surrounds from noise, light spill, dust and fire, habitat fragmentation, turbidity and weeds. Mitigation measures as detailed in section 13.4 address both direct and indirect impacts.

In response to the comment regarding the aquatic surveys, the biodiversity of the lower reaches of the Georges River has been modified as a result of habitat degradation and changes in abiotic condition such as water flow volumes, velocities, increased nutrients, chemical pollution and invasive species. The degraded condition of this section of the Georges River has led to the presence of disturbance tolerant species which are less sensitive to alternations in environmental conditions. The Ecological Impact Assessment was prepared in accordance with NSW Office of Environment and Heritage (OEH) guidelines and the surveys were based on desktop analysis. This approach was endorsed by NSW DP&E and is compliant with the Project NSW SEARs. Detailed surveys of aquatic habitat would be undertaken in preparation of the Stage 2 SSD application(s).

Impacts associated with vegetation clearing have been assessed in accordance with state and federal legislation. The Project will be subject to stringent mitigation measures at all stages of development that will include riparian vegetation management and revegetation, bridge design based on NSW Fisheries fish passage requirements for waterway crossings, and appropriately designed stormwater management measures based on further ongoing water quality monitoring. Further extensive biodiversity

offsetting in accordance with state and federal guidelines will ensure the Project adequately achieves appropriate biodiversity outcomes.

The impacts of the proposed development on *Persoonia nutans* and *Grevillea parviflora subsp. parviflora* have been assessed within Technical Paper 3 – *Ecological Impact Assessment* (EIS Volume 3) against relevant state and federal legislation. The potential impacts on these species have been proposed to be offset as outlined in the updated Biodiversity Offset Strategy presented in Appendix C of this report. The strategy identifies that the proposed offsets are proportional to the impacts on these species in both size and scale. The overall impact assessment on these species does not rely on translocation to allow legislative compliance. In short, translocation of these species is not required under legislation or the offset strategy, but is proposed to provide a greater conservation outcome.

In relation to the comments made in Submission 194, Section 3.5.2 of Technical Paper 3 (EIS Volume 3) – *Ecological Impact Assessment* specifically relates to habitat potential for threatened species of plants. This section correctly states that riparian areas associated with the rail access options contain low potential habitat for threatened species of plants. This statement is consistent throughout the Ecological Impact Assessment and EIS documentation. The three rail access corridors identified threatened ecological communities as stated under section 3.3.2.1 of Technical Paper 3 – *Ecological Impact Assessment* (EIS Volume 3) and consistently stated throughout the EIS. Submission 194 appears to have confused the definitions of a threatened species of plants as opposed to threatened ecological (vegetation) communities.

Bridge piles are proposed to be outside the Georges River channel bed. Section 4.2.2.1 of Technical Paper 3 – *Ecological Impact Assessment* has considered vegetation connectivity and stated:

> 'The Project is not likely to significantly fragment or isolate retained vegetation along the Georges River Corridor. The proposed rail link across the Georges River would create a break in the canopy of the riparian vegetation approximately 50 m in width. However, the detailed design for the rail link and bridge would explore opportunities to create conditions suitable for vegetation to be established underneath the structure and habitat connectivity features (e.g. fauna furniture, rock piles) to provide cover for terrestrial animals and elevated movement pathways for arboreal species'.

The requirements for offsetting provision have been updated and are provided in the revised Biodiversity Offset Strategy in Appendix C of this report. The requirements will be enforced through conditions of consent. As stated in section 8.1.4 of Chapter 8 – *Additional technical investigations since EIS*, MIC is committed to undertaking all reasonable steps to obtain like for like biodiversity offsets, these include:

- checking the BioBanking public register and placing an expression of interest for credits wanted for at least six months;
- liaising with OEH (or Fisheries NSW office for aquatic biodiversity) and relevant local councils to obtain a list of potential sites that meet the requirements for offsetting;
- considering properties for sale in the required area; and
- providing evidence of why offset sites are not feasible.

If MIC can demonstrate that all reasonable steps listed above have been undertaken but if specific ecosystem or species credit requirements still cannot be found, MIC will discuss the shortfall with the consent authority. If agreed by the consent authority that '*all reasonable steps to secure a matching ecosystem credit have been taken by the proponent'*, then alternative offset arrangements will be provided. These may include:

- variation of the offset rules for matching ecosystem credits, by allowing ecosystem credits created for a Plant Community Type (PCT) from the same vegetation formation as the PCT to which the required ecosystem credit relates to; or

- a supplementary offset for the PCT where the PCT is associated with an Endangered Ecological Community (EEC) or a Critically Endangered Ecological Community (CEEC).

In summary, the proposed BOS consists of a dual offsets approach including offsets within and outside the Project site to achieve an improved conservation outcome, which combines the long-term protection and/or enhancement of existing habitat in moderate to good condition with the restoration, rehabilitation, and re-establishment of habitat in poor condition.

In response to the comment regarding the offset requirement for Alluvial Woodland, ongoing negotiations in respect to Alluvial Woodland credit offset shortfalls are continuing with OEH and this issue will be further explored once further details of the Project are known.

Section 13.3.3 and 13.3.4 of Chapter 13 – *Biodiversity* address potential noise and vibration impacts on native fauna, including flora and fauna located west of the Project site. Short-term noise impacts associated with the construction phase and ongoing operational noise have been assessed as not likely to have a long-term impact on wildlife populations.

In regards to the comment made in relation to Cumberland Plain Woodland; no Cumberland Plain Woodland has been recorded from the subject site.

As discussed in Chapter 7 – *Proposed amendments to the development* of this report, the concept layout of the site has changed. Section 7.9.1 presents the assessment of biodiversity impacts as a result of this change, specifically the changes include:

- a narrowing of the proposed southern access rail corridor in the vicinity of the Georges river from 60 m to 30 m;

- a modified rail alignment utilising more of the existing disturbed lands associated with cleared lands, existing rails corridor and waste facility;

- a reduction in the impact to the Riparian and Alluvial vegetation presented in the EIS southern access option by approximately 4 ha; and

- the revised site layout has increased the width of the onsite Moorebank conservation area, extending east of the 1% flood line and therefore increasing the future Conservation and riparian corridor.

The mitigation measures presented in Table 9.1 of this report are feasible and would mitigate any impact. An updated biodiversity offset strategy (BOS) has been prepared in accordance with the NSW *Biodiversity Offset Policy for Major Projects 2014* (Offset Policy 2014) and the NSW Framework for Biodiversity Assessment 2014 (FBA) and has been included in Appendix C of this report. The BOS has been updated based on discussions with OEH and it was agreed to outline the steps involved with offsetting vegetation through a combination of on-site and off-site strategies. The BOS would be further developed during detailed design.

In relation to the Alluvial Woodland offsets, due to the change site layouts and selection of the southern rail access option, the estimated Alluvial Woodland credits for offsetting has decreased from 180 to 70 due to temporarily excluding the generation of credits on the proposed 'low condition' Alluvial Woodland in areas identified for rehabilitation. These areas will provide ecosystem credits, however the quantification of the credits requires further field assessment.

In terms of the removal of habitat from detention basins, this would also be considered in further detail once the extent of removal is known.

6.8.2 Impacts on Georges River

A number of submissions were generally concerned that the Project would impact on Georges River through impacts on the water quality, disturbance to habitat, and disturbance to and removal of flora and fauna.

In addition to general concerns, the following particular comments were made:

- Submission 197 argues that development of a bridge will impact habitat on the Georges River through overshadowing, altering the flow regime, increasing turbidity, potentially exacerbating erosion and scour of the river bank.
- Submission 185 argues the Georges River is in excellent condition and questions the impact of the Project on the river's condition.

Submission number(s)

Form letter 1, 142, 150, 178, 210, 212, 214 and 238.

MIC response

Section 13.3.3 of Chapter 13 – *Biodiversity* of the EIS notes the construction of the proposed rail access and bridge structure may result in a change to the amount of sunlight reaching the substrate of the river which would affect the ability of any submerged aquatic plants to photosynthesise. This may result in changes to the structure and extent of aquatic vegetation at that location and associated habitat for aquatic animals. Given the relatively small area affected, and the existing degraded condition of the river, this possible reduction in vegetation and modification of habitat is unlikely to be significant.

As discussed in section 16.2 of Chapter 16 – *Hydrology, groundwater and water quality* of the EIS, impacts on the Georges River in terms of water quality have been identified as an important issue for the management of the Project. Further investigations would be undertaken as part of the Stage 2 SSD application and this would include detailed modelling and subsequent management of water quality to ensure there is no impact to the Georges River and associated flora and fauna habitats.

In respect to the condition or health of the Georges River, annual monitoring reported in the Georges River Health Report Card 2013-14 states the overall river health is of 'fair' condition. The Project will be subject to stringent mitigation measures at all stages of development that will include riparian vegetation management and revegetation, bridge design based on NSW Fisheries fish passage requirements for waterway crossings, and appropriately designed stormwater management measures based on further ongoing water quality monitoring.

A water quality monitoring program for the Georges River and Anzac Creek is currently undertaken for the Project, with key results published on the MIC website (http://www.micl.com.au/environment/monitoring-results/water-quality.aspx) every month. This program commenced in July 2013 and would be expected to continue throughout the construction and operation of the Project.

6.8.3 Pest species and biosecurity risks

A number of submissions were concerned with the potential release of pest species into the environment. Some submissions requested further information on the risks of release of pest species through transportation and storage of containers.

Submission number(s)

147, 189, 190, 213, 228 and 236.

MIC response

Section 13.3 and section 13.4 of Chapter 13 – *Biodiversity* provide a discussion on the potential impacts as a result of pest species and section 13.4 identifies mitigation measures. The measures proposed are consistent with best practice management for pest species and have been successfully implemented at other intermodal and Port sites. Biodiversity monitoring of the site and surroundings would be undertaken which will also assess the effectiveness of the management measures and further measures would be put in place if required.

Specifically, section 13.4.1of Chapter 13 – *Biodiversity* states:

> 'The Biosecurity division of the Commonwealth Department of Agriculture would be consulted regarding the detailed design of the Project and its operation, to ensure that all legal requirements and appropriate management measures related to biosecurity are implemented to minimise the risk of the introduction of pest species.'

6.9 Contamination and soils

The following comments were made relating to contamination and soils:

6.9.1 Contamination impacts

- Concern raised in regards to the potential for runoff of contaminated material/water from the IMT site and the impact on water courses.
- Some submissions argue the EIS does not adequately demonstrate that contamination as a result of IMT operations would not pose risks to the surrounding environment.
- One submission (237) raises concerns with regards to the southern rail access option and the development on the Glenfield landfill, which has a high potential for contamination, with potential to expose contaminated fill, soils, groundwater, leachate and landfill gases.

Submission number(s)

211, 228 and 237.

