

- The DNSDC site is included on the Commonwealth Heritage List and is protected by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
- The SIMTA site is not listed as a heritage item under the provisions of the Liverpool Local Environment Plan 2008, however, the nearby items which are listed have been identified and assessed.
- **Management/Mitigation Measures** – the *Aboriginal Cultural Heritage Assessment* report provides a comprehensive list of mitigation measures which are also detailed within **Section 12.3.1** and **Section 12.3.2** of this report. The *Non-Indigenous Heritage* Report provides an environmental assessment against a range of development options, potential impacts, and possible mitigation measures and resulting heritage value. Each of these measures is also incorporated into the Draft Statement of Commitments.

## 12.3 ASSESSMENT OF KEY ISSUES

### 12.3.1 INDIGENOUS HERITAGE SIGNIFICANCE

The findings of the *Aboriginal Cultural Heritage Assessment* conclude that there is no indigenous heritage significant potential on the SIMTA site, predominantly due to the extensive earthworks and development that has already been undertaken to accommodate the DNSDC activities. However, a number of artefacts and potential artefact deposits (PADs) were identified during the field surveys of the adjoining land, including the proposed rail corridor. The locations of the PADs are illustrated below.

These artefacts and PADs were assessed for archaeological significance. PAD1, PAD2 and Area 1 were considered to have moderate public cultural and scientific significance.

**FIGURE 27 – RESULTS OF FIELD SURVEYS (AHMS: 2012)**



The artefacts identified in Transects 1 and 7 were considered to have moderate cultural significance. No other parts of the study area were considered to have cultural, public or scientific Aboriginal heritage significance.

Based on the findings of the field surveys and the proposed SIMTA Intermodal Terminal Facility on the SIMTA site and within the rail corridor lands, AHMS conclude the proposal will have the following impacts on the study areas Aboriginal heritage significance:

*As the design of the SIMTA proposal has yet to be finalised, it is not known precisely what the potential impact will be on PADs 1 to 3, Area 1 and Transects 1 and 7. However, should excavation, grading or the use of metal tracked or heavy vehicles be required in any of the PADs or Area 1, it would have the potential to damage or destroy Aboriginal archaeological deposits or isolated artefacts, which are culturally significant to the RAPs.*

*The process of excavation destroys the integrity of a site, and can also damage artefacts and features. Grading and heavy vehicles driving over sites can damage artefacts where they are located on, or close to the surface. Other development related activities not mentioned here may also potentially impact on the Aboriginal cultural heritage values of the aforementioned sites.*

*In all other parts of the subject area, the SIMTA proposal is not considered likely to impact any Aboriginal cultural heritage values.*

To mitigate the potential impacts, AHMS recommend the following mitigation measures be adopted:

**General Mitigation Measures:**

1. *Consultation between SIMTA and relevant Registered Aboriginal Parties (RAPs) should be maintained throughout the design and construction of the SIMTA proposal.*
2. *Where possible, SIMTA should aim to avoid impacting any known Aboriginal heritage objects, sites or places and places that have potential Aboriginal heritage or cultural values, throughout the life of the SIMTA proposal.*
3. *Where impact cannot be avoided, SIMTA should choose partial impact rather than complete impact wherever possible and ensure that appropriate measures to mitigate impacts are developed and implemented as required and as appropriate during design, construction and operation of the various stages of the SIMTA proposal.*
4. *If relocation of any element of the SIMTA proposal outside area assessed in this study is proposed, further assessment of the additional area(s) should be undertaken to identify and appropriately manage Aboriginal objects/sites/places that may be in this additional area(s).*
5. *In the event that previously undiscovered Aboriginal objects, sites or places (or potential Aboriginal objects, sites or places) are discovered during construction, all works in the vicinity of the find should cease and SIMTA should determine the subsequent course of action in consultation with a heritage professional, relevant Registered Aboriginal Parties and/or the relevant State government agency as appropriate.*
6. *Should suspected human skeletal material be identified, all works should cease and the NSW Police and the NSW Coroner's office contacted. Should the burial prove to be archaeological of Aboriginal origin, consultation with a heritage professional, relevant RAPs and/or the relevant State government agency, should be undertaken by SIMTA.*
7. *SIMTA should ensure that any reports or documents for the SIMTA proposal concerning Aboriginal heritage comply with applicable statutory requirements (those currently applicable are outlined in this report), are prepared in accordance with best practice professional standards and, where appropriate, ensure findings are provided to OEH AHIMS Registrar and the relevant RAPs.*

### Site Specific Mitigation Measures:

1. *To ensure cultural values for both the SIMTA site and proposed rail corridor are appropriately characterised and assessed, Aboriginal consultation should continue to be undertaken in accordance with applicable guidelines and requirements.*
2. *The artefacts identified in Transect 1 on the SIMTA site, and Transect 7 immediately south of the SIMTA site, should be collected by RAPs in conjunction with a heritage professional before construction commences. A Care and Control Agreement should be completed between SIMTA and the RAPs regarding the future of the artefacts (it is usually preferred that they be reburied nearby).*
3. *Given the extensive historical disturbance within the remainder of the SIMTA site, it is considered that the likelihood of the presence of intact or significant Aboriginal objects and/or sites is low and no further archaeological investigations are warranted in these remaining areas.*
4. *In relation to the proposed rail corridor, with the exception of PADs 1 - 3 (Figure 33), it is considered that the likelihood of the presence of intact or significant Aboriginal objects and/or sites is low and no further archaeological investigations are warranted in the remaining areas.*
5. *Any areas outside those investigated as part of this assessment, most notably those areas within 50m of the eastern and western banks of the Georges River, should not be impacted without further assessment.*
6. *Areas of the study area in close proximity to Georges River and the south-western most corner of the proposed rail corridor, which could not be adequately investigated due to access issues, should be investigated further. The background and predictive models presented in this report may suffice for a conditional approval, however, access and more detailed assessment of these areas is required to fully identify development impacts.*
7. *In relation to PADs 1 - 3 (Figure 33), it is recommended that, either:*
  8. *Impacts within these areas are entirely avoided (i.e. no modifications are made to any ground surface in any way, including but not limited to excavation, grading and the use of heavy or metal tracked vehicles); or*
  9. *Test excavations be undertaken in each of PADs 1 - 3 in accordance with current archaeological practice and any relevant guidelines to determine the nature, extent and significance of any Aboriginal archaeological deposit. Such testing could be undertaken under Section 75U of the Environmental Planning and Assessment Act 1979, and be used to inform the assessment prior to lodgment of the EA, or as part of a Statement of Commitments following the approval.*
  10. *If significant Aboriginal site(s) are identified in PADs 1, 2 or 3, then design of the SIMTA proposal to avoid such sites(s) is the preferred option. However, if it is not considered possible to avoid such site(s), then salvage excavations of the PADs in accordance with current archaeological practice, any relevant guidelines and in consultation with the RAPs should be undertaken to gather as much information on the site(s) as possible prior to disturbance.*

The Aboriginal Cultural Heritage Assessment has been informed through the consultation process required by way of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents, DECCW* guidelines. This process included the following key steps:

- March 2011 - letters were issued to potentially interested parties and local Aboriginal groups to identify Aboriginal people who may hold cultural knowledge relevant to determine the significance of Aboriginal objects and places within the SIMTA site.
- May 2011 - an invitation to register an interest was placed in the *Liverpool City Champion*. A register of three parties was prepared, with a further two parties registering in late July 2011.



- June 2011 - a letter was issued to all registered parties seeking comments on the proposal. This letter outlined the SIMTA proposal, the proponent, the intended approval approach, assessment approaches and processes, timeframes and the proposed field investigations. This letter was also issued to the late registering parties in late July 2011.
- Early 2012 - the report review process was undertaken for a period of 28 days between 16 January 2012 and 16 February 2012, during which the *Draft Aboriginal Cultural Heritage Report* was issued to all registered Aboriginal parties for comment.

The comments received during the report review process were then integrated into the report, where possible. A full list of the comments is contained in Appendix C of the final *Aboriginal Cultural Heritage Report* attached in **Appendix S**.

### 12.3.2 NON-INDIGENOUS HERITAGE SIGNIFICANCE

The *Non-Indigenous Heritage Assessment* identified the following heritage listings that may be relevant to assessing the potential impact of the SIMTA proposal:

- **Commonwealth Heritage List** - the DNSDC (or SIMTA) site is listed on the Commonwealth Heritage List. It includes 18 intact store buildings dating back to World War II that are considered highly significant as a rare surviving example of a World War II military complex.
- **Register of the National Estate** - Kitchener House is included on the Register of the National Estate, as well as the nearby sites of Glenfield Farm and the Holsworthy Group. The DNSDC site is included on the Interim list of the register.
- **Section 170 Register** - no Section 170 Register listings were found within the study area. However, the nearby railway viaducts at Woodbridge Road and Congressional Drive, Casula are listed on the RailCorp S170 Register.
- **State Heritage Register** - Glenfield Farm, adjacent to the Glenfield Waste depot is listed on the State Heritage Register.
- **Liverpool Local Environmental Plan (LEP) 2008** - the School of Military Engineering (which the rail corridor is proposed to traverse) is listed on the *Liverpool Local Environmental Plan 2008*. Six other items are located in the vicinity of the study area, including:
  - Casula Powerhouse (former power station), Casula.
  - Rail Viaduct, Casula.
  - Two railway viaducts, Casula.
  - Glenfield Farm Group, including the homestead, barn (former dairy and stables), Casula.
  - Holsworthy Group, Holsworthy, including powder magazine and former officers' mess, corporals' club, internment camp, Holsworthy railway station lock-up/gaol, German concentration camp.
  - Kitchener House (formerly 'Arpafeelie'), Moorebank.

The key findings arising from the assessment of the potential heritage impacts of the SIMTA proposal are summarised as follows:

- There are no heritage constraints on the development within the proposed rail corridor area or the land within the Glenfield waste depot as this area is unlikely to contain items of non-Indigenous heritage significance.
- The SIMTA proposal would not have any impact on the heritage significance of the following heritage items in the vicinity:

- Kitchener House
- The Holsworthy Group
- Casula Powerhouse
- Railway viaducts on the Southern Railway Line

The SIMTA proposal would have a significant impact on the heritage significance of the DNSDC site, which is currently occupied by Department of Defence and therefore listed on the Commonwealth Heritage List and protected by the EPBC Act 1999. For the purposes of evaluating the potential impacts on Commonwealth heritage values on the SIMTA site, an evaluation of a number of development option and mitigation measures have been considered. The options, likelihood of their adoption, impact and possible mitigation strategies for each of the heritage items is detailed in Section 7 of the *Non-Indigenous Heritage Assessment Report* and summarised in **Table 7**.

Further consideration has also been given to the potential impacts and mitigation measures associated with Glenfield Farm. It is not considered that the SIMTA proposal would have a significant impact, taking into account the existing context.

The report recommendations in Section 9 of the *Non-Indigenous Heritage* report include:

- Undertaking discussions with the appropriate heritage bodies regarding the potential listing of the site on the National Heritage List (NHL) or State Heritage Register (SHR).
- Producing a Statement of Heritage Impact for each stage of the project, addressing the legal status of the site and providing advice on required actions depending on whether the site is listed on the CHL, NHL, SHR or unlisted at the time that approval is sought.
- Developing an overall mitigation strategy for the DNSDC site, which may be based on Table 3 of the *Non-Indigenous Heritage* report (included as Table 14 on the previous pages of this report).
- Undertaking further archaeological assessment and possible investigation or monitoring in areas designated as having archaeological potential, where they would be impacted by the intermodal terminal development. The SoHI for each stage should address the necessary actions regarding areas of archaeological potential within the development area for each stage of the SIMTA proposal.
- Preparing a Statement of Heritage Impacts for Glenfield farm in association with the application seeking approval for the rail corridor, taking into account potential impacts on views and setting.
- Notifying the NSW Heritage Council and engaging a heritage consultant/archaeologist if any archaeological deposit or item of heritage significance is located within the study area and is at risk of being impacted.

As previously noted, SIMTA has submitted a referral of its proposed action to the Department of Sustainability, Environment, Water, Population and Communities and is seeking approval to carry out its proposed action.

**TABLE 8 – DEVELOPMENT AND MITIGATION OPTIONS**

DEVELOPMENT OPTION	LIKELIHOOD OF OPTION	SIGNIFICANCE OF IMPACT	POSSIBLE MITIGATION STRATEGIES	SUMMARY OF MITIGATION STRATEGY AND ITS EFFECT ON HERITAGE VALUE
<b>SIMTA Site</b>				
Conservation of the WWII buildings <i>in situ</i>	Low	The conservation of some or all buildings <i>in situ</i> would preserve some of the heritage value of the site. Values associated with the setting and context of the buildings would be affected.	<p>Adaptive reuse of the buildings <i>in situ</i>, wherever practicable.</p> <p>Preservation of buildings to allow their conservation</p>	<p>The adaptive reuse of some buildings <i>in situ</i> would involve altering the buildings in order to make them suitable for reuse in new ways. It would avoid total demolition or removal, and would preserve a connection to the military history of the site. Ideally, representative examples of both store building types (timber post and beam, and composite timber and steel) would be retained. The form of adaptive reuse would depend upon the uses to which the buildings would be put as part of the SIMTA development, but should have minimal impact on the heritage significance of the building and its setting.</p> <p>The preservation of all or some of the WWII buildings would involve maintaining their physical fabric in its current state in order to conserve their heritage significance. Preservation of some of the buildings would facilitate the retention of built heritage values, but would affect values related to heritage context and may not allow alterations that could make future use of the buildings viable.</p>
Demolition of the WWII structures to provide development areas for intermodal warehousing	Moderate	The demolition of all structures would have a significant impact on the heritage values of the DNSDC site. If the current boundaries of the site were kept intact, the site would retain some local historical significance as	Architectural interpretation of the heritage value items within the design and construction of structural elements on the SIMTA site (e.g. lighting or	Architectural interpretation would be a way of reflecting the site's military past and memorialising the former buildings and layout at the site. Architectural interpretation would be most effective if employed in conjunction with the relocation and adaptive reuse of some of the WWII buildings.

DEVELOPMENT OPTION	LIKELIHOOD OF OPTION	SIGNIFICANCE OF IMPACT	POSSIBLE MITIGATION STRATEGIES	SUMMARY OF MITIGATION STRATEGY AND ITS EFFECT ON HERITAGE VALUE
		an illustration of the boundaries and alignments of the original land grants and subdivisions in the area. The major national significance of the site lies in its role as a military camp, particularly in the WWII buildings (including their fabric, layout, and ability to demonstrate the original road and rail alignments through the military camp) and this would be diminished with the demolition of the buildings.	building facades).  Archival and photographic recording of the site, with copies of the records held at the site and at the new locations of any buildings which have been relocated.	Archival and photographic recording of the site (including the buildings themselves, and the layout of the site) should be undertaken before any changes are made to the site. This mitigation option would not actually conserve the heritage values of the site or buildings, nor provide an easily accessible/visible interpretation of them.
Relocation for adaptive reuse on other Commonwealth land of some or all of the buildings that are of heritage value	Moderate	While there would be no impacts to the physical fabric of the structures, the heritage values of the buildings and the DNSDC site would be significantly reduced by removing them from their historical setting and impacting the relationships that currently exist between the different buildings, the historical road and rail alignments, and the broader landscape.  The relocation of the buildings	Architectural interpretation of the heritage value items within the design and construction of structural elements of the SIMTA site.  Archival and photographic recording of the site, with copies of the records held at the site and at the new locations of any buildings which have	Architectural interpretation would be a way of reflecting the site's military past and memorialising the former buildings and layout at the site. Architectural interpretation would be most effective if employed in conjunction with the relocation and adaptive reuse of some of the WWII buildings.  Archival and photographic recording of the site (including the buildings themselves, and the layout of the site) should be undertaken before any buildings are relocated. If copies of these records were held at the site and at the new locations of relocated buildings, they would provide contextual information that would retain a connection with the past of the site and buildings. This mitigation option would not actually conserve the heritage values of the site or buildings, nor provide an easily

DEVELOPMENT OPTION	LIKELIHOOD OF OPTION	SIGNIFICANCE OF IMPACT	POSSIBLE MITIGATION STRATEGIES	SUMMARY OF MITIGATION STRATEGY AND ITS EFFECT ON HERITAGE VALUE
		would retain their aesthetic and representative significance, and, while not ideal, is preferable to demolition. It would be appropriate for the buildings to continue to be used by Defence on a different military site.	been relocated.	accessible/visible interpretation of them.
Relocation for preservation on other Commonwealth land of some or all of the buildings that are of heritage value	Moderate	<p>While there would be no impacts to the physical fabric of the structures, the heritage values of the buildings and the DNSDC site would be significantly reduced by removing them from their historical setting and impacting the relationships that currently exist between the different buildings, the historical road and rail alignments, and the broader landscape.</p> <p>The relocation of the buildings would retain their aesthetic and representative significance, and, while not ideal, is preferable to demolition. It would be</p>	<p>Architectural interpretation of the heritage value items within the design and construction of structural elements of the SIMTA site.</p> <p>Archival and photographic recording of the site, with copies of the records held at the site and at the new locations of any buildings which have been relocated</p>	<p>Architectural interpretation would be a way of reflecting the site's military past and memorialising the former buildings and layout at the site. Architectural interpretation would be most effective if employed in conjunction with the relocation and adaptive reuse of some of the WWII buildings.</p> <p>Archival and photographic recording of the site (including the buildings themselves, and the layout of the site) should be undertaken before any buildings are relocated. If copies of these records were held at the site and at the new locations of relocated buildings, they would provide contextual information that would retain a connection with the past of the site and buildings. However, this mitigation option would not actually conserve the heritage values of the site or buildings, nor provide an easily accessible/visible interpretation of them. Other mitigation options would also need to be employed.</p> <p>The preservation of the buildings (as opposed to adaptive reuse) may allow more scope for heritage interpretation within</p>



DEVELOPMENT OPTION	LIKELIHOOD OF OPTION	SIGNIFICANCE OF IMPACT	POSSIBLE MITIGATION STRATEGIES	SUMMARY OF MITIGATION STRATEGY AND ITS EFFECT ON HERITAGE VALUE
		appropriate for the buildings to continue to be used by Defence on a different military site.		the buildings – such as signage or posters featuring photographs, plans, and historical information related to the buildings and the DNSDC site.
A combination of Options A, B, C and/or D.	High	Impacts to the heritage values of the site are likely to be significant, but would depend on the combination of options chosen and other determining factors.	<p>Conservation and adaptive reuse of some buildings in situ</p> <p>Relocation and adaptive reuse of some buildings at other sites.</p> <p>Relocation and preservation of some buildings at other sites</p> <p>Archival and photographic recording.</p> <p>Interpretation of heritage values at the SIMTA site and in the relocated buildings</p>	<p>Given the nature of the development, it is unlikely that all of the WWII buildings would be retained. However, rather than demolition, a combination of mitigation options could provide an effective compromise and allow some of the heritage significance of the site and buildings to be preserved.</p> <p>The heritage values of both the in situ and relocated buildings should be interpreted through the use of signage or posters featuring photographs, plans, and/or historical information related to the buildings and the DNSDC site. The heritage values of the SIMTA site should be interpreted through the design and construction of structural elements on the SIMTA site. This interpretation should include physical references to the former buildings and layout of the DNSDC site. Detailed archival and photographic recording should be undertaken before any changes are made to the site.</p>
Demolition of structures built in the 1990s.	High	Impacts to the heritage significance of the site as a whole would be low if only the	Archival recording of the relationship between the 1990s buildings and	Detailed archival and photographic recording should be undertaken before any changes are made to the site in order

DEVELOPMENT OPTION	LIKELIHOOD OF OPTION	SIGNIFICANCE OF IMPACT	POSSIBLE MITIGATION STRATEGIES	SUMMARY OF MITIGATION STRATEGY AND ITS EFFECT ON HERITAGE VALUE
		1990s buildings were impacted.	other structures on the DNSDC site.	collect information on heritage values before they are impacted.
Subsurface excavations within areas of archaeological potential	High	The significance of the impacts will depend on the nature of remains identified within the area of archaeological potential.	Monitoring of works or archaeological test excavations conducted by an appropriately qualified heritage consultant/archaeologist.	Impacts would be mitigated by archaeological investigation as they would provide a means of recording and interpreting information about the heritage values of the site.

