This report has been prepared by GHD for the NSW Department of Justice and may only be used and relied on by the for the purpose agreed between GHD and the NSW Department of Justice as set out in section 1 of this report.

GHD otherwise disclaims responsibility to any person other than the NSW Department of Justice arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section 1). GHD disclaims liability arising from any of the assumptions being incorrect.
Declaration

As part of the NSW Government's Prison Bed Capacity Program, the NSW Department of Justice is proposing to expand the Metropolitan Remand and Reception Centre (MRRC), located within the Silverwater Correctional Complex at Silverwater.

This review of environmental factors (REF) has been prepared by GHD Pty Ltd and presents an assessment of the potential benefits and impacts of the construction and operation of the proposed 440 bed expansion of the MRRC (the proposal).

The NSW Department of Justice is a public authority and the determining authority for the proposal as defined by the Environmental Planning and Assessment Act 1979 (EP&A Act). The proposal satisfies the definition of an activity under Part 5 of the EP&A Act, and as such, the NSW Department of Justice must assess and consider the environmental impacts of the proposal before determining whether to proceed.

This REF has been prepared in accordance with sections 5.5 and 5.7 of the EP&A Act and clause 228 of the Environmental Planning and Assessment Regulation 2000. This REF provides a true and fair assessment of the proposal in relation to its likely effects on the environment. It addresses, to the fullest extent possible, all matters affecting or likely to affect the environment as a result of the proposed activity.

On the basis of the information presented in this REF it is concluded that:

1. The proposal is not likely to have a significant impact on the environment and therefore an environmental impact statement is not required.

2. The proposal is not likely to significantly affect threatened species, populations, ecological communities, or critical habitat. Therefore a species impact statement is not required.

3. The proposal is not likely to affect Commonwealth land, is not being carried out on Commonwealth land, and is not likely to significantly affect any matters of national environmental significance listed under the Environment Protection and Biodiversity Conservation Act 1999.

Subject to implementation of the measures to avoid, minimise or manage the environmental impacts listed in this REF, the proposal is recommended for approval.

<table>
<thead>
<tr>
<th>Author’s name and qualifications</th>
<th>Ella Muema, BE (Env)(Hons) Environmental Consultant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reviewer’s name and qualifications</td>
<td>Greg Marshall, BEng Technical Director - Environmental Impact Assessment and Permitting</td>
</tr>
<tr>
<td>Approved by</td>
<td>Greg Marshall, Certified Environmental Practitioner, EIANZ</td>
</tr>
<tr>
<td>Designation</td>
<td>Technical Director - Environmental Impact Assessment and Permitting</td>
</tr>
<tr>
<td>Organisation</td>
<td>GHD Pty Ltd</td>
</tr>
<tr>
<td>Signature</td>
<td>[Signature]</td>
</tr>
<tr>
<td>Date</td>
<td>17 August 2018</td>
</tr>
</tbody>
</table>
Verification and determination

Verifier
I have examined this REF and the declaration by the author and accept the report on behalf of Department of Justice.

Name   Fiona Gainsford
Designation  Statutory Planning Approvals Advisor
Organisation  NSW Department of Justice
Signature  [refer to email - "RE: Peer review of MRRC REF - Final Darft" dated 20/08/2018]
Date

Determination
I determine that the proposal is approved and may proceed.

Name   ANDREW CAPPIE - WOOD
Designation  SECRETARY
Organisation  DEPARTMENT OF JUSTICE
Signature
Date  7/12/18
# Table of contents

Declaration .......................................................................................................................................... i

Verification and determination ............................................................................................................ iii

Glossary of terms and abbreviations .................................................................................................. ix

1. Introduction ............................................................................................................................... 1
   1.1 Background ..................................................................................................................... 1
   1.2 The proposal ................................................................................................................... 1
   1.3 Location of the proposal .................................................................................................. 3
   1.4 Land description and ownership ...................................................................................... 6
   1.5 REF scope and methodology ........................................................................................... 6

2. Statutory considerations ............................................................................................................ 7
   2.1 Approval and assessment requirements under the Environmental Planning and Assessment Act 1979. ...................................................................................................... 7
   2.2 Environmental planning instruments ................................................................................ 8
   2.3 Other legislative considerations ..................................................................................... 11
   2.4 Summary of approval and notification requirements ....................................................... 14

3. Need for the proposal .............................................................................................................. 15
   3.1 Existing facility ............................................................................................................... 15
   3.2 Context for the proposal ................................................................................................ 17
   3.3 Options considered ....................................................................................................... 18

4. Description of the proposal ...................................................................................................... 21
   4.1 Existing environment ..................................................................................................... 21
   4.2 The proposal ................................................................................................................. 24
   4.3 Construction of the proposal .......................................................................................... 28

5. Stakeholder consultation .......................................................................................................... 33
   5.1 Approach to consultation ............................................................................................... 33
   5.2 Consultation activities and outcomes ............................................................................. 33
   5.3 Ongoing consultation ..................................................................................................... 34

6. Environmental assessment........................................................................................................ 35
   6.1 Land contamination and hazardous materials ............................................................... 35
   6.2 Traffic, transport and access .......................................................................................... 39
   6.3 Noise and vibration ........................................................................................................ 50
   6.4 Non-Aboriginal heritage ................................................................................................. 62
   6.5 Soils, erosion and water quality ..................................................................................... 66
   6.6 Air quality and odour ...................................................................................................... 69
   6.7 Biodiversity/trees ........................................................................................................... 71
   6.8 Socio-economic ............................................................................................................. 78
   6.9 Other issues .................................................................................................................. 85
7. Environmental management .................................................................................................... 91
   7.1 Environmental management approach........................................................................... 91
   7.2 Consolidated list of mitigation measures ...................................................................... 92
8. Conclusion .............................................................................................................................. 99
   8.1 Justification of the proposal ........................................................................................ 99
   8.2 Summary of REF findings ............................................................................................ 99
   8.3 Conclusion .................................................................................................................. 100
   8.4 Recommendation ........................................................................................................ 100
9. References ........................................................................................................................... 101

Table index

Table 2-1 Infrastructure SEPP consultation requirements ...................................................... 8
Table 2-2 Consideration of relevant legislation ...................................................................... 12
Table 2-3 EPBC Act protected matters search results ............................................................. 13
Table 2-4 Summary of approvals and consents for the proposal ............................................. 14
Table 4-1 Floor area of new facilities ..................................................................................... 25
Table 4-2 Floor area of expanded facilities ............................................................................ 26
Table 4-3 Estimate of construction vehicle movements ........................................................ 31
Table 5-1 Consultation with Parramatta Council .................................................................... 33
Table 6-3 Level of service criteria for intersections ............................................................... 41
Table 6-4 SIDRA results - existing intersection operations (2018 base) ................................ 42
Table 6-5 Summary of existing parking provision on site ..................................................... 43
Table 6-6 Intersection performance during construction ...................................................... 46
Table 6-7 Intersection performance during operation ........................................................... 48
Table 6-8 Average background and ambient noise levels ..................................................... 53
Table 6-9 Construction noise management levels ................................................................. 54
Table 6-10 Guideline values for short term vibration on structures (DIN4150-3) ..................... 54
Table 6-11 Guideline values –for transient vibration resulting in minimal risk of cosmetic damage (BS 7385-2) ................................................................. 55
Table 6-12 Minimum safe working distances (Roads and Maritime, 2016) ........................... 55
Table 6-13 Operational noise trigger levels for residential receivers ................................... 56
Table 6-14 Noise trigger levels – non residential receivers .................................................. 56
Table 6-15 Predicted construction noise impacts at residential receivers ............................... 57
Table 6-16 Trees within the project site ................................................................................ 73
Table 6-17 Summary of social impacts during construction ................................................ 81
Table 6-18 Summary of social impacts during operation ....................................................... 84
Figure index

Table 7-1  CEMP structure

Appendices

Appendix A – Clause 228 factors and ecologically sustainable development considerations under the EP&A Act
Appendix B – Proposal plans
Appendix C – Phase 1 Preliminary Site Investigation
Appendix D – Traffic and parking impact assessment
Appendix E – Noise and vibration assessment
Appendix F – Heritage impact assessment
Appendix G - Arboricultural assessment
Appendix H - Socio-economic impact assessment
## Glossary of terms and abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AHD</td>
<td>Australian Height Datum</td>
</tr>
<tr>
<td>AHIMS</td>
<td>Aboriginal heritage information management system</td>
</tr>
<tr>
<td>BC Act</td>
<td><em>Biodiversity Conservation Act</em> 2016</td>
</tr>
<tr>
<td>CEMP</td>
<td>construction environmental management plan</td>
</tr>
<tr>
<td>CLM Act</td>
<td><em>Contaminated Land Management Act</em> 1997</td>
</tr>
<tr>
<td>CSNSW</td>
<td>Corrective Services NSW</td>
</tr>
<tr>
<td>dBA</td>
<td>A-weighted decibels, which are an expression of the relative loudness of sounds in air as perceived by the human ear</td>
</tr>
<tr>
<td>DECC</td>
<td>Department of Energy and Climate Change</td>
</tr>
<tr>
<td>DECCW</td>
<td>Department of Energy, Climate Change and Water</td>
</tr>
<tr>
<td>EP&amp;A Act</td>
<td><em>Environmental Planning and Assessment Act</em> 1979</td>
</tr>
<tr>
<td>EP&amp;A Regulation</td>
<td>Environmental Planning and Assessment Regulation 2000</td>
</tr>
<tr>
<td>EPA</td>
<td>Environment Protection Authority</td>
</tr>
<tr>
<td>EPBC Act</td>
<td><em>Environment Protection and Biodiversity Act</em> 1999</td>
</tr>
<tr>
<td>Hz</td>
<td>Hertz, which is a measure of frequency</td>
</tr>
<tr>
<td>Infrastructure SEPP</td>
<td><em>State Environmental Planning Policy (Infrastructure)</em> 2007</td>
</tr>
<tr>
<td>Justice</td>
<td>NSW Department of Justice</td>
</tr>
<tr>
<td>LGA</td>
<td>Local government area</td>
</tr>
<tr>
<td>LEP</td>
<td>Local environmental plan</td>
</tr>
<tr>
<td>m²</td>
<td>Square metre/s</td>
</tr>
<tr>
<td>m</td>
<td>Metre/s</td>
</tr>
<tr>
<td>MRRC</td>
<td>Metropolitan Remand and Reception Centre</td>
</tr>
<tr>
<td>NPI</td>
<td>Noise Policy for Industry</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>NRAtlas</td>
<td>NSW Natural Resource Atlas</td>
</tr>
<tr>
<td>OEH</td>
<td>Office of Environment and Heritage</td>
</tr>
<tr>
<td>PFHxS</td>
<td>Perfluorohexane sulfonic acid</td>
</tr>
<tr>
<td>PFOA</td>
<td>Perfluorooctanoic acid</td>
</tr>
<tr>
<td>PFOS</td>
<td>Perfluoroctane sulfonic acid</td>
</tr>
<tr>
<td>Proposal</td>
<td>The construction and operation of the expansion to the MRRC.</td>
</tr>
<tr>
<td>Proposal site</td>
<td>The immediate location of the proposal, which is the area that has the potential to be directly disturbed by construction.</td>
</tr>
<tr>
<td>PSI</td>
<td>Preliminary Site Investigation</td>
</tr>
<tr>
<td>REF</td>
<td>Review of environmental factors</td>
</tr>
<tr>
<td>Roads and Maritime</td>
<td>Roads and Maritime Services</td>
</tr>
<tr>
<td>SEPP</td>
<td>State Environmental Planning Policy</td>
</tr>
<tr>
<td>SHR</td>
<td>State Heritage Register</td>
</tr>
<tr>
<td>SPCCA</td>
<td>Silverwater Prison Complex Conservation Area</td>
</tr>
<tr>
<td>Study area</td>
<td>Consists of land in the vicinity of the proposal site, including land that has the potential to be indirectly impacted by the proposal.</td>
</tr>
<tr>
<td>SREP</td>
<td>Sydney Regional Environmental Plan</td>
</tr>
</tbody>
</table>
1. Introduction

1.1 Background

Justice Infrastructure and Assets, a division of the NSW Department of Justice (Justice), is proposing to expand the Metropolitan Remand and Reception Centre (MRRC) within the Silverwater Correctional Complex on behalf of Corrective Services NSW.

The construction and operation of the proposed expansion of the MRRC (referred to as ‘the proposal’ for the purpose of this document) is subject to assessment and determination under Part 5 of the NSW Environmental Planning and Assessment Act 1979 (the EP&A Act). Justice commissioned GHD Pty Ltd to assess the potential environmental impacts of the proposal and prepare a review of environmental factors (REF) in accordance with the EP&A Act.

The proposal forms part of the NSW Government’s Prison Bed Capacity Program.

Justice is the proponent and determining authority of the proposal for the purposes of this REF.

1.2 The proposal

1.2.1 Program and proposal objectives

The objectives of the Prison Bed Capacity Program are to:

- provide additional capacity within the NSW correctional system in the medium term (next two to four years)
- increase the capacity of the NSW correctional system to meet demand, delivering on the NSW Government’s promise to maximise existing capacity and provide future long term requirements
- reduce the reliance on high risk beds in the correctional system
- deliver versatile physical assets that can be reutilised to meet future demands with minimal disruption or overcrowding
- enhance operational efficiencies across the broader correctional services network through reduction in prisoner transport
- ensure continuous access to custodial services that are geographically relevant.

The objectives of the proposal are to:

- maximise the additional bed capacity of the MRRC within the existing secure perimeter
- enhance the capability of the MRRC to provide the necessary programs to receive additional male custody and remand inmates safely and securely
- effectively and efficiently integrate the new centre operations and functionality with the existing operations.

1.2.2 Key features of the proposal

The proposal would involve providing new buildings, and refurbishing some existing buildings and facilities, within the existing secure perimeter of the MRRC to cater for an additional 440 inmates.

The key features of the proposal are summarised below.
**New building works**

The following new buildings would be provided to expand the capacity of the existing MRRC:

- four new modular inmate accommodation units, with 110 beds in each unit
- new programs/interviews building
- new satellite health centre building
- new indoor sports facility.

**Refurbishment/expansion of existing buildings**

The following works would be undertaken to existing buildings within the MRRC to facilitate the proposed expansion and meet the needs of the additional inmates:

- redevelopment and expansion of the Visits building
- new secure entry link to the Mental Health Screening Unit
- minor modifications to the B32 building
- conversion of the special management cells to segregation cells
- expansion of the reception inmate storage area
- expansion of the gatehouse for a new master control room
- redevelopment and expansion of the kitchen and laundry
- redevelopment and upgrade of the existing gym.

**Ancillary/infrastructure works**

Other works would include:

- services upgrades
- expansion/reconfiguration of car parking facilities.

The new building works would be undertaken in the location of the existing MRRC outdoor sports oval, an area of about 2.3 hectares in the south-eastern corner of the MRRC site. This area of the site was formerly occupied by a landfill facility and was rehabilitated for use as open space in the late 1990s. Appropriate precautions would be incorporated into the design of the works as outlined in the Remediation Action Plan for the site to ensure that any residual hazards associated with former landfill are appropriately mitigated and managed.

Further information on the key features of the proposal is provided in section 4.2.

Construction of the proposal is expected to commence in September 2018, subject to receipt of planning approval. It is estimated that the proposal would take about 32 months to construct.

The construction program would involve providing some temporary security facilities within the MRRC to facilitate the continued operation of the MRRC while works are undertaken.

Further information on the construction of the proposal is provided in section 4.3.
1.3 Location of the proposal

The site for the proposal (‘the proposal site’) is located within the existing fenced boundary of the MRRC. The MRRC forms part of the Silverwater Correctional Complex, which is located in the suburb of Silverwater, in the City of Parramatta local government area (LGA). The Silverwater Correctional Complex is located about two kilometres north-west of Sydney Olympic Park, five kilometres east of the Parramatta central business district (CBD), and about 21 kilometres west of the Sydney CBD.

The MRRC site is bounded by Holker Street to the south, Jamieson Street to the east, and other facilities within the Silverwater Correctional Complex to the west and north.

The location of the proposal site is shown in Figure 1.1 and Figure 1.2.

Further information on the proposal site and its surrounds is provided in section 4.1.
Figure 1.1 Location of the proposal
Figure 1.2 The proposal site

Legend
- The proposal site
- Silverwater Correctional Complex
- Existing developed area
- The proposed expansion area
1.4 **Land description and ownership**

The proposal site forms part of lot 22 of deposited plan 876995, which is owned by the Minister of Justice. It has a street address of Holker Street, Silverwater.

1.5 **REF scope and methodology**

1.5.1 **Scope and purpose of the REF**

The purpose of this REF is to assess the results of the environmental impact assessment and provide information about the proposal as an input to the determination process. Justice, as the determining authority, will consider the findings of the REF as part of the determination process.

The REF has been prepared to meet the requirements of sections 5.5 and 5.7 of the EP&A Act and clause 228 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

In summary, the REF will assist Justice to:

- determine whether the proposal should be approved, considering matters affecting or likely to affect the environment (in accordance with section 5.5 of the EP&A Act)
- determine whether the proposal is likely to have a significant effect on the environment or significantly affect threatened species, populations or ecological communities or their habitats
- develop appropriate conditions (based on the mitigation measures within the REF) to be attached to any approval granted.

The detailed design, construction and operation of the proposal will need to implement the outcomes and mitigation measures described in this REF, including the Remediation Action Plan for the site. If any substantive changes to the proposal as described in this REF occur, a consistency assessment and, if required, additional impact assessment, may need to be undertaken.

1.5.2 **Methodology**

Preparing the REF has involved the following tasks:

- reviewing existing information on the proposal, and relevant plans, including the *Metropolitan Remand and Reception Centre Master Plan Study* (Guymer Bailey Architects, 2018)
- site visits
- undertaking detailed and intrusive ground investigations for the purpose of examining the potential for contamination of soils and groundwater
- Undertaking specialist contamination, traffic and transport, noise and vibration, social impact, arborist and heritage assessments
- qualitative desktop assessments of other potential environmental and social impacts, including reviewing existing information and database searches
- identifying relevant mitigation measures to manage the issues identified
- addressing the requirements of Part 5 of the EP&A Act and clause 228 of the EP&A Regulation.
2. **Statutory considerations**

2.1 **Approval and assessment requirements under the Environmental Planning and Assessment Act 1979**

The EP&A Act and the EP&A Regulation provide the statutory basis for planning and environmental assessment in NSW. The EP&A Act provides the framework for environmental planning and development approvals and includes provisions to ensure that the potential environmental impacts of a development are assessed and considered in the decision making process.