MIC response

A detailed Environmental Site Assessment (ESA) has been prepared for the Project and was included in the EIS (Technical Paper 5 – *Environmental Site Assessment,* EIS Volume 5a and 5b). The ESA was reviewed by an independent site auditor accredited by the EPA under the NSW *Contaminated Land Management Act* 1997 (CLM Act) to provide certainty that the assessment is adequate and feasible.

The assessment considered the existing sources of contamination at the site (soils and groundwater) and the potential for the release of contaminated material through site remediation and construction and operation of the IMT. Findings from the assessment determined that the Project site was suitable for an industrial/commercial land use. While MIC notes the concerns raised in relation to the migration of contaminants from the site, a number of mitigation measures are proposed which would avoid and minimise the potential for contamination to low residual risks. Mitigation measures include:

- remediation of contamination 'hotpots' as identified in the Remediation Action Plan (RAP);
- further investigation of the depth and occurrence of Acid Sulfate Soil (ASS) materials;
- implementation of contamination contingency measures as detailed in the CEMP;
- further contamination investigations for the selected rail access connection option, as part of the Stage 2 SSD approval; and
- measures for storage/treatment/transportation of any hazardous materials, contaminated soil, and asbestos etc.

In addition, MIC has recently completed further geotechnical/contaminated site investigations on the SME site, in accordance with recommendations of the RAP. Analysis of the results is currently being undertaken and will be provided as part of the Stage 2 SSD applications for the Project.

In terms of the issues raised on the southern rail access option, MIC recognises that further investigation is required including targeted intrusive investigation to gather data on soils and groundwater quality so that the suitability of development of the rail access from a contamination perspective can be confirmed and the management and/or remediation options can be identified. This investigation could not be undertaken during preparation of the EIS (or this report) due to site access restrictions imposed by the landowner.

Spills and contamination, including groundwater impacts, are covered in section16.3.4 and in Chapter 15 – *Contamination and soils*. Section 16.3.4 of Chapter 16 – *Hydrology, groundwater and water quality* identifies a number of potential impacts including infiltration of contaminated surface runoff caused by accidental spills and sedimentation. The potential impacts would be considered during the development of the detailed design and, in most cases, mitigated at the detailed design phase.

6.10 Hydrology, groundwater and water quality

Comments made in relation to hydrology, groundwater and water quality are identified below:

6.10.1 Flooding impacts

- Concern the additional impervious surfaces proposed as part of the IMT development, which have the potential to change stormwater flows and exacerbate flooding impacts to surrounding areas. Submission 194 notes that the majority of the site is located in a significant flood risk area.
- Concern the stormwater system has not been adequately designed/sized to cater for heavy rainfall events. In particular, submission 197 notes the development has been catered to accommodate up to the 10% annual exceedance probably (AEP) event and that flows above this would surcharge the network.
- Concern the flooding impacts from the Georges River (during heavy rainfall events) on the IMT itself have not been adequately considered.
- Concern about potential flooding impacts on Cambridge Avenue and the issues this could cause if the bridge was closed.
- Submission 194 states the southern rail access option has the potential to exacerbate the flooding of the Glenfield landfill.

Submission number(s)

3, 167, 194 and 208.

MIC response

As shown on Figure 16.2 in Chapter 16 – *Hydrology, groundwater and water quality*, the IMT operations on the site will be located out of the high and medium flood risk zones of the Georges River catchment. An area of high flood risk is identified along the lower terraces of the Georges River. This area exceeds the 1% AEP for a significant flood event. As such, no development is proposed in this area and a conservation zone will be developed. Detailed investigation to address any pre-existing flooding issues beyond the site boundary was not required as part of the SEARs for the Stage 1 SSD application. If required these studies would be considered in further detail as part of the Stage 2 SSD application, once the site layout has been confirmed. Further modelling may also be completed to confirm issues such as flood vulnerability of roads adjacent to the site (including Cambridge Avenue).

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

The modelling of the Georges River was based on cross sections from the MIKE-11 model built for the 1999 Flood study. No additional hydrographic survey was collected for this stage of assessment; however, a two-dimensional hydraulic model would be completed in preparation of the Stage 2 SSD application to provide a more thorough understanding of flood behaviour. At Cambridge Avenue, the MIKE-11 model included twin culverts. These culverts were also included in the modelling for the Stage 1 SSD assessment. At this time, measures to reduce afflux (afflux refers to the increase in flood

level as a result of a structure (such as a bridge) in a river or waterway) upstream of the Project area (including at Cambridge Avenue) will be further investigated as necessary. This level of assessment is considered appropriate for a Stage 1 SSD application and meets the NSW SEARs and Commonwealth EIS guidelines.

Cambridge Avenue is already prone to flooding and the road is closed with permanent gates when it is overtopped. The modelling undertaken as part of the Surface Water Assessment (refer Technical Paper 6 – *Surface Water Assessment,* Volume 6 of the EIS) indicated there would be an increase in flood levels at Cambridge Avenue for the 1% AEP event of up to 0.01 m for the southern rail access option. While the bridge is low-lying and currently flood prone, the predicted change in afflux as a result of the Project would not change the flood hazard and subsequent management of a flood event at Cambridge Avenue. Further assessment for the Stage 2 SSD application would address the predicted increase in flood levels and develop appropriate mitigation measures to minimise the increase and assist with addressing the current flood risk at Cambridge Avenue.

The Glenfield landfill site is currently located within a high risk flood risk area. Development of that site would take into account any existing flood risk management plan prepared by the current operators. Any afflux caused by the Project within the landfill site is unlikely to change the flooding characteristics of the landfill site as there would be no change to the flood risk for the site. Any required mitigation measures to address potential afflux in the landfill site caused by the Project would be assessed further at Stage 2 SSD application.

6.10.2 Impacts on Georges River

A number of submissions raised general concerns in relation to the impacts on water quality of the Georges River due to construction and operation of the IMT.

In addition, the following specific comments were made in submission 194:

- The clearing of riparian vegetation would increase sediment runoff. The construction of bridge piers would increase turbidity and sediments entering the waterway.
- The MUSIC modelling presented in the EIS shows an increase in annual load of Total Nitrogen into the Georges River. This is a concern given the potential for algal blooms and the impacts on flora and fauna.

Submission number(s)

4, 46, 51, 93, 109, 125, 153, 166, 194, 208, 228 and 239.

MIC response

As discussed in section 16.2 of Chapter 16 – *Hydrology, groundwater and water quality* of the EIS, water quality has been identified as an important issue for the management of the Project site. Further investigations would be undertaken as part of the Stage 2 SSD application and this would include detailed modelling and subsequent management of stormwater quality to ensure there is no impact to the Georges River and Anzac Creek waterways.

An area of high flood risk is identified along the lower terraces of the Georges River where there is significant riparian vegetation. This area exceeds the 1% AEP for a significant flood event. As such, no development is proposed in this area and the area will be retained as a 'conservation area'. No vegetation clearing in this area is proposed.

Construction of bridge piers would have a short term impact on turbidity and sediments of Georges River. Best practice sediment and erosion controls would be implemented to minimise increases in turbidity and sediment movement during construction both in the river and across the Project site.

MUSIC modelling does indicate an increase in the generation of nutrient loads, and MIC recognises this has the potential to generate algal blooms. For the Stage 1 SSD application, preliminary modelling was undertaken to provide an indication of the likely stormwater quality management measures. Further modelling will be completed during detailed design as part of the Stage 2 SSD application, which will consider the sensitivity of Georges River based on the ongoing water quality monitoring program and will confirm the appropriate stormwater management measures to ensure an increase in nitrogen loads in Georges River is minimised.

6.11 Local and regional air quality

A number of submissions made general and specific comments relating to the air quality impacts of the Project. These are as follows:

6.11.1 Air quality impacts – general

General concern with regards to impacts on air quality as a result of the Project. Issues include:

- air pollution from IMT operations;
- decline in air quality;
- health impacts on the community; and
- location of the Project site is within a basin which allows pollution to lie.

In addition, submission 237 discusses a comment made in the SIMTA EIS in relation to air quality impacts, stating the SIMTA EIS notes that health impacts may occur from IMT operations if a person is outside for longer than 90 minutes.

Submission number(s)

4, 5, 6, 9, 25, 36, 45, 56, 59, 65, 87, 96, 98, 109, 128, form letter 2, 139, 153, 185, 214, 233 and 237.

MIC response

The Local Air Quality Impact Assessment (LAQIA) (Technical Paper 7 – *Local air quality impact assessment*, EIS Volume 6) includes the assessment of the following air pollutants: particulate matter (including total suspended particulate (TSP), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$), nitrogen dioxide (NO_2), carbon monoxide (CO), sulphur dioxide (SO_2), benzene, toluene, xylenes, 1, 3-butadine, formaldehyde, acetaldehyde and polycyclic aromatic hydrocarbons (PAHs).

Emissions of these pollutants were quantified using the accepted published emission factors from a number of sources, including the NSW EPA, US EPA and National Pollution Inventory (NPI). A range of conservative assumptions were made, including the selection of worst case emission standard engine classes for locomotives, to provide an upper level estimation of emissions from the Project.

Emissions were quantified for various stages of the Project, including construction only, periods where construction and partial operation would occur as well as the Full build operational facility. Additionally, the cumulative emissions from operations on the Moorebank IMT and the SIMTA IMT Projects were also quantified and assessed. The southern, central and northern rail access options and associated site layouts were all assessed. In total, 15 emissions scenarios were assessed to quantify impacts in the surrounding environment. Therefore, it is considered that the air pollution from IMT operations has been adequately assessed as part of the EIS. The LAQIA for the EIS was technically peer reviewed by an independent expert who agreed with the approach, methodology and findings of the LAQIA. Letters from peer reviewers endorsing the technical papers are provided in Appendix G to the EIS (EIS Volume 2).

In order to predict air quality impacts arising from quantified air pollution emissions, atmospheric dispersion modelling was conducted using the US EPA-developed AERMOD dispersion model. Atmospheric dispersion modelling was undertaken in strict accordance with the NSW EPA Approved Methods for the Modelling and Assessment of Air Pollutants in NSW.

Model predictions were made over a 7 km by 7 km area centred on the Project site, with a grid resolution of 200 m. Ground-level concentrations arising from emissions released at the Project site were predicted across this domain to assess the potential impact to health and well-being. Additionally, 38 individual receptor locations, representative of the greater community, were included for more detailed model result analysis.

Local three-dimensional topographical and hourly-varying meteorological observation datasets were incorporated into the assessment to account for the local terrain effects on the dispersion of air pollution. The inclusion of these datasets in the dispersion modelling ensures that local conditions, including the referenced basin effect of the surrounding topography adversely influencing pollution dispersion, are accounted for in the model predictions.

The results of the dispersion modelling highlight that adverse impacts to the surrounding environment are not predicted for any modelling scenario or pollutant. The air quality impact associated with the emissions generated by the construction and operational phases of the Project is therefore predicted to be low.