### 12.3.3 POTENTIAL CUMULATIVE IMPACTS

#### 12.3.3.1 INDIGENOUS HERITAGE

The previous and existing activities on the SIMTA site have resulted in a high level of disturbance to the site. It is likely that this would also be the case for the SME site. The introduction of fill would have caused significant detrimental impact to any existing land surface and/or soil profile (and any associated Aboriginal objects) that may have been present within the area of the two proposed developments.

There is potential for items or areas of cultural importance/significance to be present within the rail corridor area of the SIMTA site and surrounding the Georges River, however, these will be identified through ongoing Aboriginal consultation during the preparation and assessment of future applications.

SIMTA has completed the stakeholder consultation process in accordance with the former NSW Department of Environment Climate Change and Water '*Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*' Guidelines, and comments received during this process have been incorporated into the final report.

Overall, it is concluded that the cumulative impacts on indigenous heritage of the SIMTA proposal and the potential School of Military Engineering redevelopment for an intermodal terminal facility will be negligible, subject to the future compliance of the proposal with the recommended mitigation measures.

#### 12.3.3.2 NON-INDIGENOUS HERITAGE

The Department of Defence will continue to be consulted during the approvals process to align both the SIMTA proposal and the SME proposal in management of non-indigenous heritage items. Development options and possible mitigation measures are summarised in **Table 13**.

Based on the above, the potential cumulative impacts on non-indigenous heritage items are expected to be negligible.

### 12.4 LEGISLATIVE REQUIREMENTS

The *Indigenous Heritage Assessment* considered each of the following instruments and policy documents:

- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984.*
- *Environment Protection & Biodiversity Conservation Act 1999.*
- *Native Title Act 1993.*
- *Environmental Planning & Assessment Act 1979.*
- *Liverpool Local Environmental Plan 2008.*

The *Non-Indigenous Heritage Assessment* was undertaken in consideration of the following legislation and policy documents:

- *Heritage Act 1977.*
- *Environment Protection and Biodiversity Conservation Act 1999.*
- *NSW S170 Heritage and Conservation Register.*
- *Environmental Planning and Assessment Act 1979.*
- *Liverpool Local Environmental Plan 2008.*
- *Liverpool Development Control Plan 2008.*

## 12.5 SUMMARY AND CONCLUSION

The heritage investigations and assessments undertaken by Artefact Heritage Solutions and AHMS have identified the key heritage significance of the SIMTA site, the rail corridor land and surrounding areas.

The findings of the indigenous heritage impact assessment conclude that any potential impacts are likely to occur in the rail corridor. However, as the exact location of the rail link is yet to be resolved, it is not yet possible to determine the potential impact on these artefacts. Further investigations will be required at the detailed planning approval application stage.

The findings of the non-indigenous heritage impact assessment have found that the principal impact of the SIMTA proposal is likely to be on the heritage significance of the site, particularly the World War II buildings. However, consideration will also need to be given to the potential impacts of the rail corridor on the views and setting of Glenfield Farm.

Each of the reports provides a number of recommendations for further detailed investigations and mitigation measures which can be implemented to minimise impacts where possible. These recommendations and mitigation measures have been adopted in the Draft Statement of Commitments.

## 13 Visual and Urban Design

### 13.1 OVERVIEW

The Director-General's Environmental Assessment Requirements for the SIMTA Concept Plan application include the following requirement for assessment of the visual and urban design issues:

**Visual and Urban Design** – including but not limited to:

- *identify and evaluate the visual impacts of the project including an analysis of views from key vantage points and proposed management/mitigation measures to address the visual impact of the proposal.*
- *a design analysis and justification of the key built form elements of the proposal.*

A *Visual Impact Assessment Analysis* of the SIMTA proposal was undertaken by Reid Campbell and is attached as **Appendix U**. Reid Campbell was also engaged to prepare an *Urban Design and Landscape Report* (attached as **Appendix E**) to establish the built form controls for the future development of the site. The following sections of the report describe the assessment methodology and provide a summary of the key impacts and recommended mitigation measures outlined within these reports.

### 13.2 ASSESSMENT METHODOLOGY

The assessment of the visual and urban design matters was undertaken in accordance with the General Requirements of the DGRs and as listed below:

- **Existing Environment** – the visual and urban design analysis was based on an assessment of the existing site context, taking into account both the SIMTA site and associated rail corridor/indicative rail link. The key features of the site are summarised below:
  - The SIMTA site is predominantly cleared of natural vegetation. It currently accommodates warehousing and logistics operations, vehicle and equipment hardstand, with container storage serviced by an internal road network. The site is generally flat, ranging from between RL14 and RL16.
  - The rail corridor land comprises both undeveloped and disturbed land. The Commonwealth owned land immediately to the south is relatively undisturbed and comprises vegetated land. However, the land further south and east, including the East Hills Railway Corridor and quarry/waste facility, have been heavily modified. The proposed rail link will also need to cross both Anzac Creek and the Georges River.
  - The SIMTA site is located to the south of developed industrial land and east of the School of Military Engineering. The land immediately to the east and south is relatively undeveloped, while residential areas are located further to the east and west. The key views to the site are along the frontage of Moorebank Avenue and to a lesser extent from further distances where there is currently minimal visual impairment across cleared or unobstructed land. The residential areas generally have minimal or no views due to the significant viewing distances, undulated topography and landform, or shielding by other existing structures and vegetation.

A view shed analysis was undertaken using Geographic Information System (ArcGIS – Spatial Analysis Extension) to identify locations within the surrounding area that would have views of the proposed development. This is described in further detail within **Section 13.3.1**.

- **Potential Impacts** - the potential visual impacts of the proposal, including lighting, were assessed having regard to the assessment of the existing environment and the potential future development that could be accommodated in accordance with the provisions of the *Urban Design and Landscape Report*. An indicative high level cumulative impact assessment of the addition of the MICL and relocated DNSDC proposals was also considered, however the level of assessment is limited based on the available information at the time of assessment.



The SIMTA proposal is considered to have no or minimal direct visual impact due to the distance of the site from residential areas, existing visual barriers and undulating topography. This is described in further detail in **Section 13.3.1**. The cumulative impact of the MICL and relocated DNSDC proposals may be significant to adjacent communities to these proposals, however may in fact provide a 'visual shield' to the bulk of the SIMTA proposal. This is discussed further in **Section 13.4**.

- **Statutory Assessment Considerations** - an objective assessment methodology was utilised to determine the likely visual impacts of the proposed development. The built form design requirements are generally consistent with the requirements of the Liverpool Development Control Plan (DCP) 2008.
- **Management/Mitigation Measures** – the *Urban Design and Landscape Report* provides for the appropriate planning and orientation of development on the site, as well as integration of urban design elements and landscaping to mitigate and minimise any potential loss of visual amenity and integrate with the surrounding natural environment. The Statement of Commitments provide that the future detailed design of the proposed development will be undertaken in accordance with these requirements to avoid the proposal from having an unacceptable visual impact.

## 13.3 ASSESSMENT OF KEY ISSUES

### 13.3.1 VISUAL IMPACT

The *Visual Impact Assessment* has assessed the potential visual impacts arising from the built form that could be achieved in accordance with the site layout provided in the *Land Use and Staging Plans* (**Appendix D**) and the built form controls proposed within the *Urban Design and Landscape Report* (**Appendix E**).

A view shed analysis was undertaken using Geographic Information System (ArcGIS – Spatial Analysis Extension) to identify locations within the surrounding area that would have views of the proposed development. 40 key view locations were identified (refer below) including 35 views of the SIMTA site and nine views of the rail corridor land. The existing views were inspected and photographed using a GIS Camera.

**FIGURE 28 – KEY VIEW LOCATIONS USED IN VISUAL ANALYSIS (REID CAMPBELL: 2013)**



The potential visual impacts were assessed based on a digital three-dimensional model using AutoDesk REVIT that included the likely components of the development that would potentially be visible beyond the site. Views were generated of the model that matched the camera positions of the site photographs. The model photographs were combined with the site photographs to create simulated views of the proposal from each of the key viewpoints. Each viewpoint was then assessed using a range of visual impact criteria specific to the individual location. These criteria were broadly categorised into:

- **Visual Adaptation** – describes any significant changes to the landscape and visual amenity that is likely to occur as a result of the proposed development from a particular viewpoint.
- **Visual Sensitivity** – refers to the likely duration of views and number of observers from a given viewpoint and is independent of the ‘prominence’ of the proposed development.
- **Visual Impact** – a qualitative summary of the impact against the above criteria.
- **Light Spill** – expressed quantitatively in terms of light intensity.

The assessment recognised that the site has already been developed and its existing site character is essentially industrial, consisting of a number of large buildings used for warehouse and distribution purposes. Further, it was acknowledged that the existing site topography is generally flat with a low hill located within the middle section of the eastern boundary of the site. Besides secure perimeter fencing there is very little landscaping or other visual screening to shield operations from the public view and that of surrounding developments. The site is surrounded by expansive areas of natural dense bushland and other lands owned and occupied by the Department of Defence for industrial and military related uses. The next closest developments to the north of the site are also largely industrial. The closest residential areas are Wattle Grove to the north and east and Casula approximately 1km to the west across the Georges River.

The assessment concludes that the proposed development would generally be in keeping with the existing character of the area. Some structures/equipment may increase the visibility of the site beyond its current levels, however the pattern of the adjoining development will screen the development from much of the surrounding area. The most prominent views would occur at localised boundary points such as Moorebank Avenue and Anzac Road, as well as the residential boundary to Wattle Grove. However, these impacts are regarded as relatively low because of their existing and unobstructed views of the DNSDC operations which are reasonably compatible with the proposed SIMTA development. A summary of the potential impacts is provided in **Table 15**.

**TABLE 9 – IDENTIFIED VISUAL IMPACTS (REID CAMPBELL: 2013)**

VIEW	LOCATION	VISUAL IMPACT
View 14	North of site, Corner of Yulong Close and Anzac Road	The proposed development would be highly prominent at this location from Anzac Road looking south onto the site. There is little to no visual sensitivity from this viewpoint as the viewpoint is within an already established industrial zone. Therefore there will be a low visual impact from this viewpoint.
View 15	North of site, Corner of Greenhills Avenue and Anzac Road	The landscape change from this viewpoint would be barely perceptible due to the viewing distance and the fact that new elements which would be potentially visible would be similar to the existing elements that they would replace in the view.
View 16	North-east of site, Anzac Road	The development would be relatively prominent at this location. The change in the landscape amenity coupled with the zoning in which the viewpoint is situated will make this visual impact moderate to high.
View 17	North-east of site, Castlerock Court,	The development would be relatively prominent at this location. The change in the landscape amenity together with

	Wattle Grove	the zoning in which the viewpoint is situated will make this visual impact moderate to high.
View 18	East of site, Martindale Court, Wattle Grove	The proposed development would be relatively prominent at this location. The change in the landscape amenity coupled with the zoning in which the viewpoint is situated will make this visual impact moderate to high.
View 30	South of site, Moorebank Avenue	The proposed development would be highly prominent at this location. There is little to no visual sensitivity from this viewpoint as the viewpoint is within an already established industrial zone. Therefore there will be a low visual impact from this viewpoint.
View 31	South of site, Moorebank Avenue	The proposed development would be highly prominent at this location. There is little to no visual sensitivity from this viewpoint as the viewpoint is within an already established industrial zone. Therefore there will be a low visual impact from this viewpoint.
View 32	West of site, Moorebank Avenue	The proposed development would be highly prominent at this location. There is little to no visual sensitivity from this viewpoint as the viewpoint is within an already established industrial zone. Therefore there will be a low visual impact from this viewpoint.
View 33	North-west of site, Moorebank Avenue	The proposed development would be highly prominent at this location. There is little to no visual sensitivity from this viewpoint as the viewpoint is within an already established industrial zone. Therefore there will be a low visual impact from this viewpoint.
R01	South of site, Moorebank Avenue (rail overpass)	The addition of the proposed railway line is not a substantial change to the existing landscape amenity. The visual impact at this location will be moderate.
R02	South of site, Moorebank Avenue (rail overpass)	The addition of the proposed railway line is not a substantial change to the existing landscape amenity. The visual impact at this location will be moderate.

The principal mitigation measures that are to be employed to reduce the visual impact of the SIMTA proposal comprises screen planting and visual buffers achieved from the land use layout across the site. These include:

- High quality landscaping throughout the site, which will reinforce and extend the surrounding natural context and ecological qualities into the site.
- Inclusion of an 18 metre wide corridor of screening vegetation and a bio-retention swale along the Moorebank Avenue frontage, which will utilise a selection of native tree species with dense tree canopy and low screen planting.
- Landscape punctuation of nodal points along Moorebank Avenue.

- A 'boundary treatment' or 'buffer zone' along the other site boundaries, consisting of existing local species in the area and providing an essential scale of planting to complement the built form, including:
  - Southern boundary: combination of 10 metre and 20 metre wide landscape corridors and a bio-retention swale adjacent to the warehouse and distribution facilities and Intermodal Terminal.
  - Eastern boundary: total buffer zone of 13.5 metres consisting of 2.5 metre landscape corridor, a 6 metre internal light vehicle access road and a five metre wide bio-retention swale.
- Land cleared for the railway alignment will include planting consisting of tall trees with a height of 20 metres at Maturity, interspersed with medium height trees.

Overall, the assessment concludes that the proposed landscape treatments would reduce the visibility of the development and improve the overall visual amenity of the site and locality.

The light spill assessment was determined based on modelling a preliminary lighting concept that included Philips Optivision 2000 watt luminaries mounted on 40 metre poles at approximately 120 metre centres. The modelling showed that the 1 lux in residential dark surrounds during curfew hours is achieved approximately 150 metre from the light source. The nearest residential properties are approximately 400 metres away and accordingly, it was concluded that the impact of spill light to the residential properties will be well within the required criteria as specified in Australian Standard AS4282-1997 '*Control of the Obtrusive Effect of Outdoor Lighting*'.

Further detailed design development of the terminal will aim to reduce the proposed 40 metre standard to a lesser height whilst maintaining the 50 Lux levels required for terminal operations. This reduced standard height (and increased standard frequency) may further reduce the surrounding light spill Isolux levels, however the full extent of this reduction will not be fully recognised until further detailed design modelling is undertaken with each subsequent application for development on the site.

### 13.3.2 DESIGN ANALYSIS AND JUSTIFICATION

The Concept Plan application seeks approval for the development of an intermodal terminal facility generally in accordance with the Land Uses and Staging Plans (attached as **Appendix D**). The detailed design for the intermodal terminal and warehouse buildings is to be undertaken in association with the preparation of the applications for the individual future stages.

This will enable the detailed design to respond to current market demand and individual tenant needs. However, it is recognised that an appropriate level of certainty is required regarding the general siting and layout of the proposed facility to enable:

- Assessment of the appropriateness of locating an intermodal terminal facility at the nominated location.
- Facilitate the future construction and operation of the intermodal terminal facility in accordance with the agreed set of criteria to manage and/or mitigate its potential impacts.

Reid Campbell (and Hassell) has prepared an *Urban Design and Landscape Report* which addresses the key built form elements of the proposal (refer to **Appendix E**). While strict compliance with the LEP and DCPs is not necessary for development approval to be granted under the Part 3A transitional provisions of the EP&A Act, it is noted that the design principles proposed within the Urban Design and Landscape report are generally consistent with the local controls. These principles have been based on a comprehensive site analysis, a clear understanding of the project objectives and a core set of values, which are listed in the report as follows:

- **Responsive:** The design will be both responsive and sympathetic to the form, colours and textures of the natural and cultural character of the existing landscape. The SIMTA development will integrate with and improve the existing site character to form a high performance and quality development.
- **Community:** The development will include a provision for suitable and sufficient amenity which may be accessible by both the occupants and the public. This improved local amenity will incorporate



landscaping, open and public spaces, water sensitive urban design and environmental features, creating a “sense of place” and conveying a feeling of community.

- **Considerate:** Landscape and urban treatments will be considerate of the need to provide visual and acoustic shielding in the form of vegetation, landform and structures. A positive visual, environmental and management relationship with adjoining lands will be reinforced.
- **Connectivity:** A suite of design instruments will connect the various SIMTA site precincts, including well defined landscaping, entry statements, newly constructed landforms and streetscape elements, signage, street furniture and other built elements.
- **Identity:** The urban design and landscape form will express the character of the development and communicate a strong and unique identity that complements the surrounding land uses.