The key requirements of the EP&A Act in relation to the approval and assessment of the proposal are described below:

2.1.1 **Consent requirements and application of Part 5**

As a result of the application of State Environmental Planning Policy (Infrastructure) 2007 (the Infrastructure SEPP) (refer to section 2.2.1), the proposal is permissible without development consent. Part 5 of the EP&A Act defines the assessment process for infrastructure activities that do not need development consent.

In relation to Part 5 activities, section 5.1 defines a determining authority as

‘a Minister or public authority and, in relation to any activity, means the Minister or public authority by or on whose behalf the activity is or is to be carried out or any Minister or public authority whose approval is required in order to enable the activity to be carried out’.

As consent is not required, the proposal is subject to the requirements of Part 5 of the EP&A Act and in accordance with section 5.1, Justice is the proponent and determining authority for the proposal.

2.1.2 **Approval and assessment requirements**

For Part 5 activities, section 5.5(1) of the EP&A Act imposes a duty on a determining authority to ‘...examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity.’ This REF has been prepared to satisfy Justice’s obligations as a determining authority under Part 5 of the EP&A Act.

The factors that need to be taken into account when considering the likely impact of an activity on the environment are provided in clause 228 of the EP&A Regulation. A summary of the results of the assessment of the proposal in accordance with the clause 228 factors is provided in Appendix A.

Section 5.7(1) of the EP&A Act requires that if an activity is likely to have a significant impact on the environment, the determining authority shall not carry out or approve an activity unless it has it has considered an environmental impact statement (EIS) in respect of the activity. Section 6 of this REF assesses the potential impacts of the proposal on the environment. Based on the findings of the assessments undertaken, and with the implementation of the mitigation and management measures provided, it is concluded that the proposal is unlikely to result in significant impacts. As a result, an EIS is not considered to be required.

As an EIS is not required, the proposal does not meet the definition of State significant infrastructure under section 5.12(2) of the EP&A Act and the State Environmental Planning Policy (State and Regional Development) 2011 (the State and Regional Development SEPP). In addition, the proposal does not meet the definitions of State or regionally significant development under the
State and Regional Development SEPP. As a result, approval from the Minister for Planning is not required.

Further information on the application of relevant environmental planning instruments is provided in the following section.

### 2.2 Environmental planning instruments

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

The Infrastructure SEPP clarifies the consent arrangements for infrastructure projects. According to clause 8(1) of the Infrastructure SEPP, if there is any inconsistency, the Infrastructure SEPP prevails over other environmental planning instruments.

**Confirmation of consent requirements**

The existing facility meets the definition of a ‘correctional centre’ under clause 24 of the Infrastructure SEPP.

Clause 26(e) provides that alterations of, or additions to, an existing correctional centre may be carried out by, or on behalf of, a public authority without consent on land within a prescribed zone. As described in section 4, the proposal involves development within an existing correctional centre. As noted in section 2.2.5, the proposal site is zoned SP2 Infrastructure. This zone meets the definitions of a prescribed zone under clause 24 of the Infrastructure SEPP.

As the proposal meets the definition of a correctional centre, and is being carried out on behalf of Justice in a prescribed zone, the proposal is permissible without consent in accordance with clause 26(e) of the Infrastructure SEPP.

**Consultation requirements**

Clauses 13 to 16 of the Infrastructure SEPP outline the requirements for consultation with councils and other public authorities for infrastructure development carried out by, or on behalf of, a public authority that meets the requirements under these clauses. As described in Table 2-1, the proposal is not considered to trigger any of these requirements. However, consultation in relation to the proposal has been, and would continue to be undertaken with relevant government agencies and key stakeholders as described in section 5.

**Table 2-1 Infrastructure SEPP consultation requirements**

<table>
<thead>
<tr>
<th>Clause</th>
<th>Requirements</th>
<th>Relevance to the proposal</th>
</tr>
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</table>
| 13 Consultation with councils – development with impacts on council related infrastructure and services | Consultation required where the development would involve/result in:  
- substantial impact on stormwater management services provided by a council  
- generation of traffic that would place a local road system under strain  
- connection to, and a substantial impact on, a council owned sewerage system  
- connection to, and a substantial use of, council’s water supply system  
- installation of a temporary structure on, or the enclosing of, a public place likely to cause a disruption to pedestrian or vehicular traffic that is not minor or inconsequential  
- excavation that is not minor or inconsequential of the surface of, or a footprint adjacent to, a road for which a council is the roads authority | No requirements under this clause are triggered.  
The proposal would involve the generation of traffic during construction. Additionally, there is a potential increase in traffic once construction is completed due to increased number of staff and visitors to MRRC resulting from the expansion.  
However, the traffic assessment undertaken for the REF (summarised in section 6.2) concluded that the anticipated increase in traffic would have minimal impact on the road network when compared to the existing situation  
The proposal would involve additional connections to council’s sewerage and water supply system, however will not... |
2.2.2 State Environmental Planning Policy (State and Regional Development) 2011

Sections 4.36(1) and 5.12(2) of the EP&A Act provides that a State environmental planning policy may declare any development, or any class or description of development, to be State significant development or State significant infrastructure (respectively).

State significant development

Clause 8(1) of the State and Regional Development SEPP provides that development is declared to be State significant development if it requires development consent and it is specified in the categories of development in schedules 1 or 2 of the State and Regional Development SEPP. As the proposal is permissible without consent, clause 8(1) does not apply, and the proposal is not State significant development.

Regionally significant development

Clause 20 of the State and Regional Development SEPP defines regionally significant development. In accordance with clause 20(2)(b), this does not include development for which development consent is not required. As a result, the proposal does not meet the definition of regionally significant development.

State significant infrastructure
Clause 14(1) of the State and Regional Development SEPP provides that development is State significant infrastructure if it is permissible without development consent by virtue of the operation of a State environmental planning policy and it is specified in the categories of development in Schedule 3 of the State and Regional Development SEPP.

The categories in Schedule 3 include ‘general public authority activities’, which includes:

1. Infrastructure or other development that (but for Division 5.2 of the Act and within the meaning of Part 5 of the Act) would be an activity for which the proponent is also the determining authority and would, in the opinion of the proponent, require an environmental impact statement to be obtained under Part 5 of the Act.

Although the proposal is subject to Part 5 of the EP&A Act, an EIS is not considered to be required. As the proposal does not meet this definition, or any of the other definitions in Schedule 3, it is not State significant infrastructure.

2.2.3 State Environmental Planning Policy No. 55 – Remediation of Land

State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55) outlines the matters that planning and consent authorities need to take into account in relation to contamination during land use planning and the assessment of development applications (clause 7). It also specifies the consent requirements for remediation activities.

There is considerable desktop evidence of historical landfilling activities and contamination at the proposal site. Detailed contamination investigations have been conducted in parallel with the REF to determine the nature and extent of any historical contamination present and for the purposes of developing an appropriate design for the proposal. As there is evidence of contaminated soil and groundwater at the proposal site, design mitigation measures and operational procedures will be needed to protect against the hazards of landfill gas present in the subsurface.

Remediation as defined in the SEPP includes ‘eliminating or reducing any hazard arising from the contamination of any land’ and includes the incorporation of measures to protect against landfill gas. Therefore, management of landfill gas at the proposal site triggers the requirements of SEPP 55.
Clause 14(b)(ii) defines Category 2 remediation as ‘work which may be carried out without consent under another State environmental planning policy or a regional environmental plan’. Clause 16 specifies that a person who proposes to carry out a Category 2 remediation work must give prior notice of the work to the council in which the land is situated.

Further details regarding site contamination and hazards and risks associated with landfill gas are provided in sections 6.1 and 6.9.6.

### 2.2.4 State Regional Environmental Plan No. 24 – Homebush Bay Area

All regional environmental plans are now deemed SEPPs. *Sydney Regional Environmental Plan No 24 – Homebush Bay Area* (SREP 24) applies to the land on which the proposal site is located. Although SREP 24 requires that development consent be obtained for development within the area to which it applies, this requirement is overridden by clause 8(1) of the Infrastructure SEPP.

The Silverwater Correctional Complex is listed as a heritage conservation area under Schedule 4 of SREP 24 (with a listing name of the ‘Silverwater Prison Complex heritage conservation area (Area No 4)). In addition, the ‘Silverwater Prison Complex locality’ and eight constituent items are listed as heritage items under Schedule 5.

Clauses 29 and 30 of SREP 24 place certain requirements on consent authorities in relation to development in the vicinity of heritage items and development in heritage conservation areas. Although development consent is not required for the proposal, the potential impacts on heritage have been assessed as part of this REF. The results of the assessment are summarised in section 6.4.

### 2.2.5 Auburn Local Environmental Plan 2010

The *Auburn Local Environmental Plan 2010* (the Auburn LEP) applies to the land in which the proposal site is located. The proposal site is located within land zoned as SP2 Infrastructure: Correctional Centre.

Under the provisions for this zone, the proposal would be permitted with consent. However, clause 5.12 of the LEP states that “…this Plan does not restrict or prohibit, or enable the restriction or prohibition of, the carrying out of any development, by or on behalf of a public authority, that is permitted to be carried out with or without development consent, or that is exempt development, under *State Environmental Planning Policy (Infrastructure) 2007*.”

As the proposal is permitted without consent under the Infrastructure SEPP (refer to section 2.2.1), the consent requirements of the Auburn LEP do not apply to the proposal.

The Silverwater Prison Complex is listed as a heritage conservation area in Schedule 5 of the Auburn LEP.

### 2.3 Other legislative considerations

#### 2.3.1 NSW legislation

Other NSW environmental legislation that is directly relevant to the approval and/or assessment of the proposal is considered in Table 2-2.
<table>
<thead>
<tr>
<th>Act</th>
<th>Potential approval/assessment requirement</th>
<th>Relevance to the proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contaminated Land Management Act 1997</strong></td>
<td>The Act requires that landowners and persons who carry out contaminating activities must notify contamination of the land in the circumstances specified in section 60 of the Act.</td>
<td>A portion of the proposal site has previously been reported to the EPA and remediated under a voluntary remediation program. As the detailed intrusive investigations conducted in parallel with the REF indicated the presence of contamination soil and groundwater, including by landfill gas, Justice should notify the results of these investigations to the NSW EPA.</td>
</tr>
<tr>
<td><strong>Heritage Act 1977</strong></td>
<td>Approval under section 57(1) for works to a place, building, work, relic, moveable object, precinct, or land listed on the State Heritage Register. The form of the application is specified by section 60. An excavation permit is required under sections 139(1) and (2) to disturb or excavate any land containing or likely to contain a relic. The form of the application is specified by section 140.</td>
<td>The ‘Silverwater Prison Complex Conservation Area’ is listed on the State Heritage Register. A heritage impact assessment was undertaken to assess the potential impacts on this item, and the results are considered in section 6.4. The assessment concluded that both approval under section 57(1) and an excavation permit under section 139(1) would be required to undertake the proposal. Construction works cannot commence until approval is received under section 57(1).</td>
</tr>
<tr>
<td><strong>National Parks and Wildlife Act 1974</strong></td>
<td>A heritage impact permit under section 87 of the Act to harm or desecrate an Aboriginal heritage object.</td>
<td>There are no listed Aboriginal heritage items or places located on or in the vicinity of the proposal site. As a result of the existing levels of site disturbance, there is minimal likelihood that unknown items of Aboriginal heritage significance would be present. Further information is provided in section 6.4.</td>
</tr>
<tr>
<td><strong>Protection of the Environment Operations Act 1997 (POEO Act)</strong></td>
<td>An environment protection licence (EPL) is required for scheduled activities or scheduled development work.</td>
<td>The proposal is not considered to be a scheduled activity or development work, and therefore an EPL is not required for construction or operation.</td>
</tr>
<tr>
<td><strong>Roads Act 1993</strong></td>
<td>Approval under section 138 for works to a public road. Under Clause 5(1) of Schedule 2, a public authority is not required to obtain a roads authority’s consent for the exercise of the authority’s functions in, on or over an unclassified road.</td>
<td>The proposal would involve the provision of a temporary construction site access to Jamieson Street. As Jamieson Street is not a classified road, approval under the Roads Act would not be required.</td>
</tr>
<tr>
<td><strong>National Environment Protection (Assessment of Site Contamination) Measure 1999</strong></td>
<td>The purpose of the measure is to establish a nationally consistent approach to the assessment of site contamination and provide adequate protection of human health and the environment where site contamination has occurred.</td>
<td>Schedule B1 requires notification where potentially explosive or acutely toxic gas concentrations are present in buildings or in ground services (such as utility trenches, sumps or drains) that may connect a ground gas source to a building, neighbouring building or off-site in-ground services. Notification is not required if approved management measures are in place to control gas entry into buildings or in-ground services. The previously developed parts of the MRRC incorporate passive gas ventilation systems to control gas entry into buildings. Should any surveys of the proposal site identify the potential presence of landfill gas, notification would be required.</td>
</tr>
</tbody>
</table>
2.3.2 Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval is required from the Australian Minister for the Environment and Energy for any action likely to have a significant impact on a matter of national environmental significance or Commonwealth land.

The EPBC Act protected matters tool was searched on 5 March 2018 for a one kilometre radius around the proposal site. The results of the search are summarised in Table 2-3. As no impacts are predicted, an approval under the EPBC Act would not be required.

**Table 2-3** EPBC Act protected matters search results

<table>
<thead>
<tr>
<th>EPBC Act protected matter</th>
<th>Matter located within search radius</th>
<th>Comments</th>
<th>Potential impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Heritage Property</td>
<td>None</td>
<td>The proposal would not impact on any World Heritage properties.</td>
<td>None</td>
</tr>
<tr>
<td>National Heritage Places</td>
<td>None</td>
<td>The proposal would not impact on any National Heritage properties.</td>
<td>None</td>
</tr>
<tr>
<td>Wetlands of international significance (Ramsar sites)</td>
<td>None</td>
<td>The proposal would not impact on any wetlands.</td>
<td>None</td>
</tr>
<tr>
<td>Threatened ecological communities</td>
<td>7 threatened ecological communities including 4 critically endangered, 2 endangered and 1 vulnerable</td>
<td>The proposal would not impact on any threatened ecological communities as there is none at the proposal site (refer section 6.7).</td>
<td>None</td>
</tr>
<tr>
<td>Threatened species</td>
<td>59 species including 54 bird species, 5 reptile species</td>
<td>The proposal is located within a highly disturbed and developed urban area with limited vegetation (native or otherwise) that would provide habitat for threatened and migratory species (refer section 6.7).</td>
<td>None</td>
</tr>
<tr>
<td>Listed migratory species</td>
<td>45 species including 9 marine bird species, 8 migratory marine species, 7 terrestrial species and 21 wetlands species</td>
<td>The proposal does not involve a nuclear action.</td>
<td>None</td>
</tr>
<tr>
<td>Nuclear actions</td>
<td>None</td>
<td>No Commonwealth marine areas are located within the search radius.</td>
<td>None</td>
</tr>
<tr>
<td>Commonwealth Marine Areas</td>
<td>None</td>
<td>The Great Barrier Reef Marine Park is outside the search radius.</td>
<td>None</td>
</tr>
<tr>
<td>Great Barrier Reef Marine Park</td>
<td>None</td>
<td>The proposal would not directly or indirectly impact on the Commonwealth land. NSW Department of Justice is not a Commonwealth agency.</td>
<td>None</td>
</tr>
<tr>
<td>Commonwealth land or action by a Commonwealth agency</td>
<td>One Commonwealth property</td>
<td>Not relevant.</td>
<td>None</td>
</tr>
<tr>
<td>A water resource, in relation to coal seam gas development and large coal mining development</td>
<td>Not relevant</td>
<td>Not relevant.</td>
<td>None</td>
</tr>
</tbody>
</table>
2.4 Summary of approval and notification requirements

The proposal does not require development consent and it is subject to assessment and determination under Part 5 of the EP&A Act.

The proposal is not State significant infrastructure or development, and is subject to determination by the NSW Department of Justice. The other notification and approvals required are summarised in Table 2-4.

Table 2-4 Summary of approvals and consents for the proposal

<table>
<thead>
<tr>
<th>Agency</th>
<th>Activity</th>
<th>Relevant legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA</td>
<td>Notify NSW EPA in accordance with section 60 for the proposal.</td>
<td>Contaminated Land Management Act 1997</td>
</tr>
<tr>
<td>Heritage Council of NSW</td>
<td>An approval is required under section 57 of the Heritage Act as the proposal would affect a site listed on the State Heritage Register.</td>
<td>Heritage Act 1977</td>
</tr>
<tr>
<td>Heritage Council of NSW</td>
<td>A permit is required under section 139 of the Heritage Act for subsurface excavation in areas of archaeological potential.</td>
<td>Heritage Act 1977</td>
</tr>
</tbody>
</table>
3. Need for the proposal

3.1 Existing facility

3.1.1 Facilities

The Silverwater Correctional Complex, which has a total area of about 27 hectares, includes the following facilities:

- MRRC
- Silverwater Women's Correctional Centre
- Dawn de Loas Correctional Centre Area 1 and 2.

The MRRC is a maximum security correctional facility for male offenders, and is the principal remand and reception facility in NSW. It is the central hub to facilitate transport of inmates to and from other correctional centres and courts. Inmates who arrive at the MRRC:

- come directly from court on remand, or
- are transferred from other correctional facilities throughout NSW to stay at the MRRC while they attend court in the Sydney metropolitan area, or
- are housed at the MRRC while they wait for a vacancy at their centre of classification.

Most inmates at the MRRC leave the centre within the first few months of their arrival. They may obtain bail and are released, or they are classified and transferred to their centre of classification.

The MRRC was opened in 1997 with an operational capacity of 887 beds. Over the years, the centre’s capacity has increased and it is currently operating at its maximum capacity of 1,163 beds. The 40 bed mental health screening unit also operates on the MRRC site.

Existing types of facilities on the MRRC site include:

- inmate accommodation
- inmate recreation facilities, including a sports oval, gym and library
- clinic
- kitchen and laundry facilities (disused following damage by fire)
- mental health screening unit
- property store
- reception
- gatehouse
- master control room
- car park
- visit facilities.