The impacts on the health of the local community have been addressed in detail in Chapter 25 – *Human health risks and impacts* and Technical Paper 15 – *Human health risk assessment* (HHRA) and Technical Paper 16 – *Health impact assessment* (HIA) in Volume 9 of the EIS. More specifically, the HHRA has undertaken a quantitative assessment of the impacts of the Project on the health of the community due to changes in air quality. The quantification of health impacts included the calculation of the increase in the number of cases for the relevant health effects evaluated (refer to sections 4.4 and 4.5 of the HHRA in Volume 9 of the EIS). The change in the number of cases calculated was less than 0.2 per year which cannot be measured in any health data/statistics for the area.

In response to the comment about the impacts on a person outside for longer than 90 minutes, the Preliminary screening health risk assessment and literature review (Toxicology Consultants 2012) (as part of the Concept Plan application for the SIMTA Project) makes reference to 90 minutes (1.5 hours) in relation to whether or not a person is affected by a pollutant. Specifically, the report states (page 28):

> *Behaviour of the person:*
>
> *Whether or not a person is affected by a pollutant in air from an industrial source requires them to be present at the location at the same time the high concentration occurs. However people do not spend all their time in one spot, for example an average adult only spends 1.5 hours outdoors per day (US EPA 1997). Given that people also move around during the time they spend outdoors, the chance*

of being present when a very high concentration of pollutant from a point industrial source occurs only a few times per year is therefore quite low.

In this context the 1.5 hours (90 minutes) is given as an example of time spent outdoors and does not relate to the assessment of impacts. Nevertheless, it is noted that no adverse air quality impacts are predicted at the surrounding sensitive receptors, regardless of whether the averaging period is 1-hour, 24-hour or annual average.

6.11.2 Existing ambient air quality

The following concerns were raised in relation to ambient air quality:

- Air quality is already an issue in the Liverpool area and the Project would exacerbate the impacts.
- Submission 81 argues that existing levels are exceeding World Health Organisation (WHO) recommendations.

Submission number(s)

9, 41, 81, 105, 111, form letter 2, 142, 150 and 237.

MIC response

Existing air quality was taken into account in the LAQIA (Technical Paper 7 – *Local air quality impact assessment* in Volume 6 of the EIS) to assess the cumulative impacts with emissions from the Project and background levels. The baseline air quality characterisation study focused on data recorded by onsite monitoring equipment and the NSW OEH Liverpool air quality monitoring station monitoring station, located at Rose Street, Liverpool. Further analysis was conducted for data recorded at OEH stations at Chullora (13 km to the east north-east of Liverpool OEH), Earlwood (21 km east north-east of Liverpool OEH), Bringelly (13 km west of Liverpool OEH) and Campbelltown (18 km south-southwest of Liverpool OEH). The following points were noted from the analysis (refer to section 6 in Technical Paper 7 – *Local air quality impact assessment*):

- On average, the 2013 calendar year contained higher PM_{10} and $PM_{2.5}$ concentrations across the NSW OEH monitoring stations. 2013 was therefore selected as a conservative representation of baseline air quality.
- Comparison of same-day PM_{10} concentrations at the OEH Liverpool and onsite monitoring stations throughout 2013 showed strong agreement, despite the separation distance of 3 km between the two sites. The Liverpool station data was adopted as the most appropriate measure of baseline data.
- Annual average PM_{10} concentrations are below the EPA criterion (30 µg/m³), with infrequent exceedances of the 24-hour reporting standard primarily coinciding with regional events (in particular October 2013 bush fires).
- The influence of the October 2013 bushfires in Greater Sydney contributed to higher than normal $PM_{2.5}$ concentrations (both annual and 24-hour average) during 2013. Analysis of same-day concentrations recorded at Liverpool, Chullora and Earlwood (two closest OEH $PM_{2.5}$ stations) show strong agreement through summer, early autumn and spring. Concentrations at Liverpool are however higher between late autumn and winter. Analysis of concentrations by month and time of day highlights that concentrations are highest during May through August and between the hours of

7.00 pm and 2.00 am. This analysis is strongly indicative of impacts from residential wood-fire heaters. Figure 1 highlights the trend in monthly $PM_{2.5}$ concentrations at OEH Liverpool. A mid-morning spike is notable for October 2013; however, this is attributable to the October 2013 bushfires.

- TSP, NO_2, SO_2 and CO concentrations during 2013 are below EPA air quality impact assessment criteria.

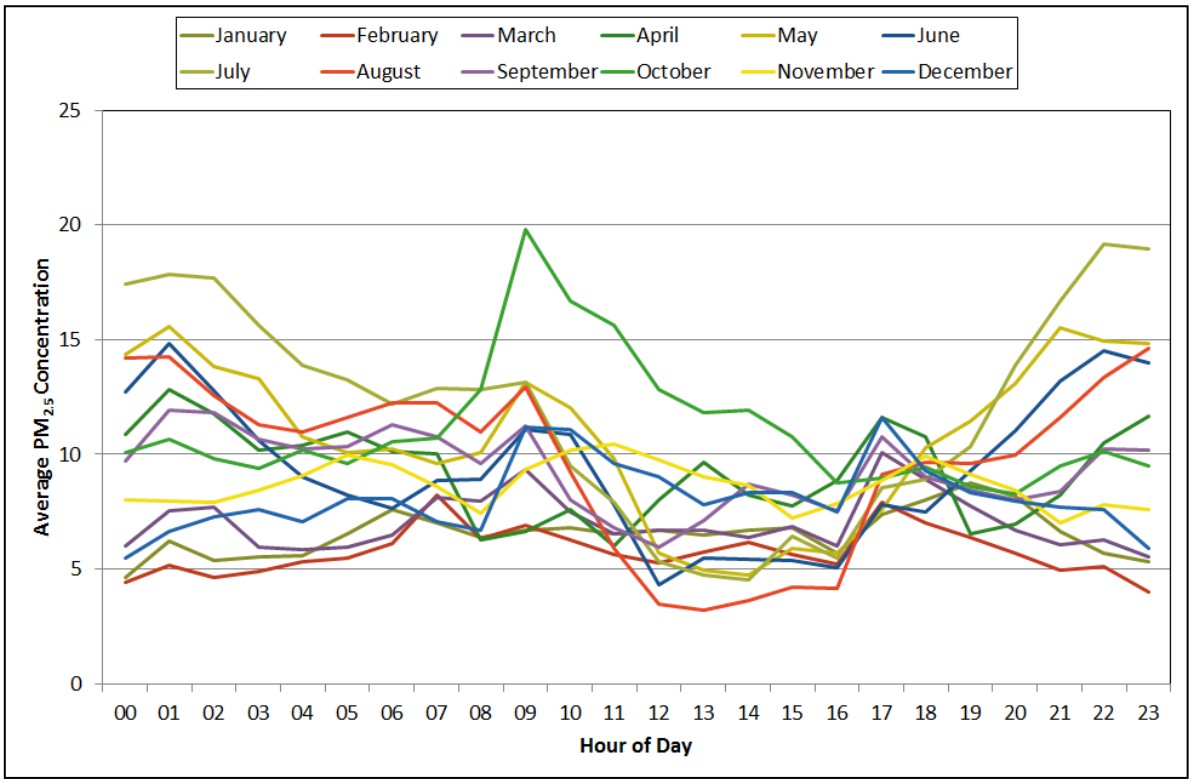

Figure 6.1 Monthly average PM2.5 concentration by hour of day – OEH Liverpool – 2013

The results show the predicted impacts in the surrounding environment from the Project (refer to section 10 of the LAQIA in Volume 6 of the EIS) are very low relative to the baseline air quality measured by local monitoring stations. As such, while it is recognised in some instances, the baseline concentrations for air quality are higher than normal (predominately due to bushfire activity), the additional impact as a result of the Project are low.

The WHO guidelines for PM_{10} and $PM_{2.5}$ are equivalent to, or less stringent than, NSW EPA assessment criteria. The exceedances of the NSW EPA assessment criteria during 2013 were directly attributable to extensive bushfire activities in the Greater Sydney region. No other WHO air quality guidelines are exceeded based on local air quality monitoring data.

6.11.3 Diesel fumes/emissions

A number of submissions raised issues/made comments about diesel fumes. These are as follows:

- Concerned with the impact of diesel fumes generated from locomotives, heavy vehicles and other equipment and associated health impacts.

- Diesel fumes and particular matter are carcinogenic and can also cause serious illness.
- Diesel locomotives and switch engines are significant contributors to air pollution.

Submission number(s)

Form letter 1, 40, 60, 98,105, form letter 2, 142, 147, 154,161, 185, 189, 190, 201, 208, 210, 211, 212, 216 and 238.

MIC response

The general concern regarding diesel combustion emissions is valid and underpins the reason for the assessment of such emissions from the Project. Emissions from Project operations, including locomotive and truck movements, were quantified using the accepted published emission factors from a number of sources, including the NSW EPA, US EPA and National Pollution Inventory (NPI). A range of conservative assumptions were made, including the selection of worst case emission standard engine classes for locomotives, to provide an upper level estimation of emissions from the Project. The results of the air quality modelling, which were based on the emission calculations, indicate that the potential for adverse impact in the surrounding environment from air pollutants generated by the Project would be very low.

The HHRA has evaluated health impacts associated with exposure to particulates from construction related dust and combustion sources (including diesel trucks and locomotives), as well as other emissions to air, specifically polycyclic PAHs from diesel engines and a range of air pollutants, including volatile organic compounds, derived from all combustion sources. As noted in section 4.2.2 of the HHRA (EIS Volume 6), the WHO cancer unit risk value (mean value of 3.4 x 10-5 per µg/m^3) has been used to evaluate potential excess lifetime risks associated with incremental impacts from diesel particulate matter exposures. The HHRA notes that while there is no guidance on what level of risk is considered to be acceptable in the community, a level of 10–4 for increased risk (one chance in 10,000) has generally been adopted by health authorities as a point where risk is considered to be unacceptable (i.e. consistent with established practice and regulation). An increased risk level of between negligible (10–6 (one chance in a million)) and unacceptable (10–4) is therefore considered tolerable or even acceptable. Findings from the HHRA indicate the risks associated with the exposure to diesel particulate matter are negligible for some health indictors with the remainder within the range of tolerable risks (refer to section 4.5.3 of the HHRA).

6.11.4 Air quality impacts on human health

The following comments were made about potential air quality impacts on human health:

- Concern that the construction and operation of the IMT would have adverse impacts on the health of the community.
- Concern with impacts from expose to pollutants and particulate matter.

Submission number(s)

Form letter 1, 16, 40, 60, 91, form letter 2, 147, 210 and 212.

MIC response

Air pollution emissions and associated impacts from the construction and operational phases of the Project have been addressed in the LAQIA (EIS Volume 6). Predicted impacts from the construction and operational phases are below applicable NSW EPA assessment criteria and have been developed to protect human health and well-being, at all surrounding receptor locations. Impacts from the construction and operation phases are predicted to be low.