The Urban Design Principles provide specific objectives, development controls and/or outcomes for a range of issues, including:

- Landscape
- Streetscape
- Road Network and Hierarchy
- Building Siting and Setbacks
- Building Heights
- Car Parking
- View Corridors
- Signage and Lighting
- Safety and Security
- Water Sensitive Urban Design

The Building and Estate Design Principles address:

- Building Design
- Building Materials and Colours
- Typical Distribution Warehouse
- Typical Cross-Dock Warehouse
- Typical Freight Village

The built form controls within the *Urban Design and Landscape Report* will achieve a satisfactory level of certainty with regard to the management and/or mitigation of the potential impacts identified within the Concept Plan, while providing an appropriate level of flexibility with regard to the delivery of the future buildings in accordance with market demand.

Each of the Urban Design and Building and Estate Design Principles has been considered in the assessment of the Concept Plan application, including the *Visual Impact Assessment* outlined in **Section 13.2** above. It is anticipated that these principles will also guide the future detailed design for the staged redevelopment of the site. An appropriate commitment has been included in the Draft Statement of Commitments to facilitate the preparation of future applications in accordance with the *Urban Design and Landscape Report*.



## 13.4 POTENTIAL CUMULATIVE IMPACTS

The potential cumulative impacts of the MICL and relocated DNSDC proposals was assessed to identify any potential increase to visual sensitivity and impact at selected viewpoints due to these additional developments beyond the impact of the SIMTA proposal. Only limited public information was available at the time of assessment and as such, the cumulative impact assessment is based on the existing site characteristics and broad descriptors of the proposed future developments.

Overall, it is anticipated that both the MICL and relocated DNSDC proposals may have a potentially high visual impact on surrounding existing residential areas and developments due to the proximity of their land boundaries to the residential areas. These developments may create a 'visual shield' to the bulk of the SIMTA proposal, potentially negating (or reducing) any direct visual impact arising from the SIMTA proposal.

## 13.5 SUMMARY AND CONCLUSION

The *Visual Impact Assessment* undertaken by Reid Campbell has determined that the visual impact of the SIMTA proposal is relatively low, taking into account the existing DNSDC industrial buildings and the mitigation measures proposed to screen the intermodal terminal facility.

The light spill assessment has demonstrated that the lighting can be designed to meet the relevant criteria and avoid detrimental impacts on the surrounding area, with opportunities to further reduce the maximum height and associated potential impacts in the detailed design phase.

The potential cumulative impact of the SIMTA, MICL and relocated DNSDC proposals may be significant, however, the contribution of the SIMTA proposal to that cumulative impact would be quite low, taking into account its location and the proximity of the other two proposals to the residential areas.

The *Urban Design and Landscape Report* provides a comprehensive design analysis that justifies the proposed built form elements that will guide the siting and layout of the proposed rail terminal, warehouse buildings and the ancillary facilities, including the freight village, internal circulation, car parking and the like.

The Draft Statement of Commitments incorporates mitigation measures to address the potential visual impacts. It also includes a commitment to the future design of the approval applications in accordance with the built form controls within the *Urban Design and Landscape Report*.

## 14 Utility Servicing

### 14.1 OVERVIEW

The Director-General's Environmental Assessment Requirements for the SIMTA Concept Plan application include the following requirement:

**Utilities** – including but not limited to:

- service demand, capacity and augmentation of existing and proposed utilities and infrastructure as a result of the project.

A *Utility Strategy Report* has been prepared by Hyder and is attached in **Appendix V**. This report should be reviewed to understand the assessment in more detail, including consideration of the existing utility services for the site and the potential augmentation and adjustments to deliver the necessary utility servicing to support the SIMTA proposal.

### 14.2 ASSESSMENT METHODOLOGY

The assessment of the utilities servicing was based on the following methodology:

- **Existing Environment** – a review of the existing water, sewer, electricity, gas and telecommunications services currently available on the site (refer to **Section 14.3.2**).
- **Impact Assessment** - assessment of the likely impacts of the proposed future development, taking into account the forecast demands for water, sewer, gas, electricity and telecommunications and consultation with individual service providers (refer to **Section 14.3.3**).
- **Management/Mitigation Measures** – identification of the relevant infrastructure upgrades where required to meet the identified demands (refer to **Section 14.3.4**).

### 14.3 ASSESSMENT OF KEY ISSUES

#### 14.3.1 SERVICE DEMANDS

The SIMTA Intermodal Terminal Facility will require an enhanced level of utility services to connect to the site. The identified utility services which will be required include:

- Water Servicing by Sydney Water
- Sewer servicing by Sydney Water
- Electricity supply by Integral Energy
- Gas supply by Jemena Gas Networks
- Telecommunication servicing by Telstra

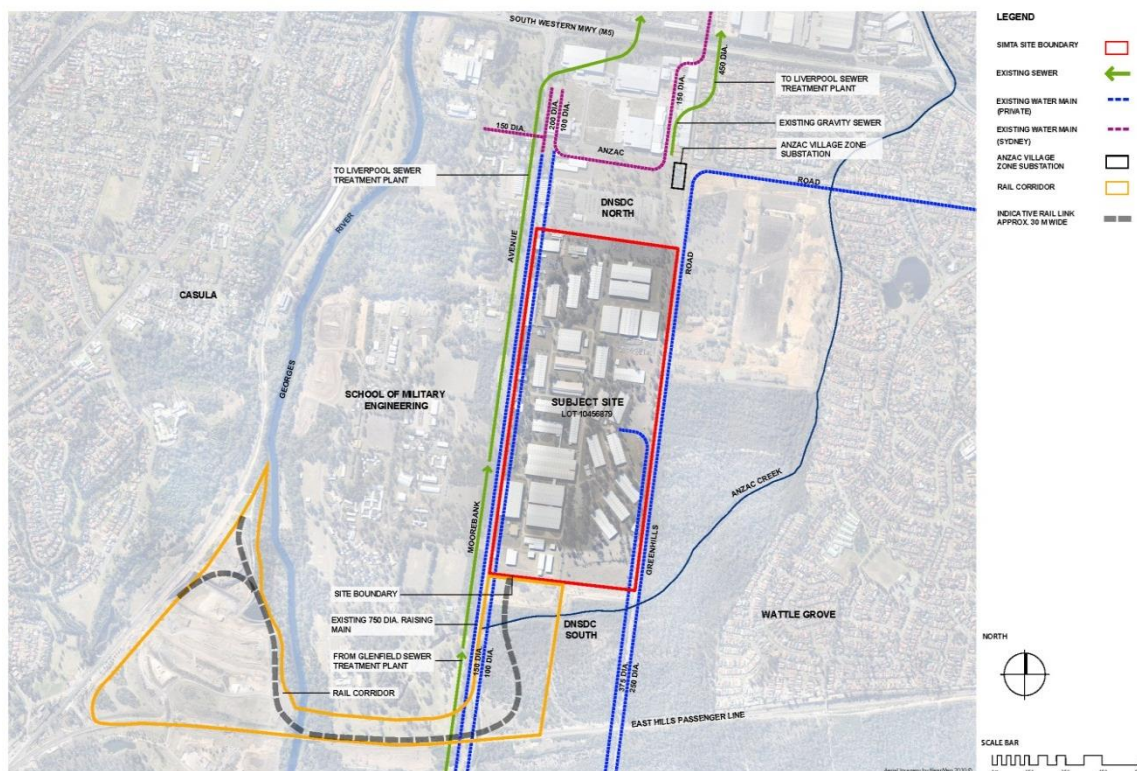
Each of these service providers was approached on service capacity and potential to accommodate future SIMTA utility demands. These responses are contained in the Appendices of the *Utility Strategy Report*.

### 14.3.2 CURRENT SERVICING CAPACITY AND LOCATIONS

Each of the utility service providers has provided information on capacity and location of existing assets within proximity of the site. The existing utility service capacities and locations are illustrated in **Figure 29** and as summarised below:

- **Potable Water** – the existing potable water services in the vicinity of the SIMTA site include both SWC owned and Department of Defence (DoD) owned assets including:
  - A SWC owned 500 millimetres diameter main in Heathcote Road.
  - A DoD owned 375 millimetres diameter lead in main from the above SWC asset, running in Anzac Road from the intersection with Heathcote Road to a booster pumping station in Greenhills Road reserve.
  - A DoD owned 300 millimetres diameter main runs from the booster pumping station along Greenhills Road reserve to two DoD owned storage reservoirs located 800 m south of the East Hills railway line.
  - A DoD owned 375 millimetres diameter ring main from the storage reservoirs which services existing DoD facilities in both the SIMTA site as well as the School of Military Engineering (SME) site on the western side of Moorebank Avenue. The Deposited Plan indicates that this main crosses the subject site via a formalised 7.5 metres wide easement for water supply.
  - A 150 millimetres diameter main on the west side and a 100 millimetres diameter main on the east side of Moorebank Avenue. Both are indicated as privately owned (DoD) on the Sydney Water network diagrams.
- **Sewer** – the SIMTA site is currently serviced by DoD owned wastewater infrastructure which discharges to the Liverpool sewerage system via SWC SPS 1094. The existing SWC sewer assets which form part of the Liverpool sewerage system in the vicinity of the SIMTA site include:
  - A 375 millimetres diameter gravity sewer in Greenhills Road reserve.
  - A 375 millimetres diameter gravity sewer in Moorebank Avenue.
  - A 300 millimetres diameter gravity sewer in Australia Avenue, Wattle Grove.
- **Electrical Supply** – an existing Integral Energy Zone Substation (Anzac Village Substation) is located at the corner of Anzac Road and the Greenhills Road reserve. The existing site is supplied as a high voltage customer (HC4391).
- **Gas** – Jemena has advised that they have the following assets in the area:
  - A 75 millimetres Nylon medium pressure natural gas main operating at about 210 kilopascal is located in Moorebank Avenue, adjacent to the site.
  - A High Pressure 1050 kilopascal steel network is located in Moorebank Avenue, to the north of the SIMTA site terminating at Bapaume Road.
- **Telecommunications** - existing Telstra assets are located in Moorebank Avenue and Anzac Road.

**FIGURE 29 – CURRENT UTILITY SERVICE CAPACITY AND LOCATIONS (REID CAMPBELL 2011)**



### 14.3.3 AUGMENTATION OF EXISTING AND PROPOSED UTILITIES

Each of the utility service providers was approached in the preparation of this Environmental Assessment to identify capability of utility facilities to service the SIMTA proposal, and identify where augmentation to existing utility infrastructure would be required. Their responses are summarised as follows:

- **Potable Water** - Sydney Water advised on 21 October 2010 that it has sufficient capacity within the Liverpool water system to service the development. Further, Sydney Water advised that the water supply for the SIMTA proposal would be from the existing 500mm water main at the corner of Anzac Road and Heathcote Road.
- **Sewer** - Sydney Water advised on 21 October 2010 that it will permit the transfer of flow from the SIMTA site and for a future connection to a Sydney Water sewer. However, the SIMTA proposal will require an extension to the existing SWC sewer network, which will be determined during the design development of subsequent planning applications requiring the approval of Sydney Water. This servicing option may involve an extension of an existing gravity main or construction of a new pumping station and associated rising main.
- **Electrical Supply** - Integral Energy has advised that they are able to provide supply from the existing Anzac Village Substation. Servicing of the SIMTA site will require the disconnection of the existing High Voltage supply, and the SIMTA proposal will be supplied as a 'low voltage tariff customer'. The service will be supplied via two new 11kV feeders, each comprising two 11kV 240mm<sup>2</sup> copper cables from Anzac Village Zone Substation. As the SIMTA proposal will be developed in stages, the new electrical feeds will also be staged, which will service both sides of the site.
  - **Stage 1** – install new feeds along Anzac Road and Moorebank Avenue to the southern end of the site.
  - **Stage 2** – Install new feed in Greenhills Avenue.
- **Gas** - Jemena has advised there are two options for providing gas servicing to the site:

- The 75mm main in Moorebank Avenue is suitable for light commercial applications and a connection can be provided at any location along the length of the site to suit the development.
- The high pressure main at Bapaume is capable of supplying an alternative energy source such as co- or tri-generation.
- **Telecommunications** - verbal confirmation has been obtained from Telstra that the site can receive the necessary telecommunication servicing.
- **AGL Upstream Investments** - AGL Upstream Investment holds an exploration license for Coal Seam Gas over the SIMTA site. As part of the *Utilities Strategy Report*, Hyder approached AGL Upstream Investments to determine if this can be relinquished.

#### 14.3.4 POTENTIAL CONSTRUCTION IMPACTS AND CUMULATIVE IMPACTS

The anticipated construction impacts for the installation of each of the required utility services has been addressed throughout the report and as provided below:

- **Potable Water** – the installation of the proposed water mains would be belowground within the road reserve of Greenhills Road and Anzac Road, connecting to the mains on Heathcote Road. Works are likely to include trenching work and temporary shutdown of the water main on Heathcote Road during tie-in works. Any tie-in works would be coordinated with Sydney Water to minimise inconvenience to surrounding residences. Trenching works within the road reserves would also be timed and managed to minimise disruptions to traffic.
- **Sewer** - installation of the proposed rising mains would be belowground within the easement of Greenhills Road, connecting to the mains within the relocated DNSDC site. Works associated with installation are likely to include trenching work and temporary shutdown of the rising main through the DNSDC site during tie-in works. Any tie-in works would be coordinated with DNSDC and Sydney Water to minimise inconvenience to DNSDC operations.
- **Electrical Supply** - installation of the proposed feeder lines would be belowground within the road reserve of Greenhills Road and Moorebank Avenue, connecting to the existing substation within the relocated DNSDC site. Works associated with installation are likely to include trenching work and temporary shutdown of the substation during tie-in works. Any tie-in works would be coordinated with DNSDC and Integral Energy to minimise inconvenience to DNSDC operations and conform to Integral Energy's stringent safety standards. Works within the public road reserves would be managed to minimise disruption to traffic.
- **Gas** - installation of the proposed gas main linkages would be belowground within the road reserve of Moorebank Ave and leading into the SIMTA site. Works associated with installation are likely to include trenching work and temporary shutdown of the gas main that follows Moorebank Avenue during tie-in works. Any tie-in works would be coordinated with Jemena to minimise inconvenience to surrounding residences and meet Jemena's stringent safety standards.

The proponents of the SIMTA and SME proposals will liaise with appropriate agencies to confirm the ongoing demands of the staged developments. Agencies will be consulted throughout the detailed design and construction process to accommodate the developments whilst minimising any disturbance upon the utility usage across the area.

#### 14.4 SUMMARY AND CONCLUSION

Based on the outcome of the investigations undertaken in the preparation of the *Utilities Strategy Report*, it is evident that all required utility services can be connected to the site to a sufficient scope to support the proposed SIMTA Intermodal Terminal Facility. The required augmentation and upgrading of existing utility services is included in the Draft Statement of Commitments.



## 15 Assessment of Additional Issues

### 15.1 OVERVIEW

In addition to the above issues listed within the DGRs, a number of additional issues were identified during the preparation of the Environmental Assessment that also warranted detailed consideration to determine their potential environmental impact. These issues include:

- Health Impacts
- Economic Impacts
- Climate Change
- Ecologically Sustainable Development (ESD)
- Waste Management

Each of the above matters is addressed within the following sub-sections of the Environmental Assessment and within the specialist reports that are submitted with the Concept Plan application.

### 15.2 HEALTH IMPACTS

A *Screening Level Health Risk Assessment* was prepared by Toxikos and is attached in **Appendix W**. The report assesses the health impacts associated with airborne particulates, and predictively evaluates the impacts of the proposed SIMTA Intermodal Terminal Facility on air quality of the surrounding residential areas.

The assessment was prepared in consultation with the Department of Health, focusing on the relationship between air quality and human health. The assessment considers a range of health-related issues include:

- Social and economic wellbeing
- Work-life balance
- Amenity
- Environment
- Physical health and wellbeing

The estimations of exposure applied within the *Screening Level Health Risk Assessment* are derived from the *Air Quality Assessment* prepared by PAE Holmes (**Appendix Q**). The air quality assessment scaled the operational activities from the Enfield intermodal, which is not automated. The assessment represents a 'worst-case' scenario as it assessed diesel fuelled forklifts, reach stackers and gantry cranes, which would not be present on the SIMTA site. This approach was adopted as the final development design, layout and operational details do not form part of the Concept Plan application. The methodology has adopted conservative air quality predictions and precautionary principles likely to generate results which are 'worst case' and lean towards protecting public health.

The potential health risks of two scenarios are assessed:

- **Scenario 1: The 'Incremental' Scenario** – assessing the emissions generated by freight movements related to the SIMTA proposal only.
- **Scenario 2: The 'Cumulative' Scenario** – combined assesses the health impacts from the existing air quality conditions and emissions from the SIMTA proposal.

The assessment concludes that the SIMTA proposal does not represent a significant acute or chronic health risk either individually or cumulatively. This conclusion is based on following key findings of the *Screening Level Health Risk Assessment*:

- *Acute or chronic direct health effects are unlikely to result from the emissions associated with the SIMTA proposal.*
- *The emissions of major importance for possible health effects are fine particulate matter (PM<sub>2.5</sub>).*
- *Nitrogen dioxide does not contribute to the overall acute or chronic health risk estimated from the SIMTA proposal.*
- *Predicted PM<sub>10</sub>, PM<sub>2.5</sub> or NO<sub>2</sub> emissions released from the SIMTA proposal would have a negligible impact on the surrounding area, either on their own or in combination.*
- *Based on the available data and the substances that have been assessed, there is a low likelihood for cumulative acute or chronic health effects.*
- *Individual concentrations of NO<sub>2</sub> and PM<sub>10</sub> and for the most part PM<sub>2.5</sub> are each below their respective health guideline thresholds.*
- *On rare occasions the accumulation of particulate matter and NO<sub>2</sub> (mainly related to PM) can exceed the combined standards, however, this does not indicate probable or imminent health impacts.*

### 15.3 ECONOMIC IMPACTS

An *Economic Assessment* has been prepared by Urbis and is attached in **Appendix X**. The report assesses the existing freight rail infrastructure across Sydney, as well as the demographic and employment profile of the Liverpool LGA and the South-West Subregion. The demographic and employment analysis of the Liverpool LGA identified:

- 56% of the population fall within the key working age group of 20 to 59 years, which is generally consistent with the Sydney average.
- Household incomes are 12.5% below the Sydney average.
- The Subregion has a higher than Sydney average proportion of labourers, machinery operators and drivers, and technicians and trades workers.
- Key employment industries are: Manufacturing; Retail trade; Construction; and Transport, postal and warehousing. These count for 52% of employment, which is above the Sydney average of 42%.
- Approximately 29% of Liverpool LGA residents work in the LGA.