The MRRC site has a total area of about 7.5 hectares.
3.1.2 Existing operational characteristics

Security and fencing
The MRRC security system consists of both static and dynamic security facilities. Electronic security systems are centrally controlled from a Master Control Room located in the central tower of the facility at Block K. It is surrounded by five metre high inner and outer perimeter Macem fences with a sterile zone between.

Staffing
There are about 485 staff employed at the MRRC, consisting of about 335 custodial officers, 55 justice health staff, 55 program staff and 40 administration staff. The staff work in shifts to keep the prison operating 24 hours a day 7 days a week.

Operating hours
The MRRC operates continuously during the day and throughout the year, with its core operational day being between the hours of 8am to 4pm (the hours in which inmates spend times out of their cells). The centre remains operational for reception screening after 4pm, with reduced staffing levels.

While prison transport movements can occur at any time during normal operating hours, the peak periods for prison transport movements are in the morning between 6am and 9am, and in the afternoon between 2pm and 6pm.

Visits are managed on a scheduled basis seven days a week during the hours of 8am to 4pm.

Visitor numbers
During visiting hours, multiple visit sessions are run (with duration of one hour per session). There are a maximum of 65 visits per session, and up to four adults are permitted for each inmate.

Parking
There are 656 designated parking spaces located within the Silverwater Correctional Complex, with approximately 70 spaces located within the visitor parking area located in the southwest corner of the proposal site, prior to the gated entry.

Site access
The main access to the proposal site is via the Silverwater Correctional Centre access road, off Holker Street.

The secured boom gate and external perimeter security are maintained by a contracted security company on a 24/7 operation.

The peak pedestrian traffic periods for the gatehouse are 6am to 8am and 3pm to 4pm. Vehicular traffic is constant throughout the rest of the day for both vehicular and pedestrian traffic.

Services
Electrical infrastructure
The MRRC is currently fed by a 1500KVA substation, main switchboard and generator which is located inside the fence in the kitchen/laundry building.

Sanitary drainage
The existing MRRC site’s sanitary drainage is via sewer pipework and sewer pumping stations (SPS) to the authority main in Holker Street. The site sewer pump station is being upgraded to include the capacity for the new building works.
Potable water
There is a site’s potable cold water system is connected to the DN150 main in Holker Street. MRRC potable water supply is fed through a quad pressure boosting pump-set to DN150 ring mains which reticulate throughout the site to feed the existing facilities.

Natural gas
The MRRC site is currently supplied with natural gas through high pressure reticulation mains.

Fire hydrants and hose reels
The existing hydrant system is a combination of Ordinance 70 and Specification 10 installations supplied from a connection to the 200 mm water main in Holker Street to a booster assembly adjacent to the carpark which then reticulates throughout the site. No annual fire safety statement was able to be obtained for the site hydrant system.

Automatic fire detection
The existing MRRC has an existing non addressable fire detection system employed for the site.

3.2 Context for the proposal

3.2.1 Background
Between 2011 and 2016 the inmate population in NSW rose sharply by 33 per cent, placing significant pressure on existing Corrective Services NSW (CSNSW) infrastructure. The inmate population is still rising. In the 2016/17 NSW budget, the NSW Government announced a $3.8 billion infrastructure plan for the state’s prison system to address current and future needs, known as the Prison Bed Capacity Program. The program is delivering new facilities as well as upgrading, expanding, or repurposing existing centres over four years.

The proposal forms part of the Prison Bed Capacity Program. The aims of the program are to:

• provide additional capacity within the NSW correctional system in the medium term (next two to four years)
• increase the capacity of the NSW correctional system to meet demand, delivering on the Government’s promise to maximise existing capacity and provide future long term requirements
• reduce the reliance on high risk beds in the correctional system
• deliver versatile physical assets to meet future demands with minimal disruption or overcrowding
• enhance operational efficiencies across the broader correctional services network through reduction in prisoner transport
• ensure continuous access to custodial services that are geographically relevant.

3.2.2 Demand for additional remand capacity
There is a high demand for male remand beds in the Sydney metropolitan area. The lack of available remand and reception facilities has contributed to a shortage of front-end maximum-security beds and increased transfers of inmates to regional locations where beds are available. This results in additional effort from existing staff resources and is more costly for the Government. The proposal would provide additional beds where they are needed.

The proposal is an important part of the overall Prison Bed Capacity Program.
3.2.3 Benefits of an expanded MRRC

The MRRC is the main facility for delivery of male remand bed capacity in the Sydney metropolitan area and is critical to the processing of inmates and access to courts and police networks in metropolitan NSW.

The proposal would provide CSNSW with an enhanced capability to receive male custody or remand inmates safely and securely within existing correctional facilities in the Sydney metropolitan area. This would address the high demand for male remand beds in the metropolitan area, reducing the transportation of inmates between regional and metropolitan locations, which also increases the safety of correctional centre and escort staff.

As noted above, the MRRC is the primary reception and screening centre for male inmates remanded into custody in the Sydney metropolitan area. As a reception and screening centre, it is required to maintain continuous operations to ensure inmates are screened and provided with the appropriate support upon entry into custody. The increased capacity as a result of the proposal would also support mental health screening of new custodies as a result of the proposed safe cells and observation cells.

3.3 Options considered

3.3.1 Strategic options

CSNSW undertook an extensive due diligence exercise on all existing Corrective Services sites in NSW. The assessment included consideration of a range of infrastructure and operational options, in coordination with Justice Infrastructure and Justice Health, to address the medium term capacity and operating requirements aligning with the CSNSW business case objectives. The strategic assessment identified that expanding and/or developing facilities on existing CSNSW sites was the preferred strategic solution.

3.3.2 Site options

A review and further assessment of CSNSW sites was undertaken to select the most suitable site. The selection criteria included: site suitability, layout, location, proximity to services, infrastructure constraints, and environmental considerations. Following initial assessment workshops, the site options under consideration were expanded to include sites that would enable medium to long term relief and align with the need for metropolitan remand beds emerging as a priority under the Corrective Services Infrastructure Strategy.

Following the initial site selection, master planning and site due diligence was undertaken to better define the preferred projects to be taken forward, and meet medium term capacity needs under the Prison Bed Capacity Program.

3.3.3 Preferred site option

The assessment concluded that the MRRC at Silverwater best meets the identified selection criteria.

The MRRC meets the operational requirement for additional metropolitan remand beds as it is situated on existing Justice-owned land within close proximity to the Sydney CBD. It also has the potential to streamline the expansion process to the Prison Bed Capacity Program, providing the type of bed capacity where it is most urgently needed.

3.3.4 The ‘do nothing’ option

The ‘do nothing’ option would involve not undertaking the proposal. The MRRC would retain the existing number of beds under this option.
This option was not considered acceptable, as it would not meet the objectives of the Government’s Prison Bed Capacity Program; principally, to respond to the required short term and medium term need for additional capacity within the NSW correctional system.
4. **Description of the proposal**

4.1 **Existing environment**

The proposal site is located in an area with a mix of corrective services, transport infrastructure, industrial, commercial, residential and recreation/sporting land uses. The key features of the existing environment are shown on Figure 4.1 and are described below.

Land uses immediately surrounding/adjoining the proposal site include:

- Silverwater Correctional Complex to the north and west
- transport infrastructure (roads) to the south (Holker Street) and east (Jamieson Street)
- commercial land uses on the opposite side of Holker Street
- open space/recreational land uses (associated with Newington Armoury) on the opposite side of Jamieson Street.

Land uses immediately surrounding/adjoining the Silverwater Correctional Centre include:

- parklands/recreation uses to the north (Blaxland Riverside Park) and north-west (Wilson Park)
- transport infrastructure (roads) to the south (Holker Street), west (Newington Road), and east (Jamieson Street)
- commercial land uses on the opposite side of Holker Street
- the Silverwater Distribution Centre and Mobil’s Silverwater Terminal on the opposite side of Newington Road
- open space/recreational land uses on the opposite side of Jamieson Street (Newington Armoury).

Land uses in the broader area include:

- Residential uses - includes both detached and medium density residential dwellings to the south and south-east of the proposal site in the suburb of Newington. The nearest residences, which front Evans Street and Blaxland Avenue, are located about 140 metres from the proposal site.
- Commercial/light land uses – extensive industrial and commercial land uses are located to the south and west of the proposal site in the suburbs of Newington, Silverwater and Rosehill. The Newington shopping centre is located about 200 metres to the south of the proposal site.
- Community infrastructure – the Newington Community Centre is located about 160 metres to the south of the proposal site next to the shopping centre. The Newington Public School is located about one kilometre south of the proposal site on Newington Boulevard.
- Recreation and sporting uses – there is a range of recreation facilities, including sporting, parks, playgrounds, and areas of open space, within a one to two kilometre radius of the proposal site. Nearby recreational facilities include the Blaxland Riverside Park, Wilson Park, George Kendall Park and Newington Armoury. The access road and parking for the Blaxland Riverside Park are located about 130 metres to the north of the proposal site. The majority of sporting facilities associated with Sydney Olympic Park and the Sydney Showground are located to the east and south of Edwin Flack and Kevin Coombs Avenues, about one kilometre to the south-east of the proposal site at the nearest point. In addition, Parramatta River Walk and Parramatta Valley Cycleway, a connection of paths to accommodate
pedestrians and cyclists commonly used for leisure and recreation. Part of these paths runs directly past Silverwater Correctional Complex.

- Reserves – the Newington Nature Reserve (managed by the National Parks and Wildlife Service) is located about 500 metres to the east of the proposal site at the nearest point.
- Accommodation – the YMCA’s Sydney Olympic Park Lodge is located about 280 metres north-east of the proposal site, within the grounds of the Newington Armoury, off Jamieson Street.
Figure 4.1 Land use and key features of the study area
4.2 The proposal

The proposal would involve providing new buildings and refurbishing some existing buildings and facilities within the MRRC to cater for an additional 440 inmates.

Detailed plans showing the proposed facilities are provided in Appendix B.

4.2.1 New building works

New buildings would be provided to expand the capacity of the MRRC and accommodate the additional inmates. These new buildings would be constructed in the south-eastern corner of the proposal site, in the location of the existing outdoor sports oval.

The approximate floor areas of the new buildings are listed in Table 4-1.

New accommodation units

The new accommodation units would consist of four two-storey units each housing 110 inmates and split across two wings. About two thirds of the cells in each unit would be single cells, and one third would be double cells. Accessible cells would be provided on the ground floor of each cell block wing. Each cell block would be split into two 55 bed accommodation units.

The units would be a modular cell pod design used for other Prison Bed Expansion Program projects. The majority of the structures would be constructed off-site, and would be transported to the proposal site for final works and fit out. This would reduce the duration of construction and the works required on site.

The accommodation units would also include an inmate yard (two per accommodation unit) and inmate amenities.

New program and interview facilities

New program facilities would be located in between the new accommodation units. The placement of these facilities would enable them to function as a central hub to the new accommodation units.

The facilities, which would be housed in separate buildings to the accommodation units, would also include staff offices and amenities.

New medical clinic

A satellite health clinic would be located in between the new accommodation units next to the program facility.

The clinic would supplement the existing services provided by the main health centre within Block J of the existing MRRC. An ambulance bay would be located in close proximity to the clinic.

New indoor sports building

A new multi-purpose indoor sports building would be constructed within the new accommodation area. The facility would include a basketball court and facilities for group activities, such as TV, major events, movies, etc.
### Table 4-1 Floor area of new facilities

<table>
<thead>
<tr>
<th>New building works</th>
<th>Approximate floor area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation units – four units of 2,600 m² each</td>
<td>10,400</td>
</tr>
<tr>
<td>Program and interview facilities</td>
<td>1,000</td>
</tr>
<tr>
<td>Medical clinic</td>
<td>800</td>
</tr>
<tr>
<td>Indoor sports building</td>
<td>750</td>
</tr>
<tr>
<td><strong>Total area</strong></td>
<td><strong>12,950</strong></td>
</tr>
</tbody>
</table>

**4.2.2 Existing building expansion/upgrades**

The works that would be undertaken to existing buildings within the MRRC to facilitate the proposed expansion and meet the needs of the additional inmates are described below.

The approximate area of the expansions to the existing facilities are listed in Table 4-2.

**Visits building**

The visits building would be redeveloped and expanded to provide capacity for additional visitors and inmates. This would include additional interview rooms and professional visits rooms.

The building would also include visitor amenities, including children’s play areas.

**New secure entry link to the Mental Health Screening Unit**

A new secure entry link would be provided to the existing Mental Health Screening Unit, to replace the existing entry point near the visits building. This would enable segregation of inmate movements from the visits area, providing greater security.

**Modifications to the B32 building**

The B32 building was used as a waiting area for inmate legal visits. Redevelopment of the B32 building would also allow it to function as the central radio pickup and drop off point for all staff by adding capacity to store and charge handheld radio and personal duress alarms.

**Conversion of existing special management cells**

The existing special management cells in Darcy 3 (cells 1 to 16) would be converted into segregation cells. This would involve upgrading the cells to the required segregation standards, with an individual yard provided at the rear of each cell. These works would provide the MRRC with a total of 31 segregation cells upon completion.

**Expansion of the reception inmate storage area**

The reception inmate storage would be expanded to provide additional capacity. This is likely to involve extending the building to the north and installing an improved storage system for optimal storage capacity and efficiency.

**Expansion of the gatehouse for a new master control room**

The gatehouse would be expanded to provide additional space for a new master control room. This is likely to involve extending the building to the south and installing an improved electronic security system to service the existing and new buildings. This expansion will be the main master control room reducing the operations in the existing control room tower to movement control.

**Redevelopment and expansion of the laundry and kitchen**

The laundry and kitchen facilities would be redeveloped and expanded to cater for the additional inmates.
The laundry, which services the Silverwater Correctional Centre as a whole prior to incurring fire damage, would be reconstructed and expanded to service the expanded facility.

The existing workshop area located adjacent the laundry would be converted to a rethermalisation (retherm) kitchen, which would service the MRRC facility as a whole.

**Redevelopment and upgrade of the gym**

The existing gym would be redeveloped and upgraded to provide additional capacity. This would include provision of two segregated gym areas for managing multiple inmate groups simultaneously, and provision of a new outdoor recreation area with secure fencing.

**Table 4-2 Floor area of expanded facilities**

<table>
<thead>
<tr>
<th>Expansion area</th>
<th>Approximate floor area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visits building</td>
<td>2,000</td>
</tr>
<tr>
<td>B32 building</td>
<td>62</td>
</tr>
<tr>
<td>Inmate storage</td>
<td>521</td>
</tr>
<tr>
<td>Special management (segregation) cells</td>
<td>84</td>
</tr>
<tr>
<td>Laundry and kitchen expansion</td>
<td>756</td>
</tr>
<tr>
<td>Gym</td>
<td>112</td>
</tr>
<tr>
<td><strong>Total area</strong></td>
<td><strong>3,535</strong></td>
</tr>
</tbody>
</table>

### 4.2.3 Services upgrades

A summary of existing services available at MRRC is provided in section 3.1.2. The proposed works will include the following services upgrade works:

**Electrical infrastructure**

The proposal involves a new 1500 KVA substation located on Holker Street outside the fence. The substation form part of a ring HV mains which provides additional redundancy for the site. A new main switchboard and generator shall be located inside the fence in a dedicated enclosure.

The new substation will feed the new buildings and Block F & G. The existing substation will feed the existing site, visits building extension and kitchen/laundry.

**Sanitary drainage**

The new sewer drainage service will be extended from the four 110 bed accommodation blocks, recreation, gym, satellite health and satellite programs buildings to two localised sewer pump stations (SPS). Each SPS will be fitted with a large macerator on the inlet and dual duty standby macerator pumps to evacuate the contents and to control the wastewater flow to the existing sewer infrastructure.

Two new localised SPSs located in the 440 bed extension will discharge to the existing MRRC site piping and to the sewer pump station currently being upgraded.

**Potable cold water**

A water storage tank with mains top up and pump set would be located in a dedicated enclosure inside the site. The tanks are sized for three hour top up as per CSNSW standards.

As the visits, reception and Main Control Room buildings are refurbishments and extensions of existing buildings, the associated increased demand is able to be catered via connections directly to the existing infrastructure.

The potable water system entering each new building is to be isolated via a path valves located external and prior to entering the plant room to a private water meter.
Potable hot water

Due to the large demand for heating in the accommodation buildings and kitchen and laundry, these buildings have been designed for gas-fired hot water plant. All other new buildings are supplied with electrical storage hot water.

Hot water delivery will be temperature controlled using thermostatic mixing valves providing control valves for the hot and cold water. The valves would be strategically located outside of high risk areas for ease of maintenance. All fixtures accessible by inmates that require temperature controlled water would be supplied with tempered water at no more than 43.5°C to accessible ablution areas and 50°C to all others.

Natural gas

The site is currently supplied with natural gas through high pressure reticulation mains. As part of the proposal, the main authority site billing meter and regulator set will be upgraded to suit increased loads. No allowance has been made to upgrade Jemena pipe infrastructure.

Fire hydrants and hose reels

The pressure and flow statement received from Sydney Water indicates there is insufficient pressure in the existing main to obtain unassisted performance to the new buildings and carpark.

As part of the proposal, a new hydrant system would be installed and supplied to service only the new buildings, new carpark, reception, kitchen and laundry.

The accommodation buildings are exempt from requiring fire hose reel coverage. CSNSW and Justice have provided instruction to provide fire hose reel coverage to all accommodation buildings. All hose reels are to be provided in accordance with AS2441:2005. All fire hose reels are to be located in a locked cupboard.

Automatic fire detection

While the Building Code of Australia does not require any form of fire detection, a new addressable fire detection system will be provided throughout the new areas of the site. As part of the upgrade works, a new main fire indicator panel will be installed which will connect the existing sub panels and the new sub panels.

Stormwater sump

A stormwater sump will need to be built near the centre of the new facilities to provide a centralised collection location for stormwater. Connections from adjacent buildings would be gravity-fed to the sump, where it would be pumped to the proposal site perimeter for connection with existing stormwater mains. The sump could be up to six metres below ground level.

Any augmentation of services capacity required will be identified at the conclusion of this process and undertaken in accordance with the requirements of the relevant asset owner. Any upgrade or replacement of services required outside the Silverwater Correctional Complex would be undertaken in accordance with relevant planning approvals and environmental management frameworks of the utility owners.