The impacts of exposure to air pollutants on the health of the local community, during both construction and operational phases of the Project have been addressed in detail in accordance with Australian guidance in the HHRA. The HHRA has evaluated health impacts associated with exposure to particulates from construction related dust and combustion sources (including diesel trucks and locomotives). The HHRA has also evaluated other emissions to air, specifically PAHs from diesel engines and a range of air pollutants, including volatile organic compounds, derived from all combustion sources. The HHRA concluded the Project would not result in any significant impact on the existing health of the population.

6.11.5 Dust and odour during construction

Some submissions commented on the impacts from dust and odour during construction of the Project.

Submission number(s)

Form letter 1, form letter 2 and 210.

MIC response

Air pollution emissions and associated impacts from the construction phases have been addressed in the LAQIA. Predicted impacts from the construction phase are below applicable NSW EPA assessment criteria at all surrounding receptor locations. Impacts from dust generation during the construction phase are therefore predicted to be low.

On the basis of onsite soil sampling results, potential odorous emissions from the construction phase are likely to minimal (i.e. given the soil characteristics, odour is not likely to be a significant issue) and would be localised/contained within the Project site. Soil management measures as described in section 15.5 of Chapter 15 – *Contamination and soils* (including covering of onsite stockpiles) would avoid and minimise any potential odour emissions.

6.11.6 Adequacy of air assessment

The following comments were made on the adequacy of the air impact assessment:

- Some submissions suggested that an additional impartial report be done by another agency.
- Submission 185 notes the monitoring station is located on Reilly Street. Suggests that a more accurate measurement would be located on Lakewood Crescent.
- Submission 185 suggests that the EIS predictions are underestimates and favoured toward the proponent.

- Submission 25 argues that the predicted increase for $PM_{2.5}$ and PM_{10} appears to be low considering the number of additional train movements, trucks movements, operations and equipment.

Submission number(s)

25, 189, 190, 211 and 213.

MIC response

Local existing air quality was analysed through the collation of data recorded by onsite monitoring equipment and NSW OEH air quality monitoring stations in the surrounding area, with particular reference to the Liverpool monitoring station at Rose Street, Liverpool. A comparison between concurrent measurements at the onsite station and OEH Liverpool monitoring station highlighted a strong correlation between the two sites. This analysis highlights that ambient particulate matter concentrations do not vary substantially across the local area. Therefore, the data collected from the monitoring station on Reilly Street is considered appropriate for use in the air quality impact assessment.

Emission calculations and atmospheric dispersion modelling has been conducted in accordance with the NSW EPA *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*. The emissions calculations modelling conducted has accounted for a high level of conservatism in key assumptions to provide an upper level prediction of potential air quality impacts in the surrounding environment. The air quality technical assessment has therefore been adequately assessed and not underestimated. In addition, LAQIA (Technical Paper 7 – *Local air quality impact assessment,* EIS Volume 6) was prepared by technical experts who are specialists in their field and peer reviewed by an independent expert who agreed with the approach, methodology and findings of the LAQIA. Letters from the independent peer reviewers endorsing the technical papers are provided in Appendix G to the EIS. In addition, the EIS has been prepared in accordance with the NSW SEARs and the Commonwealth EIS guidelines and has also been reviewed by OEH and EPA (see Table 5.1 in Section 5.5 for the issues raised in the agency submissions and MICs response in Appendix B (Table 2)). It is not considered necessary to conduct another assessment by an independent agency.

Emissions of air pollutants from the Project, including PM_{10} and $PM_{2.5}$, were quantified using the accepted published emission factors from a number of sources, including the NSW EPA, US EPA and National Pollution Inventory. A range of conservative assumptions were made, including the selection of worst case emission standard engine classes for locomotives, to provide an upper level estimation of emissions from the Project.

The emission calculations account for all proposed construction activities, locomotive and truck movements and warehousing operations likely to occur at each key phases of the Project's development (section 8 of LAQIA). These emission calculations were inputted to an approved atmospheric dispersion model (section 9 of LAQIA), with the resultant ground level concentrations predictions analysed for comparison against NSW EPA assessment criterion (section 10 of LAQIA). The predicted concentrations attributable to the Project, accounting for all proposed operational activities, were shown to be significantly lower than existing air quality and the NSW EPA assessment criterion.

6.11.7 Adequacy and feasibility of mitigation measures

The following comments were made about the adequacy and feasibility of the mitigation measures proposed in the EIS in relation to air quality:

- Submission 189 and 190 argue that pollution from vehicles access and egressing the site would not be controlled by the IMT operator and this would be the choice of the individual operators. The submissions also note there is no plan to retrofit vehicles and no railway operator with plans to acquire the types of locomotives described as mitigation measures in the EIS.

- Submission 237 seeks clarification on what would be done if exceedances are detected during the air quality monitoring. Would the IMT be closed down until it returns to normal? How quickly would this happen?

- Submission 211 argues that no assurances are made to ensure emissions are within 'safe' levels for residents.

Submission number(s)

189, 190, 211, 213 and 237.

MIC response

Vehicles accessing and egressing the site for IMEX operations will be controlled by the IMT operator, however it is correct to note that vehicles accessing the warehousing facilities will not be controlled. The air quality monitoring requirements will be set for the whole IMT operations (including the warehousing facilities) and the IMT operator will be responsible for undertaking the monitoring and reporting the results against the required guidelines. The implementation of best practice air quality emission management practices for the operational facility would be investigated during the detailed design phase, assuming approval of the Stage 1 SSD. The identified management practices listed in section 17.4 of Chapter 17 – *Local air quality,* section 11 of the LAQIA and Table 9.1 of this report would form the basis for the development of air quality mitigation measures.

Monitoring of ambient air quality would continue through to the operational phases of the Project. Online reporting of monitoring results is currently presented on the MIC website (http://www.micl.com.au/environment/monitoring-results.aspx) which will continue and ambient air quality monitoring data would be used to track the environmental performance of the Project. An Air Quality Management Plan (AQMP) would be developed for the Project, highlighting air quality management practices and procedures.

If an exceedance is detected, it is normal practice to report the exceedance to the relevant regulatory authority. The IMT operator (who will be responsible for the monitoring and reporting of air quality data) will need to investigate the exceedance and if the exceedance is attributed to site practices, modify the operations to ensure compliance is maintained. The IMT would only be closed down, if the exceedance is significant to warrant this. Based on our understanding of the baseline and predicted air quality impacts, it is unlikely that the IMT would need to be closed down. If it did, operations could restart immediately once modification to operations has occurred to address the air quality exceedances.

As part of the Project approvals (Stage 1 and Stage 2 SSD approvals), the Project would be required to comply with ambient air quality criteria on an ongoing basis. The AQMP and ambient air quality monitoring would be key tools in demonstrating this compliance to ensure 'safe' levels for the nearby residents.

6.12 Greenhouse gas

6.12.1 Carbon footprint of proposal

Two submissions raised concerns about the carbon footprint of the Project. Submission 185 references a study by the National Aeronautics and Space Administration (NASA) in the US, which identified the transportation sector as the greatest contributor to atmospheric warming.

Submission number(s)

4 and 185.

MIC response

Chapter 19 – *Greenhouse gas assessment* provides a description of the potential greenhouse gas (GHG) emissions and impacts associated with the construction and operation of the IMT. The findings of the assessment determined that while the Project would result in the emission of GHG during both the construction and operational phases, the annual GHG emissions would represent only a very small proportion of national (approximately 0.02%) and NSW (approximately 0.09%) emissions. In addition, the Project as a whole would result in reductions in freight transport emissions, as a result of the mode shift from trucks to trains for IMEX freight travelling between Port Botany and the Project site.

6.13 Aboriginal and European heritage

6.13.1 Impacts on heritage sites

Submissions raised concerns about the impacts on Aboriginal and European heritage sites as detailed below:

- Concern with the impact on heritage sites of military and indigenous significance.
- Concern that removal of heritage features on the site would break ties for the community.
- Concern that the sandstone structures of the Royal Australian Engineers Chapel and Museum would be demolished, unless their significance is recognised.
- A view that the shrines within the current Defence boundaries (shrines for Vietnam and Korean and a shrine for bomb detection dogs) should be protected.
- Concern with the impact on other surrounding sites of historical significance including the Glenfield Farm Group.

Submission number(s)

Form letter 1, 93, 110, form letter 2, 142, 147, 171, 185, 189, 190, 210, 211, 212, 213 and 237.

MIC response

The Aboriginal and European heritage impacts as a result of the Project are identified and assessed in Chapter 20 – *Aboriginal heritage* and Chapter 21 – *European heritage* of the EIS. In summary, as identified in section 20.6 of Chapter 20 – *Aboriginal heritage*, the main construction footprint is located in areas considered to be of low aboriginal heritage significance. While the majority of identified Aboriginal recordings within the Project footprint would be directly affected, the areas of highest sensitivity (adjacent to the Georges River) would be largely conserved. The Project would affect less than a quarter of the Tertiary terraces within the Project site that are identified to be archaeologically sensitive. Appropriate management and mitigation measures are proposed including avoidance (within the conservation zone), salvage of significant items, and consultation with registered Aboriginal parties.

In relation to European heritage impacts, most of the sensitive heritage items would be relocated from the current SME site prior to construction of the Project, as part of the Moorebank Units Relocation (MUR) Project. Further details of the MUR Project are available at http://www.defence.gov.au/id/moorebank/.

While many of the intangible values (e.g. memorials, Chapel and Museum) would be transferred to the new SME site at Holsworthy, there would be residual values associated with the broader landscape setting, as well as more tangible elements of the landscape that would be affected as part of the Project. However, as identified in Table 29.6 of Chapter 29 – *Environmental Risk Analysis*, the impacts on European heritage would be reduced to low to moderate provided mitigation measures such as archiving, additional investigations and relocation where appropriate, are implemented.

Section 21.2 of Chapter 21 – *European heritage* recognises that the Royal Australian Engineers (RAE) Museum and the Memorial Chapel are significant heritage features due to their association with the history of the SME site. The RAE Chapel has been identified for partial relocation as part of the MUR Project, which includes the sandstone in the walls of the Chapel and plaques (as shown in Table 21.3 in Chapter 21 – *European heritage*).

As identified in Table 21.7 of Chapter 21 – *European heritage*, the RAE Museum sandstone wall will also be partially relocated as part of the MUR Project. As the MUR Project is separate to the Moorebank IMT project, the impacts are outside of the scope and have not been considered in the Moorebank IMT EIS.

Table 21.3 of Chapter 21 – *European heritage*, identifies a number of items to be relocated as part of the MUR Project. This includes the RAE Memorial and fountain, services dogs' memorial, the Vietnam Veterans Memorial and associated plaques and the Burma-Thai cross. In addition, the commemorative gardens/heritage park, and associated memorials and plaques will also be relocated as part of the MUR Project.

