

## Review of Environmental Factors

### North Eveleigh Affordable Housing Project

#### Infrastructure Works

Prepared for Sydney Metropolitan Development Authority (SMDA)

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Sydney Metropolitan  
Development Authority

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## Foreword

This Review of Environmental Factors (REF) has been prepared for the Sydney Metropolitan Development Authority (SMDA) to assess the potential environmental impacts that could arise from a proposal to undertake infrastructure works as part of the North Eveleigh Affordable Housing Project.

The REF has been prepared in accordance with the *Environmental Planning and Assessment Act 1979*, the *Environmental Planning and Assessment Regulation 2000*, the State Environment Planning Policy 55 - Remediation of Land, State Environment Planning Policy (Major Development) 2005 and the *Heritage Act 1977*.

Based on the information presented in this REF and the mitigation measures indicated, it is unlikely that there will be any significant environmental impacts associated with the Proposal.

### Certification

This REF provides an accurate review of the proposal in relation to its potential effects on the environment.

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Date: 2012

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## 1.0 Introduction

This Review of Environmental Factors (REF) has been prepared by JBA Planning to assess the potential environmental impacts that could arise from infrastructure works associated with the Affordable Housing Project within the North Eveleigh precinct.

The works are proposed by Sydney Metropolitan Development Authority (SMDA). The works relate to the preparation of part of the North Eveleigh precinct for the Affordable Housing Project as approved under the North Eveleigh Concept Plan.

### 1.1 Sydney Metropolitan Development Authority

The SMDA is responsible for driving housing and employment opportunities in specific areas serviced by public transport and infrastructure, and building economies of urban centres.

Specifically, the role of the SMDA includes:

- § working with transport and planning departments to identify precincts for renewal;
- § undertaking land use planning investigations and feasibility analyses;
- § delivering an overarching precinct plan;
- § coordinating transport and infrastructure planning;
- § planning for open space in identified precincts;
- § levying infrastructure contributions and entering into planning agreements;
- § dealing with land; and
- § partnering with public agencies and private entities when necessary.

The Authority uses existing provisions of the *Growth Centres (Development Corporations) Act 1974* and has assumed the strategic planning functions and continues with the work of the former Redfern-Waterloo Authority (RWA), including the North Eveleigh Precinct.

### 1.2 Project Background

The North Eveleigh Concept Plan was approved by the Minister for Planning in December 2008. The Concept Plan allows for:

- § redevelopment of the site for commercial, office, retail, cultural, community and residential uses;
- § retention and adaptive reuse of heritage buildings;
- § demolition of remaining non-heritage listed buildings;
- § provision of infrastructure and services, including roadways and stormwater;
- § remediation – to remediate the site to an acceptable level for the approved redevelopment; and
- § intersection upgrades – to address increased traffic generation resulting from the redevelopment.

The SMDA has received approval for \$7.19M in infrastructure funding through the Commonwealth Government's Housing Affordability Fund (Round Two) (HAF). This funding will provide for the construction of sewer, water, stormwater and roads to service and to remediate North Eveleigh sites, for the purpose of providing affordable housing.

The SMDA also holds developer contributions for the provision of affordable housing, and expects to receive more in the years ahead. These funds will assist in the construction of affordable housing on the site.

The SMDA intends to:

- § construct infrastructure to service affordable housing and remediate the land; and
- § appoint a community housing provider to develop and manage affordable housing.

This REF relates to the construction of infrastructure and remediation of land to service the affordable housing. The development of affordable housing dwellings will be subject to a separate application and approval process.

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## 2.0 Site Analysis

The North Eveleigh precinct is approximately 10.7 hectares in area and is legally described as part Lot 4 and part Lot 5 in DP 862514. The land is owned by RailCorp, and the SMDA is presently negotiating the terms of a Heads of Agreement with a view to acquiring the land. Currently, substantial areas of the precinct are licensed to the RWA/SMDA.

The North Eveleigh precinct stretches along the northern side of the railway line from Redfern Station to the east almost to MacDonaltdown Station to the west. The North Eveleigh precinct is bound by Wilson Street to the north, Little Eveleigh Street to the east, railway lines to the south, and Iverys Lane to the west.

The North Eveleigh precinct contains numerous buildings and facilities including:

- § the Carriage Workshop, which houses the CarriageWorks performing arts centre;
- § the Blacksmiths' Shop, which is home to the Eveleigh Farmers' Market and Eveleigh Artisans' Market;
- § the Yaama Dhiyaan and Les Tobler Training School, providing training to Aboriginal students; and
- § other buildings and structures, many with heritage significance due to the precinct's long history as an important railway site.

An aerial of the North Eveleigh precinct is shown at Figure 1.

The main vehicular access to the North Eveleigh precinct is via an entrance from Wilson Street at the far western end of the North Eveleigh precinct, near Queen Street, Darlington.

The site subject of the proposed works within the wider precinct is shown within the blue line at Figure 2 and is broadly centred on the proposed Carriageworks Way in the north-western part of the precinct, near the current access to Wilson Street (near its intersection with Queen Street).



Figure 1 - The North Eveleigh precinct



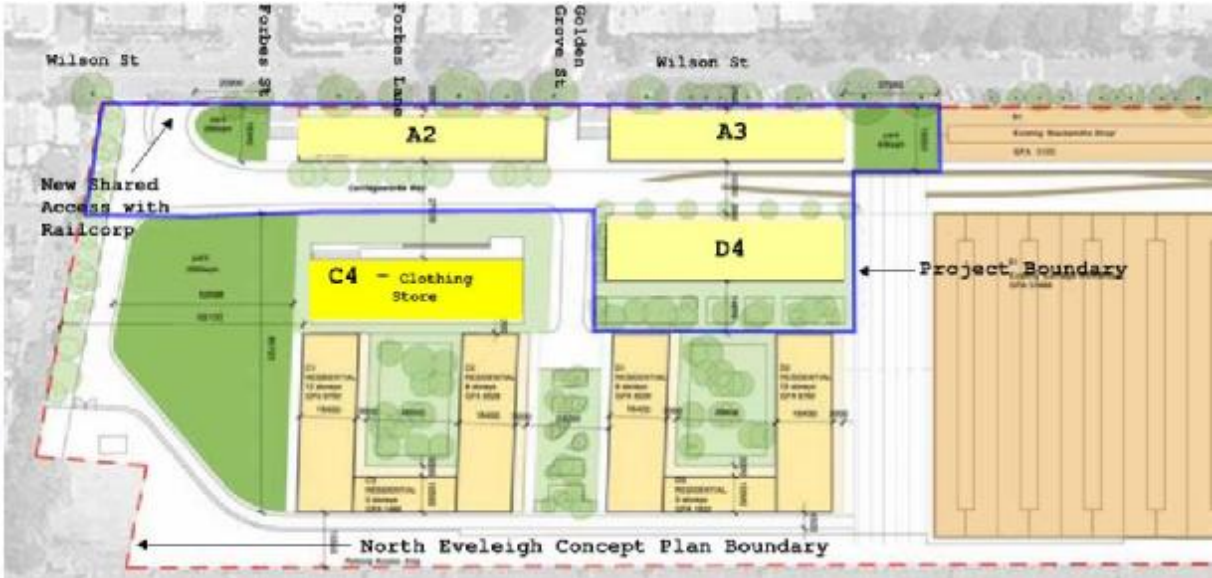


Figure 2 - The development site (outlined in blue)

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## 3.0 Scope of Works

### 3.1 Description and Justification of the Activity

The activity will prepare part of the North Eveleigh precinct for its future development under the approved North Eveleigh Concept Plan. The works are necessary to provide the infrastructure required to support the future development of the precinct for affordable housing as approved under the Concept Plan.