4.2.4 Ancillary works

Expansion of car parking facilities

As a result of the increase in inmate accommodation, additional operational staff and visitors are expected, resulting in a need to add additional car parking capacity on site. The preferred car parking solution includes reconfiguring existing at-grade car parking areas and expanding the
existing multi-storey car park. The height of the upgraded multi-storey car park will be approximately 14 metres. The new multi-storey addition aims to add a total of 102 spaces.

4.2.5 Operational characteristics

Commencement of operation
It is anticipated that the new facilities would be operational in 2021.

Hours of operation
There would be no change to the operating hours of the MRRC (described in section 3.1.2) as a result of the proposal.

Inmate, staff and visitor numbers
Once the proposal is operational, the MRRC would have the capacity to accommodate up to 1,603 inmates. As a result, staff numbers would increase by about 140 full time equivalent staff (including shift work) during operation, to a total of about 625.

The proposal would also result in increased visitation requirements for the inmate population. It is estimated that visitations would increase to about 130 per hour. Visits would be maintained as per the current operation on a scheduled basis seven days a week between the hours of 8am and 4pm.

Site access
Access to the MRRC would continue to be via the existing Silverwater Correctional Complex access road off Holker Street.

4.3 Construction of the proposal

4.3.1 Staging
The MRRC would need to remain operational at 100 per cent capacity during construction of the proposal. As a result, a staged approach to construction is proposed to minimise the potential for operational impacts on the centre.

Construction is proposed to be undertaken in four broad phases, as shown in Appendix B, and summarised below. The phases and activities described below are based on a construction concept prepared by Justice and are indicative only. The outlined works phases and activities may overlap or be undertaken differently, depending on the construction approach of the appointed construction contractor.

Phase 1
- site preparation works for the new building works
- modification of external fence to enclose the sports oval and establishment of new temporary internal secure fence line
- construction of a temporary secure gatehouse for construction access off Jamieson Street
- removal of two *Ficus Macrophylla* (Moreton Bay fig trees) located on the sports field
- commence existing multi-storey carpark expansion works outside the secure fence line including demolition
- commence construction works to the kitchen and laundry
- commence works to visits building
Phase 2

- commence work in the Darcy block segregation cells
- commence works to inmate property store
- continue work to existing multi-storey carpark, visits buildings, and kitchen/laundry

Phase 3

- construction of new modular cell accommodation
- construction of indoor recreation building
- construct ancillary buildings (programs, clinic)
- continue works to visits building.

Phase 4

- commissioning of buildings
- construction of paths, internal roads, landscape and secure links
- removal of temporary fencing
- removal of temporary secured gatehouse on Jamieson Street and reinstatement of external fences
- repairs and resolution of defects (make good)

4.3.2 Temporary facilities

During construction, temporary facilities would be required both on-site and off-site. On-site temporary facilities would include a temporary construction fence, inmate storage, and a temporary gatehouse for construction access off Jamieson Street.

4.3.3 Construction resources

Workforce

An average workforce of 80 personnel is assumed during the construction period, with a peak workforce of up to 180 people at peak periods.

Equipment

Equipment likely to be required for the construction work would include:

- excavators or similar earthmoving equipment
- air compressor
- bulldozer
- concrete pump
- crane
- front-end loader
- grader
- concrete truck
- hand tools
- welding equipment.
4.3.4 Construction compound/s, access and vehicle movements

Construction compound

The contractor would establish a compound area within the proposal site to accommodate construction activities for the duration of the construction period. The compound area would accommodate the following facilities:

- site office
- amenities
- stockpiles
- fuel storage.

All plant and equipment would be stored on the proposal site in a controlled and secure environment, in accordance with relevant standards and guidelines.

Fencing and security

A new temporary secure fence would be erected prior to establishing the main construction site. The temporary secure construction fence would be clad/covered to a height sufficient to eliminate views of the construction activity. The revised fencing and temporary gatehouse arrangements would be integrated with the existing security systems.

In the event that the temporary fence is accessible from building rooftops, anti-climb preventative measures would be added to the existing assets to maintain the operational security integrity of the MRRC.

Construction site access

Access and egress of operational staff and vehicles would take precedence over construction personnel and vehicles/deliveries. Construction access to the expansion area would be via a temporary secure gatehouse located off Jamieson Street. The refurbishment works to existing buildings within the MRRC would be accessed via the existing MRRC gatehouse off Holker Street.

Workforce parking and transport to site

Parking for construction workers is not available on site. The appointed construction contractor would be responsible for developing a strategy to manage construction workforce parking. This may include a shuttle bus system from bus stops in various locations surrounding the site and/or Sydney Olympic Park (or Auburn) stations located approximately five kilometres south east of the site.

Alternatively, construction workers would be able to access the proposal site via public transport. The availability of public transport in the vicinity of the proposal site is described in section 6.2.1.

Vehicle movements

Construction traffic movements would primarily be associated with the transportation of construction machinery, building materials, staff (via shuttle buses), and equipment to and from the proposal site. Construction staff are assumed to arrive via shuttle buses from Sydney Olympic Park Station or surrounding bus stops to the construction site.

Initial daily estimates for construction vehicle movements to the proposal site are a maximum of 40 (two way) heavy vehicle movements and 16 (two way) daily shuttle bus movements during the AM and PM peak periods to and from the site. Construction worker light vehicles are not allowed within the site, with parking provided off site.

A breakdown of the expected construction traffic movements is provided in Table 4-3.
Table 4.3 Estimate of construction vehicle movements

<table>
<thead>
<tr>
<th>Vehicle type</th>
<th>Activity</th>
<th>Daily vehicle numbers</th>
<th>Movements per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average construction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy vehicles</td>
<td>Haulage and delivery trucks</td>
<td>50 (25 in / 25 out)</td>
<td>20 (10 in / 10 out)</td>
</tr>
<tr>
<td></td>
<td>Shuttle buses for construction staff (25 seats)</td>
<td>12 (AM: 3 in / 3 out)</td>
<td>12 (AM: 3 in / 3 out) (PM: 3 in / 3 out)</td>
</tr>
<tr>
<td>Light vehicles</td>
<td>Cars/utilities (for deliveries only)</td>
<td>Construction light vehicles not permitted on site</td>
<td>Construction light vehicles not permitted on site</td>
</tr>
<tr>
<td><strong>Peak workforce</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy vehicles</td>
<td>Haulage and delivery trucks</td>
<td>80 (40 in / 40 out)</td>
<td>30 (15 in / 15 out)</td>
</tr>
<tr>
<td></td>
<td>Shuttle buses for construction staff (25 seats)</td>
<td>16 (AM: 4 in / 4 out)</td>
<td>16 (AM: 4 in / 4 out) (PM: 4 in / 4 out)</td>
</tr>
<tr>
<td>Light vehicles</td>
<td>Cars/utilities (deliveries only)</td>
<td>Construction light vehicles not permitted on site</td>
<td>Construction light vehicles not permitted on site</td>
</tr>
</tbody>
</table>

It is anticipated that the majority of traffic movements associated with the proposal would be undertaken during standard construction hours (refer to section 4.3.5). However, there may be a need for limited vehicle movements outside of standard construction hours for the delivery of any oversized equipment required to be transported during hours/times as specified by Roads and Maritime Services (Roads and Maritime) and the NSW Police. These deliveries would be in accordance with the requirements of relevant authorities.

### 4.3.5 Construction timing and work hours

#### Construction timing

Construction of the proposal would commence following July 2018 (subject to planning approvals) and be substantially completed by March 2021. The duration of construction would be confirmed following appointment of the construction contractor.

#### Construction hours

**Standard working hours**

The majority of construction work for the new buildings/facilities would occur during the recommended standard hours set out in the *Interim Construction Noise Guideline* (DECC, 2009):

- Mondays to Fridays between 7 am and 6 pm
- Saturdays between 8 am and 1 pm
- Sunday and Public Holidays: No work.

Works associated with the upgrade or internal refurbishment of existing facilities/structures are expected to be less noisy/intrusive and are therefore proposed to be undertaken 24 hours per day, seven days a week.

Other works outside of standard working hours would include any activities in accordance with the requirements of road authorities (such as the delivery of oversized equipment or components) and/or any activities directed by emergency services or necessary to protect a life or reduce pollution of the environment. Such activities are not expected to occur frequently.

The potential impacts of out of hours works are considered in section 6.3.
4.3.6 Construction environmental management

The approach to environmental management during construction, and required management measures, would be defined by the construction environmental management plan (CEMP), which would be prepared by the construction contractor and approved by Justice.

A core component of the environmental management approach during construction will be procedure to maintain a safe working environment with respect to potential landfill gas emissions from excavation works, as well as avoiding exposure of workers to contamination within soils and groundwater at the proposal site.

Further information is provided in sections 6 and 7.
5. Stakeholder consultation

5.1 Approach to consultation

The approach to consultation was guided by Justice’s consultation plan for the project which principally involved engagement with Parramatta City Council and the community via the existing community advisory group. As discussed in section 2.2.1, there are no statutory consultation requirements of the Infrastructure SEPP triggered by the proposal.

5.2 Consultation activities and outcomes

Two meetings were held with relevant officers of Parramatta Council on 18 April and 10 May 2018. The first meeting was held with the Council’s Planning and Development Manager to raise awareness of the proposal and to broadly discuss the need for the expanded facility.

A second meeting was held with the Council’s Social Outcomes Manager to seek Council’s inputs on issues such as the community profile, key values and issues held by ratepayers and to discuss the potential social impacts and benefits of the proposal (refer 6.8).

A summary of the second meeting discussion is shown in Table 2-1.

### Table 5-1 Consultation with Parramatta Council

<table>
<thead>
<tr>
<th>Topic</th>
<th>Issue discussed</th>
<th>Relevance to project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community profile and population growth</td>
<td>Council noted there is moderate growth occurring especially in Rydalmere, Ermington and the Melrose Park corridor. This leads to greater connectivity between these areas and the broader Sydney region.</td>
<td>Improvements in public transport across Sydney generally could potentially make the Silverwater Correctional Complex more accessible by public transport in the future.</td>
</tr>
<tr>
<td>Land use</td>
<td>Council considered it important to protect light and commercial industry in the Silverwater suburb area.</td>
<td>Noted. The proposal would not change the surrounding land use.</td>
</tr>
<tr>
<td>Traffic and transport</td>
<td>Council commented that the proposal needs to address access and parking.</td>
<td>Noted. There is currently a shortfall in parking spaces for staff and visitors. The proposal includes increasing car park capacity.</td>
</tr>
<tr>
<td>Social impact</td>
<td>Council noted that since the proposal would be built within an existing correctional complex, it is unlikely to change community perception of the locality. It is also unlikely that the proposal may influence housing prices.</td>
<td>Noted.</td>
</tr>
<tr>
<td></td>
<td>Council indicated that there is a lack of community infrastructure to accommodate visitors before or after visits with relatives or friends in the facility. This may adversely affect the visitor experience, and could be improved by additional areas or places for visitors that are well advertised at the facility.</td>
<td>Noted. Community infrastructure for visitors before and after visits is available at SHINE for Kids facility located near the entrance of the Silverwater Correctional Complex and the Newington Marketplace approximately five minutes walking distance from MRRC. CSNSW has no capacity for a community infrastructure within the Centre.</td>
</tr>
</tbody>
</table>
Council noted that increase in the number of visitors to the correctional complex could lead to an increase in patronage at the local shops, thus contributing to a positive socio-economic impact. Noted. Additional staff required at the complex as a result of the expansion may also increase local demand for housing, goods and services also.

### 5.3 Ongoing consultation

Justice will provide construction information and updates through the existing community advisory group and for other stakeholders on an ad hoc basis.

The design and construction process will require a moderate level of consultation and engagement with relevant utility providers and others regarding specific details of existing capacity and upgrade requirements for utilities and services, if required.

A complaints management procedure would be established by the construction contractor as required by the CEMP. Complaints would be managed in accordance with Justice’s Managing Complaints and Feedback Policy.

The procedure would define community contact arrangements during construction, and the process for recording and responding to complaints received.

Justice’s standard service level agreement for acknowledging complaints is three business days from receipt, and resolution within 21 business days, if the complainant has requested a response and provided accurate contact details.
6. Environmental assessment

6.1 Land contamination and hazardous materials

This section provides a summary of the results of contamination assessments undertaken for the proposal site by GHD. The assessments included a preliminary site assessment (provided in Appendix C) and a detailed site investigation including intrusive sampling and laboratory analysis.

6.1.1 Existing environment

Contamination status

A search of the EPA’s contaminated land record indicated that a portion of the Silverwater Correctional Complex received a regulatory notice under section 58 of the NSW Contaminated Land Management Act 1997 (CLM Act) in February 2004. The notice related to a voluntary remediation proposal for a part of the complex proposed for development of a facility described as the Department of Corrective Services Silverwater Transport Unit. The EPA determined that contamination at this site posed a significant risk of harm under the CLM Act due to landfill gas issues. In June 2005, the EPA gave notice that the terms of the proposal had been satisfactorily completed.

A search of the list of contaminated sites notified to the EPA indicated that the same part of the Silverwater Correctional Complex has been notified under section 60 of the CLM Act. Notified sites are those that the notifiers consider to be contaminated and warrant reporting to EPA. However, the contamination may or may not be significant enough to warrant regulation.

A review of Council’s Section 10.7 planning certificate for lot 22 DP 876995 and lot 421 DP 824053 indicates that the identified land is deemed to be significantly contaminated land. However, the certificate indicates that the land is not the subject of a management order, voluntary management proposal, ongoing maintenance order, or a site audit statement.

A search of the SafeWork NSW Hazardous chemical register indicates hazardous substances are present and have previously been stored within the Silverwater Correctional Complex.

Ground conditions

A number of previous investigation reports were undertaken for the proposal site between 1990 and 2017. A summary of the findings of these reports is provided in section 6 of Appendix C.

Actual and potential sources of contamination and hazard identified by the desktop review include:

- landfill waste beneath a clay cap across the site
- contaminated groundwater and soil
- landfill gas from waste buried at the proposal site (or migrating from adjacent areas)
- potential migration of contamination from a former gasworks
- potential migration of petroleum hydrocarbon contamination associated with the adjacent fuel storage facility.

Previously encountered ground conditions at the proposal site include fill comprising silty clay (likely to be the clay cap understood to have been placed over the landfill waste) to about one metre below ground level. This is underlain by fill waste materials including, but not limited to, peat, foam, wood, glass, concrete and a black tar like substance. The depth of waste may be up to 12.2 metres below ground level across the proposal site, underlain by extremely weathered shale. The composition of waste materials is indicated to be highly variable.
Based on the information available, the following have been identified as contaminants of potential concern at the proposal site:

- total recoverable hydrocarbons (TRH)
- benzene, toluene, ethylbenzene and total xylene (BTEX)
- polycyclic aromatic hydrocarbons (PAHs)
- organochlorine pesticides (OCP)
- polychlorinated biphenyls (PCB)
- metals (arsenic, cadmium, chromium, copper, mercury, nickel, lead, zinc, iron, manganese).
- phenols
- cyanides
- asbestos
- chlorinated solvents
- dissolved methane
- nutrients (ammonia, nitrate, phosphorus); and
- per- and poly-fluoroalkyl substances (PFAS).

**Soil**

The results of the detailed site investigation undertaken by GHD revealed that environmental investigation and ecological screening level exceedances were identified for soils within the top two metres. Ecological screening level exceedances for total recoverable hydrocarbons (F3 fraction) were noted in conjunction with management limit exceedances in the western portion of the proposal site. Some nickel and copper exceedances were also noted, while zinc exceedances were identified across the site. Asbestos was identified in fibre cement sheeting fragments and as loose fibre bundles within landfill materials across the proposal site.

The widespread nature and relatively small margin of exceedance (generally less than twice the environmental investigation level of 70 mg/kg) of the zinc contamination, in conjunction with the conservative nature of the soil characteristics assumed for the environmental investigation level, as well as the lack of any obvious vegetative stress of trees and other landscaping on site, indicates that environmental investigation level exceedances are unlikely to have a limiting impact on the site use and redevelopment.

Preliminary waste classification of soils encountered during the investigation indicate that soils are likely to be as Special Waste (Asbestos waste) for the purpose of off-site disposal.

**Groundwater quality**

Groundwater is likely to be encountered at between 1.5 and 3.5 metres below ground level. It is anticipated that groundwater within the waste material may exist at a higher elevation than the natural groundwater table, particularly during wet periods. Based upon the standing water levels recorded in the monitoring wells (as corrected to metres AHD), it appears that the groundwater contours under the MRRC are sloping to the west. This is not consistent with the topography of the surrounding area and inferred regional groundwater flow direction.

Groundwater contamination exceeding freshwater and drinking water groundwater investigation levels or PFOS/PFHxS and PFOA drinking water guidelines was identified at all sampling locations. Exceedances were noted for metals (arsenic, cadmium, copper, lead, manganese, mercury, nickel and zinc), ammonia, sulphate, cyanide, benzene, and PFOS/PFHxS and PFOA. Exceedances and detections of contaminants were generally lowest in a borehole located at the northern extent of the
proposal site, outside of the landfill footprint, implying that the landfill may be acting as the primary source of the identified contamination.

**Landfill gas**

Landfill gas is a colourless, odourless gas comprising mostly methane and carbon dioxide. If an ignition source is present and sufficient concentrations exist, or in a confined space, landfill gas can pose a threat of explosion or asphyxia.

Based on observations in previous reports (e.g., Woolacott, 2014), existing landfill gas management measures appear to be present around the waste footprint within Silverwater Correctional Complex and that a site management plan for landfill gas has been developed. The current performance of the mitigation measures, and the degree of implementation of this plan is not currently known.

During the detailed site investigations, landfill gas was considered to present the most significant risk to off-site receptors. Monitoring results identified potential migration of methane gas from the landfill source to areas outside the landfill footprint. The extent of this migration has not been delineated and as such the potential for exposure risk has not been eliminated. However, it is understood that a landfill gas mitigation system has been implemented in other locations at the proposal site. The performance of these measures is yet to be confirmed.

### 6.1.2 Construction impacts

Based upon the known historical contamination at Silverwater Correctional Complex, contaminants of concern were identified in soil, surface and groundwater within proposal site which may present a health and safety risk for construction workers.