The Dog Cemetery (MH1) has been identified as a significant heritage item which meets the criteria for inclusion on the Commonwealth Heritage List. As identified in section 21.5.1 of Chapter 21 – *European heritage* the adaptive reuse or relocation of these items to another location is the next preferred option, and would be explored further during Stage 2 SSD detailed design.

Section 21.4.3 identifies that the southern rail access option would have an indirect impact on the Glenfield farm, however no direct impact is anticipated. The southern rail option connection would have a visual impact on the site, during construction of the new rail access and as a result of trains approaching the site. These views have already been considerably affected by the Glenfield Landfill site and the construction of the SSFL.

6.13.2 Adequacy of consultation with Registered Aboriginal Parties

One submission requests confirmation if consultation has been undertaken with the local Gandangara Aboriginal Land Council.

Submission number(s)

237.

MIC response

Section 3.3 of Chapter 3 – *Consultation* of this report, notes that consultation with the Gandangara Local Aboriginal Land Council has been undertaken through letters, emails and telephone calls, as well as participation in field survey and subsurface testing programs. Appendix 5 of Technical Paper 10 – *Aboriginal Heritage Assessment* (EIS Volume 7) contains a record of the consultation that has occurred with Aboriginal representatives.

Further subsurface testing was undertaken in August 2014 and Registered Aboriginal Parties were on site including a reprehensive from Gandangara Local Aboriginal Land Council. Following this, further consultation was undertaken with the Registered Aboriginal Parties during the scared tree assessment sampling. Concerns raised were acknowledged and addressed where possible. The results of the additional subsurface testing and scar tree assessment are found in Appendix J and I respectively of this report.

6.14 Visual and urban design

6.14.1 Light impacts

Submissions raised issues relating to lighting impacts of the IMT. These are discussed below:

- Concern that light spill impacts would have detrimental impacts on the community.
- Concerned about impacts on the behaviour of nocturnal animals.
- Concerned about the impacts from freight trains including headlights and rail signalling lights.
- Concerned that mitigation measures have not been designed as part of the EIS, but deferred to a later date.
- Request for information on the mitigation strategies for light spill impacts, including how these would be enforced.

Submission number(s)

65, form letter 2, 147, 175, 185, 186, 189, 190, 211, 213, 214, 216, 228, 237 and 238.

MIC response

Section 22.5 of Chapter 22 – *Visual and urban design* of the EIS identifies and assesses the light spill impacts. For some residential locations that overlook the Project site, there would be a noticeable change in the brightness of the area on clear nights. In foggy conditions, the brightness may be less; however, there would be a local sky glow effect. Transitory lighting from train headlights on trains leaving the Project site at night would potentially affect some residential locations with greater impacts associated with the northern and central rail access options, as these options are no longer being considered, the impacts are reduced. As outlined in section 22.7.2 of Chapter 22 – *Visual and urban design* of the EIS and Table 9.1 of this report, light spill mitigation measures would be considered during the detailed design and would include measures such as:

- designing lighting to minimise impacts;
- the use of shields on luminaire lighting to minimise brightness effects;
- selecting asymmetric light distribution-type floodlights as part of the proposed lighting design,
- the use of low-reflection pavement surfaces to reduce brightness; and
- minimising the quantity of light and energy consumption in parts of the IMT site that are not active.

For the northern and central rail access options, mitigation measures such as avoiding the use of high beam lights for trains leaving the IMT have been considered; however, as the southern rail access option has been selected by MIC as the preferred rail access option, the impacts of train headlights leaving the site to the residents of Casula have been eliminated.

Impacts on nocturnal animals, in section 13.3.4 of Chapter 13 – *Biodiversity* of the EIS notes that lighting impacts during operation may affect the foraging behaviour, reproduction and communication, as well as causing orientation towards or disorientation from artificial light sources of some faunal species. The assessment concludes the proposed vegetation restoration within the riparian corridor and landscape planting in the interior of the Project site could mitigate some light pollution through the screening effects of increased vegetation, combined with the other measures proposed as part of the light spill mitigations.

The design and layout of the lighting required for the Project is yet to be confirmed. As such, it is not appropriate for the mitigation measures to be designed at this stage. Rather, these would be assessed and confirmed during the Stage 2 SSD approval for the Project.

In terms of enforcement, the EIS commits to the monitoring of light spill during the operation of the Project to assess the impacts and modify, including introducing new measures (if required).

6.14.2 Visual impact of the IMT

The following concerns about visual impacts were raised:

- Concern about the visual impacts of the IMT.
- Request for information on the mitigation strategies for residential properties on Casula Links Estate, including how these mitigation measures would be enforced.
- Concern the viewpoints selected for the Casula residential area are not reflective of the topography as they are located too low and close to the River. Suggests using locations such as Marsh Parade and Dunmore Crescent.

- Concern there is currently no visual mitigation of the SSFL for residents.

Submission number(s)

45, 99, 117 and 186.

MIC response

The visual impacts of have been assessed with findings provided in Chapter 22 – *Visual and urban design* of the EIS. Impacts were assessed at a number of different locations/receptors surrounding the proposed IMT site, including parks and community facilities to the west and surrounding residential suburbs and public road reserves. During construction moderate to high impacts were predicted for many viewpoints due to the impact of tall construction equipment such as cranes that would be visible above the tree line during construction of both the IMEX and interstate IMT facilities. These impacts would be temporary. The EIS notes that at Full Build, the most significant visual impact would be on the public park and residential properties on the elevated areas to the west of the Georges River and residential properties backing onto the SSFL. These impacts range from negligible to moderate/high for different locations.

MIC has proposed a number of mitigation measures (presented in Table 9.1 of this report) that would be considered during detailed design phase and further information on these measures would be provided as part of the Stage 2 SSD application(s). These include:

- incorporation of urban design principles into Project design, including height controls that limit building heights to 21 m;
- visual mitigation measures such as landscaping, screening/ buffering of less attractive activities/infrastructure;
- localised earth mounding and native canopy tree planting in internal landscaped areas to mitigate visual impacts from residential areas; and
- designing lighting to minimise light spill (as discussed in section 6.14.1 of this report).

In terms of enforcement, the EIS commits to the monitoring of light spill during the operation of the Project to assess the impacts and modify, including introducing new measures (if required).

The management and operation of the SSFL is not part of the scope for this EIS. Any requirements for visual mitigation of the SSFL are part of the approval for that project.

6.15 Land use and property

6.15.1 Impacts on public open space/community facilities

Concerns were raised regarding the impact on the Casula Powerhouse Arts Centre. Submissions note that both the Casula Powerhouse Arts Centre and the surrounding parklands are important community assets, providing a range of social and environmental benefits for the community.

Submission number(s)

4, 87, 93, 98, 125, form letter 2, 142, 150, 153, 160, 175, 178 and 185.

MIC response

Section 24.3.4 and section 24.3.8 of Chapter 24 – *Social and economic impacts* and section and 23.2.3 of Chapter 23 – *Property and infrastructure* of the EIS describe the impacts on the Casual Powerhouse Arts Centre and the Northern Powerhouse Land (land to the north of the Casula Arts Centre). In particular, minor amenity impacts are expected, including some potential disruption during construction activities; however, access to these facilities would be maintained at all times.

The northern and the central rail access options would have the greatest impact on the Northern Powerhouse Land, which is directly north of the Casula Powerhouse Arts Centre. Since exhibition of the EIS, MIC has selected the southern rail access option as its preferred option, so the impacts to the Northern Powerhouse Land will no longer occur.

6.15.2 Impacts on Georges River

Some submissions raise concerns in regards to the loss of recreational land. One submission argues that development on the Project site would be inconsistent with the Liverpool Council master plan for the Georges River.

Submission number(s)

8, 45, 92, 125, 134 and 216.

MIC response

The impacts on Georges River have been presented in section 6.15.1 which discusses potential impacts on recreational land. As noted in section 23.2.3 of Chapter 23 – *Property and infrastructure,* the Northern Powerhouse land, which is directly north of the Casula Powerhouse Arts Centre has been identified for potential future public parkland in the Georges River Casula Parklands Concept Master Plan (LCC 2013). However, since the southern rail access option has been selected as the preferred option, the impacts on the Northern Powerhouse Land will no longer occur.

Minor recreation impacts are expected, including some potential disruption during construction to activities by the NSW Barefoot Water Ski Club on the Georges River. During operation of the Project, impacts on the recreational use of the Georges River are unlikely. The normal water level at the proposed Georges River bridge location (the location of the northern rail access option bridge crossing to the SSFL) is RL 3.0 m, which is non-tidal due to the weir located downstream. This provides a vertical clearance of 8.3 m to the underside of the bridge deck (i.e. at RL 11.3 m).

6.15.3 Property values

Some submissions argue that development of an IMT close to existing residential areas will depreciate the value of the homes in the area.

Submission number(s)

9, form letter 1, 65, 93, 96, 99, 105, 142, 147, 155, 156, 161, 167, 189, 190, 191, 201, 210, 213 and 230.

MIC response

MIC acknowledges the concerns of the local community regarding depreciation to the value of homes. There are many factors that influence housing prices in an area. Given the complexity of these factors, it is not possible to predict whether the terminal would have any negative impacts, or positive impacts – for example, due to housing demand created by the additional employment generated by the terminal.

The EIS has also presented a number of management and mitigation measures to be implemented during construction and operation of the Project to mitigate any adverse impacts on property prices. These measures will be assessed further during the detailed design phase and during future Stage 2 SSD applications.

6.16 Social and economic impacts

Some submissions discussed issues relating to the social and economic impacts of the Project. These are outlined below:

6.16.1 Social impacts from increased travel times

Some submissions were concerned about the social impacts as a result of increased in travel times (i.e. increased travel time leading to reduced time for other things).

Submission number(s)

55, 100, 125 and 142.

MIC response

Social impacts from increased travel times are discussed in section 6.6.8; the project is expected to reduce the VKT on the Sydney road network which will benefit traffic flow on major Sydney arterials.

6.16.2 Impacts of children getting to school

One submission commented on the risks and delays to children travelling to school as a result of traffic impacts of the Project.

Submission number(s)

70.

MIC response

Refer to response in section 6.6.5 and section 6.6.8 which discuss the impacts on local roads travel delay times and traffic safety issues.

6.16.3 Impact on usability of residential open space

Three submissions argued that noise from the IMT would impact on the ability of residents to use their outdoor living spaces.

Submission number(s)

125, 142 and153.

MIC response

MIC acknowledges that a number of residents live close to the Project site and there are concerns regarding the exceedance of noise assessment criteria and the impacts this has on health and lifestyle. Noise from construction and operation would be regulated through the Project approvals (Stage 1 and Stage 2 SSD approvals) and in accordance to relevant acoustic legislation, policy and guidelines (including the NSW *Industrial Noise Policy*, the NSW *Road Noise Policy* and the *Interim Construction Noise Guideline*). The regulations have applied the more rigorous noise criteria at the property façade; typically if the façade regulations are achieved then the amenity regulations (for outdoor noise) are also achieved.