The proposal includes:

- § the construction of a two way vehicle site entry in the location of the existing entry;
- § the construction of a two way road parallel to Wilson Street, between the site entry and the Carriage Workshop building;
- § associated car parking, footpaths and landscaping;
- § electricity distribution, telecommunications, sewage distribution, stormwater management and water reticulation works;
- § demolition of the Timber Shed extension, Reclamation Shed and Air Raid Sheds to allow for the construction of the road and water reticulation works;
- § remediation of land (as required) in the path of the infrastructure works and the land to be developed for affordable housing.

The works will also include the reinstatement of existing rail tracks in the new road and the retention of timber from the Timber Shed extension for future use on the North Eveleigh site.

Car parking, footpaths and landscaping includes:

- § 3 metre wide concrete footpaths adjacent to the new concrete entry and access roads, including a pedestrian stair entry/footpath from the intersection of Iverys Lane and Wilson Lane into the site;
- § 17 on-street car spaces, including 1 disabled space;
- § street tree planting and landscaping; and
- § bioretention rain gardens.

Additional pedestrian entries from Wilson Street into the site and open space areas will be subject to further planning approvals. These are expected to be assessed in association with residential development on the site.

The roads, infrastructure works and demolition of buildings is consistent with the North Eveleigh Concept Plan approval, although the road will initially be a two way road. The Concept Plan envisaged that the road parallel to Wilson Street would be one way with an additional exit road to be provided adjacent to the railway line. It is expected this additional road will be constructed when the site approaches full development.

The development of the affordable housing will be subject to a separate application and approval process.

Engineering and Landscape Plans prepared by AECOM are included at Attachment A. More detail on the proposal is provided below:

## Accessibility and Circulation

Access to the site is generally in accordance with the Approved Concept design and is summarised as follows:

- § Vehicular entry from Wilson Street at the existing access point to the site;
- § Stair access to Ivery's Lane – formalising the existing informal access arrangements at this location.

The central access road is to be provided as two-way in the interim design condition and would revert to one-way circulation once the loop road to the south is completed. The layout of this road is presented for both the interim and final condition on the landscape layout drawing. A stub road is to be provided to the RailCorp substation site (refer to location on drawing 60238089-DRG-CI111 in Appendix A).

Pedestrian circulation is to be promoted through provision of raised speed tables across the central road, these tables align with the access points to Wilson Street. Pedestrian footpaths are to be provided on each side of the central road.

The key design vehicles used for the geometric layout of the roads are as follows:

- § 19.0 m articulated truck (Austroads 2008) to access to the existing Carriage Works building and residential development within the final loop road configuration.
- § 12.5 m rigid truck (Austroads, 2008) to access to the RailCorp substation.

The road is to be provided with kerb and gutter to minimise the extent of bollards required. Bollards will be required where the road raises to form pedestrian threshold and is on grade with the adjacent footpath.

The proposed road will generally be maintained at grade in front of the proposed buildings with sufficient grade for drainage purposes.

Further applications for future development will include:

- § Pedestrian stair access from Wilson Street;
- § Accessible ramp incorporated into the western/entry pocket park to allow disabled access to site.

## Streetscape

The streetscape is intended to provide clear access through the development to the adjacent residential and Carriage Works precincts, aligning with the existing Carriage Works roadway. Streetscape planting provides visual amenity and shade to adjacent residential buildings.

To allow for incorporation of the required number of parking spaces, trees and landscaping along the southern side of the street will be located within a 1m wide landscape strip and within small areas of bioretention swale. On the northern side of the road, limited landscape will be provided in the interim condition where the street operates with two-way traffic, with additional landscape to be introduced in the final configuration.

Tree planting along the western boundary (Ivery's Lane) is constrained by the proposed RailCorp 11 kV electricity easement which precludes anything other than large shrubs being planted along this alignment.

Bio-retention systems are proposed to be integrated into the streetscape at low points, on the south side of the street. These are focused at the raised pedestrian crossings/through axis to Wilson Street.

The approach to selection of planting and hard landscape materials is summarised as follows:

- § Planting palette taken from surrounding precinct character (residential);
- § Street Tree species existing on site and included in City Of Sydney precinct plan;
- § Other tree species existing in surrounding precinct; and
- § Pavement materials are compatible with existing site character (concrete road, ease of retention of rail tracks).

Planting types will be consistent with the summary above and the approved Concept Plan.

All pavement materials will be in accordance with City of Sydney standards to facilitate future dedication. It is proposed that all road, footpaths and pedestrian thresholds will be concrete construction.

#### Water, sewer and stormwater

Water and sewer servicing will require connection to the existing Sydney Water infrastructure. The relevant points of connection are as follows:

- § Water – Northern side of Wilson Street
- § Sewer – Ivery's Lane
- § Stormwater – Iverys lane

Proposed connection points to the proposed water and sewer reticulation and stormwater networks are provided at each of the four possible future building sites. These points of connection are grouped with the other proposed service access locations.

The sewer and stormwater connections in Iverys Lane will require a new line to be installed on the same alignment as the existing sewer.

These sewer and stormwater works will not be located within 25m of the rail corridor.

#### Electricity

Electrical works for the development will consist of diversion of the existing 11 kV feeders which cross the site and provision of an low voltage (LV) supply to service the proposed buildings and infrastructure. In addition, RailCorp has advised that they will be installing new high voltage (HV) infrastructure along the western boundary of the site to serve their new substation.

The existing 2 No.11 kV feeders (within an 8 No. 150mm diameter duct bank) follow the alignment of the existing road and therefore would cross between the proposed road reserve and the building lots. To avoid conflict with future developments, with the proposed RailCorp HV infrastructure and with proposed underground services it is proposed to re-align these feeders with the proposed road alignment.

As the proposed buildings are over 450 m from the existing Ausgrid substation, it will be necessary to provide a new padmount substation to serve the buildings and associated public domain LV demand. The padmount substation would be sized to serve the 4 future buildings and will be connected directly to the realigned 11 kV feeders.

#### Telecommunications

A proposed connection point to the proposed telecommunications reticulation network is provided at each of the four future building sites. These points of connection are grouped with the other proposed service access locations.

#### Remediation

Remediation will require off-site removal of contaminated soil found in areas proposed for infrastructure works and for the proposed residential areas. This will be undertaken in accordance with the Remediation Action Plan as approved by a Site Auditor.

### 3.2 Evaluation of Alternatives

An alternative considered is to undertake construction of all roads, public domain and remediation of the site. However this is not being pursued as the impact of long term rail needs on the site is not resolved and it is appropriate to progress staged development of the site utilising available funds.

Failure to undertake the proposed works would be an inappropriate course of action for the SMDA. The infrastructure works are critical in enabling the future development of the North Eveleigh precinct. If the works do not go ahead, the future stages of the project will not be able to proceed and the SMDA will not be able to fulfil its role of providing affordable housing for the community and urban renewal of the site.

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## 4.0 Planning Context

### 4.1 Environmental Planning and Assessment Act 1979

For the purposes of these works, the SMDA is the proponent and the determining authority under Part 5 of the EP&A Act. This is in accordance with the provisions of State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP), State Environmental Planning Policy 55 – Remediation of Land 1998 (SEPP 55) which are discussed in Section 4.2 below.