This demographic study indicates that jobs that would be created by the intermodal terminal facility at Moorebank would largely fall within occupational categories which are matched to the employment profile of the local population. There is a demand for employment opportunities in the Subregion, which has just 0.59 jobs available per person in the labour force, with only the North and South Subregions having lower local job prospects.

The key economic impacts of the SIMTA proposal are considered to be positive. These are listed in the *Economic Assessment* (page iii) as follows:

- *850 direct and indirect jobs per annum over the six year construction period, or a total of 5,100 one year full time equivalent jobs over the full six year construction period.*
- *7,100 ongoing direct and indirect jobs during once the facility is fully operational.*
- *Reduction in the volumes of heavy vehicle movements along the M5 corridor in the order of 2,700 movements per day.*

- *Reduction in truck vehicle kilometres travelled of approximately 13 million kilometres per annum across the whole Sydney Metropolitan Network by 2031. This compares to a relatively small gain in train kilometres travelled of approximately 332,000 kilometres in 2026 once SIMTA has reached its estimated capacity of 1 million TEU.*
- *Net travel time savings of approximately 530,400 hours per annum, resulting in labour cost savings to businesses in the order of \$18.6 million per annum (\$2011). Over a 20 year period, this could generate savings with a net present value in the order of \$213 million (based on a 6% discount rate on an un-escalated basis).*
- *Net carbon dioxide emissions savings associated with the SIMTA development as opposed to an alternative development on the site consistent with the Liverpool Local Environmental Plan 2008 is estimated at 43,206 tCO<sub>2</sub>e per annum. Based on the commencing value of the Federal Government's proposed Carbon Tax at \$23 per tonne (fixed for the first three years), this would result in carbon tax savings to businesses of approximately \$994,000 per annum once the Moorebank Intermodal Terminal reaches full capacity of 1 million TEU. Over a 20 year period on a non-escalated basis (assuming a discount rate of 6% per annum), this saving would result in a net present value of approximately \$11.4 million.*

Overall, it is considered that the proposed SIMTA Intermodal Terminal Facility will provide employment and economic benefits for the Liverpool LGA, the South-West Subregion, and the Sydney Metropolitan Area.

## 15.4 CLIMATE CHANGE

While climate change was not specifically listed as a key issue within the DGRs, it is considered to be a relevant environmental concern requiring consideration as part of the assessment of the Concept Plan application. Accordingly, Hyder was engaged to prepare a *Climate Risk Assessment* (CRA) (refer to **Appendix Y**), including assessment of possible severe weather events associated with climate change.

A desktop qualitative risk assessment was undertaken to determine risks posed by historical climate and projected climate change impacts for the SIMTA proposal. The objective of the assessment was to assess whether the site would deliver required minimum levels of service throughout the entire design period, having regard to the selection of appropriate materials and design of all structures.

The CRA established the current climate regime based on historical weather data obtained from the Bureau of Meteorology (BOM) Bankstown Airport weather station for rainfall, temperature, humidity and wind speed. Based on records collected since 1968, the key characteristics of the local climate are:

- Highest average rainfall is in February (439.8mm).
- The highest daily rainfall event was in February 1990 with 439.8mm being recorded.
- The lowest rainfall months being July and September (44.6 mm)
- The average maximum temperature ranges between 17.2°C and 28.1°C.
- The highest recorded maximum at the weather station was 44.8°C recorded on 18 January 2003.
- Mean wind speeds generally do not exceed 25 km/h at 9am or 3pm.
- Relative humidity in the area typically ranges between 45% and 80%.

The local climate characteristics were considered with regards to the potential natural hazards associated with climate change. The principal climate change risks and potential implications associated with the SIMTA proposal were identified as follows:

- Flooding in the southern portion of the SIMTA site and within the rail corridor, particularly the eastern, central and western areas.

- Bushfire impacts along the eastern, southern and western boundaries of the proposal site and parallel to the rail link.
- Hail, lightening and wind associated with severe thunderstorms causing damage to infrastructure and structures.
- Heatwaves causing occupational health and safety issues as well impacts on machinery and equipment.

The potential climate change risks associated with the SIMTA proposal were assessed and the priority risks identified for mitigation measures to be developed for both construction and on-going operation of the SIMTA proposal. The adaptation actions for mitigation of priority climate change risks are shown below.

**FIGURE 30 – ADAPTATION ACTIONS FOR MITIGATION OF PRIORITY CLIMATE CHANGE RISKS (HYDER: 2012)**

Risk	Risk Rating	Adaptation Measure	Residual Risk*
Flooding of buildings and infrastructure causing higher maintenance costs and reduced asset lifecycle	High	Incorporate climate change sensitivity analyses for 20 per cent increase in peak rainfall and storm volumes into flood modelling assessment to determine system performance	Moderate
	High	Incorporate appropriate flood mitigation measures, where practical within the design to limit the risk to acceptable levels	Low
Flooding of rail infrastructure located within Anzac Creek sub-catchment causing declines in serviceability due to operational impacts	High	Consider the impacts of climate change on system performance, and where practical incorporate adaptive capacity measures within the design to limit the risk to acceptable levels.	Low
Flood management structures are not designed to cope with future rainfall patterns leading to flood damage	High		Low
Storm damage to structural enhancements / add-ons to buildings	High	Use of appropriate materials and engineering design capable of withstanding potential impacts posed by storm damage	Low
Increased heatwave frequency resulting in rail line buckling from sudden temperature rises causing higher maintenance costs and reduced asset life	High	Maintain track stability through regular maintenance, use concrete sleepers in place of wooden ones and use preventative measures in the event of heatwaves e.g. speed restrictions	Moderate
Increased operating costs due to higher carbon pricing	High	Consider further assessment of marginal abatement cost curves to assess commercial opportunities of reducing reliance on single energy source	Moderate

Appropriate mitigation measures have been adopted in the Draft Statement of Commitments to facilitate their delivery in the future staged approval applications.

## 15.5 ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)

Similar to climate change, it was considered important that Ecologically Sustainable Development (ESD) measures be addressed so that the SIMTA proposal minimises environmental impacts and emissions during its construction and on-going operation.

ESD opportunities exist across the life of the SIMTA proposal through the design, construction, operation, maintenance and decommissioning phases. At each stage the primary opportunities are in energy and water conservation and waste minimisation and resource recovery, as summarised below.

**TABLE 10 – ECOLOGICALLY SUSTAINABLE DEVELOPMENT OPPORTUNITIES**

SOURCE	ESD OPPORTUNITY
<b>Energy</b>	<ul style="list-style-type: none"> <li>▪ The main objectives are to reduce energy demand and GHG emissions. There are two aspects to reducing energy demands - reducing gross energy demands for the site, or a portion of it, and reducing demands during peak times.</li> <li>▪ This can be achieved through the utilisation of self-generated energy during peak times, through shift time adjustments and scheduling or through selection of energy efficient equipment being utilised preferentially during peak demand times.</li> <li>▪ Reduction in reliance on non-renewable energy sources is a key outcome.</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>▪ The main objectives are to reduce water demand and water losses and maintain hydrological flow regimes.</li> <li>▪ There are two aspects to reducing water demand - reducing potable water demand and reducing water demand across site facilities through water efficient technologies.</li> <li>▪ Reducing water losses can be achieved through the adoption of water efficient systems and processes and conservation of on-site water resources.</li> </ul>
<b>Waste</b>	<ul style="list-style-type: none"> <li>▪ The main objectives are to reduce waste generated on-site and ultimately reducing the amount of waste leaving the site to landfill in addition to efficient resource recovery.</li> <li>▪ Reducing waste would be achieved through a combination of design elements and management policy (e.g. procurement strategies).</li> </ul>

The SIMTA proposal provides opportunities for beneficial impacts through the adoption of innovative design and management practices that provide local and regional benefits aligned with the principles of ESD and other sustainability performance indicators, such as those identified by the Global Reporting Initiative and SIMTA's commitment to reduce environmental impacts and seek to improve standards set under planning and environmental controls.

Three core groups of ESD initiatives have been identified that would be implemented across the construction, operation and decommissioning stages of the SIMTA proposal. These are categorised as:

- Site management policies and strategies.
- Materials selection and energy and water demand management.
- On-site renewable energy generation.

The combination of these initiatives will contribute to the sustainable management of the SIMTA proposal and will contribute to minimising its ecological footprint. Further, it is considered that there are regional ESD benefits associated with the shift toward rail freight over current road vehicle transportation, reducing traffic in the Port Botany area and resulting in an increase in local employment opportunities.



## 15.6 WASTE MANAGEMENT

Waste management has been considered to identify re-use opportunities at the demolition and construction phases and minimise long-term environmental issues deriving from landfill. A *Waste Management Strategy (WMS)* has been prepared by Hyder and is contained in **Appendix Z**.

The WMS identifies the types of waste and materials that will be produced at each phase of the development. The waste management and minimisation strategy is summarised in Table 3 of the WMS and as reproduced below.

**TABLE 11 – SUMMARY OF WASTE MANAGEMENT AND MINIMISATION STRATEGIES**

DEMOLITION WASTE	CONSTRUCTION WASTE	OPERATIONAL WASTE
<ul style="list-style-type: none"> <li>Re-use of material will have priority over recycling</li> <li>Recycling will have priority over disposal</li> <li>Selection of reputable waste removal contractors who will guarantee that recyclable material will be recycled and will provide any relevant certificates</li> <li>Vegetation removed shall be either preserved for use in the new development, or mulched for inclusion in landscaping activities. The remainder will be sent to a composting facility</li> <li>Excavated earth will be used for infill and landscaping where feasible, the remainder will be sent to a recycling facility</li> <li>Asphalt will be re-used by transferring it to a batching plant or using it as a base layer for access roads</li> <li>Concrete components will, where possible, be crushed and re-used on site, the remainder will be sent to a recycling facility</li> <li>Fuel and oil storage from demolition machinery will be secured and managed responsibly within compound sites during works, and removed upon completion of works</li> <li>Sewage waste shall be disposed of by a licensed waste contractor in accordance with Sydney Water and OEH requirements</li> </ul>	<ul style="list-style-type: none"> <li>Reduce potential waste by ordering the correct quantities of materials</li> <li>Coordinate and sequence trades people to minimise waste</li> <li>Prefabricate materials where possible</li> <li>Use modular construction and basic designs to reduce the need for off-cuts</li> <li>Re-use formwork</li> <li>Re-use or recycle materials from the demolition phase</li> <li>Separate off-cuts to facilitate re-use, resale or efficient recycling</li> <li>Minimise site disturbance and limit unnecessary excavation</li> <li>Select landscaping which reduces green waste</li> <li>Select waste removal contractors to guarantee that recyclable waste are recycled</li> <li>Engage with the supply chain to supply products and materials that use minimal packaging</li> <li>Set up schemes with suppliers to take back packaging materials</li> <li>Sewage waste shall be disposed of by a licensed waste contractor in accordance with Sydney Water and OEH requirements</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate areas shall be provided for the storage of waste and recyclable material</li> <li>Standard signage on how to use the waste management system and what materials are acceptable in the recycling will be posted in all waste collection and storage areas</li> <li>All domestic waste shall be collected regularly and disposed of at licensed facilities</li> <li>Waste collection vehicles will be able to service the development efficiently and effectively</li> <li>An education programme and on-going monitoring will be implemented for training personnel to properly sort and transport waste into the right components and destinations</li> <li>Sewage waste will be disposed of by a licensed waste contractor in accordance with Sydney Water and OEH requirements</li> <li>Trade waste will be discharged to the sewer through a trade waste agreement with Sydney Water</li> </ul>

The WMS concludes the mitigation measures outlined in the strategy will achieve best practice waste reduction, waste minimisation and waste management for the SIMTA Intermodal Terminal Facility and help reduce development waste sent to landfill. The recommendations of the Strategy have been adopted in the draft Statement of Commitments.

## 16 Environmental Risk Analysis

The Director-General's Environmental Assessment Requirements for the SIMTA Concept Plan application include the following requirement for an Environmental Risk Analysis to be undertaken as for the SIMTA proposal as part of the environmental assessment:

### **Environmental Risk Analysis**

*Notwithstanding the above key assessment requirements, the EA must include an environmental risk analysis to identify potential environmental impacts associated with the project, environmental performance criteria and development standards and other mitigation measures, and any significant residual environmental impacts. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed assessment of this key environmental impact must be included.*

An *Environmental Risk Assessment* (attached in **Appendix AA**) was undertaken to identify and assess the potential environmental impacts associated with the SIMTA proposal and assign a risk ranking to each of those impacts. Mitigation measures to ameliorate those risks that are proposed in the preliminary environmental assessment specialist studies are discussed and a residual risk ranking assigned. The ERA concludes that with the application of the proposed mitigation measures, no environmental aspect is ranked as 'Very High' and accordingly, there are no unacceptable risks associated with the project.

The risk ranking for the key environmental issues listed in the DGRs is based on the risk analysis categories and criteria illustrated below, and are assessed before and after the control measures are applied.

**FIGURE 31 – RISK ANALYSIS CATEGORIES AND CRITERIA (HYDER: 2013)**

Likelihood	Consequence				
	1 – Not significant	2 - Minor	3 – Moderate	4 – Major	5 - Severe
<b>A - Almost certain</b>	Moderate	Moderate	High	Very High	Very High
<b>B – Likely</b>	Low	Moderate	High	Very High	Very High
<b>C – Possible</b>	Low	Low	Moderate	High	High
<b>D – Improbable</b>	Low	Low	Low	Moderate	Moderate
<b>E – Rare</b>	Low	Low	Low	Low	Moderate

The risk category is determined on the basis of consideration of the likelihood of an impact occurring and the consequences of the impact occurring. The criteria for evaluating likelihood and consequence are outlined in the following figures.

**FIGURE 32 – CRITERIA FOR EVALUATING LIKELIHOOD (HYDER: 2013)**

Level	Descriptor	Description	Frequency Of Occurrence
<b>A</b>	Almost Certain	Is expected to occur in most circumstances	Once per month
<b>B</b>	Likely	Will probably occur in most circumstances	Between once a month and once a year
<b>C</b>	Possible	Might occur at some time	Between once a year and once in 5 years
<b>D</b>	Unlikely	Could occur at some time	Between once in 5 years and once in 20 years
<b>E</b>	Rare	May occur in exceptional circumstances	Once in more than 20 years

**FIGURE 33 – CRITERIA FOR ESTABLISHING CONSEQUENCE (HYDER: 2013)**

Level	Category	Safety	Financial	Operational
<b>1</b>	Not Significant	No medical control	<\$250,000	< 6 hours track closure or disruption to facility operations
<b>2</b>	Minor	Lost time injury occurs or medical control required	≥ \$250,000 but less than \$2,000,000	≥ 6hrs but less than 24 hrs track closure or disruption to facility operations
<b>3</b>	Moderate	Serious injury occurs	≥ \$2M but less than \$10M	≥ 24 hrs but less than 48 hrs track closure or disruption to facility operations
<b>4</b>	Major	Single fatality occurs	≥ \$10M but less than \$50M	≥ 2 days but less than 5 days track closure or disruption to facility operations
<b>5</b>	Severe	Multiple but localised fatalities occur	≥ \$50M	≥ 5 days track closure or disruption to facility operations

Each of the potential environmental impacts was initially ranked between low and very high based on the environmental impacts that could potentially result if the issue was un-mitigated. Following the initial risk ranking, the environmental impacts were assigned a second risk ranking to indicate the risk following implementation of the control measure(s).

A summary of the risk analysis undertaken for each of the environmental aspects is provided on the following pages. The results present the outcome of the assessment of the perceived impacts, proposed control measures, and any residual impacts that may result. Overall, the report concludes that the proposed mitigation measures will result in no unacceptable risks.



Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
Transport and access	Yes	Increased traffic on proposed local road and rail routes.	H	<ul style="list-style-type: none"> <li>A detailed Transport and Accessibility Impact Assessment along with a Traffic Management Plan would be drafted to present likely impacts of the works and recommendations on management practices to be implemented accordingly.</li> <li>Strategic and project modelling would be undertaken to inform decisions on appropriate control measures to be prepared and implemented (e.g. access and intersection upgrades where required).</li> <li>An assessment of the road and rail infrastructure quality would be undertaken to determine capacity to handle increased traffic.</li> </ul>	Yes	H	N/A
		Decrease in quality of local road and rail infrastructure.	M		None	L	
Noise and vibration	Yes	Increased noise and vibration levels upon adjoining receivers during construction (including nearby residential areas of Moorebank, Wattle Grove and Casula and sensitive land uses).	H	<ul style="list-style-type: none"> <li>A Construction Noise and Vibration Management Plan would be prepared and implemented to include the appropriate control measures to avoid, reduce and manage noise emissions and vibration.</li> </ul>	Yes	M	Noise and Vibration Assessment



Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
		Increased noise and vibration caused by locomotive movements once SIMTA proposal is operational.	H	<ul style="list-style-type: none"> <li>An Operational Noise and Vibration Management Plan would be prepared and implemented to include the appropriate control measures to avoid, reduce and manage noise emissions and vibration.</li> </ul>	There may be intermittent residual impacts during adverse weather conditions, i.e. overcast, low pressure or wind direction.	M	
Biodiversity	Yes	Permanent loss of threatened aquatic (including groundwater dependent) fauna and flora species habitat due to installation of infrastructure (e.g. bridge and rail link).	M	<ul style="list-style-type: none"> <li>Implementation of design principles for maintaining fish friendly passage.</li> <li>Implementation of construction and operation management plans for maintenance of structures in riparian and aquatic zones.</li> </ul>	Yes	L	Flora and Fauna Assessment  Preliminary Biodiversity Offset Plan
		Permanent loss of threatened fauna and flora species due to installation of infrastructure (e.g. bridge and rail link).	M	<ul style="list-style-type: none"> <li>The route of the proposed rail link should be designed to minimise potential impacts on the populations of <i>Persoonia nutans</i> and <i>Grevillea parviflora</i> subsp. <i>parviflora</i> in the study area. An offset strategy should be developed to offset residual impacts on these species.</li> <li>Construction and operation activities to be undertaken in accordance with a Flora and Fauna Management Plan within CEMP and OEMP respectively.</li> </ul>	Yes	L	
		Inadvertent removal and/or modification of areas containing populations,	VH	<ul style="list-style-type: none"> <li>Endangered Ecological communities and known locations of threatened flora species would be avoided where</li> </ul>	Yes	H	

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
		endangered ecological communities and/or critical habitat (including the Cumberland Plain Woodland).		possible. <ul style="list-style-type: none"> <li>High visibility plastic fencing is to be installed to clearly define the limits of the construction works area so as to not encroach on EEC and locations of threatened flora species.</li> </ul>			
		Inadvertent removal and/or modification of native and threatened flora.  Vegetation clearing (including riparian areas and loss and fragmentation of foraging, nesting and roosting areas.	VH	<ul style="list-style-type: none"> <li>Vegetation would be cleared only where required and outlined for the SIMTA proposal.</li> <li>A Vegetation Management Plan (VMP) would be prepared prior to construction of the rail corridor, detailing restoration, regeneration and rehabilitation of areas of native vegetation in the vicinity of the proposed rail corridor.</li> <li>The VMP would detail appropriate management for the potential habitat of threatened plant species in the study area, including monitoring during and after construction works to enable potential impacts to be minimised. Appropriate management may include fencing the habitat, signage and educating contractors of the presence of habitats, its significance and no-go zones.</li> <li>The VMP should be integrated with the landscape plan for the SIMTA proposal.</li> </ul>	Yes. A biodiversity offset strategy may be negotiated with Department of Premier Cabinet – Office of Environment (OEH) for unavoidable impacts.	H	

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
				<ul style="list-style-type: none"> <li>A Soil and Water Management Plan would be prepared and implemented that would include appropriate soil erosion and sedimentation control measures for both construction and operation.</li> </ul>			
		Loss of hollow bearing trees and fauna habitat.	H	<ul style="list-style-type: none"> <li>Important fauna habitat features, such as large hollow bearing trees, would be avoided where possible.</li> <li>Fauna microhabitat such as logs would be removed from areas to be cleared and relocated to suitable nearby bushland areas (where practicable) in the presence of an ecologist. Strategic removal of hollow-bearing trees.</li> <li>Installation of nest boxes would be considered in woodland vegetation in the rail corridor that may offer alternative nesting habitat to hollow-dependent species recorded in the study area</li> </ul>	Yes	M	
		Loss of biodiversity due to bushfire.	M	<ul style="list-style-type: none"> <li>Hot work not to be undertaken on declared total fire ban days.</li> <li>Vehicles and plant should not block fire trails.</li> <li>Bushfire awareness included in staff induction and in toolbox talks pre-commencement.</li> </ul>	Yes	L	

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
				<ul style="list-style-type: none"> <li>Construction and operation phases would be conducted in accordance with bushfire response and emergency procedures and hazard reduction activities would be undertaken where endorsed by the RFS.</li> </ul>			
		Loss of biodiversity due to changes in hydrological function of the SIMTA site, in particular the Castlereagh Swamp Woodland community.	<b>M</b>	<ul style="list-style-type: none"> <li>Design of on-site water retention to facilitate discharges to receiving waterways matching pre-construction discharges.</li> <li>Installation of appropriate drainage infrastructure (e.g. sediment basins), sediment and erosion controls to manage surface waters.</li> <li>Bio-retention installed in base of channels and swales proposed to capture and store stormwater. This will consist of bio-filtration layers, planting and subsoil collection and drainage.</li> </ul>	No	<b>L</b>	
		Loss of biodiversity due to weed infestation.	<b>M</b>	<ul style="list-style-type: none"> <li>CEMP would include requirements for washdown of equipment prior to entering site to remove seed and plant material.</li> <li>A weed control program is recommended as part of the conservation management of the retained vegetation.</li> <li>Ongoing monitoring for identification of weed outbreaks and treatment where</li> </ul>	Yes	<b>L</b>	

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
				required. <ul style="list-style-type: none"> <li>Any imported soils or earth materials to site would be classified and certified as weed free prior to acceptance on site.</li> </ul>			
		Loss of fish habitat and passage.	M	<ul style="list-style-type: none"> <li>Design and construction of rail crossings over Anzac Creek and Georges River to be in accordance with Fish Passage Requirements for Waterway Crossings (Fairfull and Witheridge 2003).</li> <li>Installation of appropriate drainage infrastructure (e.g. sediment basins), sediment and erosion control to prevent degradation of aquatic habitat.</li> </ul>	Yes	L	
Riparian	Yes	Alteration of Anzac Creek / Georges River flow regime effecting water quantity and quality.	L	<ul style="list-style-type: none"> <li>Development of the rail link across Anzac Creek and Georges River will comply with the required riparian corridor setbacks. Approval will be sought to undertake works within riparian corridors.</li> </ul>	No	L	Riparian Assessment
		Loss of riparian biodiversity.	M		Yes	L	
		Removal of riparian vegetation for purposes of waterway crossings.	VH	<ul style="list-style-type: none"> <li>The following mitigation strategies would be adopted during construction to ameliorate impacts on riparian zones:</li> <li>A Soil and Water Management Plan would be prepared and implemented that would include appropriate soil erosion and sedimentation control measures for both construction and operation.</li> </ul>	Yes	M	
		Introduction of hazardous materials into watercourse as a result of spills.	H		Yes	M	



Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
				<p>This will be defined through the preparation of a construction environmental management plan.</p> <ul style="list-style-type: none"> <li>• Areas of disturbance would be progressively developed to reflect the need of progressive construction. Areas would be rehabilitated and stabilised as soon as possible following construction.</li> <li>• Potentially hazardous activities would be conducted in accordance with industry standard practice environmental protection measures and in areas isolated from stormwater drainage systems or natural watercourses.</li> <li>• An OEMP would be prepared and implemented to address monitoring and maintenance of riparian vegetation and water and sediment control structures.</li> </ul>			
Bushfire	Yes	The SIMTA site has the potential to increase bushfire frequency.	M	<ul style="list-style-type: none"> <li>• Future design stages of the SIMTA proposal will be undertaken in accordance with the management principles identified in <i>Planning for Bushfire Protection</i> (NSW RFS, 2006b).</li> <li>• A Bushfire Management Plan would be developed for both the construction and operational phases of the SIMTA proposal.</li> </ul>	None	L	Hazards and Risks Assessment
		Increased risk of bushfire ignition from rail corridor activities.	M		None	L	

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
Hazards and risks (storing and handling dangerous goods on site)	Yes	Pressure explosion. Fire. Health hazard to humans.	H	<ul style="list-style-type: none"> <li>A preliminary hazard assessment would be progressively undertaken in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development as required as tenancy of the SIMTA site is determined.</li> <li>All tenants would be required to sign onto the SIMTA site's Hazardous Material Management Plan which will adopt the Code of Practice for storage and handling of dangerous goods (WorkCover NSW, 2005) and Model Code of Practice - Labelling of Workplace Hazardous Chemicals (Safe Work Australia 2011) as a minimum.</li> </ul>	None	L	Hazards and Risks Assessment
Contamination	Yes	Contaminated land. Natural soil constraint - including potential acid sulphate soils (PASS).	M	<ul style="list-style-type: none"> <li>A Phase 2 and 3 Environmental Site Assessment to be undertaken at five sites identified by Golders Associates Pty Ltd as potentially contaminated.</li> <li>Where required, a remedial action plan would be prepared and an approval sought under State Environmental Planning Policy No. 55 – Remediation of land.</li> <li>The Soil and Water Management Plan would include the appropriate measures to control associated impacts of remediation areas.</li> </ul>	None	L	Hazards and Risks Assessment Phase 1 Environmental Site Assessment

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
Stormwater and flooding	Yes	Regional and local hydrological impacts including: <ul style="list-style-type: none"> <li>Effects on flood characteristics on and off the SIMTA site.</li> <li>Loss of operations of the SIMTA proposal due to flooding.</li> <li>Structural damage to railway line resulting to loss of serviceability/freight access to site.</li> </ul>	M	<ul style="list-style-type: none"> <li>Stormwater detention facilities would be designed to limit peak discharges for a range of storm durations to no greater than under existing conditions.</li> <li>Water sensitive urban design measures would be incorporated in to the site design including the use of large open swales and channels and rainwater tanks.</li> </ul>	None	L	Stormwater and Flooding Environmental Assessment
		Reduced surface water and stormwater quality.	M	<ul style="list-style-type: none"> <li>A Soil Water and Management Plan and Water Sensitive Urban Design would be drafted. The plan would confirm the engineered design solutions to minimise associated impacts upon surface and stormwater quality.</li> </ul>	None	L	
		Increased erosion during construction (on and off the SIMTA site).	H	<ul style="list-style-type: none"> <li>An Erosion and Sediment Control Plan (ESCP) would be developed and implemented to include the appropriate control measures to minimise impacts upon water quality.</li> </ul>	None	L	
Air quality	Yes	Increased air pollution (particulate matter, NO <sup>2</sup> , CO and ozone) from the	VH	<ul style="list-style-type: none"> <li>An Air Quality Management Plan would be prepared and implemented to include</li> </ul>	Yes	M	Air Quality Impact

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
		construction of the SIMTA site.		appropriate control measures during the construction and operation phases, including control of dust and other particulate emissions.			Assessment
		Increased air pollution due to increased locomotive movements during operation (particulate matter, NO <sup>2</sup> , CO and ozone).	VH		Yes	M	
Greenhouse gas	Yes	Increase in greenhouse gas emissions as a result of construction and embodied emissions in materials used.	H	<ul style="list-style-type: none"> <li>A Greenhouse Gas Management Plan would be developed and implemented to include appropriate control measures during the construction and operation phases of the SIMTA proposal. This will include selection of materials to minimise embodied greenhouse gases.</li> </ul>	Yes	M	Greenhouse Gas Assessment
		Potential net increase in direct greenhouse gas emissions as a result of operation	L	<ul style="list-style-type: none"> <li>The transfer of freight movements from road to rail will result in a decrease in transport related GHG emissions.</li> </ul>	None	L	
Heritage	Yes	Damage and/or destruction of Aboriginal heritage items of significance.	H	<ul style="list-style-type: none"> <li>A management strategy for Aboriginal Heritage would be appropriate control measures during the construction and operation phases. This would include consideration of consultation requirements and process for managing any identified Aboriginal items uncovered during construction and operation.</li> </ul>	None	L	Non-Indigenous Heritage Assessment  Aboriginal Cultural Heritage Assessment
		Damage and/or destruction of European heritage items of	H	<ul style="list-style-type: none"> <li>Further archaeological investigation would be undertaken in the area</li> </ul>	None	L	

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
		significance.		<p>designated as having good archaeological potential if it is to be impacted by the SIMTA proposal.</p> <ul style="list-style-type: none"> <li>A Statement of Heritage Impact should be prepared for the Glenfield Farm during the staged project application for the rail link.</li> <li>A Heritage Management Plan would be drafted in consultation with the Australian Heritage Council and the State heritage council</li> </ul>			
<b>Visual and urban design</b>	Yes	Change in visual character of the SIMTA site and rail corridor.	<b>M</b>	<ul style="list-style-type: none"> <li>A landscape management plan will be developed and implemented to reinforce the surrounding natural context and ecological qualities of the SIMTA proposal.</li> <li>Along the site boundaries, a landscape treatment consistent with existing local species in the area would be applied to provide an essential scale of planting to complement the developments built forms.</li> </ul>	None	<b>L</b>	Visual Impact Assessment
<b>Utilities</b>	Yes	Increase on service demand, capacity and augmentation of existing and proposed utilities and infrastructure as a result of the SIMTA proposal.	<b>M</b>	<ul style="list-style-type: none"> <li>Lead in works and network upgrade works required to supply utilities to the SIMTA proposal will be undertaken at the cost of the development.</li> </ul>	None	<b>L</b>	Utilities Strategy Report



Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
Waste	No	Increase in demolition waste production.	M	<ul style="list-style-type: none"> <li>A Waste Management Plan would be drafted to include appropriate control measures and recommendations to be implemented during the construction and operation phases of the SIMTA proposal.</li> </ul>	None	L	Waste Management Strategy
		Increase in construction waste production.	H		Yes	M	
		Increase in operational waste production.	M		None	L	
Climate change	No	Increase frequency of flooding to buildings and infrastructure causing higher maintenance costs and reduced asset life.	H	<ul style="list-style-type: none"> <li>Incorporate climate change sensitivity analyses for 20 per cent increase in peak rainfall and stormwater volume into flood modelling assessment to determine system performance.</li> </ul>	Yes	M	Climate Change Risk Assessment Hazards & Risks Assessment
				<ul style="list-style-type: none"> <li>Incorporate appropriate flood mitigation measures, where practical within the design to limit the risk to acceptable levels.</li> </ul>		L	
		Flooding of rail infrastructure located within Anzac Creek sub-catchment causing declines in serviceability due to operational impacts.	H	<ul style="list-style-type: none"> <li>The impacts of climate change on system performance will be considered, to incorporate adaptive capacity measures within the design to limit the risk to acceptable levels.</li> </ul>	None	L	
		Flood management structures are not designed to cope with future rainfall patterns leading to flood damage.	H			L	

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
		Increased risk of storm damage to structural enhancements/add-ons to buildings.	H	<ul style="list-style-type: none"> <li>A Soil and Water Management Plan and WSUD would be drafted to include the following control measures:</li> <li>Use of appropriate materials and engineering design capable of withstanding potential impacts posed by storm damage.</li> </ul>	None	L	
		Increased bushfire frequency and intensity causing structural damage to buildings and infrastructure creating higher maintenance costs and reduced asset lifecycle.	H	<p>A Bushfire Management Plan would be drafted to include the following control measures:</p> <ul style="list-style-type: none"> <li>Incorporating appropriate strategic protection zones, including asset protection zones into design to limit bushfire risk to acceptable levels.</li> <li>Control of performance of hotworks on total fire ban days during construction and operation, particularly within any defined asset protection zones.</li> </ul>	None	M	
		Increased heatwave frequency resulting in rail line buckling from sudden temperature rises causing higher maintenance costs and reduced asset life	H	<ul style="list-style-type: none"> <li>Maintain track stability through regular maintenance, use concrete sleepers in place of wooden ones and use preventative measures in the event of heatwaves (e.g. speed restrictions, warehouse ventilation for improved heat removal).</li> </ul>		M	

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
		Increased operating costs due to higher carbon pricing	H	<ul style="list-style-type: none"> <li>Consider further assessment of Marginal Abatement Cost Curves to assess commercial opportunities of reducing reliance on single energy source.</li> </ul>		M	
Landuse	No	Alteration to the current landuse of the SIMTA site, rail corridor and surrounds.	M	Consideration of a Landuse Assessment to be drafted to include measures to control associated landuse impacts.	None	L	N/A
		Rail line construction across Glenfield Waste facility would adversely affect operation of the waste facility.	H	Consultation will be undertaken with the owner/operator of the facility to keep them informed during design and construction.	Yes	M	
Community	No	Disruption to the community during construction.	VH	<p>A Community Consultation and Involvement Plan would be drafted to include the following:</p> <ul style="list-style-type: none"> <li>Maintaining communication with the community and all relevant stakeholders throughout the construction process.</li> </ul>	Yes	M	Community Consultation Outcomes Report
		Community concern over impacts on air quality of queuing and idling trucks.	H	<ul style="list-style-type: none"> <li>SIMTA is committed to implementing a system for the management of truck arrivals and departures to reduce the likelihood of trucks queuing and idling in and around the proposed intermodal.</li> </ul>	Yes	M	

Issue	DGR key issue?	Potential impacts	Risk ranking before control measures applied	Control measures	Residual impacts	Risk ranking after control measures applied	Reference
		Impacts on community resulting from light shed	M	<ul style="list-style-type: none"> <li>SIMTA proposal will use a lighting concept designed specifically to minimise light spill and comply with Australian Standard AS4282- 1997 – Control of Obtrusive Effects of Outdoor Lighting. The lights would be shaded and downward pointing to minimise light spill. Luminaires which spread light would not be used.</li> </ul>	Yes	L	

## 17 Consultation

The Director-General's Environmental Assessment Requirements (DGRs) include the following requirement for consultation to be undertaken during the preparation of the Environmental Assessment documentation:

*You should undertake an appropriate level of consultation with relevant parties during preparation of the EA, including but not limited to:*

- *Local, State or Commonwealth government authorities such as:*
  - *Department of Sustainability, Environment, Water, Population and Communities;*
  - *Department of Finance and Deregulation;*
  - *NSW Department of Environment, Climate Change and Water;*
  - *NSW Roads and Traffic Authority;*
  - *Transport NSW;*
  - *NSW Rural Fire Service;*
  - *NSW Industry and Investment;*
  - *RailCorp;*
  - *Australian Rail Track Corporation;*
  - *Sydney Ports Corporation; and*
  - *Liverpool City Council.*
- *service and infrastructure providers such as:*
  - i) *Sydney Water Corporation;*
  - ii) *Integral Energy;*
  - iii) *Jemena;*
  - iv) *Telstra; and*
  - v) *AGL Upstream Investments Pty Ltd.*
- *specialist interest groups and the public, including adjoining and affected landowners.*

Each of the above parties was consulted by SIMTA and the consultant team during the preparation of the Environmental Assessment documentation. A summary of these consultation processes is provided below. A copy of the *Community and Stakeholder Consultation Outcomes Report* prepared by Elton Consulting is attached as **Appendix BB**.