Exposure to contaminants through soils, surface and groundwater/leachate and/or landfill gas during construction could occur through:

- ingestion
- dermal contact
- inhalation
- lateral migration of groundwater/leachate to adjacent areas or waterbodies

Occupational health precautions for site construction workers associated with these risks and recommended protection and precautionary measures are outlined in section 6.9.6. These would be subject to review and development of a comprehensive occupational health and safety plan by the construction contractor.

Material across the site is broadly categorised as special waste (asbestos waste) for the purpose of off-site disposal. Should the material need to be removed off-site, a more detailed waste classification and chemical assessment will need to be conducted to allow appropriate classification and disposal of the materials.

There are also environmental risks associated with the potential mobilisation of soils or dust during earthworks or from site runoff with the potential to be deposited off-site or enter adjacent waterbodies. There is unlikely to be significant earthworks needed at the site as the ground is already mostly level and the proposed construction is to utilise prefabricated sections as far as possible. Foundations would either be bored piles or a concrete raft slab.

Soils at the site are likely to have an inherently high moisture content due to the high water table and standard soil erosion and water controls referenced in Section 6.5 are expected to be satisfactory to limit the potential for off-site impacts.
6.1.3 Operational impacts

Under the current site usage scenario, and assuming the operability of existing landfill gas controls at the site, the identified soil and groundwater contamination is considered to pose a low and acceptable risk to human health receptors. No vapour risk from volatile contamination was identified and identified contamination is located at depth.

Based on an estimated gas screening value, the proposal site was considered to be a moderate to high risk from landfill gas. As operation of the proposal would involve people being resident on the site, as well as risks to construction and maintenance workers during intrusive works, the gas protection score for the proposal site is 5. Gas protection measures to achieve this score would need to be incorporated as part of the remediation action plan (RAP).

The outcomes of the RAP will include the scope and extent of design protection measures which will need to be included to make the site safe for occupancy. As long as the measures outlined in the RAP are fully and effectively implemented, there is not expected to be any undue risk to occupants or the environment.

6.1.4 Mitigation measures

Design

- A Remedial Action Plan (RAP) would be developed for the site, outlining remediation options to reduce and mitigate risks from contamination, including landfill gas, soil and groundwater, during construction and operational phases.
- A holistic landfill gas risk assessment would be undertaken, including an assessment of ‘worst case’ meteorological conditions.
- Groundwater monitoring bores would be strategically installed around the site to determine the potential for contamination entering/leaving the site.
- Waste classification of materials likely to be disposed of off-site would be performed with consideration to the identified COPCs and the widespread identification of asbestos within site soils.
- No impairment to the efficacy of any existing on-site landfill gas collection or ventilation systems is to be allowed without adequate alternate infrastructure and procedures in place.

Construction

- The construction contractor would be responsible for developing and implementing relevant OHS controls for workers relevant to the site conditions, including those detailed in the RAP.
- Potential risks to construction workers from contamination and landfill gas would be addressed by completing additional landfill gas monitoring at the site and through the adoption of the results into the RAP.
- The work, health and safety protocols relevant to the identified issues, documented in Section 6.9.6, would be implemented.
- Waste classification of materials likely to be disposed of off-site would be performed with consideration to the identified COPCs and the widespread identification of asbestos within site soils.
- The CEMP would include an unexpected finds protocol in order to accommodate any potential contamination issues not previously identified.
Operation

No mitigation measures are likely to be required, subject to the incorporation of adequate protection and preventative measures included in the RAP being incorporated into the proposal design.

6.2 Traffic, transport and access

This section provides a summary of the results of the traffic, transport and access assessment of the proposal undertaken by GHD. The full assessment report is provided in Appendix D. The methodology for the assessment is detailed in Appendix D.

6.2.1 Existing environment

The existing traffic conditions around the proposed site are discussed in term of road network characteristics, performance and accessibility.

Road network characteristics

Holker Street

Holker Street is a sub-arterial regional classified road, which runs in an approximately east–west direction adjacent to the southern boundary of the site. Holker Street connects Hill Road in the east to Silverwater Road in the west. It provides access to the proposal site via a signalised intersection with a dedicated access road to the Silverwater Correctional Complex.

In the vicinity of the proposal site, the road has two travel lanes in each direction with a dedicated bus lane in each direction on a divided carriageway, and a sign posted speed limit of 60 kilometres per hour.

Jamieson Street

Jamieson Street is a local road which provides secondary access to the site via the Holker Street / Jamieson Street intersection, located south of the site. The road has a north-south access orientation and also provides access to Blaxland Riverside Park, Newington Armoury and the Sydney Olympic YMCA lodge located north of the subject site.

Jamieson Road is characterised by one traffic lane in each direction with an undivided carriageway. There are no dedicated bus, bicycle or pedestrian facilities and parking is not allowed along this road.

The sign posted speed limit is 50 kilometres per hour.

Silverwater Road

Silverwater Road functions as an arterial state road providing north-south access from Dundas Valley in the north to Newington in the south. Silverwater Road intersects Holker Street at a signalised intersection approximately 540 metres west of the site. Silverwater Road travels between the Western Motorway/M4 to the south, and Kissing Point Road/Stewart Road in Dundas to the north.

Silverwater Road is characterised by three travel lanes in each direction with a divided carriageway. Dedicated turn lanes are provided on the approach to Holker Street in both directions. There are pedestrian footpaths on both sides of the road and bus stops on both sides of the road at the Silverwater Road/River Street intersection. There are no dedicated bicycles facilities.

The signposted travel speed is 70 kilometres per hour.
Road network performance

Road network performance was assessed by estimating the traffic volumes over two day period at three locations close to the site (refer Figure 6.1). Traffic volumes were measured by undertaking intersection traffic counts at three locations below:

- Site 1: Holker Street/Silverwater Correctional Complex (signalised intersection)
- Site 2: Holker Street/Avenue of Africa (signalised intersection)
- Site 3: Holker Street/Jamieson Street (give way, priority controlled intersection)

Traffic volumes at the above three locations were measured during the following periods:

- Weekday AM from 6:30 am to 9:30 am (3 hours)(Tuesday 6 March 2018)
- Weekday PM from 4:00 pm to 7:00 pm (3 hours)(Tuesday 6 March 2018)
- Saturday from 11:00 am to 2:00 pm (3 hours)(Saturday 3 March 2018)

![Traffic survey locations](image)

**Figure 6.1  Traffic survey locations**

The traffic surveys indicated the following peak hour periods along Holker Street:

- Weekday AM peak = 7:00 am to 8:00 am;
- Weekday PM peak hour = 5:00 pm to 6:00 pm; and
- Saturday peak hour = 11:30 am to 12:30 pm.
Traffic volumes during peak hour were compared against typical nominal average annual daily traffic volumes for various classes of roads developed by Roads and Maritime Services. The survey results indicated that the peak hour traffic volumes generally fall within the criteria for the relevant classification. Full results of the survey are provided in Appendix D and a summary of the results is given below:

- Holker Street eastbound traffic volumes are 1,012 vehicles per hour at morning weekday peak hour, 1,114 vehicles per hour at evening peak hour and 864 vehicles per hour during Saturday peak hour
- Holker Street westbound traffic volumes are 766 vehicles per hour at morning peak hour, 610 vehicles per hour at evening peak hour and 693 vehicles per hour during Saturday peak hour
- Recorded traffic volumes on Holker Street is well within the Roads and Maritime criteria for sub-arterial roads of 500-2,000 vehicles/hour
- Jamieson Street eastbound traffic volumes are 46 vehicles per hour at morning peak hour, 19 vehicles per hour at evening peak hour and 106 vehicles per hour during Saturday peak hour
- Jamieson Street westbound traffic volumes are 12 vehicles per hour at morning peak hour, 30 vehicles per hour at evening peak hour and 95 vehicles per hour during Saturday peak hour
- Recorded traffic volumes on Jamieson Street is well within the Roads and Maritime criteria for local roads of 0-200 vehicles/hour
- Heavy vehicles percentages on Holker Street are 5% of total traffic volume at morning peak hour, 2.2% at evening peak hour and 3.1% during Saturday peak hour.

**Traffic characteristics and intersection performance**

The performance of the existing road network is largely dependent on the operating performance of key intersections, which are critical capacity control points on the road network. SIDRA intersection modelling software was used to assess the proposed peak hour operating performance of intersections on the surrounding road network.

The criteria in Table 6-3 were used to evaluate the operational performance of intersections (RTA, 2002).

**Table 6-1 Level of service criteria for intersections**

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Average delay (seconds per vehicle)</th>
<th>Traffic signals, roundabouts</th>
<th>Give way &amp; stop signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&lt; 14</td>
<td>Good operation</td>
<td>Good operation</td>
</tr>
<tr>
<td>B</td>
<td>15 to 28</td>
<td>Good with acceptable delays &amp; spare capacity</td>
<td>Acceptable delays &amp; spare capacity</td>
</tr>
<tr>
<td>C</td>
<td>29 to 42</td>
<td>Satisfactory</td>
<td>Satisfactory, but accident study required</td>
</tr>
<tr>
<td>D</td>
<td>43 to 56</td>
<td>Operating near capacity</td>
<td>Near capacity &amp; accident study required</td>
</tr>
<tr>
<td>E</td>
<td>57 to 70</td>
<td>At capacity; at signals, incidents will cause excessive delays Roundabouts require other control modes</td>
<td>At capacity, requires other control mode</td>
</tr>
<tr>
<td>F</td>
<td>&gt; 70</td>
<td>Over Capacity Unstable operation</td>
<td>Over Capacity Unstable operation</td>
</tr>
</tbody>
</table>

Source: Guide to Traffic Generating Developments (Roads and Maritime Services, 2002)
Base 2018 traffic models were developed using the morning and evening weekday and weekend peak hour surveyed data results. Existing traffic flows at key intersections were analysed using SIDRA7 to obtain the current traffic flow conditions. These key intersections are:

- Holker Street/Silverwater Correctional Complex Access Road
- Holker Street/Avenue of Africa
- Holker Street/Jamieson Street

The results of SIDRA modelling is shown in Table 6-4.

### Table 6-2 SIDRA results - existing intersection operations (2018 base)

<table>
<thead>
<tr>
<th>Intersection</th>
<th>AM Peak</th>
<th></th>
<th>PM Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Delay (s)</td>
<td>LoS</td>
<td>Control Type</td>
</tr>
<tr>
<td>Site 1: Holker Street/Silverwater Correctional Complex</td>
<td>11</td>
<td>A</td>
<td>Signals</td>
</tr>
<tr>
<td>Site 2: Holker Street/Avenue of Africa</td>
<td>9</td>
<td>A</td>
<td>Signals</td>
</tr>
<tr>
<td>Site 3: Holker Street/Jamieson Street</td>
<td>43</td>
<td>D</td>
<td>Give Way Priority</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Weekend Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Delay (s)</td>
</tr>
<tr>
<td>Site 1: Holker Street/Silverwater Correctional Complex</td>
<td>10</td>
</tr>
<tr>
<td>Site 2: Holker Street/Avenue of Africa</td>
<td>11</td>
</tr>
<tr>
<td>Site 3: Holker Street/Jamieson Street</td>
<td>+100</td>
</tr>
</tbody>
</table>

Notes:
- The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay.
- The level of service for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.
- The degree of saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.
- Average delay is given in seconds per vehicle.

The traffic analysis indicated that each of the analysed intersections currently have an acceptable Level of Service (LoS)(i.e. better than Level of Service E) with spare capacity in both the weekday morning and evening peak periods. During the weekend peak period, Holker Street/Jamieson Street intersection has reached capacity (indicated by Level of Service F) while the other two intersections maintain an acceptable Level of Service.
Site access

Primary access to the MRRC site is via the signalised intersection of Holker Street / Silverwater Correctional Complex access road. A secured boom gate and external perimeter security are maintained by a contracted security company on a 24/7 operation.

According to the traffic analysis utilising SIDRA, the Level of Service of this intersection is at good operation (Level A).

Parking

The site includes formal parking provision in five areas for visitors and staff parking as shown in Figure 6-2. These areas are accessed via the following two-gate system locations:

- Holker Street / Silverwater Correctional Complex access road; and
- Authorised vehicles only via access off Jamieson Street.

![Figure 6-2 Existing parking locations](image)

A breakdown of the existing parking provision is given in Table 6-5 below.

**Table 6-3 Summary of existing parking provision on site**

<table>
<thead>
<tr>
<th>Parking area</th>
<th>Parking provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Designated parking bays: 122 (including 70 visitor parking bays). Informal parking: Peak occupancy 10 vehicles</td>
</tr>
<tr>
<td>2</td>
<td>Designated parking bays: 150 (two-level car park). Informal parking: Peak occupancy 1 vehicles</td>
</tr>
</tbody>
</table>
In total, there are 656 designated parking spaces within the Silverwater Correctional Complex, with approximately 70 spaces located within the visitor parking area located in the southwest corner of the site, prior to the gated entry (Parking area 1 in Figure 6-2). Within each parking area there is also informal parking provision (grassed or hardstand areas), with no formal designated parking locations.

Parking utilisation surveys at the site were undertaken on Tuesday 6 March 2018 and Saturday 3 March 2018. In general, the surveys indicated that parking utilisation is reaching capacity throughout the site with exception of Parking area 5, which appears to be underutilised. Parking utilisation was lower during the weekend compared to weekday.

**Crash data review**

Crash data for roads within the vicinity of the proposal site was obtained from Transport for NSW Centre for Road Safety website.

There is a total of 35 crashes over five year period (2012-2016) and 30 injured on the roads within the vicinity. The locations of crashes are shown in Figure 6-3.

![Figure 6-3 Locations of crashes (2012-2016)](image)

The crash data indicated that the most common crash type at these intersections involve:

- Vehicles from the same direction (e.g. rear end), and
- Opposing vehicles while turning at intersections.
Public and active transport

Public transport options considered in this assessment include bus and train and active transport include bicycle riding and walking.

Bus stops are located adjacent to the southern boundary of the site along Holker Street at its intersection with the Silverwater Correctional Complex access road (approximately 40 m from the site). Bus services covering the proposal area include routes 525, 526, 540 and 544. Route maps and indicative timetable are included in section 2.8.1 of Appendix D.

The nearest train stations to the site are Olympic Park Station and Auburn Station. Distances from the site are 2.5 kilometres and 3.5 kilometres to Olympic Park Station and Auburn Station, respectively. Whilst the distances are further than the generally acceptable walking distance of 2 kilometres, both stations are connected to the site by bus.

Train services from Olympic Park Station typically operate to Lidcombe train station at 10 minute intervals on weekdays and weekends. During major special events, train services operate at more frequent intervals.

Auburn train station provides interchange between the T1 Western Line (from Richmond and Emu Plains in the west to Hornsby in the North via Central) and the T2 Inner West and Leppington Line (from Leppington and Macarthur in the south to Central). Train services typically operate at 10 minute intervals on weekdays and weekends.

The City of Parramatta Bike Plan 2017 identified that there are sufficient off road and on road bicycle routes close to the site, although Silverwater Correctional Complex does not currently provide bicycle parking facilities.

A footpath is provided along the southern boundary of Holker Street for the entirety of the road. Between the intersection of Holker Street with Silverwater Road and the intersection of Holker Street with Newington Road, a formal pedestrian path is also provided along the northern boundary of Holker Street.

A footpath is provided on both sides of Holker Street which connects with the pedestrian access from the bus stop to Silverwater Correctional Complex via the intersection of Holker Street / Silverwater Correctional Complex access road.

Signalised pedestrian crossings are provided on the west approach of the Holker Street / Newington Road intersection, the north and east approach of the Holker Street / Silverwater Correctional Complex access road intersection and the south approach of the Holker Street / Avenue of Africa, providing pedestrian access across the road corridor.

A sealed pedestrian footpath is also provided on the western side of Newington Road and on both sides of the Avenue of Africa. There are no sealed footpaths along Jamieson Street.

6.2.2 Construction impacts

Traffic generation and impacts on the road network

Construction traffic movements would primarily be associated with the transportation of construction machinery, building materials, construction workers, and equipment to and from the site.

Construction vehicle movements would result in a temporary increase in traffic on the surrounding road network. An estimate of the potential construction traffic generation is provided in section 4.3.4. Assumptions which underpin the modelling and impact prediction are outlined in Appendix D.

SIDRA modelling was undertaken to assess the performance of the intersections at three locations to be compared with the base 2018 model:
- Holker Street/Silverwater Correctional Complex Access Road
- Holker Street/Avenue of Africa
- Holker Street/Jamieson Street

The results of the SIDRA modelling are shown in Table 6-6.

**Table 6-4 Intersection performance during construction**

<table>
<thead>
<tr>
<th>Intersection</th>
<th>AM Peak</th>
<th></th>
<th></th>
<th>PM Peak</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Delay (s)</td>
<td>LoS</td>
<td>Control Type</td>
<td>Degree of Saturation</td>
<td>Average Delay (s)</td>
<td>LoS</td>
</tr>
<tr>
<td>Site 1: Holker Street/Silverwater Correctional Complex</td>
<td>11</td>
<td>A</td>
<td>Signals</td>
<td>0.67</td>
<td>12</td>
<td>A</td>
</tr>
<tr>
<td>Site 2: Holker Street/Avenue of Africa</td>
<td>9</td>
<td>A</td>
<td>Signals</td>
<td>0.51</td>
<td>13</td>
<td>A</td>
</tr>
<tr>
<td>Site 3: Holker Street/Jamieson Street</td>
<td>29</td>
<td>C</td>
<td>Give Way Priority</td>
<td>0.24</td>
<td>39</td>
<td>C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Weekend Peak</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Delay (s)</td>
<td>LoS</td>
<td>Control Type</td>
<td>Degree of Saturation</td>
</tr>
<tr>
<td>Site 1: Holker Street/Silverwater Correctional Complex</td>
<td>10</td>
<td>A</td>
<td>Signals</td>
<td>0.59</td>
</tr>
<tr>
<td>Site 2: Holker Street/Avenue of Africa</td>
<td>11</td>
<td>A</td>
<td>Signals</td>
<td>0.58</td>
</tr>
<tr>
<td>Site 3: Holker Street/Jamieson Street</td>
<td>+100</td>
<td>F</td>
<td>Give Way Priority</td>
<td>0.92</td>
</tr>
</tbody>
</table>

**Notes:**
- The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay.
- The level of service for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.
- The degree of saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.
- Average delay is given in seconds per vehicle.