To minimise noise emissions and comply with the Project approval and regulations, the Project would be designed and constructed with reasonable and feasible noise mitigation measures to control noise emissions within the surrounding communities.

6.16.4 Impacts to the local community structure

One submission argues the community structure would be negatively impacted, now and into the future.

Submission number(s)

127.

MIC response

Section 24.3.2 of Chapter 24 – *Social and economic impacts* assesses community structure including the potential changes to demographics and population as a result of the Project. No considerable changes to Liverpool's population are expected during construction or operation of the Project. During construction the workers are expected to be sourced from within the Sydney metropolitan region, with some workers sourced from inside the Liverpool LGA. The operation of warehousing could see an additional 1,500 people being employed in the area; this would be equivalent to an increase of around 1% of the existing Liverpool LGA population (see Table 24.4 of Chapter 24 – *Social and economic impacts*).

As discussed in section 24.3.6 of Chapter 24 – *Social and economic impacts,* negligible impacts on existing housing and accommodation would be expected during all phases of the Project (construction and operation).

6.16.5 Impacts on quality of living

One submission was concerned that the Project would have adverse impacts on the quality of living.

Submission number(s)

130.

MIC response

MIC acknowledges the concerns of the local community regarding the impacts on the quality of living. There are many factors that influence the quality of living in an area. Given the complexity of these factors, it is not possible to predict whether the terminal would have any negative impacts, or positive impacts.

The EIS and Table 9.1 of this report have presented management and mitigation measures to be implemented during construction and operation of the Project which would avoid and minimise the impacts. These measures will be assessed in future detail during the detail design and during future Stage 2 SSD approval applications.

6.17 Human health risks and impacts

6.17.1 Health impacts on the community

The following general concerns were raised relating to human health:

- Concern about impacts on the health of the community (current and future) as a result of the construction and operation of the IMT. In particular, submission 142 states that according to the WHO, even relatively low noise levels are linked to higher rates of heart attack and increased cortisol levels, increased levels of hypertension, fatigue and psychological issues.
- Submissions argue that health impacts are not acceptable and will make people sick.
- Concerned with stress impacts on the community and the health implications.
- Submissions argued there are already significant health issues in the community, including respiratory problems and concerned that the Project would exacerbate these problems/issues.
- Submissions argued there are a high number of child care centres, pre-schools, kindergartens, primary schools, high schools, sporting grounds and aged care facilities located within the immediate area. Concerned with the impact on the population and users of these facilities.

Submission number(s)

4, 9, form letter 1, 16, 23, 34, 61, 62, 70, 79, 85, 87, 95, form letter 2, 142, 160, 166, 170, 185, 201, 210, 211, 228, 234 and 239.

MIC response

Chapter 25 – *Human health risks and impacts* of the EIS provides an overview of the findings of the assessments in relation to the potential health impacts associated with the Project. The health impacts are addressed in more detail in the HHRA of the EIS, and HIA of the EIS (in Volume 9). The methodology applied to the HIA was developed by HIA specialists Enrisks, with expert guidance provided by the Centre for Health Equity Training, Research and Evaluation (CHETRE) and a stakeholder working group (councils and state agencies). The HIA was technically peer reviewed by an independent expert who agreed with the approach, methodology and findings of the HIA. Letters from peer reviewers endorsing the technical papers are provided in Appendix G to the EIS (Volume 2).

In relation to determining whether health impacts in the community are acceptable, the HHRA and HIA have considered whether there are threshold values (below which there are no health impacts) that are protective of health and if the Project complies with these thresholds. In addition, where an annual or lifetime health risk is calculated, the HHRA provides a detailed discussion on the acceptability of health risks (presented in section 4.4 of the HHRA). All these aspects have been considered in the HHRA where the acceptability of health impacts is evaluated.

The HIA presented in Technical Paper 16 (EIS Volume 9) includes consideration of a range of impacts (related to many aspects of the Project) including stress levels on the community, low level noise impacts and impacts to infants, children and the elderly. These aspects are summarised in Table 6.1 in the HIA along with a summary of the measures proposed to minimise/mitigate these impacts.

The existing health of the local community is discussed in section 2.4 of the HHRA and section 3.5 of the HIA (EIS Volume 9). From this data the population in the Sydney south-west area has a higher rate of health indicators. The existing health of the population in this area (based on the existing health data available from NSW Health) is included in the calculations undertaken in the HHRA when evaluating the risk of health impacts from particulate exposures. The calculations presented in the HHRA do not indicate that the Project would result in any significant impact on the existing health of the population. While the calculated risks do not show any significant impact on community health, the HIA includes a list of recommendations and mitigation measures which will be considered further at detailed design to minimise community exposures. As discussed in section 5.11.7 of the HIA (EIS Volume 9), the implementation of best practice air quality management practices for the operation of the facility would also be investigated during Stage 2 SSD detailed design.

Impacts on health associated with noise are discussed in detail in section 5.3 of the HIA and summarised in section 25.5.2 of Chapter 25 – *Human health risks and impacts* of the EIS. The assessment of health impacts from noise relies on the noise guidelines established in NSW (NSW *Industrial Noise Policy*, the NSW *Road Noise Policy*, and the *Interim Construction Noise Guideline*). These noise guidelines are based on the protection of health from a range of different types of noises (from industry, roads, rail and construction) and these guidelines incorporate information/evidence of health effects in the community derived from the WHO (refer to section 5.3.3 of the HIA (EIS Volume 9) for further discussion).

The assessment of health impacts presented in the HHRA and the HIA have considered impacts at a range of representative sensitive receivers (refer to Figure 2.1 in the HHRA and Figure 3.1 in the HIA). These include the closest workplaces, residences, schools, childcare facilities and community facilities. The quantitative assessment of health risks presented in the HHRA has assumed that individuals are

exposed to impacts from the Project at each of the sensitive receivers for a whole work day (for workplace locations) and for 24 hours a day, every day for all other sensitive receivers. This approach provides a conservative assessment for all users (i.e. school, day care, sporting grounds etc.) of these areas. Health impacts in areas located further from the site will be lower than assessed for the closest sensitive receivers.

6.17.2 Air quality impacts on human health

A number of submissions were concerned that air emissions during construction and operation of the IMT will have negative impacts on the health of the community. Some submissions were concerned that the Project would increase or exacerbate the occurrence of asthma.

Submission number(s)

9, 10, 48, 59, 81, form letter 2, 142, 178, 189, 190, 211, 217, 228 and 237.

MIC response

The air quality impacts on the health of the local community have been addressed in detail in the HHRA (Technical Paper 15 – *Human Impact Assessment,* in Volume 9 of the EIS) in accordance a number of national and international peer reviewed sources. In particular, the HHRA draws upon the following guidelines:

- Environmental Health Risk Assessment: Guidelines for Assessing Human Health Risks from Environmental Hazards: 2012 (enHealth 2012a); and
- Exposure Factors Guide (enHealth 2012b).

The HHRA has evaluated impacts during both construction and operational phases of the Project. As outlined in Chapter 25 – *Human health risks* and impacts and section 3 of the HHRA (EIS Volume 9), the HHRA has evaluated a range of emissions to air, including dust during construction and emissions from combustion sources including diesel trucks and equipment, locomotives and traffic associated with the IMT, warehousing and commercial operations.

A more detailed assessment of risk associated with particulate emissions (including dust during construction and finer particulates derived from combustion sources that include diesel trucks and locomotives) is presented in section 4 of the HHRA. The assessment has used the most current robust science to determine which health effects have been well linked to particulate emissions (including diesel particulates) and can be quantified in a population (as discussed in sections 4.1 and 4.2 of the HHRA). There are numerous studies available that consider various associations between particulate exposures (in populations or close to specific sources such as major roadways) and health effects. It's important to note that the studies considered in the HHRA are based on robust clear associations between exposure to particulates and a health effect. This has been considered in the assessment presented in section 4 of the HHRA (EIS Volume 9).

In response to community concerns regarding asthma, an assessment of the Project impacts on asthma is also presented in section 4.5.4 of the HHRA (EIS Volume 9). The HHRA concluded that the Project would not result in any significant impact on the existing health of the population. While the calculated risks do not show any significant impact on community health, the assessment recommended the application of best available technology and mitigation measures be implemented to minimise community exposures.

A paper has been referenced in several of the submissions: Matsuoko et al. 2011: *Freight Transport and Goods Movement – Impacts on Workers, Health, Community and the Environment*. A response to the issues raised in this paper is provided below:

- *Occupational health and safety issues for freight workers.* These aspects are addressed in detail in Chapter 11 – *Traffic, transport and access* and Chapter 14 – *Hazards and risks* of the EIS. The issues are also addressed in Technical Paper 11 – *Traffic Impact Assessment (*EIS Volume 3). The HHRA considered short-term/acute and long-term/chronic exposures and health risks to workers within the IMT. As concluded in section 5 of the HHRA, the risks are considered to be low which is consistent with established practice and regulation. In addition, Chapter 29 – *Environmental Risk* of the EIS, notes the key risks/hazards associated with the Project during construction and operation includes gas leaks, loss of containment of flammable/combustible liquids, vehicle accidents, flooding and inappropriate waste disposal. A number of design and management measures are proposed to minimise risk to levels consistent with established practice and regulation (refer to section 14.7 of Chapter 14 – *Hazards and risks*).

- *Exposure to air pollutants including fine particulates, ultrafine particulates and diesel particulates.* The health effects of exposure to air pollutants relevant to the Project is addressed in the HHRA where impacts of exposure to diesel particulate matter, fine particulates and other air pollutants has been addressed using Australian guidance, current robust science and the site-specific aspects, including all the emission sources related to the Project. Ultrafine particulate exposure was also raised in the paper. The relationships used in the HHRA (as outlined in section 4.2 of the HHRA) are based on studies of changes in exposure to fine particulates (that include ultrafine particulates) in urban air (where the pollution is dominated by combustion sources that include fine and ultrafine emissions) and health effects in the population. As such, the quantitative assessment presented in the HHRA addresses health effects associated with exposure to both fine and ultrafine emissions from combustion sources.

- *Exposure to noise.* The health effects outlined in the paper are noted and addressed within section 25.5 of Chapter 25 – *Human health risks and impacts* and section 5.3 of Technical Paper 16 – *Health Impact Assessment*. As noted in these sections, noise levels would need to be mitigated to ensure the Project complies with relevant guidelines and established practice.

- *Race and place issues.* Equity issues associated have been addressed in section 7 of the HIA (EIS Volume 9). The HIA notes that the evidence gathered for the assessment identified particular population sub-groups that are particularly vulnerable to health impacts resulting from the IMT (children and the elderly). Measures to address this include: providing advice to General Practitioners (GPs) regarding childhood asthma, targeted consultation and investigation of potential bus route options that target appropriate local facilities.