### 17.1 GOVERNMENT AUTHORITIES

Each of the relevant government agencies was invited to a Planning Focus Meeting at the SIMTA site on 13 December 2010. This meeting included representatives of:

- Department of Sustainability, Environment, Water, Population and Communities
- Department of Finance and Deregulation
- Department of Planning and Infrastructure
- Office of Environment and Heritage
- NSW Roads and Traffic Authority
- Transport NSW



- NSW Rural Fire Service
- NSW Industry and Investment
- RailCorp
- Australian Rail Track Corporation
- Sydney Ports Corporation
- Liverpool City Council

Further consultation was undertaken with a range of authorities to address the key issues identified within the DGRs. A summary of the Government Authority consultation, including mediums and attendees, is identified within the Consultation Schedule attached as **Appendix BB**. Further details are provided within each of the specialist consultant reports that are submitted with the Environmental Assessment and as summarised below:

- **Department of Planning and Infrastructure (DoPI)** – representatives from SIMTA and Urbis met with officers from the Department of Planning and Infrastructure (DoPI) on a number of occasions during the preparation of the Concept Plan application for the SIMTA Intermodal Terminal Facility. The initial meetings in 2010 aimed to provide DoPI with an understanding of the project and confirm the requirements for the preparation of the Preliminary Environmental Assessment. Further meetings were held between 2011 and 2012 regarding the preparation of the original Environmental Assessment. A number of meetings were held in 2012 and 2013 to fully understand the issues raised by DoPI and other key stakeholders, which have been responded to within this report.
- **Liverpool City Council** – SIMTA representatives met with Liverpool Council representatives in late-2010 and mid-2011 to discuss the SIMTA proposal. These discussions include an overview of the community concerns raised during the stakeholder and community consultation process, as well as discussions relating to management controls to be incorporated into the SIMTA proposal on the surrounding built, natural, social and economic environments.
- **Australian Rail Track Corporation (ARTC)** – Hyder liaised with ARTC representatives in determining the line capacity on the Southern Sydney Freight Line to handle forecast freight capacity generated by the SIMTA proposal. ARTC have provided no objections to the project definition design developed by SIMTA. These discussions are reflected in the *Rail Access Report* prepared by Hyder in **Appendix H**.
- **Transport NSW and NSW Roads and Traffic Authority (RTA)** (now RMS) – a number of meetings were held with Transport NSW and the RTA to discuss and clarify the traffic issues, modelling assumptions and SIMTA trip generation to be incorporated in the *Transport and Accessibility Impact Assessment*. This consultation is discussed in more detail in Section 5 and the report attached as **Appendix F**.
- **Department of Sustainability, Environment, Water, Population and Communities (DSEWPC)** – representatives of SIMTA and Hyder met with officers of DSEWPC on 15 March 2011 to discuss the expectations and requirements of the support documentation and assessment process for the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) referral. On 23 January 2012, a delegate for the Minister determined that assessment and approval was required under the EPBC Act and the proposed action would be assessed by Environmental Impact Statement (EIS). The draft EPBC EIS was placed on public display on 13 June 2013. The EIS will be assessed by DSEWPAC once the EIS has been finalised to address feedback received and a decision made whether to approve the action.
- **Office of Environment and Heritage (OEH)** – Hyder liaised with representatives of OEH to clarify scope of documentation to be prepared for the relevant DGRs. The key issues raised by the OEH related to water and stormwater management, contamination and acid sulphate soils. These matters have been responded to in Sections 9 and 10 of the Environmental Assessment.

- **Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS)** – discussions were undertaken between SIMTA specialist consultants and representatives of DTIRIS regarding scope of investigations required within the Georges River. The outcomes of these discussions are reflected in the *Flora and Fauna Assessment* in **Appendix J** and the *Riparian Assessment* in **Appendix K**.
- **Department of Health (DOH)** – SIMTA's health consultants liaised with DOH to clarify the scope and structure of the *Screening Level Health Risk Assessment*. These discussions have been incorporated in the *Screening Level Health Risk Assessment* in **Appendix W**.
- **Moorebank Project Office (MPO)** (now the Moorebank Intermodal Company Limited (**MICL**)) – discussions were undertaken with MPO and SIMTA representatives to establish aligned and concurrent understanding of risks and impacts of concurrent site investigations within the vicinity of the SIMTA site.

## 17.2 SERVICE AND INFRASTRUCTURE PROVIDERS

Hyder consulted with the following services and infrastructure providers to identify existing capacity and scope for augmentation of existing networks and infrastructures to support the SIMTA proposal:

- Sydney Water Corporation.
- Integral Energy.
- Jemena.
- Telstra.
- AGL Upstream Investments Pty Ltd.

The outcome of the consultation process with these service providers is summarised in the *Utilities Strategy Report* attached as **Appendix V**.

## 17.3 SPECIALIST INTEREST GROUPS AND THE PUBLIC

SIMTA commenced consultation with the local community and stakeholders prior to the lodgement of the Environmental Assessment and its formal public exhibition by the Department of Planning and Infrastructure. Community consultation was undertaken by Elton Consulting and included:

- Establishing a Community Information Centre (CIC) which has been made available as a space for stakeholder and project team meetings and for open invitation community sessions since May 2011.
- One-on-one Stakeholder Meetings with the first round of meetings on 10 February 2011 and upon request prior to the opening of the CIC.
- On-going consultation and communication methods including:
  - Stand-alone project website.
  - Email feedback system.
  - Free-call information line.
  - Community information newsletters and letters.

Elton Consulting has also continued to monitor local, regional, metropolitan and online media coverage in parallel to the consultation process, enabling SIMTA to respond to emerging community concerns.

The key issues raised in the consultation process are listed below:

- Capacity and cumulative capacity
- Traffic
  - Congestion on M5 and Moorebank Avenue
  - Traffic impacts along Anzac Road
  - Truck numbers on the M5
  - Trucks travelling to/from SIMTA's site daily
  - Trains travelling to/from SIMTA's site daily
  - Trucks and the suburban road network
  - Traffic impact assessment and methodology
- Cumulative impacts of the adjacent intermodal proposals
- Air quality and health impacts
  - Air quality impacts – increase in pollution
  - Air quality impacts and health impacts
  - Air quality impacts of idling/queuing trucks
  - Air quality impact assessment – methodology
- Light spill
  - How bright will the intermodal terminal be?
  - Extent of light spill
  - Methodology for assessing light spill
- Noise
  - Impact on existing noise levels
  - Methodology for assessing noise impacts
  - Noise generated by the SSFL
  - Noise monitoring
  - Noise buffering
- Remediation - is the land contaminated?
- Location and operation
  - Distance of SIMTA's proposal from nearest residences
  - Visual impact of SIMTA's proposal
  - Moorebank: an appropriate location

- Community Consultation - notifying the community and consultation process
- Biodiversity - Impacts on flora and fauna
- Greenhouse Gas
- Heritage

Detailed responses to each of the above issues are outlined in Section 4 of the *Community and Stakeholder Consultation Outcomes Report* prepared by Elton Consulting attached as **Appendix BB**.

The key social impacts are addressed within the *Social Impact Commentary* prepared by Urbis and attached as **Appendix CC**. A summary of the responses to each of the identified issues is provided below:

- **Traffic** – the potential for traffic congestion was identified as a major issue, including the potential for increased trucks on residential streets, congestion and truck impact on the M5 and truck traffic along Anzac Road and Moorebank Avenue.

It was noted that the outcomes of the traffic assessment identified the proposed development will contribute to existing poor levels of service in the local area and there will be some additional congestion at peak hours. However, it is acknowledged that a range of mitigation measures are proposed to minimise these impacts, including intersection/road upgrades, pedestrian and cycle infrastructure and public transport infrastructure to increase the frequency and accessibility of services.

- **Air Quality and Health Impacts** – concern has been raised regarding the potential impacts on local air quality; the question of increased particulates through diesel fumes; the effects of idling trucks; the methodologies for assessing current and future air quality and the effect of the proposal on the existing 'asthma zone'.

The air quality and human health impacts were assessed by Pacific Environment Limited and Toxikos (refer to **Appendix Q** and **Appendix W**). The *Air Quality Assessment* did not identify any likely significant exceeded standards for air quality for the local community, however did identify an overall net positive impact on air quality at the regional level. The *Health Impact Assessment* assessed the cumulative health impacts and concluded the SIMTA proposal was unlikely to have acute or chronic direct health effect on the local residents.

The review concludes that from a social impact perspective, the air quality impacts have not been identified as exceeding the standards and determined as unlikely to have acute or chronic direct health effects on local residents.

- **Visual Impact and Light Spill** – concerns have been raised regarding the potential brightness and extent of light spill and how it is proposed to be measured. The potential light spill from the SIMTA proposal has been assessed by Reid Campbell. This assessment has concluded that the light spill does not exceed regulated levels, and the proposed landscaping and works associated with reducing visual impacts will also assist in mitigating the effects of light spill.
- **Noise and Vibration Impacts** – concerns have been raised regarding the methods of assessment for monitoring of noise levels, the extent of the areas included in noise level studies, how impacts on existing noise levels might occur; impacts of rail noise and ongoing noise monitoring plans.

The review of the social impacts concludes that the Noise Assessment prepared by Wilkinson Murray has considered noise emissions from operations on site, rail noise, road traffic and during construction. Noise levels at non-residential receivers comply with relevant criteria, however, construction and operational noise, particularly from trucks, may exceed relevant criteria for some residential uses west of the site. No additional noise impacts are identified as a result of traffic increases on Moorebank Avenue, or as a result of additional rail traffic. Noise impacts during construction were identified for residential areas near the site. There will be no off-site vibration impacts.

The Assessment recommends provision is made at more detailed design stages for the construction of a noise barrier along the western boundary of the site. It is noted this is at the full operational stage of one million TEU. It also recommends the preparation of a Construction Noise and Vibration Management Plan prior to the commencement of any work, to manage potential impacts particularly around noise. The Plan should include activities to monitor noise and vibration associated with construction activities.

- **Employment Impacts** - the review of the social impacts acknowledges that the SIMTA Intermodal Terminal Facility will provide local employment opportunities during the construction and operation phases. This creates the potential to provide for a significant social benefit to the region, including:
  - *Reduced travel distances and commuting time for local potential employees.*
  - *New jobs created in construction, operation, maintenance, logistics and transport, including a range of skilled and unskilled roles.*
  - *Potential opportunities could be investigated for particular groups including young people, Aboriginal people or the long-term unemployed*
- **Crime Prevention Through Environmental Design** – the social impact review noted that there are currently few incidences of crime at or in the vicinity of the subject site. However, the higher frequency of crimes in the Liverpool LGA suggests a need for the incorporation of Crime Prevention through Environmental Design (CPTED) principles. It is recommended that natural surveillance, access control, territorial reinforcement/ownership and space management are considered in the preparation of more detailed designs, combined with management, leading to the production of a safe and healthy environment.

This Social Impact Commentary concludes that further mitigation measures may include:

- *Further consider landscaping design to minimise visual impacts and light spill, and enhance the local environment.*
- *Consider the development of a vehicle efficiency and emissions reduction program for the facility to encourage good maintenance and efficient vehicle selection.*
- *Potentially extend the reach of the pedestrian and cycle infrastructure including signage to encourage local pedestrian and cycling trips. Further, consider providing appropriate cyclist facilities in the development including under cover bike storage, showers and change facilities. The site is a 7-10 minute bike ride from Liverpool train station.*
- *Ensure the development of a Construction Noise and Vibration Management Plan at the appropriate stage, containing effective noise management and complaints reporting procedures, as recommended by the Noise Assessment.*
- *Consider the potential to include social service facilities on site that would serve the local employees and wider community. These may include such things as a child care facility or recreational facilities, as identified above. Provision of these would require further needs assessment and stakeholder consultation to ensure appropriate infrastructure was provided.*
- *Ensure the principles of Crime Prevention Through Environmental Design are considered and incorporated into the detailed design stages.*
- *Continue to assess social impact in relation to subsequent stages of design and development.*

These matters have been incorporated into the Draft Statement of Commitments within **Section 18**.

## 18 Draft Statement of Commitments

The following table outlines the Draft Statement of Commitments proposed by SIMTA as the proponent for the Concept Plan.

It incorporates each of the recommendations provided in the specialist consultant reports to mitigate the environmental impacts, monitor the environmental performance and/or achieve a positive environmentally sustainable outcome.

**TABLE 12 – DRAFT STATEMENT OF COMMITMENTS**

SUBJECT	COMMITMENT
<b>Development and Staging</b>	<p>The Proponent commits to carrying out the development of the SIMTA Intermodal generally in accordance with the following plans and documents:</p> <ul style="list-style-type: none"> <li>▪ Land Use Plan, prepared by Reid Campbell.</li> <li>▪ Indicative Staging Plan, prepared by Reid Campbell.</li> </ul> <p>The Proponent commits to the delivery of the rail link between the SIMTA site and the Southern Sydney Freight Line in the detailed application for the first stage of works. The application shall include the following information:</p> <ul style="list-style-type: none"> <li>▪ Clear and comprehensive description of the proposed infrastructure and operational details associated with the intermodal terminal.</li> <li>▪ Detailed assessment of all environmental issues, including geotechnical, ecological, stormwater/flooding and contamination.</li> <li>▪ Clear demonstration that the proposed new siding will be compatible with the current and future track alignment, including the proposed quadruplication of the East Hills railway corridor.</li> <li>▪ Details of consultation with the relevant agencies, including Transport for NSW, Railcorp, ARTC, Crown Lands Office, NSW Office of Water, NSW Fisheries and others, as required.</li> </ul> <p>The Proponent commits to including the following information with the detailed planning application(s) for the warehouse buildings:</p> <ul style="list-style-type: none"> <li>▪ Details of the building massing and internal layouts.</li> <li>▪ Siting and design of buildings in consideration of potential noise impacts from the intermodal terminal facility.</li> <li>▪ Perspective images that clearly show the proposed building treatments.</li> </ul> <p>The Proponent will consider the inclusion of facilities within the Freight Village that meet the needs of employees.</p> <p>The principles of Crime Prevention Through Environmental Design are to be considered and incorporated into the detailed design stages.</p>
<b>Transport and Access</b>	<p>The Proponent commits to negotiating with the relevant agencies/authorities as required to facilitate the staged delivery of the following road infrastructure upgrades</p>



SUBJECT	COMMITMENT
	<p>in accordance with the Transport Accessibility Impact Assessment:</p> <ul style="list-style-type: none"> <li>▪ Widen Moorebank Avenue to four lanes between the M5 Motorway/Moorebank Avenue grade separated interchange and the Northern SIMTA site access. Some localised improvements will be required around central access and southern access points.</li> <li>▪ Concurrent with four lane widening on Moorebank Avenue, the Moorebank Avenue/Anzac Road signal will require some form of widening at the approach roads.</li> <li>▪ A new traffic signal at SIMTA's northern access with Moorebank Avenue.</li> <li>▪ Potential upgrading works at the M5 Motorway/Moorebank Avenue grade separated interchange to cater for both background and additional SIMTA traffic growth as outlined in Table 9-1 of the Transport Accessibility Impact Assessment (and Table 6 of the Environmental Assessment report).</li> </ul> <p>The Proponent commits to negotiating with the relevant agencies/authorities as required to facilitate the staged delivery of the public transport infrastructure in accordance with the Transport Accessibility Impact Assessment:</p> <ul style="list-style-type: none"> <li>▪ Designing and constructing the central spine road and other site roads to accommodate buses, bus infrastructure and cyclist use for employees.</li> <li>▪ Construction of a covered bus drop off/pick up facility within the site to encourage the use of buses for employees.</li> <li>▪ Review and rationalisation of the locations of Route 901 bus stops in the vicinity of the site to match the proposed northern terminal entry location and enhance accessibility.</li> <li>▪ Providing peak period and SIMTA shift work responsive express buses to/from the site and Liverpool Station via Moorebank Avenue and Newbridge Roads with frequency dependant on the development of the site.</li> <li>▪ Providing peak period express buses to/from the site and Holsworthy rail station via Anzac Road, Wattle Grove Drive and Heathcote Road with frequency dependant on the development of the site.</li> <li>▪ Consulting with relevant bus provider(s) regarding the potential to extend the Route 901 bus through the site via the light vehicle road and increasing peak period bus service frequencies to better match the needs of existing and future employees of the locality as terminal development proceeds.</li> </ul> <p>The Proponent shall encourage walking and cycling by the inclusion of appropriate facilities including under cover bike storage, showers and change facilities.</p> <p>The Proponent commits to undertaking an actual truck trip generation survey after 24 months of operation and then progressively as the SIMTA site is developed.</p> <p>The Proponent commits to developing a Construction Traffic Management Plan to</p>

SUBJECT	COMMITMENT
	<p>minimise the potential impacts of the construction stage(s), including:</p> <ul style="list-style-type: none"> <li>▪ Heavy vehicle access routes</li> <li>▪ Location of construction worker parking</li> <li>▪ Mitigation measures to avoid any unacceptable impacts on the surrounding land uses, including the School of Military Engineering</li> </ul> <p>The Proponent commits to developing a Traffic Site Management Plan prior to the commencement of operations at the site to minimise the potential impacts, including:</p> <ul style="list-style-type: none"> <li>▪ Management measures to avoid trucks parking and idling either within or outside of the site boundaries</li> <li>▪ Provision of adequate parking for heavy vehicles to accommodate any potential delays in schedule times</li> </ul>
<b>Noise and Vibration</b>	<p>The Proponent will undertake further detailed assessments at each application stage after the Concept Plan Approval to provide input to planning and confirm the need for and degree of noise mitigation if required. This should be undertaken based on the most detailed information available at that stage of works. These subsequent assessments should address the DGR requirements for the SIMTA proposal as a minimum.</p> <p>The Proponent will carry out detailed assessments when the SIMTA proposal is operational, including monitoring of operational noise levels at nearby receivers. The monitoring data should be used to validate noise models used in these assessments.</p> <p>The Proponent shall consider locating buildings at or near the north-eastern and south-eastern boundaries of the site to provide beneficial acoustic shielding to the nearest residences.</p> <p>The Proponent shall consider locating less noise-intensive activities and operations at the north-eastern and south-eastern corners of the site where residences are closest.</p> <p>The Proponent should make provision for a noise barrier along the western boundary of the SIMTA site. The requirement for the barrier will be determined during detailed assessments at each development application stage after the Concept Plan Approval.</p> <p>The Proponent will carry out detailed assessments for the subsequent application stages and when the SIMTA proposal is operational, including monitoring of operational noise levels at nearby receivers. The monitoring data should be used to validate noise models used in these assessments. The subsequent assessments should address the environmental assessment requirements, as determined by the approval authority, as a minimum.</p> <p>Prior to undertaking demolition and construction on site, a Construction Noise and Vibration Management Plan should be prepared based on details of the proposed construction methodology, activities and equipment. This should identify potential noise and vibration impacts and reasonable and feasible noise mitigation measures (such as those identified in this report) that may be implemented to minimise any</p>