As the proposed development can be undertaken as Development without Consent, development consent under Part 4 (Development Assessment) of the EP&A Act is not required. However, an assessment under Part 5 (Environmental Assessment) of the EP&A Act is required, and as such, this Review of Environmental Factors has been prepared.

### 4.2 State Environmental Planning Policies

#### 4.2.1 State Environmental Planning Policy (Infrastructure) 2007

With the exception of the remediation works (see Section 4.2.2), the proposed works can be carried out as Development without Consent under the following clauses of Infrastructure SEPP:

- § Clause 41 provides that development for the purpose of an electricity transmission or distribution network (substation) (including demolition) may be carried out by or on behalf of a public authority without consent on any land;
- § Clause 94 provides that development for the purpose of a road (including demolition) may be carried out by or on behalf of a public authority without consent on any land;
- § Clause 106 provides that development for the purpose of sewage reticulation systems (including demolition) may be carried out by or on behalf of a public authority without consent on any land;
- § Clause 111 provides that development for the purpose of stormwater management systems (including demolition) may be carried out by or on behalf of a public authority without consent on any land;
- § Clause 114 provides that development for the purpose of telecommunications facilities (including radio facilities) may be carried out by or on behalf of a public authority without consent on any land; and
- § Clause 125 provides that development for the purpose of water reticulation systems (including demolition) may be carried out by or on behalf of a public authority without consent on any land.

#### 4.2.2 State Environmental Planning Policy 55 – Remediation of Land

Clause 8 of SEPP 55, provides that:

*'(1) A person may carry out a remediation work in accordance with this Policy, despite any provision to the contrary in an environmental planning instrument, except as provided by clause 19 (3).*

*(2) A person must not carry out a category 1 remediation work except with the consent of the consent authority.*

*(3) A person may carry out a category 2 remediation work without the consent of the consent authority.'*

Clause 14(a) of SEPP 55 describes category 2 remediation work as 'a remediation work that is not a work of a kind described in clause 9 (a)–(f)'.

Clause 9 of SEPP 55 relevantly describes as category 1 remediation work as a remediation work that is:

*'(d) development for which another State environmental planning policy or a regional environmental plan requires development consent, or*

*(e) carried out or to be carried out in an area or zone to which any classifications to the following effect apply under an environmental planning instrument:*

...

*(ii) conservation or heritage conservation'*

In relation to clause 9(d) of SEPP 55, there are no provisions in the Major Development SEPP that requires development consent for remediation work on the site.

In relation to clause 9(e) of SEPP 55, there are no items identified in the Major Development SEPP on any part of the site on which the remediation works will be carried out nor is there an area or zone under the Major Development SEPP classified as '*conservation or heritage conservation*' on which the remediation works will be carried out.

In light of the above, the remediation works would be considered category 2 remediation works, which and may be carried out without development consent by virtue of clause 8(3) of SEPP 55. Since the above work does not require development consent, the proposed work will be assessed as an activity under Part 5 of EP&A Act.

### **4.2.3 State Environmental Planning Policy (Major Development) 2005**

The site is identified as forming part of the 'Redfern–Waterloo Authority Sites' under Part 5 of Schedule 3 of State Environmental Planning Policy (Major Development) 2005 (the Major Development SEPP).

Under its listing in the Major Development SEPP, all other environmental planning instruments do not apply to the site, except for other State Environmental Planning Policies.

### **4.2.4 State Environmental Planning Policy (Urban Renewal) 2010**

The site is identified as being within a 'potential precinct' under State Environmental Planning Policy (Urban Renewal) 2010 (Urban Renewal SEPP). The policy aims to achieve the orderly and economic development and redevelopment of sites in and around urban renewal precincts, and facilitate delivery of the objectives of any applicable government State, regional or metropolitan strategies connected with the renewal of urban areas that are accessible by public transport.

The specific provisions of the Urban Renewal SEPP do not apply to applications under Part 5 of the EP&A Act and are therefore not relevant to this application. Despite this, the works will facilitate future urban renewal.

### 4.3 Local Environmental Plan

As the site is listed in the Major Development SEPP and all other environmental planning instruments do not apply to the site, except for other State Environmental Planning Policies, Sydney Local Environmental Plan 2005 is not applicable to the proposed development. As detailed in Section 4.5 below, the Concept Plan and State Significant Site listing together set out the planning, development and legislative framework for North Eveleigh.

### 4.4 Development Control Plans / Policies

There are no Development Control Plans or Policies that are applicable to the site of the proposed works. The approved Concept Plan serves this purpose.

The Department of Planning's *Development Near Rail Corridors and Busy Roads—Interim Guideline* applies to the development.

### 4.5 Concept Plan and SSS Listing

The North Eveleigh Concept Plan and Redfern-Waterloo Authority State Significant Site listing sets the planning and development framework for the site. The proposed development, including roads, demolition, remediation and infrastructure, are permissible under the State Significant Site listing which zones the site 'Business Zone - Mixed Use'.

The Concept Plan envisages the redevelopment of the western end of the North Eveleigh precinct for residential and public open space uses. The demolition works, remediation works, augmentation and diversion of services and location of the proposed road are all consistent with the terms of the Concept Plan approval.

### 4.6 Heritage

The site the subject of the proposed works does not comprise any heritage items listed under an Environmental Planning Instrument.

The whole of the former Eveleigh Railway Workshops site is listed on the State Heritage Register. The NSW Heritage Branch heritage inventory sheet for the precinct makes particular reference to the Locomotive Workshop, Carriage Workshops, Paint Shop, Turntable and Tracks, and Air Raid Shelters. There are also separate listings for the Eveleigh Railway Workshop Machinery, Eveleigh Chief Mechanical Engineer's Office, and the Eveleigh Chief Mechanical Engineer's Office Moveable Relics.

In accordance with Part 4 of the NSW Heritage Act 1977, approval is required in order to undertake development on the site, including the demolition of the Air Raid Shelters. A Section 60 Application will therefore be required to be lodged with the NSW Heritage Branch, unless an exemption is given.

### 4.7 Consultation

In accordance with clause 42 of the ISEPP, development for the purpose of electricity substations needs to be notified to Council and adjoining land occupiers. The proposed development includes an electricity substation and so SMDA has provided a draft of this REF to City of Sydney Council and the occupiers of adjoining land.



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## 5.0 Environmental Impact Assessment

The following section provides an outline of the potential impacts of the activity on the environment, and how these potential impacts will be managed.

### 5.1 Environmental Planning and Assessment Act 1979 Considerations

#### Duty to Consider Environmental Impact (Section 111)

For the purpose of attaining the objects of the EP&A Act relating to the protection and enhancement of the environment, a determining authority in its consideration of an activity shall, notwithstanding any other provisions of the Act or the provisions of any other Act or of any instrument made under the EP&A Act or any other Act, examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity (refer to sub-section 1 of section 111).

This REF report addresses the above provisions of section 111 of the EP&A Act. The table below demonstrates the effect of the proposed development activity on the matters listed for consideration in sub-sections 2, 3 and 4 of section 111.