The SIDRA modelling results shown in Table 6-6 indicate that each of the analysed intersections are expected to maintain an acceptable Level of Service (LoS)(i.e. better than Level of Service E) during construction with spare capacity in both the weekday morning and evening peak periods.

The Holker Street/Jamieson Street intersection has reached capacity as indicated by the results of the base model (see Table 6-4) and construction activities would only increase the degree of saturation by 0.03.

There are only minor differences in the degree of saturation between existing conditions (base 2018 model) and during construction at all the intersections which indicates construction is unlikely to result in a noticeable deterioration in existing traffic conditions.

Potential construction impacts would be managed by the implementation of measures provided in section 6.2.4. The specific measures would be confirmed by the appointed construction contractor when the construction method, workforce and parking requirements have been confirmed.
**Workforce parking and transport**

Construction worker parking has the potential to impact on parking in local facilities in the vicinity of Silverwater Correctional Complex, such as the Newington Marketplace and Blaxland Riverside Park, as no construction worker parking is available on site with workers being transported to site by public transport. Such transport facilities could include a shuttle bus system from Sydney Olympic Park Station (and/or Auburn Station) located east of the site. Assuming the proposed shuttle bus system provides connection for workers to Sydney Olympic Park Station public transport system and the site, the traffic generation of four inbound and four outbound movement (for 100 site personnel) will create a slight increase right in/left out turn movement at the Holker Street/Jamieson Street intersection.

**Pedestrian movements and access**

Construction activities are not anticipated to impact on pedestrian access to and from the Silverwater Correctional Complex.

There is a potential impact on pedestrians and cyclists on the west side of Jamieson Road due to vehicle entry and exit via temporary construction access on Jamieson Road. This impact would be minimised through the implementation of mitigation measures listed in section 6.2.4.

**Public transport**

Construction activities would not impact on public transport operations.

No impacts are anticipated on access to and from the bus stops on Holker Street.

**6.2.3 Operational impacts**

**Traffic generation and impacts on the road network**

Operational impacts of the proposal would be characterised by an increase in the number of staff and visitors coming to the Silverwater Correctional Complex. Traffic assessment (Appendix D) was based on the following assumptions:

- The existing shift patterns for the MRRC and surrounding complex would remain unchanged following completion of the proposal.
- Additional staff would arrive/depart the complex individually by private vehicle (to provide a worst-case scenario)
- Vehicle movements are distributed as 80 percent arriving and departing to the west along Holker Street and 20 percent arriving and departing to the east.
- The number of visitors to the correctional complex would double, and each visit would generate one vehicle movement.

SIDRA modelling was undertaken at key intersections as per section 6.2.2 and the results are shown in Table 6-7.
### Table 6-5  Intersection performance during operation

<table>
<thead>
<tr>
<th>Intersection</th>
<th>AM Peak</th>
<th></th>
<th>PM Peak</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Delay (s)</td>
<td>LoS</td>
<td>Control Type</td>
<td>Degree of Saturation</td>
</tr>
<tr>
<td>Site 1: Holker Street/Silverwater Correctional Complex</td>
<td>12</td>
<td>A</td>
<td>Signals</td>
<td>0.67</td>
</tr>
<tr>
<td>Site 2: Holker Street/Avenue of Africa</td>
<td>9</td>
<td>A</td>
<td>Signals</td>
<td>0.52</td>
</tr>
<tr>
<td>Site 3: Holker Street/Jamieson Street</td>
<td>45</td>
<td>D</td>
<td>Give Way Priority</td>
<td>0.24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Weekend Peak</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Delay (s)</td>
<td>LoS</td>
</tr>
<tr>
<td>Site 1: Holker Street/Silverwater Correctional Complex</td>
<td>10</td>
<td>A</td>
</tr>
<tr>
<td>Site 2: Holker Street/Avenue of Africa</td>
<td>12</td>
<td>A</td>
</tr>
<tr>
<td>Site 3: Holker Street/Jamieson Street</td>
<td>+100</td>
<td>F</td>
</tr>
</tbody>
</table>

Notes:
- The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay.
- The level of service for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.
- The degree of saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.
- Average delay is given in seconds per vehicle.

Table 6-7 indicates that each of the analysed intersections are expected to maintain an acceptable Level of Service (LoS) (i.e. better than Level of Service E) with spare capacity in both the weekday morning and evening peak periods following completion of the proposal. The Holker Street/Jamieson Street intersection has reached capacity in the base model (see Table 6-4) and the degree of saturation during operation is comparable indicating no significant worsening of conditions is expected.

### 6.2.4 Mitigation measures

**Design**
- Construction access layout would be reviewed during design development to consider the turning path required for the construction vehicles.

**Construction**
- A Construction Traffic Management Plan (CTMP) would be prepared prior to the commencement of works with site induction for construction personnel being undertaken to outline the requirements of the CTMP. It would detail the management measures to be implemented to minimise the potential for impacts on the operation of the surrounding road and transport environment. It would include the following information and management measures as a minimum:
- A Traffic Control Plan (TCP) would be developed in accordance with RMS Traffic Control at Works Sites and AS1742.3 – Traffic Control for Works on Roads.

- Hours of operation, heavy vehicle volumes (numbers) and routes, loading/unloading areas and site access and security arrangements, temporary warning, guidance and information signage, and appropriate traffic control devices.

- Vehicles would be permitted to travel past the work site with traffic signage in accordance with the TCP.

- Construction vehicle movements would be minimised during the AM and PM peak hour and during the middle of the day on the weekend, when higher traffic volumes occur within the road network.

- Construction vehicles are to arrive to the site from the west, along Holker Street and utilise the site access on Jamieson Street and exit from the site via Jamieson Street and eastbound along Holker Street.

- Public access to the site would be maintained on the surrounding road network.

- Carpooling between workers would be encouraged to decrease traffic activity and parking demand.

- Construction contractor would confirm workforce transport arrangements including transfer of staff between the site and public transport system such as the Sydney Olympic Park train station or other alternative arrangement.

- Site access is be restricted to authorised personnel only and existing employees on site.

- Pedestrian access to and around the site would be maintained at all times.

- Specific road hazards would be identified, including but not limited to wet weather, pedestrian and bicycle riders, general traffic and bus infrastructure.

- The timing of deliveries accessing the site would be programmed to ensure there is sufficient space within the proposal site to accommodate deliveries, and there is minimal potential for impacts to operation of the MRRC.

- Designated queuing and idling areas would be determined near the work site to minimise disruption to the local community.

- Adequate sight lines would be provided to allow for safe entry and exit from the site.

- All roads would be kept clean and free of dust and mud at all times. Where material is tracked onto sealed roads at any time, it would be removed immediately so that road pavements are kept safe and trafficable.

- Any roads, kerbs, gutters and footpaths damaged as a result of construction would be restored to their pre-construction condition.

- All traffic would comply with all applicable traffic laws and regulations including speed limits.

- All roads and accesses would be rehabilitated post construction to a standard equivalent to, or better than, the pre-construction condition.

- The community would be notified in advance of any proposed road and pedestrian network changes through signage, the local media, and other appropriate forms of communication.

**Operation**

- The precinct future planning would be undertaken to streamline parking needs for staff and visitors.

- Consideration would be given to the development of a Transport Access Guide (TAG) summarising alternate transport options for staff and visitors to access the Silverwater Correctional Complex.
6.3 Noise and vibration

This section provides a summary of the results of the noise and vibration assessment of the proposal undertaken by GHD. The full assessment report is provided in Appendix E. The methodology for the assessment is described in Section 1.3 of Appendix E.

6.3.1 Existing environment

Sensitive receivers

Noise and vibration sensitive receivers include residences, medical centres, educational institutes, hospitals, places of worship, recreational areas and commercial/industrial premises.

Two noise catchment areas have been identified in the vicinity of the proposal site:

- Noise Catchment Area 1 (NCA1) - encompassing the residences on Blaxland Avenue fronting Holker Street, immediately across the road from the MRRC
- Noise Catchment Area 2 (NCA2) - encompassing residences, commercial properties and medical facilities set back from Holker Street within the suburb of Newington.

Average background and ambient noise levels were determined by conducting noise monitoring over a period of ten days between 10 and 19 April 2018 at two locations. The locations of the noise catchment areas and monitoring points are shown in Figure 6-4 and Figure 6-5.
FIGURE 6.4

Project site, noise monitoring locations, planning zones and sensitive receivers

Department of Justice and Attorney-General
Noise and Vibration

Project No. 21-27178
Revision No. A
Date 25/04/2018


---

Planning Zones
- B2, Local Centre
- B7, Business Park
- DM, Deferred Matter
- E1, National Parks and Nature Reserves
- E2, Environmental Conservation
- E3, Environmental Management
- IN1, General Industrial
- IN3, Heavy Industrial
- R2, Low Density Residential
- R3, Medium Density Residential
- R4, High Density Residential
- RE1, Public Recreation
- SP2, Infrastructure
- W1, Natural Waterways
- W2, Recreational Waterways

---

Noise Monitoring Locations
- MRRC Boundary
- Study Area
- Silverwater
- Correctional Complex

---

Sensitive Receivers
- Commercial
- Medical
- Residential - NCA1
- Residential - NCA2

---

Map Projection: Transverse Mercator
Horizontal Datum: GDA-1994
Grid: GDA 1994 MGA Zone 56

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GHD

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Paper Size ISO A4

---

FIGURE 6.5

Residential receivers - NCA1 and NCA2

Legend
- Noise Monitoring Locations
- MRRC Boundary
- Proposed Expansion Area
- Study Area
- Site Boundary
- Project Site Buildings
- Sensitive Receivers
  - Commercial
  - Medical
  - Residential - NCA1
  - Residential - NCA2

Planning Zones
- B2, Local Centre
- B7, Business Park
- E2, Environmental Conservation
- IN1, General Industrial
- R3, Medium Density Residential
- R4, High Density Residential
- RE1, Public Recreation

Department of Justice and Attorney-General
Noise and Vibration

Project No. 21-27178
Revision No. A
Date 25/04/2018

Paper Size ISO A4

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

Data source: General topo - NSW LPI DTDB 2012. Aerial imagery © Department of Finance, Services & Innovation 2017. Created by jrbacani

Print date: 26 Apr 2018 - 11:58
A summary of the measured noise levels at monitoring locations M1 and M2 is shown in Table 6-8.

### Table 6-6 Average background and ambient noise levels

<table>
<thead>
<tr>
<th>Location of noise logger</th>
<th>Rating background level (dB(A)), 90th percentile ( L_{A90(15min)} )</th>
<th>Ambient noise levels (dB(A)), ( L_{Aeq(period)} )</th>
<th>Road traffic noise level ( L_{Aeq(period)} )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day</td>
<td>Evening</td>
<td>Night</td>
</tr>
<tr>
<td>M1 – Balcony of unit 17/3-5 Blaxland Avenue, Newington</td>
<td>51</td>
<td>46</td>
<td>37</td>
</tr>
<tr>
<td>M2 – Backyard of 3 Cumberland Avenue, Newington</td>
<td>34</td>
<td>34</td>
<td>31</td>
</tr>
</tbody>
</table>

**Heritage items**

As discussed in section 6.4, the proposal site is situated in a heritage conservation area. There are a number of buildings within the proposal site or its vicinity, which have the potential to be impacted by vibration during construction.

### 6.3.2 Noise and vibration criteria

Noise and vibration compliance criteria for the project were established in accordance with the relevant guidelines. Information on how the criteria were derived is provided in sections 3.1 and 3.2 of Appendix E. The following section provides a summary of these criteria.

**Construction noise criteria**

A summary of construction noise management levels specific for the proposal is shown in Table 6-9.
Table 6-7 Construction noise management levels

<table>
<thead>
<tr>
<th>Receiver type</th>
<th>Construction noise management levels, $L_{Aeq(15 \text{ min})}$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recommended standard hours</td>
</tr>
<tr>
<td></td>
<td>Noise affected</td>
</tr>
<tr>
<td>Residential receivers at NCA1</td>
<td>61</td>
</tr>
<tr>
<td>Residential receivers at NCA2</td>
<td>44</td>
</tr>
<tr>
<td>Commercial</td>
<td>70 (external)</td>
</tr>
<tr>
<td>Active recreation areas</td>
<td>65 (external)</td>
</tr>
<tr>
<td>Medical centres</td>
<td>55 (external)</td>
</tr>
</tbody>
</table>

Notes:
1) OOHW1 refers to the outside of standard hours work during the day period (Saturday 1 pm – 6 pm, Sundays and public holidays 8 am – 6 pm)
2) OOHW2 refers to the out of standard hours work during the evening period (6 pm to 10 pm)
3) OOHW3 refers to the out of standard hours work during the night period (10 pm to 7 am Monday to Friday, 10 pm to 8 am Saturdays, Sundays and public holidays)

Construction vibration criteria

Construction vibration criteria were established for human comfort as well as for structural damage. The degrees of perception for humans are suggested by the vibration level categories given in BS 5228.2 – 2009, Code of Practice for noise and vibration on construction and open sites – Part 2: Vibration, as follows:

- Vibration level 0.14 mm/s - vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction
- Vibration level 0.3 mm/s – vibration might just be perceptible in residential environments
- Vibration level 1.0 mm/s – it is likely that vibration at this level in residential environments will cause complaints, but can be tolerated if prior warning and explanation has been given to residents
- Vibration level 10 mm/s - vibration is likely to be intolerable for any more than a very brief exposure.

Two guidelines were applied to establish vibration criteria for the proposal: DIN 4150-3 Structural vibration – effects of vibration on structures (1999) and BS 7385-2:1993 - Evaluation and measurement for vibration in buildings: Guide to damage levels from groundborne vibration. The guideline values are shown in Table 6-10 and Table 6-11.

Table 6-8 Guideline values for short term vibration on structures (DIN4150-3)

<table>
<thead>
<tr>
<th>Line</th>
<th>Type of structure</th>
<th>Guideline values for velocity, (mm/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 Hz to 10 Hz</td>
</tr>
<tr>
<td>1</td>
<td>Buildings used for commercial purposes, industrial buildings, and buildings of similar design</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Dwellings and buildings of similar design and/or occupancy</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (for example listed buildings under preservation order)</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ 100 Hz is not given because this frequency is not considered in the context of short term vibration on structures.
Table 6-9  Guideline values –for transient vibration resulting in minimal risk of cosmetic damage (BS 7385-2)

<table>
<thead>
<tr>
<th>Type of building</th>
<th>Peak particle velocity in frequency range of predominant pulse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4 Hz to 15 Hz</td>
</tr>
<tr>
<td>Reinforced or framed structures. Industrial and heavy commercial buildings</td>
<td>50 mm/s at 4 Hz and above</td>
</tr>
<tr>
<td>Unreinforced or light framed structures. Residential or light commercial type buildings</td>
<td>15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz</td>
</tr>
</tbody>
</table>

Vibration buffer distances were sourced from the *Construction Noise and Vibration Guidelines* (Roads and Maritime, 2016) for cosmetic damage (standard structures) and human response. Safe working distances for various types of receivers from machinery that would be used in the proposal are shown in Table 6-12.

Table 6-10  Minimum safe working distances (Roads and Maritime, 2016)

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Minimum working distances</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Human comfort buffer distance Screening criteria 1 mm/s</td>
</tr>
<tr>
<td>Vibratory roller (4-6 tonnes)</td>
<td>40 m</td>
</tr>
<tr>
<td>Small hydraulic hammer (5-12 tonnes excavator)</td>
<td>7 m</td>
</tr>
<tr>
<td>Medium hydraulic hammer (12 to 18 tonnes excavator)</td>
<td>23 m</td>
</tr>
<tr>
<td>Large hydraulic hammer (18 to 34 tonnes excavator)</td>
<td>73 m</td>
</tr>
</tbody>
</table>

Operational noise criteria

The *Noise Policy for Industry* (EPA, 2017) was used to establish operational noise criteria for the proposal. Operational noise levels are distinguished between intrusiveness noise and amenity noise. The intrusiveness noise level refers to the relative audibility of operational noise compared to the background level at residential receivers. The amenity noise level refers to the total level of extraneous noise for all receiver types. The intrusiveness noise level is assessed over a 15 minute period, while the amenity noise level is assessed over the day, evening or night time period. The lower of the two is set as the project noise trigger level, which was used to assess the impact of the proposal. The operational noise trigger levels for residential and non-residential receivers are shown in Table 6-13 and Table 6-14 respectively.
Table 6-11  Operational noise trigger levels for residential receivers

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Residential Receivers (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day¹</td>
</tr>
<tr>
<td>Intrusiveness noise level at NCA1</td>
<td>56</td>
</tr>
<tr>
<td>Intrusiveness noise level at NCA2</td>
<td>39</td>
</tr>
<tr>
<td>Project amenity noise level at NCA1 (urban residential)</td>
<td>58</td>
</tr>
<tr>
<td>Project amenity noise level at NCA2 (suburban residential)</td>
<td>53</td>
</tr>
<tr>
<td>Project noise trigger levels at NCA1</td>
<td>56</td>
</tr>
<tr>
<td>Project noise trigger levels at NCA2</td>
<td>39</td>
</tr>
</tbody>
</table>

Notes:
1) The Noise Policy for Industry (NPI) defines Day as 7 am to 6 pm Monday to Friday and 8 am to 1 pm Sunday and Public Holidays, Evening 6 pm to 10 pm and Night as the remaining periods.
2) Noise from the site is to be measured at the most affected point within the residential boundary.

Table 6-12  Noise trigger levels – non residential receivers

<table>
<thead>
<tr>
<th>Receiver</th>
<th>Non-residential receivers</th>
<th>Time of day</th>
<th>L_{Aeq}, dBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial premises</td>
<td></td>
<td>When in use</td>
<td>65 (external)</td>
</tr>
<tr>
<td>Medical (hospital ward)</td>
<td></td>
<td>Nosiest 1 hour</td>
<td>50 (external)</td>
</tr>
<tr>
<td>Active recreation</td>
<td></td>
<td>When in use</td>
<td>55 (external)</td>
</tr>
</tbody>
</table>

6.3.3  Construction impacts

Noise

Construction would require the use of heavy machinery, which would generate noise and vibration levels at nearby receivers. At any location, the potential impacts may vary greatly depending on factors such as the proximity of sensitive receivers, the duration of works, the magnitude of the noise levels, the time at which the construction is undertaken, and the character of the noise or vibration emissions.