SUBJECT	COMMITMENT
	potential impacts, including engineering and management controls.
<b>Health</b>	<p>The Proponent will undertake further health impact assessments for lodgement with each of the detailed planning applications for the three major stages of the development, including:</p> <ul style="list-style-type: none"> <li>▪ Discussion of the known and potential developments in the local region</li> <li>▪ Assessment of the impact on the environmental values of public health.</li> <li>▪ Assessment of local and regional impacts including health risks</li> </ul> <p>Health impact assessments will be undertaken with reference to the Centre for Health Equity Training, Research, and Evaluations' practical guide to impact assessment (August 2007).</p>
<b>Biodiversity</b>	<p>The Proponent will undertake further detailed assessment to establish the potential biodiversity impacts of the proposed rail link and measures to mitigate its potential impacts. The investigations shall incorporate the mitigation measures listed within Section 5 of the Flora and Fauna Assessment and as summarised below:</p> <p><u>Avoid Impacts</u></p> <ul style="list-style-type: none"> <li>▪ Site establishment, earthworks and rail construction</li> </ul> <p><u>Mitigate Impacts</u></p> <ul style="list-style-type: none"> <li>▪ Soil disturbance related to site establishment, earthworks and rail construction</li> <li>▪ Vegetation clearance for rail construction, access and maintenance tracks</li> <li>▪ Construction in riparian areas/in proximity to watercourse</li> <li>▪ Construction of pavement, slabs and building structures</li> <li>▪ Hot works (including vegetation clearing requiring heat producing equipment)</li> <li>▪ Alteration to air quality and noise environments</li> <li>▪ Operation of the SIMTA proposal</li> </ul> <p><u>Management of Threatened Plant Species</u></p> <p>The Proponent shall prepare and implement a Threatened Species Management Plan for the <i>P. nutans</i> and <i>G. parviflora</i> populations within the rail corridor that would be affected by the rail link</p> <p><u>Off-Set Impacts</u></p> <p>The Proponent will update the <i>Preliminary Biodiversity Offset Strategy</i> (Hyder Consulting 2013) and continue to consult with DSEWPC through the project approval processes.</p> <p><u>Aquatic Flora and Fauna</u></p>

SUBJECT	COMMITMENT
	<p>The Proponent will implement the following measures to protect the aquatic flora and fauna as part of the applications for the detailed planning applications (where relevant and applicable):</p> <ul style="list-style-type: none"> <li>▪ Implementation of design principles for friendly fish passage.</li> <li>▪ Implementation of Construction and Operation Management Plans for maintenance of structures in riparian and aquatic zones.</li> <li>▪ Minimise siltation of the Georges River during construction through implementing the water quality mitigation measures detailed within the Stormwater and Flooding section of the Statement of Commitments.</li> <li>▪ Thorough assessment of any development within the Anzac Creek CSWL community, including potential impacts on groundwater quality and quantity.</li> <li>▪ Lantana removal within nominated construction zones to reduce degradation of streamside vegetation and offset any potential impacts to aquatic biodiversity.</li> </ul> <p><u>Riparian</u></p> <ul style="list-style-type: none"> <li>▪ The proposed rail link (located within the rail corridor) is exempt from the requirement for an a WM Act controlled activity approval from NOW as a transitional Part 3A project; however the detailed design of the rail link will seek to conform to the objects of the WM Act and its associated guidelines.</li> <li>▪ The riparian setback for Anzac Creek, as specified by NOW, is 30 metres (20 metre CRZ and 10 metre VB), while for Georges River the riparian setback is likely to be between 30 and 50 metres (20 – 40 metre CRZ and 10 metre VB).</li> <li>▪ Riparian corridors will be appropriately revegetated to restore and/or maintain ecological, functional and habitat values and impede surface flows and drop sediment before it reaches the waterways.</li> <li>▪ Water quality and quantity issues will be managed during the construction phase through the implementation, inspection and maintenance of best practice soil and water management techniques which will be defined in the CEMP for sedimentation and erosion control during construction.</li> <li>▪ Water quality and quantity issues will be managed during the operation phase through the implementation, inspection and maintenance of Water Sensitive Urban Design (WSUD) measures such as rainwater tanks, grass filter strips, swales and bio retention.</li> </ul>
<p><b>Hazards and Risks</b></p>	<p><u>Asbestos</u></p> <ul style="list-style-type: none"> <li>▪ The Proponent will develop an asbestos management plan for the SIMTA proposal containing a risk assessment undertaken in accordance with Code of Practice for the Management and Control of Asbestos in the Workplace (NOHSC, 2005).</li> <li>▪ Where the management plan recommends the removal of asbestos from site all works will be undertaken in accordance with the Code of Practice for the Safe</li> </ul>

SUBJECT	COMMITMENT
	<p data-bbox="571 226 1433 293">Removal of Asbestos (NOHSC, 2005), including the development of an asbestos removal control plan and an emergency plan.</p> <p data-bbox="528 327 724 353"><u>Dangerous Goods</u></p> <ul data-bbox="528 387 1437 1346" style="list-style-type: none"> <li data-bbox="528 387 1437 573">▪ The Proponent commits to undertaking a preliminary hazard assessment either during the preparation of the detailed applications (where tenants and purposes have been defined) or by tenants during the operational phase of development, as required by State Environmental Planning Policy No. 33 Hazardous and Offensive Development (SEPP No. 33).</li> <li data-bbox="528 600 1437 786">▪ Once the level of risk has been identified the aim will be to reduce the risk to 'as low as reasonably possible' (ALARP) through the application of specific operational management procedures that would form part of a framework for managing risks, captured within the facility's Hazard and Risk Management Plan and Emergency Response Plan.</li> <li data-bbox="528 813 1437 958">▪ Should unacceptable levels of risk be identified during the Preliminary Hazard Assessment (PHA), SIMTA will require potential tenants to demonstrate measures to reduce the risk to an acceptable level prior to acceptance of tenancy.</li> <li data-bbox="528 985 1437 1171">▪ The Proponent will require all tenants to disclose the type and quantity of goods entering the SIMTA site prior to award of tenancy. Prior to commencement of a lease on the SIMTA site, all tenants that would handle dangerous goods would be required to sign on to SIMTA's Hazard and Risk Management Plan and the Emergency Response Plan for the site.</li> <li data-bbox="528 1198 1437 1346">▪ These plans will be reviewed regularly and updated as goods entering the site may change with the tenancies. The requirements in the Code of Practice for storage and handling of dangerous goods (Work Cover NSW, 2005) would be adopted in these plans as a minimum.</li> </ul> <p data-bbox="528 1379 587 1406"><u>Spills</u></p> <p data-bbox="528 1440 1437 1547">The Proponent commits to the preparation of a Construction and Operational Management Plan prior to the commencement of site operations for control/mitigation and management of any spillage/leaks etc.</p> <p data-bbox="528 1581 767 1608"><u>Unexploded Ordnance</u></p> <p data-bbox="528 1641 1437 1709">The Proponent commits to undertaking and remediation (where necessary) prior to the commencement of construction.</p> <p data-bbox="528 1742 762 1769"><u>Bushfire Management</u></p> <ul data-bbox="528 1803 1437 2011" style="list-style-type: none"> <li data-bbox="528 1803 1437 1910">▪ The Proponent commits to incorporating the key objectives identified by the Rural Fire Service (RFS) into relevant future design stages, in accordance with the following principles: <ul data-bbox="571 1944 1437 2011" style="list-style-type: none"> <li data-bbox="571 1944 1437 2011">– Afford occupants of any building adequate protection from exposure to a bush fire.</li> </ul> </li> </ul>

SUBJECT	COMMITMENT
	<ul style="list-style-type: none"> <li>– Ensure safe operational access and egress for emergency service personnel and residents</li> <li>– Provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in asset protection zones (APZs)</li> <li>– Ensure that utility services are adequate to meet the needs of fire fighters</li> <li>▪ The Proponent commits to the development of a Bushfire Management Plan for both the construction and operational phases of the SIMTA proposal that aligns with the requirements of the local RFS Bushfire Management Committee operational plans of management.</li> </ul>
<b>Contamination</b>	<p>The Proponent will undertake the following tasks in association with the detailed planning applications for the staged redevelopment of the SIMTA site:</p> <ul style="list-style-type: none"> <li>▪ Confirming what, if any, actions were taken in regards to the Milsearch (2002) recommendations and the associated low risk ordnance issues.</li> <li>▪ Undertaking further investigations in the areas of environmental concern likely to be impacted upon by the proposed development. These investigations will be based on the detailed design of the proposed development to identify the extent of contamination, and what, if any, remediation activities are needed. The remediation of areas of the site (if any) would be best matched to the development of the site and considered as part of the future design.</li> <li>▪ Developing a Contamination Management Plan with detailed procedures on: <ul style="list-style-type: none"> <li>– Handling, stockpiling and assessing potentially contaminated materials encountered during the development works;</li> <li>– Landfill gas management during the excavation, handling, and stockpiling of waste materials, if excavation is required during the development, in the area of the Glenfield Quarry and Landfill;</li> <li>– Assessment, classification and disposal of waste in accordance with relevant legislation; and</li> <li>– A contingency plan for unexpected contaminated materials, such as materials that is odorous, stained or containing anthropogenic materials, that may be encountered during site works.</li> </ul> </li> </ul> <p>The Proponent will undertake the following tasks in association with the detailed planning applications for the staged redevelopment of the rail corridor lands:</p> <ul style="list-style-type: none"> <li>▪ Undertaking a Phase 2 intrusive environmental site assessment of the proposed rail corridor lands, with an objective to assess the risk posed to the detailed design and construction of the rail corridor by the areas of environmental concern identified within this report. The Phase 2 intrusive investigation would include a program of soil and groundwater sampling completed in accordance with the guidelines made or approved by the EPA under s 105 of the Contaminated Land</li> </ul>

SUBJECT	COMMITMENT
	<p>Management Act 1997;</p> <ul style="list-style-type: none"> <li>▪ Developing and implementing a contamination management plan as part of the project construction environmental management plan for managing contaminated materials either expected or unexpectedly encountered during the construction of the rail corridor. The contamination management plan would include detailed procedures on: <ul style="list-style-type: none"> <li>– Handling, stockpiling and assessing potentially contaminated materials encountered during the development works;</li> <li>– Assessment, classification and disposal of waste in accordance with relevant legislation; and</li> <li>– A contingencies plan for unexpected contaminated materials, such as materials that is odorous, stained or containing anthropogenic materials that may be encountered during site works.</li> </ul> </li> </ul>
<b>Stormwater and Flooding</b>	<p>The Proponent will incorporate stormwater quantity and quality management measures into the detailed applications in accordance with the objectives and performance standards outlined in the <i>Stormwater and Flooding Environmental Assessment</i> report and including:</p> <ul style="list-style-type: none"> <li>▪ Preparation of a Soil and Water Management Plan (SWMP) and Erosion and Sediment Control Plan (ESCP) for both the construction and operation phases.</li> <li>▪ Implementation of management plan strategies prior to commencement of the staged construction phase.</li> <li>▪ Monitoring and review performance of sediment and water control structures during construction and operation phases.</li> </ul> <p>With respect to fish passage and fish habitat, all design associated with flood and stormwater management and mitigation of pollution and waterway crossings will be in accordance with the requirements specified in Witheridge (2003) and Part 7 (Division 3) of the Fisheries Management Act 1994 (FM Act).</p> <p>The Proponent will prepare and update a flood emergency response plan as necessary to address the staged development of the site. Details are to be provided prior to the construction of each of the three major stages of the development.</p>
<b>Air Quality</b>	<p>The Proponent will undertake an air quality monitoring programme during the initial phases of both construction and operation of the SIMTA site in accordance with the <i>Air Quality Impact Assessment</i> and including:</p> <ul style="list-style-type: none"> <li>▪ Nuisance Dust</li> <li>▪ Air Emissions – PM<sub>10</sub> and Nitrogen Dioxide</li> </ul> <p>The Proponent shall consider the need to develop a vehicle efficiency and emissions reduction program for the facility to encourage good maintenance and efficient vehicle selection, taking into account the results of the air quality monitoring</p>



SUBJECT	COMMITMENT
	<p>programme.</p> <p>The Proponent commits to the preparation of a Construction Environmental Management Plan prior to the construction of each stage to provide air quality and dust management/ mitigation procedures to be adopted during each of the construction phases of the development.</p> <p>The Proponent commits to the preparation of a Greenhouse Gas Management Plan for the three major stages of the development in accordance with the provisions of the <i>Greenhouse Gas Assessment</i>.</p>
<b>Heritage</b>	<p>The Proponent commits to the implementation of the following General Mitigation Measures in the <i>Aboriginal Cultural Heritage Assessment</i> and including:</p> <ul style="list-style-type: none"> <li>▪ Consultation between SIMTA and relevant Registered Aboriginal Parties (RAPs) throughout the design and construction of the SIMTA proposal.</li> <li>▪ Where possible, SIMTA should aim to avoid impacting any known Aboriginal heritage objects, sites or places and places that have potential Aboriginal heritage or cultural values, throughout the life of the SIMTA proposal.</li> <li>▪ Where impact cannot be avoided, SIMTA should choose partial impact rather than complete impact wherever possible and ensure that appropriate measures to mitigate impacts are developed and implemented as required and as appropriate during design, construction and operation of the various stages of the SIMTA proposal.</li> <li>▪ If relocation of any element of the SIMTA proposal outside area assessed in this study is proposed, further assessment of the additional area(s) should be undertaken to identify and appropriately manage Aboriginal objects/sites/places that may be in this additional area(s).</li> <li>▪ In the event that previously undiscovered Aboriginal objects, sites or places (or potential Aboriginal objects, sites or places) are discovered during construction, all works in the vicinity of the find should cease and SIMTA should determine the subsequent course of action in consultation with a heritage professional, relevant Registered Aboriginal Parties and/or the relevant State government agency as appropriate.</li> <li>▪ Should suspected human skeletal material be identified, all works should cease and the NSW Police and the NSW Coroner's office contacted. Should the burial prove to be archaeological of Aboriginal origin, consultation with a heritage professional, relevant RAPs and/or the relevant State government agency, should be undertaken by SIMTA.</li> <li>▪ SIMTA should ensure that any reports or documents for the SIMTA proposal concerning Aboriginal heritage comply with applicable statutory requirements (those currently applicable are outlined in this report), are prepared in accordance with best practice professional standards and, where appropriate, ensure findings are provided to OEH AHIMS Registrar and the relevant RAPs.</li> </ul> <p>The Proponent commits to the implementation of the following Site Specific Mitigation</p>

SUBJECT	COMMITMENT
	<p>Measures:</p> <ul style="list-style-type: none"> <li>▪ To ensure cultural values for both the SIMTA site and proposed rail link are appropriately characterised and assessed, Aboriginal consultation should continue to be undertaken in accordance with applicable guidelines and requirements.</li> <li>▪ Where potentially impacted by the proposed rail link footprint, the artefacts identified in Transect 1 on the SIMTA site, and Transect 7 immediately south of the SIMTA site, should be collected by RAPs in conjunction with a heritage professional before construction commences. A Care and Control Agreement should be completed between SIMTA and the RAPs regarding the future of the artefacts (it is usually preferred that they be reburied nearby).</li> <li>▪ Given the extensive historical disturbance within the remainder of the SIMTA site, it is considered that the likelihood of the presence of intact or significant Aboriginal objects and/or sites is low and no further archaeological investigations are warranted in these remaining areas.</li> <li>▪ In relation to the proposed rail link footprint, with the exception of PADs 1 - 3 (Figure 33), it is considered that the likelihood of the presence of intact or significant Aboriginal objects and/or sites is low and no further archaeological investigations are warranted in the remaining areas.</li> <li>▪ Areas within 50 metres of the eastern and western banks of the Georges River, should not be impacted without further assessment.</li> <li>▪ The detailed application for the first stage of works shall include test excavations in each of PADs 1 - 3 in accordance with current archaeological practice and any relevant guidelines to determine the nature, extent and significance of any Aboriginal archaeological deposit. Such testing would be undertaken under Section 75U of the Environmental Planning and Assessment Act 1979, and be used to inform the assessment of these areas prior to lodgement of the subsequent staged application.</li> </ul> <p><u>Non-Indigenous Heritage</u></p> <p>The Proponent commits to undertaking the recommendations within the Non-Indigenous Heritage and including:</p> <ul style="list-style-type: none"> <li>▪ Preparing a Statement of Heritage Impact (SoHI) for submission to the Minister for Planning and Infrastructure as part of staged planning applications at State level.</li> <li>▪ Commencing discussions with the appropriate heritage bodies regarding the potential listing of the DNSDC site on the National Heritage List or the State Heritage Register.</li> <li>▪ Preparing a Statement of Heritage Impact for each stage, including the legal status of the site and advice on required actions depending on whether the site is listed or unlisted at the time that approval is sought.</li> </ul>

SUBJECT	COMMITMENT
	<ul style="list-style-type: none"> <li>▪ Development of an overall mitigation strategy for the DNSDC site, which may be based on Table 3 of this report.</li> <li>▪ Undertaking further archaeological assessment and investigation or monitoring, where required in areas designated as having archaeological potential that would be impacted by the proposal. The SoHIs for each stage should address the archaeological potential within the development area for each stage.</li> <li>▪ If any archaeological deposit or item of heritage significance is located within the study area and is at risk of being impacted, the NSW Heritage Council should be notified and a heritage consultant/archaeologist should be engaged to assess the item to determine its heritage significance.</li> </ul> <p>The potential visual impact of the proposed rail corridor shall be mitigated by the use of screening vegetation and terracing or earth mounding to soften the impact of the flyover.</p>
<b>Visual and Urban Design</b>	<p>The Proponent commits to the preparation and submission of a Landscape Management Plan with the detailed applications for the for the three major stages of the development that address each of the objectives and design principles contained within the Urban Design and Landscape report and the following mitigation measures:</p> <ul style="list-style-type: none"> <li>▪ High quality landscaping throughout the site, which will reinforce and extend the surrounding natural context and ecological qualities into the site.</li> <li>▪ Inclusion of an 18 metre wide corridor of screening vegetation and a bio-retention swale along the Moorebank Avenue frontage, which will utilise a selection of native tree species with dense tree canopy and low screen planting.</li> <li>▪ Landscape punctuation of nodal points along Moorebank Avenue.</li> <li>▪ A 'boundary treatment' or 'buffer zone' along the other site boundaries, consisting of existing local species in the area and providing an essential scale of planting to complement the built form, including: <ul style="list-style-type: none"> <li>▪ Southern boundary: combination of 10 metre and 20 metre wide landscape corridors and a bio-retention swale adjacent to the warehouse and distribution facilities and Intermodal Terminal.</li> <li>▪ Eastern boundary: total buffer zone of 13.5 metres consisting of 2.5 metre landscape corridor, a 6 metre internal light vehicle access road and a five metre wide bio-retention swale.</li> </ul> </li> <li>▪ Land cleared for the railway alignment will be include planting consisting of tall trees with a height of 20 metres at Maturity, interspersed with medium height trees.</li> </ul> <p>The Proponent will use lighting which is in accordance with Australian Standard AS4282-1997 'Control of Obtrusive Effect of Outdoor Lighting'. The height of the permanent light poles will be a maximum of 40 metres and reduced in height, where possible, to minimise potential light spill while maintaining appropriate safety</p>