Table 1 – Matters for consideration under section 111 of the EP&A Act

Matters for consideration under sub-sections 2, 3 & 4 of section 111 of the EP&A Act	
Matter for consideration	Effect of Activity
<i>Sub-section 2</i>	
(a) any conservation agreement entered into under the <i>National Parks and Wildlife Act 1974</i> and applying to the whole or part of the land to which the activity relates, and	No effect, as no conservation agreement under the <i>National Parks and Wildlife Act 1974</i> (NPWA1974) applies to the subject land.
(b) any plan of management adopted under that Act for the conservation area to which the agreement relates, and	No effect, as no plan of management adopted under the NPWA1974 applies since there is no conservation agreement that relates to the subject land under the NPWA1974.
(c) any joint management agreement entered into under the <i>Threatened Species Conservation Act 1995</i> , and	No effect, as no joint management agreement has been entered into under the <i>Threatened Species Conservation Act 1995</i> (TSCA1995) in relation to the subject land.
(d) any biobanking agreement entered into under Part 7A of the <i>Threatened Species Conservation Act 1995</i> that applies to the whole or part of the land to which the activity relates	No effect, as no biobanking agreement has been entered into under Part 7A of the TSCA1995 in relation to the land to which the activity relates.
<i>Sub-section 3</i>	
Without limiting subsection (1), a determining authority shall consider the effect of an activity on any wilderness area (within the meaning of the <i>Wilderness Act 1987</i> ) in the locality in which the activity is intended to be carried on.	No effect, as there is no wilderness area (within the meaning of the <i>Wilderness Act 1987</i> ) within the locality in which the activity is intended to be carried out on.
<i>Sub-section 4</i>	
Without limiting subsection (1), a determining	

<p>authority must consider the effect of an activity on:</p> <p>(a) critical habitat, and</p> <p>(b) in the case of threatened species, populations and ecological communities, and their habitats, whether there is likely to be a significant effect on those species, populations or ecological communities, or those habitats, and</p> <p>(c) any other protected fauna or protected native plants within the meaning of the <i>National Parks and Wildlife Act 1974</i>.</p>	<p>No effect, as there is no critical habitat on or within the vicinity of the site.</p> <p>No effect, as there are no known threatened species, populations and ecological communities, or their habitats on or in the vicinity of the site.</p> <p>No effect, as there is no known protected fauna or protected native plants within the meaning of the NPWA1974 on or within the vicinity of the site.</p>
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Note. If a biobanking statement has been issued in respect of a development under Part 7A of the *Threatened Species Conservation Act 1995*, the determining authority is not required to consider the impact of the activity on biodiversity values.

## 5.2 Environmental Planning and Assessment Regulation 2000 Considerations

Environmental Planning and Assessment Regulation 2000 Considerations in the table below provides a summary checklist of matters to be considered under clause 228 of the *Environmental Planning and Assessment Regulation 2000*.

Table 2 – Summary checklist of matters to be considered

Factor	Impact
<p>(a) any environmental impact on a community</p> <p>There will be long-term benefits by preparing the site for its future redevelopment for affordable housing. All construction impacts can be mitigated.</p>	<p>-ve <input type="radio"/></p> <p>Nil <input type="radio"/></p> <p>+ ve <input checked="" type="radio"/></p>
<p>(b) any transformation of a locality</p> <p>The activity represents the preliminary works to facilitate redevelopment of the western portion of the North Eveleigh precinct consistent with the North Eveleigh Concept Plan.</p>	<p>-ve <input type="radio"/></p> <p>Nil <input type="radio"/></p> <p>+ ve <input checked="" type="radio"/></p>
<p>(c) any environmental impact on the ecosystems of the locality</p> <p>The activity will not result in any negative impact to the locality, or result in any environmental impacts on local ecosystems.</p>	<p>-ve <input type="radio"/></p> <p>Nil <input checked="" type="radio"/></p> <p>+ ve <input type="radio"/></p>
<p>(d) any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality</p> <p>The activity will not reduce the aesthetic, recreational, scientific or other environmental quality or value of a locality. The proposed landscaping works, including landscaping treatment at the entrance to the site will enhance the aesthetic quality of the locality. The remediation works will improve the environmental quality of the locality.</p>	<p>-ve <input type="radio"/></p> <p>Nil <input type="radio"/></p> <p>+ ve <input checked="" type="radio"/></p>
<p>(e) any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations</p> <p>The activity will not significantly increase or decrease the significance of the site. The demolition of the buildings in accordance with the approved Concept Plan will provide for the significance of the site to be demonstrated while allowing for new uses and the revitalisation of the site.</p>	<p>-ve <input type="radio"/></p> <p>Nil <input checked="" type="radio"/></p> <p>+ ve <input type="radio"/></p>

(f) any impact on the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974) The activity will not impact on the habitat of protected fauna.	-ve ○ Nil <b>p</b> + ve ○
(g) any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air The activity will not endanger any species of animal, plant or other living thing.	-ve ○ Nil <b>p</b> + ve ○
(h) any long-term effects on the environment The activity will not have any long term effects on the biophysical environment.	-ve ○ Nil <b>p</b> + ve ○
(i) any degradation of the quality of the environment The activity will not degrade the quality of the environment. Conversely the planned remediation of the site removes an existing environmental degradation.	-ve ○ Nil ○ + ve <b>p</b>
(j) any risk to the safety of the environment The activity will not risk the safety of the environment. The remediation works being undertaken in accordance with the approved RAP will improve the safety of the environment by remediating contaminated land.	-ve ○ Nil ○ + ve <b>p</b>
(k) any reduction in the range of beneficial uses of the environment The activity will not alter the potential for the environment to be utilised. Conversely it makes use of an underutilised and contaminated site for affordable housing.	-ve ○ Nil ○ + ve <b>p</b>
(l) any pollution of the environment Appropriate mitigation measures will be implemented to ensure that the environment will not be polluted.	-ve ○ Nil <b>p</b> + ve ○
(m) any environmental problems associated with the disposal of waste The disposal of construction waste will be in accordance with the CMP developed for the site which will mitigate any significant environmental problems.	-ve ○ Nil <b>p</b> + ve ○
(n) any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply The activity will have no significant impacts in terms of demand for scarce resources.	-ve ○ Nil <b>p</b> + ve ○
(o) any cumulative environmental effect with other existing or likely future activities The activity will prepare the site for its future redevelopment which will deliver a significant benefit to the community.	-ve ○ Nil ○ + ve <b>p</b>

### 5.3 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The provisions of the *Environment Protection and Biodiversity Conservation Act 1999* do not affect the proposed development as it is not development that takes place on or affects Commonwealth land or waters. Further, it is not development carried out by Commonwealth agencies, nor is the proposed development a matter considered to be of national environmental significance and there are no critical habitats or threatened species on the site.

## 5.4 Consistency with the Approved North Eveleigh Concept Plan

The Concept Plan envisages the redevelopment of the western end of the North Eveleigh precinct for residential and public open space uses. The demolition works, remediation works, augmentation and diversion of services and location of the proposed road are all consistent with the terms of the Concept Plan approval.

## 5.5 Heritage

### 5.5.1 European Cultural Heritage

The site the subject of the proposed works does not comprise any heritage items listed under an Environmental Planning Instrument. However, the whole of the former Eveleigh Railway Workshops site is listed on the State Heritage Register. The approved Concept Plan sets out the framework for the future redevelopment of the site, including which buildings and structures would be retained or demolished. The Concept Plan approved the demolition of the buildings proposed to be demolished as part of this REF, including the Air Raid Shelters, the Reclamation Shed and the Timber Shed Extension. These structures need to be demolished to allow for the construction of the road and water reticulation services.