- *Incompatible land uses and potential health impacts of locating freight terminal in areas close to residential areas and schools*. The impact of the Project on the local community that includes residential areas, schools and aged care facilities has been assessed in detail, in accordance with Australian guidance, within the HHRA. Overall, on the basis the assessment, cumulative and incremental impacts from the construction and operation of the Project on the health of the community (including sensitive land uses) are generally considered to be low and impacts can be mitigated in accordance with established practice and regulation (refer to section 5 of the HHRA).

- *Neighbourhood impacts (lighting, traffic and congestion).* The light spill impacts of the Project have been addressed in Chapter 22 – *Visual and urban design* with further comments provided in section 6.14.1of this report. For some residential locations that overlook the Project site, there would be a noticeable change in the brightness of the area on clear nights and therefore a number of mitigation measures would be considered during the detailed design phase of the Project to mitigate the impacts. The traffic and congestion impacts are discussed in detail in Chapter 11 – *Traffic, transport and access* with further comment provided in section 6.6 of this report.

- *Climate change/global warming/natural resource impacts.* The GHG impacts of the Project are assessed in Chapter 19 – *Greenhouse gas assessment.* In summary, the annual GHG emissions would only represent a very small proportion of national (approximately 0.02%) and NSW (0.09%) emissions. In addition, the Project would result in reductions in freight transport emissions.

6.17.3 Learning difficulties for children

Two submissions were concerned that the noise impacts of the IMT would result in learning difficulties for children in nearby schools.

Submission number(s)

125 and142.

MIC response

Impacts on health associated with noise are discussed in detail in Chapter 25 – *Human health risks and impacts* and section 5.3 of Technical Paper 16 – HIA (EIS Volume 9). The assessment of health impacts from noise relies on the noise guidelines established in NSW (NSW *Industrial Noise Policy*, the NSW *Road Noise Policy*, and the *Interim Construction Noise Guideline)*. These noise guidelines are based on the protection of health from a range of different types of noises (from industry, roads, rail and construction) and these guidelines incorporate information/evidence of health effects in the community that include proximity to schools and learning difficulties for children. Compliance with the relevant NSW noise guidelines is protective of these health effects in the local community. A range of noise mitigation measures are identified in the EIS to ensure that the relevant noise guidelines are met in the community (refer to section 5 of the HIA and Chapter 12 – *Noise and vibration* of the EIS for further discussion).

6.17.4 Health impacts due to sleep disturbance

Some submissions were concerned that sleep disturbance could cause health impacts such as increased blood pressure and heart rate, increased pulse amplitude, vasoconstriction, changes in respiration and cardiac arrhythmias. These are all said to increase the likelihood of accidents and decrease concentration.

Submission number(s)

125, form letter 2, 142 and 228.

MIC response

MIC acknowledges that the community is concerned about the impacts of sleep disturbance and the potential health impacts this may cause. As discussed in section 12.5 of Chapter 12 – *Noise and vibration* of the EIS, operations on the main IMT site were predicted to comply with sleep disturbance objectives at the nearest receptors in Casula, Wattle Grove and Glenfield. Furthermore, IMEX and interstate train movements on the rail access connection to the SSFL are predicted to comply with sleep disturbance objectives for the southern rail access option.

The design and construction of the Project will include measures to reduce and control night-time noise levels and specifically control noise from short lived or high noise events which may otherwise have the potential to disturb sleep (refer to section 12.4 of Chapter 12 – *Noise and vibration)*.

6.17.5 Impacts on health systems

There was some concern there would be an increase in patient load on the health system as a result of the Project's impacts. Submissions reference a report commissioned by Queensland Health, where it was found that between 1996 and 2004 Gladstone has a chronic lymphocytic leukaemia rate twice that of the state average. Submissions note that Gladstone is a heavy industrial town.

Submission number(s)

147, 213, 228 and 234.

MIC response

The impacts on the health of the local community have been addressed in detail in Chapter 25 – *Human health risks and impacts* and Technical Paper 15 – HHRA and Technical Paper 16 – HIA (Volume 9 of the EIS). More specifically, the HHRA has undertaken a quantitative assessment of the impacts of the Project on the health of the community due to changes in air quality. The quantification of health impacts has included the calculation of the increase in the number of cases for the relevant health effects evaluated (refer to sections 4.4 and 4.5 of the HHRA). The change in the number of cases calculated was less than 0.2 per year which cannot be measured in any health data/statistics for the area. Therefore, it is not considered that the Project would have an increased patient load within the NSW health system.

A number of submissions have referenced a study undertaken by Queensland Health in relation to an increased incidence of Chronic Lymphoid Leukaemia in the Gladstone area between 1996 and 2004 ('*Investigation of Chronic Lymphoid Leukaemia, Gladstone – Calliope, 1996–2004, Full Technical Report, August 2007'* available from http://www.health.qld.gov.au/ph/documents/caphs/finalgladstone.pdf and summary at http://www.health.qld.gov.au/ph/documents/caphs/cll_summary_report.pdf). The submissions imply the Gladstone study found the increased incidence was due to industrial pollution exposures. Review of the Queensland Health report, however, does not support this implication. The Queensland Health report, which did evaluate the potential for a link between the increased incidence and industrial emissions, found 'no evidence in the scientific literature pointing to any environmental cause' (page 3 of the summary document as part of *Investigation of Chronic Lymphoid Leukaemia, Gladstone – Calliope, 1996-2004*). The report concludes the increased incidence may be related to a genetic risk or a result of random variation in time and place. On this basis, the study referenced in the submission does not support any conclusions of environmental exposures being linked to the increased incidence of Chronic Lymphoid Leukaemia in Gladstone. As such, the study does not provide any information that is relevant to the assessment of health impacts in Moorebank associated with the Project.

6.17.6 Adequacy of human health assessment

Two submissions were concerned that the HIA does not include all sensitive receptors and has not adequately assessed the impacts of the Project. Submissions argue that the health assessment should include consideration of costs (such as the cost of treating cancer patients).

Submission number(s)

185 and 211.

MIC response

The assessment of health impacts presented in Chapter 25 – *Human health risks and impacts*, Technical Paper 15 – HHRA and Technical Paper 16 – HIA (EIS Volume 9) have considered impacts at a range of representative sensitive receivers (refer to Figure 2.1 in the HHRA and Figure 3.1 in the HIA). These include the closest workplaces, residences, schools childcare facilities and community facilities. These are representative of the closest sensitive receivers in the surrounding community and are not intended to cover all the sensitive receivers in the suburbs surrounding the site. Impacts from the site decrease with increasing distance from the site, hence an assessment of community exposure all day every day at locations closest to the site provides a conservative assessment of impacts at locations further away. The HHRA considered health impacts to the community in all areas, assuming they are at home all day, every day, for a lifetime. For workplace areas close to the site, the HHRA considered exposures every work day for a working lifetime. In addition, the approach adopted for the assessment of health impacts in the HHRA addresses health effects for all members of the community including infants, pregnant women, the elderly and those with pre-existing health conditions. Such an approach addresses exposure to emissions from the Project for all members of the community regardless of whether they are at work, home, attending school, community facilities or recreational areas. The major community hospital, Liverpool Hospital is much further from the site than the sensitive receivers evaluated and is considered to be adequately covered by the assessment presented in the HHRA. This approach was also supported by and independent external technical peer reviewer CHETRE. Letters from peer reviewers endorsing the technical papers are provided in Appendix G to the EIS (Volume 2).

Submission 185 references a news article (http://www.healthnews.uc.edu/news/?/7358/) which notes that proximity to major roadways can leave school aged children more susceptible to respiratory disease later in life. These health effects are captured in the risk calculations presented in the HHRA (refer to sections 4.1 and 4.2 in the HHRA). The health impacts assessed include primary and secondary indicators related to shortened life expectancy from all causes (including respiratory disease) and specific respiratory and cardiovascular disease. The specific paper referenced does not provide robust relationships that can be used in the HHRA; however the effects and relationships adopted in the HHRA capture the health effects discussed in the paper.

The existing health of the local community is discussed in Chapter 25 – *Human health risks and impacts*, section 2.4 of the HHRA, and section 3.5 of the HIA (EIS Volume 9). This discussion includes health statistics published by NSW Health for the Sydney south-west area. These health statistics are based on data collected by NSW Health and reflect the population of the whole Sydney south-west area. No data is available for individual suburbs and there will be significant variations between individuals within the population (which is normal for any statistical data set). It is not appropriate to assume that the health statistics for a large population (such as the Sydney south-west area) apply to any specific individual.

The existing health of the population in the Project area (based on the existing health data available from NSW Health) has been included in the calculations undertaken in the HHRA when evaluating the risk of health impacts from particulate exposures. The calculations presented in the HHRA show that the Project would not result in any significant impact on the existing health of the population.

The health effects of exposure to air pollutants relevant to the Project are addressed in the HHRA where exposure to diesel particulate matter, fine particulates and other air pollutants has been assessed using current robust science and the site-specific aspects of the Project, including all the emission sources related to the Project (including diesel emissions). The relationships used in the HHRA (as outlined in section 4.2 of the HHRA) are based on studies of changes in exposure to fine particulates (that include

ultrafine particulates) in urban air (where the pollution is dominated by combustion sources that include fine and ultrafine emissions) and health effects in the community. As such the quantitative assessment presented in the HHRA addresses health effects associated with exposure to both fine and ultrafine emissions from combustion sources.

Technical Paper 16 – HIA (EIS Volume 9) addresses health impacts associated with noise, light spill and traffic impacts raised in the submissions. In addition, the HIA (section 7 of the HIA) addresses equity aspects of the Project, relevant to the Project area.

The HHRA has undertaken a quantitative assessment of the impacts of the Project on the health of the community due to changes in air quality. The assessment of risk presented in the HHRA determined the health impacts were not significant in the local community. In addition the HHRA has included the calculation of the increase in the number of cases for the relevant health effects evaluated (refer to sections 4.4 and section 4.5 of the HHRA). The change in the number of cases calculated was less than 0.2 per year which cannot be measured in any health data/statistics for the area. Therefore, it is not possible to provide indicative health cost associated with such low levels of health impacts.

6.18 Environmental risks analysis

6.18.1 Appropriateness of risk assessment

Some submissions questioned the appropriateness of the risk analysis and the ratings identified in the EIS. In particular, five submissions (147, 189, 190, 192 and 213) suggested that air quality impacts should have been assessed with a probability of 'almost certain' and a consequence of 'severe' with a resultant risk of 'very high' given the release of particulate matter and polycyclic hydrocarbons into the atmosphere.

Submission number(s)

147, 189, 190 and 213.