SUBJECT	COMMITMENT
	standards.
<b>Utilities</b>	<ul style="list-style-type: none"> <li>▪ The Proponent will protect and relocate (where required) the existing services passing through the site, including stormwater, sewer, water, telecommunications and electricity.</li> <li>▪ The Proponent will undertake further investigations, as required, and provide details that adequate services are available to the site and/or provide details regarding the proposed servicing upgrades. Details are to be provided with the applications for each of the future stages of the development.</li> <li>▪ The Proponent will undertake to source all water supplies for the project from an authorised and reliable source.</li> <li>▪ The Proponent will obtain authorisation for the taking of water for purposes other than water supply, including for dewatering during construction.</li> </ul>
<b>Climate Change Risk</b>	<p>The Proponent will where applicable implement the controls and mitigation measures summarised in the <i>Climate Risk Assessment</i> report and including:</p> <ul style="list-style-type: none"> <li>▪ Incorporate climate change sensitivity analyses for 20 per cent increase in peak rainfall and storm volumes into flood modelling assessment to determine system performance</li> <li>▪ Incorporate appropriate flood mitigation measures, where practical within the design to limit the risk to acceptable levels</li> <li>▪ Consider the impacts of climate change on system performance, and where practical incorporate adaptive capacity measures within the design to limit the risk to acceptable levels</li> <li>▪ Use of appropriate materials and engineering design capable of withstanding potential impacts posed by storm damage</li> <li>▪ Incorporate appropriate strategic protection zones, including asset protection zones into design to limit bushfire risk to acceptable levels, where required</li> <li>▪ Control of performance of hotworks on total fire ban days during construction and operation, particularly within any defined asset protection zones.</li> <li>▪ Maintain track stability through regular maintenance, use concrete sleepers in place of wooden ones and use preventative measures in the event of heatwaves (e.g. speed restrictions, warehouse ventilation for improved heat removal)</li> <li>▪ Consider further assessment of Marginal Abatement Cost Curves to assess commercial opportunities of reducing reliance on single energy source</li> </ul>
<b>Ecological Sustainable Development</b>	<p>Where applicable the Proponent will implement the Environmental Sustainable Development initiatives across the construction, operation and decommissioning stages of the SIMTA proposal including:</p> <ul style="list-style-type: none"> <li>▪ Site management policies and strategies.</li> </ul>

SUBJECT	COMMITMENT
	<ul style="list-style-type: none"> <li>▪ Materials selection and energy and water demand management.</li> <li>▪ On-site renewable energy generation.</li> </ul> <p>The following principles will be achieved during the design development and construction phase of the proposal:</p> <ul style="list-style-type: none"> <li>▪ Precautionary principles.</li> <li>▪ Inter-generational equality.</li> <li>▪ Conservation of biological and ecological integrity.</li> <li>▪ Improved valuation, pricing and incentive mechanisms.</li> </ul>
Waste Management	<p>The Proponent commits to undertaking waste management in the demolition, construction and operational phases of the development as listed below:</p> <p><u>Demolition</u></p> <ul style="list-style-type: none"> <li>▪ Re-use of material will have priority over recycling</li> <li>▪ Recycling will have priority over disposal</li> <li>▪ Selection of reputable waste removal contractors who will guarantee that recyclable material will be recycled and will provide any relevant certificates</li> <li>▪ Vegetation removed shall be either preserved for use in the new development, or mulched for inclusion in landscaping activities. The remainder will be sent to a composting facility</li> <li>▪ Excavated earth will be used for infill and landscaping where feasible, the remainder will be sent to a recycling facility</li> <li>▪ Asphalt will be re-used by transferring it to a batching plant or using it as a base layer for access roads</li> <li>▪ Concrete components will where possible be crushed and reused on site, the remainder will be sent to a recycling facility</li> <li>▪ Fuel and oil storage from demolition machinery will be secured and managed responsibly within compound sites during works, and removed upon completion of works</li> <li>▪ Sewage waste shall be disposed of by a licensed waste contractor in accordance with Sydney Water and OEH requirements.</li> </ul> <p><u>Construction</u></p> <ul style="list-style-type: none"> <li>▪ Reduce potential waste by ordering the correct quantities of materials</li> <li>▪ Coordinate and sequence trades people to minimise waste</li> <li>▪ Prefabricate materials where possible</li> </ul>

SUBJECT	COMMITMENT
	<ul style="list-style-type: none"> <li>▪ Use modular construction and basic designs to reduce the need for off-cuts</li> <li>▪ Reuse formwork</li> <li>▪ Reuse or recycle materials from the demolition phase</li> <li>▪ Separate off-cuts to facilitate reuse, resale or efficient recycling</li> <li>▪ Minimise site disturbance and limit unnecessary excavation</li> <li>▪ Select landscaping which reduces green waste</li> <li>▪ Select waste removal contractors to guarantee that recyclable waste are recycled</li> <li>▪ Engage with the supply chain to supply products and materials that use minimal packaging</li> <li>▪ Set up schemes with suppliers to take back packaging materials</li> <li>▪ Sewage waste shall be disposed of by a licensed waste contractor in accordance with Sydney Water and OEH requirements.</li> </ul> <p><u>Operations</u></p> <ul style="list-style-type: none"> <li>▪ Appropriate areas shall be provided for the storage of waste and recyclable material</li> <li>▪ Standard signage on how to use the waste management system and what materials are acceptable in the recycling will be posted in all waste collection and storage areas</li> <li>▪ All domestic waste shall be collected regularly and disposed of at licensed facilities.</li> <li>▪ Waste collection vehicles will be able to service the development efficiently and effectively.</li> <li>▪ An education programme and on-going monitoring will to be implemented for training personnel to properly sort and transport waste into the right components and destinations.</li> <li>▪ Sewage waste will be disposed of by a licensed waste contractor in accordance with Sydney Water and OEH requirements.</li> <li>▪ Trade waste will be discharged to the sewer through a trade waste agreement with Sydney Water</li> </ul>
<b>Consultation</b>	<p>The Proponent will continue to consult with relevant government authorities and bodies during the design development process for the detailed applications for the three major stages of the development. Depending on the development proposed, these may include:</p> <ul style="list-style-type: none"> <li>▪ Transport for NSW</li> </ul>

SUBJECT	COMMITMENT
	<ul style="list-style-type: none"> <li>▪ Railcorp</li> <li>▪ ARTC</li> <li>▪ Crown Lands Office</li> <li>▪ NSW Office of Water</li> <li>▪ NSW Fisheries</li> <li>▪ Department of Defence</li> <li>▪ Moorebank Intermodal Company Limited</li> </ul> <p>The Proponent will continue to engage and consult with the community during the future detailed planning applications. Depending on the scale of the proposed, development, SIMTA may undertake the following activities either prior to lodgement or during the public exhibition of the application:</p> <ul style="list-style-type: none"> <li>▪ Open the Community Information Centre to provide stakeholders with information and to receive feedback on the proposal</li> <li>▪ Update the existing project website and maintain access</li> <li>▪ Continued operation of the email feedback system and free-call information line.</li> </ul> <p>The Proponent shall:</p> <ul style="list-style-type: none"> <li>▪ Obtain the consent of the ARTC with respect to the connection to the Southern Sydney Freight Line (noting that the granting of consent by ARTC is subject to the provision of ARTC Interstate Access Undertaking).</li> <li>▪ Work with ARTC to identify the timing, scope and staging of any required capacity enhancement to the ARTC Network.</li> </ul>



## 19 Summary and Conclusion

An earlier version of the Environmental Assessment for the SIMTA proposal was previously lodged with the Department of Planning and Infrastructure (**Department**) and publicly exhibited from 28 March 2012 to 28 May 2012. This amended EA has been prepared:

- Following the Director-General's designation of the SIMTA proposal under clause 8F(1)(e) of the Environmental Planning and Assessment Regulation 2000 (NSW) (Clause 8F Designation). The designation of the SIMTA proposal as a project on land with multiple owners has the effect that the consent of the owner of land on which the project is to be carried out is not required in respect of the Concept Plan Application; and
- To incorporate responses to issues raised by the Department of Planning and Infrastructure and other key stakeholders in their assessment of the earlier Environmental Assessment and associated Preferred Project Report, including:
  - Department of Finance and Deregulation
  - Department of Defence
  - Australian Rail Track Corporation Ltd
  - Railcorp
  - Transport for NSW
  - Roads and Maritime Services
  - Office of Environment and Heritage
  - Heritage Council of New South Wales
  - NSW Office of Water, Department of Primary Industries
  - NSW Environment Protection Authority
  - NSW Health
  - Liverpool City Council
  - Bankstown City Council
  - Campbelltown City Council
  - Local land owners and residents
- To reflect and incorporate changes proposed by SIMTA since the period of public exhibition to minimise potential impacts of the SIMTA proposal, being:
  - Reduction in the width of the rail corridor
  - Relocation of the rail link within the East Hills railway corridor
  - Introduction of a temporary rail siding
  - Rationalisation of the proposed rail infrastructure by including additional land parcels to the Concept Plan Application to accommodate the proposed rail corridor and rail link.

The proposed development outlined in the Concept Plan application for the SIMTA Intermodal Terminal Facility at Moorebank Avenue, Moorebank is considered to be appropriate and entirely suitable for the site for the following reasons:

- The proposal is entirely consistent with strategic planning policy, including *NSW 2021*, *Sydney Metropolitan Plan 2036*, *Draft Metropolitan Strategy for Sydney to 2031*, *NSW Long Term Transport Master Plan*, *State Infrastructure Strategy 2012-2032* and the *Draft South West Subregional Strategy*. The proposal will make a significant contribution to the key freight objective of increasing the proportion of container freight being moved by rail from Port Botany to 28%.
- There has been strong and consistent support at both Commonwealth and State level for the expansion of the rail freight network across NSW. The development of an intermodal terminal facility at Moorebank has been proposed since 2004. The Concept Plan application lodged by SIMTA will facilitate the timely development of this facility by the private sector as identified within existing and draft freight policy including *Railing Port Botany's Containers*, *Draft National Ports Strategy* and *National Land Freight Strategy Discussion Paper* and *Draft NSW Freight and Ports Strategy*.
- The SIMTA proposal will not restrict the siting and layout options for the MICL proposal on the SME site. As such, there is no reason to further delay the SIMTA proposal while the relocation of the SME and MICL proposal is further resolved.
- The proposed development is permissible with Ministerial consent under the transitional Part 3A provisions of the *Environmental Planning and Assessment Act 1979* (EPA Act 1979), *State Environmental Planning Policy (Infrastructure) 2007* and the *Liverpool Local Environmental Plan 2008*. It has been demonstrated that the proposal complies with each of the relevant state environmental planning instruments. It has also been demonstrated that the proposal satisfactorily responds to the local controls.
- The key issues for all components of the project identified in the DGRs have been assessed in detail, with specialist reports underpinning the key findings and recommendations outlined in the Environmental Assessment. It has been demonstrated that each of the impacts identified in the assessment of the key issues will either be positive or can be appropriately mitigated as summarised below:
  - **Transport and Access** – the assessment has demonstrated that there is a clear benefit arising from the proposal with regard to its strategic contribution to the development of the intermodal network and the increased share of container freight being moved by rail. There are forecast capacity issues for the local and regional road network, however, it has been demonstrated that these are irrespective of whether or not the SIMTA proposal proceeds. A range of infrastructure and non-infrastructure related mitigation measures have been identified to reduce these impacts.
  - **Noise and Vibration** – it has been demonstrated that the SIMTA proposal will be able to meet the relevant noise and vibration criteria for surrounding land uses through the implementation of a number of mitigation measures during the construction and phase and at full operational capacity to minimise its potential impacts.
  - **Biodiversity** – the SIMTA site has been determined to be of limited conservation significance and its redevelopment will have minimal ecological impacts. The construction of the rail corridor has the potential to have a more significant impact, particularly on the *Personia nutans*, which is located to the south of the SIMTA site on the Commonwealth owned land, however, the rail link and associated corridor will be located to avoid this species as far as practicable. Where impacts cannot be avoided, mitigation measures will be implemented to ameliorate impacts on biodiversity values during and following construction, including the use of biodiversity offsets.
  - **Hazards and Risks** – the potential on-site and off-site hazards and risks have been identified and assessed based on the currently available information, with a list of recommendations for further detailed assessment to be undertaken at the relevant planning approval application stage, once the final layout and operational issues have been further resolved.
  - **Contamination** – it has been demonstrated that the SIMTA site is suitable for the proposed use, subject to further site investigations, including confirmation of a Site Management Plan being

undertaken. A preliminary environmental assessment has been undertaken for the rail corridor lands including the indicative rail link. Further investigations will be completed as part of the staged approval applications. A Contamination Management Plan will be prepared as part of a Construction Environmental Management Plan.

- **Stormwater and Flooding** – the stormwater, flooding and erosion sediment impacts have been identified and mitigation measures have been incorporated into the proposal. These measures will facilitate the treatment of stormwater quantity and quality in the future construction and operational phases of the project in accordance with the relevant legislative requirements.
- **Air Quality** – the assessment concludes that the SIMTA proposal will not exceed air quality criteria during construction or operation. The regional impacts of the SIMTA proposal are expected to result in a net reduction in emissions for NO<sub>x</sub> and PM. The changes in emissions when considered at the regional level and impacts on regional air quality would be negligible. The *Greenhouse Gas Assessment* has demonstrated that the SIMTA proposal can achieve an annual GHG saving of 43,206 tCO<sub>2</sub>e per annum through its operational and transport efficiencies
- **Heritage** – the assessment has concluded that there is no indigenous heritage significant potential on the SIMTA site, having regard to the extensive earthworks and development that has already been undertaken to accommodate the existing site activities. The potential impacts are likely to occur within the rail corridor and mitigation measures are provided to address these potential impacts. The non-indigenous heritage impact assessment has concluded that the principal impact of the proposal will be on the SIMTA site, particularly with regard to the World War II buildings. The report recommends that a Statement of Heritage Impacts should be produced and submitted with the future planning approval applications for the staged development of the site.
- **Visual and Urban Design** – a comprehensive assessment has been undertaken with regard to the potential visual impacts arising from the SIMTA proposal and it has been concluded that the impact is relatively low, having regard to the existing DNSDC industrial buildings and the mitigation measures to screen the intermodal terminal facility. The design analysis has demonstrated that the proposed built form controls will satisfactorily guide the siting and layout of the future staged development.
- **Utilities** – it has been demonstrated that all required utility services can be connected to the site and are capable of accommodating the proposed intermodal terminal facility, subject to the augmentation and upgrading of the existing facilities by the proponent.
- Further to the issues listed within the DGRs, the proponent has identified a number of additional important issues that are assessed within the Environmental Assessment. It has been demonstrated that each of the impacts arising from these additional issues will either be positive or can be appropriately mitigated as summarised below:
  - **Health Impacts** – the potential health impacts associated with the proposal have been assessed and indicate that acute or chronic health impacts are unlikely to result from the emissions associated with the SIMTA proposal on an individual or cumulative impact basis.
  - **Economic Impacts** – the employment generating potential of the proposal has been assessed and it has been determined that the proposed intermodal facility will generate a significant number of direct and indirect jobs. It will also result in a number of other economic benefits, including net travel time and labour cost savings.
  - **Climate Change** – the possibility of severe weather events associated with climate change has been assessed with regard to the SIMTA proposal. Appropriate mitigation measures have been recommended for the construction and operational phases which will be incorporated into the future detailed planning approval applications.
  - **Ecologically Sustainable Development (ESD)** – a range of ESD initiatives have been proposed during the construction, operation and decommissioning stages of the SIMTA proposal, including site management policies and strategies, materials selection and energy and water demand management and on-site renewable energy generation. These initiatives will contribute to the

sustainable management of the proposal and contribute to minimising its ecological footprint. Further, there are considered to be regional ESD benefits arising from the shift towards rail based freight transport.

- **Waste Management** – a waste management strategy has been prepared to achieve best practice waste reduction, waste minimisation and waste management at the SIMTA Intermodal Terminal Facility and help reduce the amount of waste sent to landfill.
- An environmental risk analysis has been undertaken to identify the potential environmental impacts associated with the proposal. This analysis concluded that the proposed mitigation measures to be implemented within the SIMTA proposal will result in no unacceptable environmental risks.
- Each of the relevant issues raised during the consultation process has been addressed within the Environmental Assessment.

It has been demonstrated that the proposed redevelopment will result in a number of significant benefits, including:

- Reduction in congestion and heavy vehicle movements along the M5 Motorway between Port Botany and Moorebank by 2,735 vehicles per day.
- Restoration and regeneration of degraded areas of vegetation to improve the overall biodiversity quality of the rail corridor land.
- Improvements to the water quality of surrounding riparian corridors, including the Anzac Creek and Georges River through the introduction of more rigorous on-site water management and water quality control measures.
- The regional impacts of the SIMTA proposal are expected to result in a net reduction in emissions for NOx and PM.
- Creation of 850 direct and indirect jobs per annum over the six year construction period and 7,100 direct and indirect jobs once the facility is fully operational.
- Reduction in truck vehicle kilometres travelled of approximately 13 million kilometres per annum and net travel time savings of approximately 530,400 hours per annum, with associated labour cost savings of \$18.6 million per annum (2011 figures).

The potential direct, indirect and cumulative impacts of the proposed intermodal terminal facility have been identified and thoroughly assessed. It is considered that the potential impacts can be satisfactorily mitigated through a range of measures that will be addressed as part of the future detailed planning approval applications and throughout the construction and operational phases of the project. A Draft Statement of Commitments has been prepared listing each of these mitigation measures.

Overall, the assessment concludes that the development proposed in the Concept Plan application is in the public interest and approval is recommended.

## Disclaimer

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