A Heritage Impact Statement (HIS) has been prepared by Weir Phillips to assess the proposed works and is included at Attachment C. The HIS found that:

- § The proposed work will not adversely impact on the heritage significant buildings in the vicinity of the work.
- § The proposed new road alignment will have a positive heritage impact as it will provide a better appreciation of the significant heritage buildings to be retained.
- § The reinstatement of the existing rails into the new concrete road retains significant fabric and assists in the interpretation of the history of the site as a whole. The removal of remnant pieces of rail at the western end of the road will have a minor adverse impact on the immediate area but will not have an adverse impact on the site as a whole as the extent of fabric to be removed is relatively minor and there are extensive amounts of rail in other parts of the site being retained.
- § The proposed demolition of air raid shelters, spring store, reclamation shed and timber shed extension will enable the future residential use of the site in accordance with the approved Concept Plan and the vision for the adaptive re-use of the former Eveleigh Workshop site. The demolition of selected buildings is considered acceptable as the residential use is considered to help protect the heritage values of the place as a whole, especially the retention of the more significant buildings and elements, by providing for an ongoing viable use for the place.

The HIS concludes that the proposed activity will not have an adverse impact on the heritage significance of the site as a whole as it does not impact on the retention of the core historic buildings, spaces and elements, which provides for the significance of the site to be demonstrated while allowing for new uses and the revitalisation of the site.

The HIS makes a number of recommendations to mitigate any potential impacts from the proposed development, which have been incorporated into the Mitigation Measures in Section 7.0.

The subject site is in the vicinity of a number of heritage items on or off site listed in South Sydney Local Environmental Plan 1998. The proposed work will not have an adverse impact on the heritage items in the vicinity because it will have limited visibility from those items.

The subject site is located adjacent to a number of Conservation Areas, Golden Grove (CA25), Pines Estate (CA40), and Queen Street (CA41). The proposed activity will have a positive impact on the Golden Grove Conservation Area with regard to the Wilson Street streetscape because it will improve visual and physical connections to the site.

### 5.5.2 Aboriginal Heritage

An Aboriginal Heritage Assessment was undertaken as part of the Concept Plan Environmental Assessment. The Aboriginal Heritage Assessment concluded that the site is highly disturbed and does not retain any Aboriginal archaeological potential. The Aboriginal Heritage Assessment accordingly concluded that no further archaeological investigation was required in this part of the site.

In light of the above, it is not anticipated that proposed activity will result in any impact on any aboriginal relics. Notwithstanding this, a mitigation measure has been included which deals with aboriginal relics should they be encountered during the works.

## 5.6 Contaminated Land

The North Eveleigh precinct has been the subject of a number of contamination investigations since 1993. Both soil and groundwater contamination that requires remediation and/or management prior to redevelopment was identified across the site, including within the area of the Affordable Housing Project site.

As part of the Concept Plan Environmental Assessment SMEC provided an assessment of the site's suitability for the proposed development, confirming that the site can be made suitable for the future residential development.

Following approval of the Concept Plan, a Remediation Action Plan (RAP) was prepared by Consulting Earth Sciences. In accordance with the *Contaminated Land Management Act 1997*, a Site Audit Report was then prepared by Environmental Strategies (see Attachment D) that confirmed that the RAP provides an appropriate remediation strategy to render the site suitable for its intended uses. Accordingly, a Site Audit Statement, approving the RAP, was issued in May 2011 (see Attachment E).

The RAP and SAS confirm that the site can be remediated to enable future residential use. It is noted that the RAP is currently being revised to consider the proposed infrastructure works and development of affordable housing. As such, the Mitigation Measures at Section 7.0 include the requirement to undertake all remediation works in accordance with a RAP as approved by a site auditor.

## 5.7 Impact on the Community

The activity will have a negligible impact on the local community. In terms of services and infrastructure provision, the activity will not have any significant impacts on roads, power, water, drainage or social services. The proposal will enable the other on-going activities which occur on the Carriageworks site to continue whilst the works are undertaken.

## Traffic and Transport Impacts

The nature and scale of the proposed works will not generate significant construction traffic. Construction vehicles will use the existing vehicle entry off Wilson Road and parking facilities on the site.

The Mitigation Measures at Section 7.0 include the requirement to prepare a Construction Management Plan (CMP) prior to the commencement of works. The CMP will detail how construction traffic, parking and access will be managed during the construction.

Transport and traffic arrangements external to the site will not be affected during the construction or operational phase of the activity, with all surrounding roads and car parking areas remaining open.

The proposed works will ultimately provide 31 new on-street car spaces to support the future residential development on the site. However, the activity itself will not generate any additional traffic to the site. It merely formalises future access and parking arrangements. As a result, there will be no impact on, or changes made to, existing traffic arrangements. The traffic impact of the future development will be subject of a separate application and approvals process. No additional mitigation measures are required.

## Site Access

To ensure the safety of the community during the works, the construction site will be appropriately fenced and protected.

The proposal will affect vehicular access via the Wilson Street entry to the Carriageworks site during construction, specifically access to the markets and access to the RailCorp substation. To manage this, the construction works will be appropriately staged to ensure that safe access to the Carriageworks site and RailCorp infrastructure will be provided at all times during the construction process. A preliminary Construction Staging Plan has been prepared (see Attachment F) to demonstrate how this can be achieved. Site access procedures will be implemented via the final Construction Management Plan.

## 5.8 Flora and Fauna

No significant flora or fauna species were identified on the site subject of the works as part of the Concept Plan's Environmental Assessment.

Landscape Matrix Pty Ltd prepared an Arboricultural Report in respect to trees on or adjacent to the site as part of the Concept Plan for the site. The report identified those trees that required removal in the Concept Plan for the redevelopment of the site, including those trees which will be removed as part of the subject activity. The recommendations of the Arborist Report relating to tree protection and management during construction have been incorporated into the Mitigation Measures in Section 7.0.

In accordance with the Landscape Plan prepared by AECOM (refer to Attachment A), new landscaping will incorporate a variety of new street trees, shrubs and groundcovers.

## 5.9 Stormwater Management

A Stormwater Management Plan (SMP) has been prepared for the site (refer to Attachment B).

### 5.9.1 Stormwater Quantity

The proposed development will result in an increase of impervious areas that will likely reduce the time of concentration and increase of the peak flows in the sub-catchment. Discussions with City of Sydney indicate that they would not accept an underground storage tank as part of the dedication of the roads and public realm. As such, it is proposed to mitigate the increased runoff from the roads and public domain through detention storage provided as part of the future residential development. The reduction in flow rate from the buildings will result in no-net increase from the combined road/public domain and buildings and therefore not result in any increased loading on the offsite drainage system.

### 5.9.2 Stormwater Quality

Two types of Water Sensitive Urban Design infrastructure are proposed for the road and public domain areas of the site:

- § a system of Bio-retention swales within the road; and
- § a hydrodynamic separator system (CDS or equivalent).

The Bio-retention swales will comprise a filter media and planting that is resistant to high pollutant loads. This system will reduce pollutants through a biological process and infiltration. The design maximises the area of bio-retention swale within the constrained road, also allowing for the required provision of parking spaces.

As the extent of bio-retention swale is limited, a hydrodynamic separator system is also proposed to form provide a further level of treatment to stormwater runoff. The hydrodynamic separator system will efficiently remove total suspended solids and the entrained hydrocarbons from the runoff.

A MUSIC model has been developed to assess the performance of the water quality treatment proposals. The model demonstrates that the water quality measures in place will ensure that the water quality targets for the site are achieved.