For the purpose of the noise assessment, construction works are summarised into four construction scenarios as follows:

- Construction scenario 1: Excavation and bulk earthworks (CS1). Plant and equipment to be used include excavators, loader, dozer, grader, scraper and trucks. Works would be undertaken during standard construction hours and activity sound power level is predicted to be a maximum of 117 dBA.
- Construction scenario 2: New building works (CS2). Plant and equipment to be used include concrete trucks, crane, hand tools, generator, compressor and welder. Works would be undertaken during standard construction hours and activity sound power level is predicted to be a maximum of 112 dBA.
- Construction scenario 3: Car park expansion works (CS3). Plant and equipment to be used include excavator, grader, roller, dozer, trucks and scraper. Works would be undertaken during standard construction hours and activity sound power level is predicted to be a maximum of 117 dBA.
- Construction scenario 4: Refurbishment/ expansion of existing buildings (CS4). Plant and equipment to be used include crane, trucks, hand tools, generator, compressor and welder.
Works would be undertaken during standard construction hours and activity sound power level is predicted to be a maximum of 112 dBA.

Noise levels have been predicted using computer modelling software based on the above construction scenarios and assumed list of likely plant and equipment to be used. The predicted noise levels are generally considered conservative as the construction noise model predicts the worst-case 15 minute scenario and these levels are highly unlikely to represent the actual noise emission experienced by the community throughout the entire construction period (if at all). The predicted noise impacts are summarised in Table 6-15.

**Table 6-13 Predicted construction noise impacts at residential receivers**

<table>
<thead>
<tr>
<th>Relevant noise management area / criteria</th>
<th>Construction noise management level (CNML)</th>
<th>Number of exceedances of CNML (NCA1/NCA2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CS1</td>
</tr>
<tr>
<td>Noise Management Level at Residences (standard hours)</td>
<td>61 dBA (NCA1) 44 dBA (NCA2)</td>
<td>2/174</td>
</tr>
<tr>
<td>Noise Management Level at Residences (OOhW1 – Saturday/Sundays - day)</td>
<td>56 dBA (NCA1) 39 dBA (NCA2)</td>
<td>N/A</td>
</tr>
<tr>
<td>Noise Management Level at Residences (OOhW2 - Evening)</td>
<td>51 dBA (NCA1) 39 dBA (NCA2)</td>
<td>N/A</td>
</tr>
<tr>
<td>Noise Management Level at Residences (OOhW3 - Night)</td>
<td>42 dBA (NCA1) 36 dBA (NCA2)</td>
<td>N/A</td>
</tr>
<tr>
<td>Highly Noise Affected</td>
<td>75 dBA</td>
<td>0</td>
</tr>
<tr>
<td>Commercial</td>
<td>70 dBA</td>
<td>1</td>
</tr>
<tr>
<td>Active recreation</td>
<td>65</td>
<td>0</td>
</tr>
<tr>
<td>Medical</td>
<td>55 dBA</td>
<td>0</td>
</tr>
</tbody>
</table>

**Noise impacts during recommended standard working hours**

The results of modelling indicate that construction would cause a short-term increase in background noise levels. According to Table 6-15, the following receivers are predicted to be affected by construction noise during standard working hours:

- **CS1**: 176 residential receivers and one commercial property are predicted to receive noise levels that exceed the construction noise management levels during standard construction hours (with noise levels exceeding the CNML by 15 dBA or more at 11 residential buildings).
- **CS2**: 125 residential receivers are predicted to receive noise levels that exceed the construction noise management levels during standard construction hours (with noise levels exceeding the CNML by 15 dBA or more at one residential building).
- **CS3**: 74 residential receivers, two commercial properties and one medical facility are predicted to receive noise levels that exceed the construction noise management levels during standard construction hours (with noise levels exceeding the CNML by 15 dBA or more at three residential buildings).
- **CS4**: 22 residential receivers are predicted to receive noise levels that exceed the construction noise management levels during standard construction hours (with all level of exceedances less than 15 dBA).

The receivers with the potential to experience noise above the noise management levels are shown on Figure 5, 6, 7 and 8 of Appendix E. No receiver would be ‘highly affected’ by noise (defined as receiving noise above 75 dBA) for all construction scenarios.
**Out of hours work and sleep disturbance**

As described in section 4.3.5, works to the existing facilities (CS4) would include works outside the recommended standard construction working hours.

The results of modelling indicate that the following receivers would be affected by out of hours (Sunday and night-time work) construction noise:

- 111 residential receivers during the day on Saturday or Sunday
- 112 residential receivers in the evening
- 161 residential receivers at night.

The loudest event likely to occur during night construction works is the use of hand tools associated with the upgrade/redevelopment of existing structures (CS4). Based on a conservative sound power level of 115 dBA and the closest distance from source to receiver of 300 metres, the predicted $L_{A_{F,max}}$ noise level at the nearest receiver (1 Blaxland Avenue) is 48 dBA. As the predicted noise level does not exceed the Noise Policy for Industry (NPI)'s sleep distance screening test, no sleep disturbance impacts are anticipated.

The measures listed in section 6.3.5 would be implemented to minimise the potential noise impacts identified.

**Construction traffic impacts**

In accordance with the *Road Noise Policy* (DECCW, 2011), construction traffic noise is considered to be acceptable when it is within two dBA of the existing noise levels.

Peak construction noise levels are assessed at 1-9 Blaxland Avenue. It is predicted that the additional vehicle movements associated with construction would increase traffic noise by 0.5-0.6 dBA (Table 4.6 of Appendix E). As a result, no significant noise impacts resulting from construction traffic are anticipated.

**Vibration**

**Impacts to sensitive receivers**

As there are no sensitive receivers located within 40 metres of any proposed construction works, no human comfort or structural damage impacts to sensitive receivers are anticipated.

**Impacts to heritage items**

Heritage items located within the project site may be subject to adverse vibration impacts if earthworks are in close proximity to these structures. The measures provided in section 6.3.5 would be implemented to ensure there are no adverse vibration impacts to any adjacent heritage structures.

**Impacts to standard structures**

Mitigation measures have been recommended in Section 6.3.5 to ensure there are no adverse vibration impacts to any adjacent standard structures within the site boundary.

**6.3.4 Operational impacts**

Operational noise has been assessed and includes the following noise sources within the site:

- the use of the outdoor areas
- the use of the parking lots within the site
- the use of delivery trucks and inmate transport vehicles
The following noise sources have not been included with the assessment as the noise levels are predicted to be negligible at all sensitive receiver locations:

- use of the public announcement (PA) system within internal area, and
- existing and proposed mechanical plant.

PA systems are located internally within the buildings/modules are predicted to be inaudible at all sensitive receiver locations. Noise emission from existing and proposed mechanical plant is assumed to be negligible at sensitive receivers due to the fact that they are located within internal plant rooms within buildings that are over 150 metres from the nearest residents and 90 metres to any commercial receivers.

The operational noise levels are anticipated to comply with the noise criteria for all assessed scenarios. The predicted operational noise levels would comply with the noise emission requirements of the NPI and would not adversely affect the acoustic amenity of the neighbouring residents. The majority of operational activities are expected to occur during the day or evening period, and therefore sleep disturbance impacts are not anticipated.

The predicted noise levels also indicate that the operational traffic associated with the proposal would not increase road traffic noise levels by more than two dBA when assessed at the most affected receiver locations.

### 6.3.5 Mitigation measures

#### Construction

The following noise and vibration mitigation measures will be implemented throughout the construction phase of the project.

**Noise**

- A noise and vibration management sub-plan would be prepared and implemented as part of the CEMP. It would detail feasible and reasonable management measures to minimise the potential for noise and vibration impacts in accordance with the *Interim Construction Noise Guideline* (DECC, 2009) and *Australian Standard (AS) 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites*. It would include the following information and management measures as a minimum:
  - Sensitive receivers would be identified and marked on plans.
  - Works with the potential to result in high noise levels would be scheduled during recommended standard hours where practicable.
  - Works outside normal hours would only comprise construction works associated with the refurbishment or expansion of existing buildings, delivery of materials outside normal hours required by police or other authorities for safety reasons or emergency work to avoid the loss of lives and/or property.
  - All equipment and construction methodologies would be selected to minimise noise emissions. Equipment would be fitted with appropriate silencers and be in good working order. Machines found to produce excessive noise compared to normal industry expectations would be removed from the site or stood down until repairs or modifications can be made.
  - Truck drivers would be informed of designated vehicle routes, parking locations and the requirement to minimise engine idling.
  - Non-tonal reversing beepers (or an equivalent mechanism) would be fitted and used on construction vehicles and mobile plant regularly used on-site and for any out of hours work.
– Work sites and activities would be planned and managed to minimise noise generating activities, including unnecessary shouting, loud stereos/radios, dropping of materials from height, throwing of metal items, and slamming of doors, particularly at the start and finish of shifts.
– Quieter and less noise emitting construction methods would be used where practicable.
– The simultaneous operation of noisy plant within discernible range of a sensitive receiver would be limited/avoided where practicable.
– The offset distance between noisy machinery and sensitive receivers would be maximised, and noise-emitting machinery would be directed away from sensitive receivers where practicable.
– Machinery used intermittently would be throttled down or shut down when not in use.
– Vehicles, plant and equipment would be regularly maintained and kept in good operating condition. Machines found to produce excessive noise would be removed from site or stood down until repairs or modifications can be made.
– Traffic flow, parking and loading areas would be planned to minimise reversing movements within the site.
– Site topography would be considered when situating machinery and use structures (such as site shed placement, earth bunds, fencing, noise barriers) to shield receivers from noise.

• All construction workers would be educated as to the potential for noise impacts on sensitive receivers and encouraged to take practical and reasonable measures to minimise impacts during the course of their activities. This would include explanation of the measures defined by the noise and vibration management sub-plan.
• Inductions for construction workers would include the specific noise issues and mitigation measures required for the site. The induction would include informing the construction workers of:
  – all relevant standard noise mitigation measures
  – relevant licence and approval conditions
  – permissible hours of work
  – location of any sensitive receivers that may exceed the construction noise management level
  – construction employee parking areas
  – designated loading/unloading areas and procedures
  – site opening/closing times (including deliveries)
  – behavioural practices that help minimise noise
  – avoiding dropping materials from height and avoiding metal to metal contact of materials
• Where possible, use structures to shield residential receivers from noise within the construction site.

**Vibration**
• Prior to commencement of construction works, a dilapidation report would be undertaken on the heritage structures in the vicinity of the works to identify structures considered structurally unsound, if any.
• Attended trial monitoring would be conducted during the first stage of construction works to estimate construction vibration levels for the equipment and ground conditions.
• Based on attended trial monitoring, buffer distances would be established for the different equipment to be used for the proposed works.
• When work is required within the buffer distances, a permanent vibration monitoring system would be installed on the nearest sensitive structure to the works. Should there be multiple structures, the monitor could be moved or additional monitors could be put in place.

• The system would include a trigger alarm set up to notify site personnel when vibration limits are approached or exceeded, consisting of two lights: amber warning light and red stop work light.

• Where practicable, activities with the potential to generate human comfort impacts would be scheduled during standard construction hours.

• Sensitive receivers within the safe working distance buffers would be informed of the nature of the work, duration and contact details as part of the communication plan for the proposal.

• Where construction is required within the safe working buffer distance, alternative work methods such as smaller equipment would be considered. If no alternative work method is feasible or reasonable, then compliance vibration monitoring would be undertaken including:
  – Site tests to review the measured frequency content to determine the structural damage criteria as per the noise and vibration assessment (Appendix E) for standard dwelling and for heritage structures.
  – Continuous vibration monitoring with a visual alarm installed to warn the equipment operator when the structural damage vibration criteria (considering frequency content) is exceeded.

Communication

• Notification undertaken during construction would inform relevant stakeholders of the work locations and timing, the potential for noise impacts, and contact details. These include residents within 200 metres of the proposal site.

• A complaints management procedure would be implemented as outlined in section 5.3.

Noise monitoring

• Where potential noise impacts are predicted to be more than 15 dBA above the noise management levels, the potential construction noise nuisance is considered to be high. All reasonable and feasible noise mitigation measures would be implemented prior to commencement of construction works.

• Noise levels during construction would be monitored and where exceeded, further noise reduction measures (where reasonable and feasible) would be implemented

Operation

The following noise and vibration mitigation measures will be implemented during the operational phase of the project to protect the acoustic amenity of the nearest sensitive receivers.

• Ensure the use of outdoor area is within the day time period only.

• No music would be played in outdoor areas

• Use of the public announcement (PA) system is to be minimised and used only when necessary and at a suitable volume level

• If any PA systems are proposed within the outdoor field and recreational areas, assistance of an acoustic consultant would be sought during the detailed design stage of the project to ensure the noise emission from the PA systems does not exceed the relevant noise criteria.

• If any large mechanical plant is proposed externally, assistance of an acoustic consultant would be sought during the detailed design stage of the project to ensure the noise emission from the units do not exceed the relevant noise criteria.
6.4 Non-Aboriginal heritage

This section provides a summary of the results of the heritage impact assessment undertaken for the proposal by Artefact Heritage. The full assessment report is provided in Appendix F. The methodology for the assessment is detailed in section 1.6 of Appendix F.

6.4.1 Existing environment

Historic context

Land within Liberty Plains (as land now occupied by the suburbs of Silverwater, Homebush, Rookwood and Lidcombe were once known) was first settled in 1797.

John Blaxland was granted a lease over an area of about 1,290 acres in 1807, which he called ‘Newington’. The proposal site is located in this area. The Newington Estate included land between Parramatta River and Parramatta Road, Duck River and Haslam’s Creek.

In 1829, Blaxland commenced construction of ‘Newington House’, which was completed in 1832. In 1863, Newington House was leased for use by Newington College until 1880.

In 1880, the NSW Government purchased part of the site for use as a ‘Benevolent Asylum’ for aged and destitute women. By 1881, the estate had been subdivided, and by 1887 Newington House became the centre of the Newington Asylum and Hospital, which would remain operational until 1969. The establishment and operation of the Newington Asylum and Hospital (also known as Newington State Hospital) involved the construction of dozens of structures, including Irwin House (which remains in use as part of the MRRC), nurse’s quarters, bathrooms, and administration buildings.

In 1892, land to the east of the study area was resumed for the Newington Armament Depot, which encompasses the existing State Heritage Register listed Newington Armament Depot and Nature Reserve.

By 1969, the Department of Corrective Services took over the Newington Hospital and Asylum for use as a prison facility. Throughout the next 20 years, the site was subject to various developments, however, it was not until 1985 that major construction works associated with the Silverwater Correctional Complex occurred. Newington House, St Augustine’s Chapel, and Irwin House were all converted for use as part of the correctional centre during this time, and their original landscaped settings were significantly altered. Newington House, Irwin House, and St Augustine’s Chapel were all restored between 1998 and 2000.

Between 1982 and 1986, land now occupied by the MRRC’s oval and Blocks G and F was used as a rubbish tip by Bradshaw Waste Industries. Prior to this, the area consisted of a partially grassed ‘slopping rocky site, used by inmates as a cricket ground and football oval.

Construction of the MRRC commenced in 1994 and it was officially opened in July 1997.

The recreational oval as it appears today was formalised alongside the MRRC by 1997. Two large fig trees were also removed from unknown locations and planted in the oval during this period. These trees were not allocated a heritage significance category number in the Conservation Management Plan for the Silverwater Correctional Complex (Graham Brooks and Associates, 2004).

Heritage listings

The Silverwater Correctional Complex (including the proposal site) is listed as a heritage conservation area under a number of statutory registers, as summarised below. Components of the heritage listings noted below are shown in Figure 6.4.

State Heritage Register
The ‘Silverwater Prison Complex Heritage Conservation Area’ is listed on the State Heritage Register (SHR listing no. 00813). The statement of significance under the listing notes that: ‘Silverwater Correctional Centre is of exceptional significance as it is the core remaining part of John Blaxland’s Newington Estate and of the State Hospital & Asylum for Women, for its subdivision and subsequent use for a variety of institutional functions, as an expression of a philosophy regarding the care of the aged.’ Individual components of significance under the listing include:

- Newington House
- St. Augustine’s Chapel
- Surrounds (of the house and chapel)
- Irwin House
- Engineer’s Cottage (former)
- Superintendent’s Cottage (former)
- Landscape.

Of these, Irwin House is located within the proposal site.

The ‘Newington Armament Depot and Nature Reserve’, located opposite the proposal site to the east of Jamieson Street, is listed on the State Heritage Register (SHR no. 01850).

**Sydney Regional Environmental Plan No.24 (Homebush Bay)**

The ‘Silverwater Prison Complex heritage conservation area (Area No 4)’ is listed under Schedule 4 of SREP 24. In addition, the ‘Silverwater Prison Complex locality’ and eight constituent items are listed as heritage items under Schedule 5:

- Newington House
- St Augustine’s Chapel
- Irwin House
- Margaret Catchpole House
- Caroline Chisholm Building
- Former Superintendent’s Residence
- Former Ward Block
- Former Engineer’s House

**Section 170 Register**

The ‘Silverwater Prison Complex Conservation Area (Newington House, Chapel, Irwin House, Former Superintendent’s Residence)’ is listed on Corrective Services NSW’s Section 170 Register, with the listing noting that the item has state significance.

**Auburn Local Environmental Plan 2010**

The ‘Silverwater Prison Complex’ is listed as a heritage conservation area by Schedule 5 of the Auburn LEP (item no C00813).
Archaeological potential

Assessment of archaeological potential conducted as part of the heritage impact assessment (Appendix F) identified and indicated the degree to which archaeological remains are likely to survive within the proposal site. The assessment considered the potential archaeological significance of the proposal site according to five main phases or periods of occupation/development:

- Phase 1 (1797-1807) – Pre-Blaxland Farms
- Phase 2 (1807-1863) – Blaxland Family Estate and Industrial Activity
- Phase 3 (1863-1879) – Newington College
- Phase 4 (1879-1968) – From Asylum to Hospital
- Phase 5 (1968-present) – Silverwater Correctional Complex.

The assessment concluded that there was nil to low potential for archaeological remains for the first three development phases up to 1879. The potential for intact remains associated with phase 4 surviving in the proposal site is considered to be nil for the oval area, and low to moderate across the remainder of the site. The potential for intact remains associated with phase 5 is considered to be high for the proposal site as a whole.