MIC response

The Environmental Risk Analysis (ERA) provided in Chapter 29 – *Environmental risk analysis* of the EIS uses a risk analysis framework and matrix which was prepared in accordance with the principles of the Australian and New Zealand standard AS/NZS ISO 31000:2009 *Risk Management – Principles and Guidelines*.

In the case of the air quality impacts during construction and operation of the Project, a rating of 'Moderate' consequence, 'Likely' probability of impact, with a 'High' unmitigated risk significance was applied. However, the mitigation measures proposed as part of the Project reduced the residual risk to 'Low to Moderate'. The 'Moderate' consequence is appropriate given the impact is likely to be localised and the regional impact is low. This is consistent with the 'Moderate' rating defining in Table 29.2 of Chapter 29 – *Environmental risk analysis* of the EIS.

A 'Likely' probably rating was allocated based on the findings of the air quality assessments which determined there is overall a low likelihood of adverse local air quality impacts on the surrounding environment as result of construction and operation of the Project (refer to section 17.5 of Chapter 17 – *Local air quality*, EIS Volume 6). As such, the impact falls within the criteria 'Likely', as defined in Table 29.3 in Chapter 29 – *Environmental risk analysis*.

The operational air quality impacts of the Project were given the rating of 'High', despite the incremental (Project-only) air pollutant concentrations and dust deposition rates associated with all modelled scenarios being predicted to be within NSW EPA criteria and National Environment Protection Measures (NEPM) advisory reporting. This is due to the maximum cumulative 24 hour average PM_{10} and $PM_{2.5}$ concentrations exceeded the applicable NSW EPA criteria and NEPM advisory reporting goals (exceedance only at one receptor) when taking into account existing background levels. Importantly, the air quality assessment found that there would be no additional exceedance events as a result of the Project. On this basis, the Project was given a rating of 'High' as opposed to 'Major'. Taking into account the mitigation measures as outlined in section 17.4 of Chapter 17 – *Local air quality*, the impacts can be considered to be reduced to a low to moderate level, meaning the potential impact is understood and the effectiveness of the mitigation measures are considered to be high given that similar measures have been employed on a range of other projects.

The risk assessment process was supported by a robust Local Air Quality Assessment that was peer reviewed by an independent industry leading expert in air quality assessments.

6.19 Cumulative

6.19.1 Adequacy of cumulative assessment

A number of submissions noted there has been a lot of confusion around the two proposed IMTs within the Moorebank precinct (Moorebank and SIMTA). Some submissions argued the cumulative impacts of the SIMTA Project and the Moorebank IMT have not been adequately explained and considered as the projects have been assessed separately.

Submissions argued that the traffic modelling for the Moorebank IMT and the SIMTA project was different and this creates confusion.

Submission number(s)

Form letter 1, form letter 2, 142, 147, 210 and 213.

MIC response

MIC acknowledges the community concerns regarding the Moorebank IMT and SIMTA IMT proposals and recognises that some confusion may exist. As discussed in section 6.2.1, prior to the EIS exhibition, the MIC proposal was being developed as a stand-alone project and it was therefore necessary to assess the environmental impacts independently of the SIMTA project.

Chapter 27 – *Cumulative impacts* of the EIS assesses the cumulative impact of both the Moorebank IMT site in conjunction with the SIMTA IMT and other planned or proposed developments in the local area. In recognition of community and approval agencies concerns about the prospect of both projects being developed in some way; three scenarios (as detailed in section 27.1 of Chapter 27 – *Cumulative impacts*), were assessed in the EIS (assuming a combined IMT precinct across both sites). The cumulative scenarios assessed in the EIS were developed through discussions with NSW DP&E with consideration of the capacity of the SSFL and freight demands. Since the exhibition of the EIS an in–principle agreement has now been reached between MIC and SIMTA and the indicative site layout plan of the Moorebank IMT has changed to reflect the likely combination of the two sites. Chapter 7 of this report outlines proposed amendments to the development, which includes the details of the proposed change to the Project site concept layout and section 7.10 provides an assessment of cumulative

impacts taking into account the developments in the IMT precinct planning that have occurred since exhibition of the EIS.

In terms of the comment regarding the discrepancies in the traffic modelling between the SIMTA Project and the Project site, as discussed in section 5.6.15, the SIMTA traffic analysis was undertaken by a different consultant, modelling a different operation and so discrepancies are to be expected. However, while the daily totals traffic generation are different, the AM and PM peak hour generation are similar.

As mentioned above, MIC acknowledges the traffic network implications of the Project and the concerns raised by Council. Additional traffic impact assessment is currently being undertaken to identify the measures required to mitigate the traffic impact of the Project on intersections in the surrounding area, the results of which are discussed in section 7.9.3 of this report. These investigations aim to ensure the intersections would operate no worse than they would without the Project.

6.20 General

In addition to the issues discussed in the sections above, a number of community submissions raised concerns about IMTs in general and/or the impacts of the Project. These are summarised and responded to in Table 6.2 below.

Table 6.2 Summary of general issues raised and MIC response

Issue	MIC response	Submission number(s)
General concern regarding pollution from the IMT.	Refer to MIC's response to contamination, air quality and noise impacts in section 6.9, section, 6.11 and section 6.7 of this report.	2, 11, 18, 52, 68, 74, 93, 102, 117, 170, 171, 174, 191, 206, 218 and 236
General concern raised on impacts of the Project.	The impacts of the Project have been considered and assessed in the EIS (Chapters 11–26 of the EIS).	50, 70, 118 and 226.
Concerned that the IMT would negatively impact on the quality of life for residents, including the ambiance.	MIC notes that the lifestyle of an area is comprised of a number of components including amenity aspects (visual, noise and air) as well as recreational opportunities and social interactions. The impact of the Project on these aspects has been discussed in detail throughout the EIS, with responses to particular community submissions provided in the sections above.	57, 65, 75 and 230
General concern regarding long term planning for Sydney basin	Chapter 2 – *Assessment of the issues raised by the NSW Planning Assessment Commission* of this report presents an analysis of the Moorebank precinct demand for both IMEX and Interstate intermodal capacity with a specific focus on the conclusions made by the PAC in their assessment report for the SIMTA concept approval. The analysis draws upon and expands on the demand assessment presented in Chapter 3 – *Strategic context and need for the project* in the EIS and aligns these with the NSW Government objectives to double the proportion of container freight moved by rail through NSW Ports by 2020. The Project is consistent with, and assists in meeting the key objectives of a number key policies including the National Land Freight Network Strategy, National Ports Strategy, National Infrastructure Priorities – Infrastructure for an economically, socially and	61

Issue	MIC response	Submission number(s)
	environmentally sustainable future, NSW 2021, State Infrastructure Strategy, NSW Long Term Transport Master Plan, Draft Sydney Metropolitan Strategy for Sydney to 2031, Railing Port Botany's Containers, South West Subregion: Draft Subregional Strategy and NSW Ports and Freight Strategy. Refer to section 3.6 of Chapter 3 – *Strategic context and need for the Project* of the EIS for a detailed discussion.	
Concerned with the crime issues associated with freight terminals.	MIC notes the issues raised by community members about crime issues. The design for the IMT would take into account measure to avoid and minimise crime including having the site fully fenced with security gates for vehicles and pedestrians entering the site. The design of the IMT would take into account the objectives for Crime Prevention Through Environmental Design (CPTED).	9, 125, 142 and 153
Concerned with the impacts of rail access options (as proposed in EIS). In particular: • The EIS creates confusion due to the three rail access options under consideration. It is difficult for community members to understand the impact of each rail access option. • Submission 188 argues the southern rail access option would better integrate into the existing rail network and provide for a precinct-wide approach for the development of the IMT. • Submission 237 questions why the southern rail access option would be preferred if only one IMT was developed on the SIMTA site and the Moorebank site. Suggests that either one of the rail access options would work.	The assessment of three rail access options in the EIS was intended to allow flexibility for future developers and operators of the Project, so that the most efficient and effective layout could be developed for the Project. However, since the exhibition of the EIS, MIC has selected the southern rail access option as its preferred option. The Project now only seeks approval for one rail access option, the southern rail access connection. This connection would provide access to both the SIMTA site and the Project site. It is important to note, that only one rail connection will be built to service both the Moorebank IMT project and the SIMTA IMT project.	Form letter 2, 188, 196 and 237
Concerned with litter impacts. In particular: • Argues that industrial areas are likely to generate a large amount of litter. • Argues that litter prevention measures are required to minimise and capture of litter to avoid downstream impacts on the Georges River. Suggests the use of a water wheel within the river.	Chapter 26 – *Waste and resource management* provides an assessment of the waste likely to be generated from the IMT during construction and operation of the Project. This assessment includes litter, paper and food waste generated from a range of sources. Section 26.3 outlines the mitigation measures and the key principles of waste management which includes reduction, re-use, recycling and recovery. 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. There are no plans to build a water wheel within Georges River, as this would generate additional impacts to the River itself.	194

Issue	MIC response	Submission number(s)
Argues that the business case has not been made public. Argues that this should be.	A business case was prepared for the Project in 2012 by KPMG and considered by the then Australian Government in its decision to proceed with the development of an intermodal at Moorebank. The full business case contains sensitive commercial information and as such is not available to the general public. A summary of the business case was released publicly in 2012, and is available on the MIC website, http://www.micl.com.au/. Relevant information from the full business case was incorporated into the EIS including a summary of the economic appraisal.	224
Concerns raised in relation to the accuracy and adequacy of identifying/ locating sensitive receptors. In particular: • St Francis X Primary, All Saints Primary, Al Amana College, Moorebank High School, St Christopher's Primary School, NewBridge Heights, Nuwarra Public School, St Josephs Moorebank, Hammondville Public School. • Places of workshop including: St Lukes Anglican Church, St Marys Anglican Church, St Christopher's Anglican Church, St Thomas Indian Orthodox Cathedral, Church of Jesus Christ of Latter Day Saints, St Agnes, St Thomas Anglican Church. • Other places including Liverpool Hospital and Liverpool Private and Liverpool Regional Museum. • Notes other residents in Lakewood Crescent which are said to be 22 m from the subject site. Other nearby houses which have not been included are in Wattle Grove (230 m), Casula (280 m), Liverpool Links (530 m), Glenfield (770 m), Moorebank Avenue 950 m).	The assessment of health impacts presented in Chapter 25 – *Human health risks and impacts*, Technical Paper 15 – HHRA and Technical Paper 16 – HA has considered impacts at a range of representative sensitive receivers (refer to Figure 2.1 in the HHRA and Figure 3.1 in the HIA). These include the closest workplaces, residences, schools childcare facilities and community facilities. These are representative of the closest sensitive receivers in the surrounding community and are not intended to cover all the sensitive receivers in the suburbs surrounding the site. Impacts from the site decrease with increasing distance from the site, hence an assessment of community exposure all day every day at locations closest to the site provides a conservative assessment of impacts at locations further away. This approach was also supported by and independent external technical peer reviewer and the CHETRE.	185