## 5.10 Construction Air and Water

To ensure the activity does not result in any adverse air or water quality impacts mitigation measures have been included at Section 7.0. The mitigation measures include the requirement to prepare a Construction Management Plan (CMP) prior to the commencement of works. The CMP will include procedures for:

- § silt control on the roads;
- § water from dewatering systems;
- § rainwater within the site, during excavation and before final pavements are installed;
- § diversion of clean water;
- § dust suppression;
- § waste water, from general cleanup of tools and equipment; and
- § spills control.

Implemented procedures will be in compliance with the Environmental Protection Authority (EPA), City of Sydney Council and Sydney Water requirements.

Due to the nature and extent of the activity, and the mitigation measures in place, there will be no qualitative impacts on local or regional air or water quality.



## 5.11 Construction Noise and Vibration

The residences to the north of the site and activities within the Carriageworks site represent the only sensitive land use that could be impacted by the activity during parts of the day.

To ensure the activity does not result in any adverse noise and vibration impacts mitigation measures have been included at Section 7.0. The mitigation measures include the requirement to prepare a CMP prior to the commencement of works.

Demolition and excavation is proposed to be undertaken in accordance with the relevant standards and guidelines. In the event that works are planned that will exceed the construction noise objective, all sensitive receivers will be notified by the Head Contractor in writing at least 48hrs prior to the commencement of those works.

The CMP will require that the appointed building contractor shall arrange the programming of the works so as to prevent, as far as practicable, excessive and nuisance noise reaching neighbouring buildings. The CMP will also require that the contractor adopt best practice methods for noise suppression.

The SMDA as Precinct Manager has established a North Eveleigh Stakeholders Group, which meets regularly concerning operations within the Precinct. It is likely this group will be the forum to discuss construction issues, including noise and access prior to and during the construction period. Additionally, the Mitigation Measures require the adjoining land owners and stakeholder to be notified of construction dates.

Construction work will be confined to the hours of 7.00am to 7.00pm Monday to Friday and 7.00am to 5pm Saturday, to ensure that the amenity of surrounding properties is maintained. These hours are consistent with the City of Sydney's standard hours of operation.

## 5.12 Waste Minimisation and Management

### Construction Waste Management

The Mitigation Measures at Section 7.0 include the requirement to prepare a Construction Management Plan (CMP) prior to the commencement of works. The CMP will detail how waste will be minimised and managed as part of the construction process. Timber and other materials from buildings being demolished will be either stored on site for later re-use or sold to responsible recyclers.

The appointed building contractor will be responsible for the control and decontamination of hazardous substances. Handling, use, isolation, removal and disposal of any such substances encountered during the execution of the works, will be undertaken in accordance with statutory requirements.

A desktop level Hazardous Materials Assessment was undertaken as part of the Concept Plan for the site. The Hazardous Materials Assessment made a number of recommendations which have been incorporated as Mitigation Measures, including the requirement to undertake a detailed hazardous materials assessment of structures proposed to be demolished and appropriate handling and disposal of any hazardous materials.

### Operational Waste Management

The proposed activity will not result in any increase in the volume of waste produced on the site. No further mitigation measures are required.

### 5.13 Natural Resource Use

The activity will not result in any significant impacts in relation to the following:

- § natural resources including ground and surface water;
- § fuels;
- § timber;
- § extractive material;
- § minerals; or
- § prime agricultural land or areas important for fishing, agriculture, forestry or mining.

No mitigation measures are required.

### 5.14 Visual Assessment

The visual impacts of the activity will be negligible. The majority of the works are at a subterranean level. The demolition of the various structures was assessed as part of the Concept Plan Environmental Assessment and will not create any new permanent unattractive views. The new road and associated landscaping will have a positive visual impact, particularly when viewed from the Wilson Street frontage of the site. The works will facilitate the opening of view corridors and ultimately visual and physical access to the site and precinct consistent with the objectives of the Concept Plan. Therefore, the activity will have no impact in terms of obscuring existing views or creating unattractive views. No mitigation measures are required.

### 5.15 Land Use

The activity will not change the use of the land. The works will allow for the future use of the land as affordable housing which was approved as part of the North Eveleigh Concept Plan. No mitigation measures are required.

### 5.16 Impact on Rail Infrastructure

The activity does not involve any excavation that is of at least 2m in depth and is above a rail corridor or within 25 horizontal metres of a rail corridor, or underground rail corridor. Therefore the application does not need to be referred to RailCorp by the consent authority for comment under Clause 86 of the ISEPP. Notwithstanding this the works have been the subject of detailed discussions with RailCorp and has been referred to RailCorp for comment (see Section 4.7).

The land has been assessed to be surplus to RailCorp's requirements and is subject to an agreement to be transferred from RailCorp to SMDA.

It is noted that the structural and geotechnical assessment undertaken for the Concept Plan found that provided the construction was carried out in accordance with the recommendations contained within the respective reports which accompanied the Concept Plan, the proposed development will not have any adverse affect or result in unacceptable risks of geotechnical instability to the rail corridor.

### 5.17 Cumulative Environmental Impacts

The activity will assist in preparing part of the North Eveleigh precinct for the redevelopment in accordance with the North Eveleigh Concept Plan. There are no recently approved projects currently under construction in the locality. The activity

will not contribute to any known environmental stresses in the locality. Conversely the planned remediation of the site removes an existing environmental degradation.

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## 6.0 Summary of Impacts

The objective of the activity is to prepare the subject site for its future redevelopment as affordable housing. The impacts of the activity are summarised below.

### Biophysical Impacts

Due to the nature and extent of the works, the impact of the activity on the biophysical environment will be positive. The remediation of land identified as being contaminated in accordance with the approved RAP will significantly improve the environmental quality of the site.

### Social Impacts

The activity will provide infrastructure to service the site and enable the future provision of affordable housing. As such, it will have a beneficial impact.

### Economic Effects

The provision of infrastructure to service the redevelopment of the North Eveleigh site is an efficient use of economic resources.

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## 7.0 Mitigation Measures

### 7.1 Mitigation Measures to be Implemented

This REF applies to the infrastructure works outlined in Section 3.0 and is consistent with the provisions of the Infrastructure SEPP and SEPP 55. Activities undertaken during construction would require environmental safeguards to a suitable standard to be implemented through a Construction Management Plan, to reduce any potential adverse impacts arising from the proposed works on the surrounding environment.

This REF has been prepared in accordance with the following plans and supporting information:

Table 3 - Relevant Reports and Documentation

Report / Plan Number	Plan Date/ Revision	Description	Prepared By
60238089-DRG-CI001	27.02.12	Cover Sheet and Drawing List	AECOM
60238089-DRG-CI101 and 60238089-DRG-CI102	16.03.12	Existing Conditions and Demolition Plan (Sheets 1 & 2)	AECOM
60238089-DRG-CI111	16.03.12	General Arrangement Plan (Sheet 1)	AECOM
60238089-DRG-CI112	16.03.12	General Arrangement Plan (Sheet 2)	AECOM
60238089-DRG-CI331	16.03.12	Typical Road Sections	AECOM
60238089-DRG-CI401	16.03.12	Combined Services Plan (Sheet 1)	AECOM
60238089-DRG-CI402	16.03.12	Combined Services Plan (Sheet 2)	AECOM
60238089-DRG-CI511	16.03.12	Drainage Plan (Sheet 1)	AECOM
60238089-DRG-CI512	16.03.12	Drainage Plan (Sheet 2)	AECOM
60238089-DRG-LS111	27.02.12	Landscape Plan	AECOM
Site Audit Statement	May 2011	Site Audit Statement	Environmental Strategies
Arboricultural Assessment and Development Impact Report	18 March 2008	Arborist Report	Landscape Matrix
Stormwater Management Plan	28.02.12	Stormwater Management Plan	AECOM
Heritage Impact Statement	February 2012	Heritage Impact Statement	Weir Phillips
Construction Staging Plan	February 2012	Construction Staging Plan	SMDA

## Heritage

- § The applicant is to commission an experienced Heritage Architect to work with the consultant team throughout construction of the project. A Heritage Architect is to be involved in the resolution of all matters where existing significant fabric is to be preserved, restored, recorded or demolished. A Heritage Architect is to be provided with full access to the site.
- § The proposed works are to be carried out in a manner which ensures that the Clothing Store, Blacksmiths Shop and Carriage Workshops are to be protected from damage during demolition and construction work.
- § The Wilson Street retaining wall is to be protected from damage during demolition and construction work.
- § The extent of the extant rails set in concrete is to be investigated and survey plans produced. Continuous pairs of rails that join the rails outside the Blacksmith's Workshop are to be recovered and reinstated in the new road in consultation with a Heritage Architect.
- § An archival photographic recording in accordance with NSW Heritage Branch guidelines is to be made prior to the commencement of work. The photographic archival record is to include recording of the subject site generally (ie the western end of the larger North Eveleigh Railway Workshop site), the Spring Store, Reclamation Shed, Air Raid Shelters, and the Timber Shed Extension. An archival photographic record is also to be made of the Air Raid Shelters during demolition.
- § An archival drawn record of the Air Raid Shelters and Timber Shed Extension is to be made prior to the commencement of work. The record is to include accurate measured drawings of the floor plan, elevation, sections and roof plan (after removal of the soil). The scale is to be 1:10 or 1:50. Measured drawings should be cross-referenced, clearly titled, indicate scale, north point and date of execution.
- § The interpretation treatment of the demolished buildings is to be consistent with the Eveleigh Railway Workshops Interpretation Plan 2012.
- § Should any heritage relics or sites be discovered during construction they shall be reported to the SMDA. If relics other than those indicated by this assessment are revealed, a suitably qualified archaeologist should be consulted to assess the significance and research potential of the remains and to undertake any required consultation with the EPA.
- § If archaeological remains are unexpectedly disturbed, cease work and engage an archaeologist who will apply for an archaeological excavation permit (Heritage Act 1977 amended 2001) before any further work is undertaken.
- § Should any evidence of Aboriginal be relics discovered during construction they shall be reported to the SMDA. Any proposal to disturbance suspected relics or Aboriginal heritage site may require consultation with the EPA. All work is to cease on site until the relevant permit is received or advice is provided by the EPA that work can recommence.
- § Where underground services are discovered, assessment shall be made of their significance and whether they are active before disturbance or removal.

## Construction Work Site

- § All relevant legislation and associated regulations should be complied with.
- § Best management practices would be implemented as specified by any codes of practice or guidelines that are recognised by EPA.

- § Traffic during construction would be managed in accordance with AS 1742.3 - 1996 "Manual of Uniform Traffic Control Devices Part 3: Traffic Control Devices for Works on Roads".
- § Protective site safety fencing would be installed around the construction site. Vehicle and workforce access points to the construction compounds would be controlled.
- § The hours of demolition or construction, including delivery of materials to and from the site, shall be restricted as follows:
  - a. between 7.00am and 7.00pm, Monday to Friday, and 7.00am and 5.00pm Saturday; and
  - b. no work or deliveries on Sunday and/or public holidays.
- § The worksite would be left tidy and rubbish free each day prior to leaving site and at the completion of the works.
- § No hazardous materials or dangerous goods would be used or stored on site.
- § No plant and equipment storage areas or bunded areas for storage of petroleum, distillate and other chemicals would be permitted within the site.
- § The contractor would meet all workplace safety legislation.
- § Undertake dilapidation reporting of Council assets (e.g. footpath) and where necessary adjacent private properties prior to commencement of construction works.
- § All materials on-site or being delivered to the site must be contained within the site. The requirements of the *Protection of the Environment Operations Act 1997* are to be complied with when placing/stockpiling loose material or when disposing of waste products or during any other activities likely to pollute drains or watercourses.
- § The public way must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances.
- § Access through the site for all uses, including pedestrian and cyclist access, should be maintained throughout the construction of the project.

### Plant and Equipment

- § In accordance with WorkCover all plant and equipment used in construction work must comply with the relevant Australian Standards and manufacturer specifications.
- § All plant/equipment would be inspected daily to avoid leakage of fuel, oil or hydraulic fluid to the work sites. Machinery found to be leaking would be repaired or replaced.
- § All machinery to be secured against vandalism outside working hours.
- § No batching plant would be permitted on site.

### Demolition, Excavation and Construction

- § A copy of the approved and certified plans, specifications and documentation shall be kept on site at all times and shall be available for perusal by any authorised officer.
- § Construction of the Proposal would be completed to Building Code of Australia performance requirements.
- § Protective fencing is to be installed around demolition and construction areas to prevent public access to the site.

- § No blasting would be permitted during construction.
- § All previously connected services would be appropriately disconnected as part of the demolition works. The contractor is required to consult with the various service authorities regarding their requirements for the disconnection of services.

### Construction Management Plan

- § A Construction Management Plan (CMP) will be prepared, to incorporate (but not be restricted to) appropriate construction traffic, access and parking management measures, erosion and sediment control, water management, noise and vibration, air quality and waste management mitigation measures.

### Erosion and Sediment Control

- § An Erosion and Sedimentation Control Plan would be prepared as part of the CMP and implemented as necessary and would incorporate appropriate erosion and sediment control measures e.g. socks around inlets, silt fences etc, in accordance with Landcom's "Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book)". Where over 2,500m<sup>2</sup> of soil is being disturbed as a result of the works, a Soil and Water Management Plan would be implemented.
- § Erosion and sedimentation control measures would be maintained regularly and after rainfall events in accordance with Landcom's "Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book)".
- § Erosion and sedimentation control measures would not be removed until disturbed areas have stabilised.
- § Disturbed areas would be stabilised during construction works where necessary and revegetation would be undertaken after works are complete, in line with Landcom's "Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book)".
- § Any excess spoil following construction would be seeded to minimise the likelihood of it being transported offsite through wind or water action. Alternatively, it would be removed off site for disposal in accordance with OEH, Council and legislative requirements.
- § Any damage from construction to the ground surface shall be restored to pre-construction condition on completion of works.
- § Any loose material stockpiles would be located within the temporary construction compounds and be protected from possible erosion.

### Water Quality

A Water Management Plan (WMP) will be prepared as part of the CMP. The WMP will include procedures for:

- § silt control on the roads;
- § water from dewatering systems;
- § rainwater within the site, during excavation and before final pavements are installed;
- § diversion of clean water;
- § waste water, from general cleanup of tools and equipment; and
- § spills control.



Implemented procedures will be in compliance with the Environmental Protection Authority (EPA), City of Sydney Council and Sydney Water requirements.

All care and due diligence would be taken to minimise or prevent pollutant material entering drain inlets or waterways.

## Flora and Fauna

Measures to be implemented prior to the commencement of any works on the site.

- § All trees identified for retention/protection within the subject site are to be clearly identified by signage as protected trees.
- § The primary root zone areas of trees identified for protection are to be protected by fencing during the entire construction period except for specific areas directly required to achieve construction works.
- § The tree protection fence shall be constructed of galvanised pipe at 2.4 metre spacing and connected by securely attached chain mesh fencing to a minimum height of 1.8 metres prior to work commencing.

Measures to be implemented and maintained during the life of construction works on the site.

- § Construction works, development (including utilities) or soil level changes within the critical root zones of trees identified for protection within the site shall be avoided or, if unavoidable, shall be restricted to pier and beam style or suspended slab construction (including driveway construction).
- § Any excavation (e.g. for piers/posts) within the primary root zones of trees identified for protection shall be carried out by hand to minimize disturbance to tree roots. Roots greater than 30mm are not to be damaged or severed without prior assessment by an arborist to determine likely level of impact and the restorative actions required to minimise the impacts of root damage.
- § Tree roots between 10mm and 30mm diameter, severed during excavation, shall be cut cleanly by hand and the tree subsequently treated with a root growth hormone and wetting agent, by an experienced Arborist/Horticulturist with a minimum qualification of the Horticulture Certificate or Tree Surgery Certificate.
- § To prevent soil compaction or contamination no storage or mixing of construction materials shall be allowed within the primary root zone area of trees identified for protection.
- § Canopy pruning of trees identified for protection which is necessary to accommodate approved building works shall be undertaken by an experienced Horticulturist/ Arborist, with a minimum qualification of the Horticulture Certificate or Tree Surgery Certificate and in accordance with Australian Standard 4373-2007 'Pruning of Amenity Trees':

## Noise and Vibration

- § The contractor would use the best available techniques not entailing excessive cost to meet EPA's construction noise and vibration requirements as far as practicable. Reference should be made to EPA's "Interim Construction Noise Guideline (July 2009)".
- § For projects with a construction period longer than three weeks demolition and construction noise will be limited to EPA's "Interim Construction Noise Guideline (July 2009)", which provides for a construction noise level of background plus 10 dB(A) and LAeq 75 dB(A) during recommended standard hours (Monday to Saturday 7 am to 7 pm with no work on Sundays or public

holidays) and a construction noise level of background plus 5 dB(A) outside standard hours.

- § All reasonable practical steps shall be undertaken to reduce noise and vibration from the site.
- § Construction noise would be attenuated with the use of screening, acoustic enclosures, engine silencing and substitution by alternative processes to reduce noise emission levels from typical construction equipment. In addition to these physical noise controls, the following general noise management measures would be followed.
- § Plant and equipment would be properly maintained.
- § Equipment would be checked and calibrated to the appropriate design requirements and to ensure that maximum sound power levels are not exceeded.
- § Where possible, plant would be strategically positioned on site to reduce the emission of noise to the site, surrounding neighbourhood and to site personnel.
- § Unnecessary noise would be avoided when carrying out manual operations and operating plant.
- § Any equipment not in use for extended periods during construction work would be switched off.
- § Good relations with people living and working in the vicinity of the construction site would be established at the beginning of the project and be maintained throughout the project. Any complaints would be registered, and then addressed seriously and expeditiously.
- § Demolition and excavation is proposed to be undertaken in accordance with the relevant standards and guidelines. In the event that works are planned that will exceed the construction noise objective, all sensitive receivers will be notified by the Head Contractor in writing at least 48hrs prior to the commencement of those works.
- § The appointed building contractor shall arrange the programming of the works so as to prevent, as far as practicable, excessive and nuisance noise reaching neighbouring buildings. The CMP will also require that the contractor adopt best practice methods for noise suppression.

### Air Quality

- § Spraying of paint and other materials with the potential to become air borne particulates would only be undertaken in still or light wind conditions.
- § Community notification would be undertaken where appropriate.
- § No burning of vegetation or other materials would be permitted on site or at the construction compound.
- § Dust generation during construction activities would be controlled by regular control measures such as on-site watering.
- § Areas of open excavation would be kept to a minimum.
- § Damp cloth fences would be used around open excavation areas as required.
- § Construction vehicles and equipment would be suitably serviced within the six-month period prior to commencement of construction activities and all necessary maintenance undertaken during construction period. In addition, where practicable, the excessive use of vehicles and powered construction equipment would be avoided.

- § Exposed areas would be progressively revegetated as soon as practical.
- § Vehicle wash down areas would be established to ensure all mud and soil from construction vehicles is not carried onto public roads.
- § Mud deposited on the road network due to truck movements to and from the site would be either prevented or cleaned up immediately.

## Waste Management

- § All waste generated by the project, shall be beneficially reused, recycled or directed to a waste facility lawfully permitted to accept the materials in accordance with the EPA's "Waste Classification Guidelines (2008)" and the Protection of the Environment Operations Act 1997.
- § Where available, recyclable site and construction waste would be recycled in accordance with the NSW Government's "Waste Reduction and Purchasing Policy (WRAPP guidelines)". Waste oil would be sent to approved recyclers.
- § No burning or burying of wastes would be permitted on site.
- § Non-recyclable waste and containers would be regularly collected and disposed of at a licensed landfill or other licensed disposal sites in the area.
- § Any bulk garbage bins delivered by authorised waste contractors would be placed and kept within the property boundary.
- § Waste management practices for the Proposal would follow the resource management hierarchy principles embodied in the Waste Avoidance and Resource Recovery Act 2001. These practices include: avoid unnecessary resource consumption; recover resources (including reuse, reprocessing, recycling and energy recovery); and dispose (as a last resort).

## Utilities and Services

- § Prior to commencement of construction activities, any services near the building site which may be impacted by the works would be accurately located.

## Contamination

- § All remediation works must be undertaken in accordance with an approved Remediation Action Plan as approved by a site auditor.
- § Prior to any demolition works, a hazardous material survey should be carried out to ascertain identify any hazardous materials. The surveys should include sampling of settled dust on structural building elements for other contaminants such as heavy metals.
- § Hazardous materials should be removed prior to the commencement of any demolition works that may cause their disturbance. Any removal of asbestos materials should be done in accordance with the requirements of the NOHSC "Code of Practice for the Safe Removal of Asbestos 2nd Edition [NOHSC: 2002(2005)]".
- § If any contaminated materials or hazardous substances (for example, asbestos, polychlorinated biphenyls, synthetic mineral fibre, lead dusts, paint containing lead and ozone depleting substances) were encountered during demolition and construction then safe work method statements and appropriate documented practices would be implemented.
- § Any contaminated materials or hazardous substances would be classified first and then stored, transported and disposed of in accordance with EPA requirements at a EPA licensed waste facility.

- § Asbestos removal and management in NSW is regulated under the Occupational Health and Safety Act 2000 and Occupational Health and Safety Regulation 2001. The handling of asbestos and asbestos work must be carried out in accordance with the following documents published by the NOHS Commission in August 1988, as in force from time to time (clause 259):
- "Guide to the Control of Asbestos Hazards in Buildings and Structures [NOHSC: 3002 (1988)]", and,
  - "Code of Practice for the Safe Removal of Asbestos [NOHSC: 2002 (1988)]".

#### Other Requirements

- § Works-as-executed drawings are also to be forwarded to the SMDA for information purposes at the completion of the project.

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## 8.0 Conclusion

This REF has been prepared for the SMDA to assess the potential environmental impacts that could arise from a proposal to undertake infrastructure works as part of the North Eveleigh Affordable Housing Project.

Based on the information presented in this REF and the mitigation measures indicated, it is unlikely that there will be any significant environmental impacts associated with the Proposal.

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