Archaeological significance

Assessment of archaeological significance was conducted following the assessment of archaeological potential (Appendix F). Substantial and intact archaeological remains within the study area may have historical, associative, social significance, research potential and representativeness at a state level.
Archaeological remains associated with Phase 1 may represent early evidence of pastoral activities within the study area during this period, while those associated with Phase 2 occupation would represent a large multi-use estate which included residences, pastoral activities and light industry. Occupation of the site during Phases 3 and 4 (and today) was primary institutional, with any archaeological remains relating to a significant period of educational, medical and mental health service development and response in NSW.

The likelihood for intact remains associated with Phases 1-4 surviving in the study area is nil in the Sports Oval, and nil to moderate across the remainder of the site.

6.4.2 Construction impacts

Impacts of the proposal on non-Aboriginal heritage are distinguished between the following:

- impacts to fabric
- impacts to potential archaeological remains
- impacts to views and vistas.

Impacts to fabric

The proposal’s impact to fabric within the study area would be associated with modifications to Blocks B, C, D, E, J and U, and the removal of dressed sandstone garden boundaries within the existing sports oval.

Due to the late date of construction and lack of significant heritage fabric within Blocks B, C, D, E, J and U, impacts to fabric within the buildings are considered to be neutral and would not reduce the heritage significance of the Silverwater Prison Complex Conservation Area (SPCCA).

No works are proposed to take place within the building or surrounding gardens of Irwin House, Newington House and St Augustine’s Chapel (considered to contain exceptional heritage significance). Therefore, direct impacts to significant heritage fabric are not anticipated.

The removal of two garden beds, two fig trees (considered to have ‘some significance’), and construction of new buildings within the sports oval would have a major to moderate impact to the MRRC landscape, and a minor to moderate impact on the heritage significance of the SPCCA as a whole.

Impacts to potential archaeological remains

The proposed works would take place within areas of nil archaeological potential, including the sports oval, Blocks B, C, D, E, F, G, J and U. Therefore, impacts to potential archaeological remains associated with the SPCCA would be negligible to minor.

No works are proposed to take place within the building or surrounding gardens of Irwin House, Newington House and St Augustine’s Chapel. Therefore impacts to potential archaeological remains as a result of the proposed works are not anticipated.

Impacts to views and vistas

The proposed works to buildings in the western portion of the MRRC would have a minor to negligible impact to views and vistas to and from the area from the surrounding complex and Irwin House, Newington House and St Augustine’s Chapel.

Within the eastern portion of the MRRC, the proposal would have a moderate impact on views and vistas to and from the sports oval and would be a minor to moderate visual impact on the SPCCA.

Heritage impacts could be reduced by implementing the mitigation measures provided below.
6.4.3 Operational impacts

Operation of the proposal would not result in any additional impact to Non-Aboriginal heritage.

6.4.4 Mitigation measures

Design and pre-construction

- Prior to works commencing, approval from Heritage Council of NSW would be obtained in accordance with section 57(1) of the Heritage Act 1977.
- A permit from the Heritage Council of NSW would be obtained prior to works commencing in accordance with section 139 of the Heritage Act.
- Design of the proposal would be planned to minimise heritage impacts.
- A heritage architect would be consulted during the detailed design stage of the proposal.
- A Heritage Interpretation Strategy would be prepared to explore and guide opportunities for providing historical and archaeological interpretive displays to inmates, visitors and members of the public.
- The MRRC, including the oval that may be altered by the proposed development would be archivally recorded prior to construction works commencing in accordance with recommendations made by the heritage impact assessment (Appendix F).

Construction

- In the event that unexpected archaeological remains, relics, or potential heritage items are discovered during construction, all works in the immediate area would cease, and the unexpected finds procedure would be implemented.
- All land-disturbing activities would be confined to within the assessed proposal area defined in this REF. Should work needs to extend beyond this area, further archaeological assessment may be required.
- Mitigation measures to avoid vibration impacts on heritage structures as per section 6.3.5 would be implemented.

Operation

No mitigation measures would be required.

6.5 Soils, erosion and water quality

6.5.1 Existing environment

Topography, geology and soils

The proposal site is situated at approximately 14-15 metres Australian Height Datum according to the NSW Land and Property Information Spatial Information Exchange. The site appears to be relatively flat; sloping steeply at the immediate eastern and south-eastern boundaries. Surface water runoff is expected to flow to the east and north-east, towards Jamieson Street following localised topography, ultimately to the Parramatta River located approximately 680 m north of the site.

According to the Sydney 1:100,000 Geological Sheet 9130 (1st Edition, 1983), the site is underlain by Ashfield Shale (Rwa) of the Wianamatta Group and consists a succession of black to dark-grey shale and laminate.
The Soil Conservation Service of NSW 1:100,000 Soil Landscape Series Sheet 9130, Sydney, classifies the soil as Blacktown. The landscape and soils are described as gently undulating rises on Wianamatta Group shales and Hawkesbury shale, shallow to moderately deep soils. Limitations include moderately reactive highly plastic subsoils, low soil fertility and poor soil drainage.

**Acid sulfate soils**

Auburn Local Environmental Plan 2010 Acid Sulfate Soils Map – Sheet ASS_005 describes the site as having Soil Class 5. Acid sulfate soils (ASS) are not typically found in Class 5 areas, but they are within 500 metres of higher class soils (1,2,3,4) areas on adjacent land, which have higher ASS risks. Land management activities are not likely to be affected by ASS materials at this site.

**Surface water**

The nearest receiving water body from the proposal site is Parramatta River, which is located about 700 metres north to north-east of site. The ground surface of the site is primarily grass and surface water would be expected to infiltrate through unsealed areas. Due to the urban environment surrounding the site, excess surface water from surrounding land and adjacent roads would likely enter the stormwater drainage system prior to discharge. It is likely that some surface water may drain into a drainage channel visible on land immediately east of the site.

The proposal site is not located within the area mapped as a Flood Planning Area under the Auburn Local Environmental Plan 2010.

**Groundwater**

A review of existing groundwater bore records using the NSW Water Information Database as well as previous investigations relevant to the site was conducted to identify registered groundwater bores in close proximity and record information such as use and standing water level. A summary of existing groundwater bores are provided in Appendix C.

The review concluded that groundwater can be expected to be encountered at a depth of 1.4 to 6.5 metres below ground level and may be perched in the fill.

**Contamination**

Phase 1 and Phase 2 site investigations generally in accordance with Guidelines for Consultants Reporting on Contaminated Sites (OEH, 1997) have been conducted as part of the REF process to assess the nature and extent of potential contamination at the proposal site. Further details of the assessments conducted are discussed in more detail in section 6.1.

6.5.2 **Construction impacts**

**General erosion and water quality impacts**

Construction of the new facilities would involve disturbance to the ground surface to construct the slab, footings, and underground services. Small stockpiles of excavated soil would be created during construction.

Excavation and stockpiling activities, if not adequately managed, could have the following impacts:

- erosion through exposed soils and stockpiled materials
- dust generation from excavation works, and vehicle movement over exposed soils.
- an increase in sediment loads entering the stormwater system and the nearby receiving waterways.
The proposal also has the potential to result in soil and water contamination via any accidental fuel or chemical spills from plant and equipment. The potential for impacts as a result of any spills or leaks would be managed by the implementation of measures provided in section 6.5.4.

These impacts are considered to be minimal as exposure of soils and stockpiling of spoil would be temporary and short term. Potential impacts would be minimised by implementing the mitigation measures provided in section 6.5.4.

Construction of the proposal has the potential to create preferential pathways for contaminant migration resulting from piling (if proposed), as a result of the presence of contaminated groundwater/leachate. These issues are considered in more detail in Section 6.1.

6.5.3 Operational impacts

Operation of the proposal would not impact topography, geology, soils or water quality at the site. Aside from the building areas, the site would be sealed or landscaped where required. No erosion or sedimentation impacts are anticipated during operation.

6.5.4 Mitigation measures

Construction

- A soils, erosion and water quality management sub-plan would be prepared and implemented as part of the CEMP. It would detail the measures to minimise the potential for soil and water quality impacts, and would include the following measures as a minimum
  - Sediment and erosion control devices would be installed around work sites and maintained to minimise the transport of sediment in accordance with Managing Urban Stormwater, Soils and Construction, Volume 1 (Landcom, 2004). These devices would be inspected weekly and immediately after rainfall to ensure their effectiveness over the duration of the works. Any damage to erosion and sediment controls would be rectified immediately.
  - The area of exposed surfaces would be minimised and disturbed areas would be stabilised progressively to ensure that no areas remain unstable for any extended length of time.
  - Wherever possible, soil and sediment that accumulates in erosion and sediment control structures during site restoration would be reused unless it is contaminated or otherwise inappropriate for reuse.
  - Cease work in the immediate vicinity of any areas of suspected contamination that are identified prior to or during work unless specific provisions and procedures have been put in place to satisfactorily address these issues.
  - Vehicle and machinery movement would be confined to designated roads, tracks, pathways and work areas. Designated lay-down areas would be selected to minimise erosion or vegetation damage.
  - Cease work during heavy rainfall events when there is a risk of sediment loss off-site or ground disturbance due to water logged conditions.
  - Any groundwater or leachate intercepted by the proposal must be treated appropriate for the intended disposal method. No groundwater (or leachate) is to be discharged from site into adjacent areas or stormwater systems prior to treatment in accordance with the relevant regulatory requirements.
  - Ensure equipment, plant and materials are placed in designated areas where they are least likely to cause erosion.
  - Following completion of work, restore land surfaces to as close as possible to pre-existing conditions.
• Mitigation measures for safe handling and testing of potentially contaminated soil and groundwater as incorporated in the RAP would be implemented.

Operation

No mitigation measures would be required during operation.

6.6 **Air quality and odour**

6.6.1 **Existing environment**

A search of the National Pollutant Inventory undertaken on 1 March 2018 identified five sources of pollution for the 2015/16 reporting period, in the suburbs of Silverwater, Newington, and Sydney Olympic Park. The closest identified sources are:

• Mobil’s Silverwater Terminal – located on Newington Road near Holker Street, about 200 metres west of the proposal site.

• Lubrizol International, Inc – petroleum and coal product manufacturing at 28 River Street, Silverwater, about 800 metres west of proposal site.

• Daniels Health – a waste treatment, disposal and remediation services, located at 2 Wiblin Street, Silverwater, about one kilometre south-west of the proposal site.

Other contributors to air quality within the study area include emissions from motor vehicles on the surrounding road network.

The nearest sensitive receivers include:

• inmates and staff of, and visitors to, the MRRC and other facilities within the Silverwater Correctional Complex

• residents located in properties on Blaxland Avenue, about 100 metres to the south-east of the proposal site, and properties on Evans Street, Newington, about 100 metres to the south of the proposal site at the nearest points

• employees of commercial properties located opposite the proposal site on Holker Street (about 50 metres to the south of the site)

• users of Blaxland Riverside Park, located about 200 metres north of the site.

The site has also previously been used as a landfill for construction and demolition waste but also, records indicate, a component of putrescible waste which generates odour as it decays as well as landfill gas. The presence of odour at the site depends upon a number of factors such as the state of the waste ie whether it is still decomposing and the performance/ integrity of the landfill capping layer. Any gaps or holes in the landfill cap would potentially provide a pathway for odour to escape.

During site visits conducted for the REF, there was no noticeable landfill odour at the site. While site specific conditions and design decisions may result in a different outcome for the proposal, it does provides a level of certainty that the proposal can be developed without offensive, long term odour arising.

6.6.2 **Construction impacts**

Air quality impacts associated with construction would mainly result from dust generated during excavation and the movement of construction machinery, vehicles and plant. Wind erosion of uncompacted surfaces, such as stockpiled material, could also cause localised emissions of dust.

Dust has the potential to impact on the amenity of surrounding sensitive receivers.

The operation of construction plant and equipment would also result in additional exhaust emissions in the area, however these impacts would be short-term and temporary.
Potential air quality impacts would be minimised by implementing the mitigation measures listed in section 6.6.4. With the implementation of these measures, potential air quality impacts during construction are unlikely to be significant.

The scope of earthworks required at the site would be defined at the detailed design stage, however excavation for items such as utilities and services trenches and potentially for building foundations will involve excavation at depth and potentially piling. Such deep excavation may penetrate the landfill capping layer and become a pathway for odour.

6.6.3 Operational impacts

Issues relating to the risk of landfill gas and preventative measures are addressed in section 6.1 and 6.9.6.

6.6.4 Mitigation measures

Construction

- A dust quality management sub-plan would be prepared and implemented as part of the CEMP. It would detail the measures to minimise the potential for air quality impacts, and would include the following measures as a minimum:
  - All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards.
  - Machinery would be turned off when not in use and not left to idle for prolonged periods.
  - Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust.
  - Any waste (such as excavated spoil) produced on-site would be stored appropriately to reduce the production of dust.
  - Materials transported to and from the site would be covered to reduce dust generation in transit.
  - Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation.
  - Shade cloth would be fastened to the perimeter fence on the proposal site to minimise dust transported from the site during construction.
  - Stabilisation of any excavated areas would occur as soon as practicable.
  - Fixed hoses would be used to dampen exposed surfaces to minimise dust generation, where required.
- An odour management plan would be prepared by the construction contractor if the proposed works include excavation down to waste level or have the potential to cause the release of landfill gas.
- The RAP would be reviewed for the presence and location of odorous contaminants and gas protection measures incorporated in the RAP are to be implemented.
- Prior to excavation in an area of known waste, a small scale trial would be conducted to determine the presence, intensity and character of odours.
- During excavation works, any exposed waste would be covered as soon as practicable.
- Works in odorous area would be avoided when weather conditions may lead to poor dispersion of odour in the direction of sensitive receptors.
- All mitigation measures relating to landfill gas provided in section 6.1.4 would be implemented.
Operation
No mitigation measures would be required during operation.

6.7 Biodiversity/trees

This section provides a summary of the results of the arboricultural and ecological assessment of the proposal undertaken by GHD. The full assessment report is provided in Appendix G. The methodology for the assessment is described in Section 2 of Appendix G.

6.7.1 Existing environment

Flora

Trees at the proposal site

The ground-cover consists of a closely mown sward of exotic lawn grass. The subject site does not contain any stands of intact native vegetation and it is likely that the original topsoil has undergone substantial modification since the original clearing for agriculture and development. There are two mature Moreton Bay Fig (*Ficus macrophylla*) trees located on the site (shown in Figure 6.5). These trees were moved to their existing locations in the 1990s from elsewhere in the Silverwater complex. Historical information indicates that numerous fig trees were planted in the Blaxland estate. For ease of identification, the two Moreton Bay fig trees are referred to as the western specimen and the eastern specimen.

Other tree species within the proposal site include an early-mature Lemon-scented Gum, a resprouting Tallowwood (*Eucalyptus microcorys*), a box hedge (*Buxus microphyllus var. japonica*) and several Lion’s Tail (*Agave attenuate*).

Photographs of the vegetation in the proposal area are shown in Figure 6.6 - Figure 6.10 and a summary of the tree properties is provided in Table 6-16.

The properties include the following:

- Height of tree (metres)
- Canopy radius or spread of foliage (in metres radius)
- Diameter at breast height or diameter of the tree measured at 1.4 metres above the ground (metres) (AS4970-2009)
- Tree Protection Zone, calculated based on tree diameter at breast height, which indicates a distance from the stem required for the protection of a tree’s crown and roots to provide for the viability and stability of the tree.
- Structural Root Zone, calculated based on both diameter at breast height and diameter at ground level, which indicates the area around the base of a tree required for the tree’s stability in the ground.
- Safe Useful Life Expectancy (SULE) rating, which provides an estimation of how many years a tree can be retained in the landscape provided growing conditions do not worsen and any recommended works are completed. SULE ratings allow classification for trees numbering from 1 to 5, where 1 is given for trees that appear to be retainable for more than 40 years and 5 is for trees which can be readily moved or replaced, including small and young trees (Barrell, 2001).
Figure 6.7  Location of surveyed trees
<table>
<thead>
<tr>
<th>Tree</th>
<th>Height</th>
<th>Canopy radius</th>
<th>Aerial root column</th>
<th>Diameter at breast height</th>
<th>Tree Protection Zone</th>
<th>Structural Root Zone</th>
<th>SULE rating</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western specimen, Moreton Bay fig tree</td>
<td>14 m</td>
<td>6-9 m</td>
<td>1.4 m</td>
<td>1.12 m</td>
<td>13.44</td>
<td>4.12 m</td>
<td>2A</td>
<td>Transplanted in the 1990s (Graham Brooks and Associates, 2004) Small leaves, fruits uncommon Surface roots appear to have been regularly wounded by lawn mowing</td>
</tr>
<tr>
<td>Eastern specimen, Moreton Bay fig tree</td>
<td>16 m</td>
<td>6-11 m</td>
<td>1.6 m</td>
<td>1.74 m</td>
<td>1.5 m</td>
<td>4.52 m</td>
<td>3A</td>
<td>Transplanted in the 1990s (Graham Brooks and Associates, 2004) Small leaves, fruits uncommon Signs of poor root growth observed Surface roots appear to have been regularly wounded by lawn mowing</td>
</tr>
<tr>
<td>Lemon scented gum</td>
<td>8 m</td>
<td>2.5 m</td>
<td>0.24 m</td>
<td></td>
<td></td>
<td></td>
<td>5A</td>
<td>In good form and vigour Environmental weed</td>
</tr>
<tr>
<td>Tallowwood</td>
<td>5 m</td>
<td>3 m</td>
<td>0.39 m</td>
<td></td>
<td></td>
<td></td>
<td>5A</td>
<td>In fair form and moderate vigour Sparse canopy</td>
</tr>
<tr>
<td>Group of trees (south eastern corner of project site), incorporating:</td>
<td>4-9 m</td>
<td>2 m</td>
<td>0.39 m</td>
<td></td>
<td></td>
<td></td>
<td>5A (for the group)</td>
<td>Covers an area of approximately 240 square metres Mostly in moderate to good condition Located within area where regular, intense pedestrian movement occurs Subject to stress factors such as soil compaction around the root zones and mechanical damage to tree trunks</td>
</tr>
</tbody>
</table>

SULE ratings:
2A (Medium) - Tree that appear to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk, assuming reasonable maintenance
3A (Short) - Tree that appear to be retainable at the time of assessment for 5 to 15 years with an acceptable degree of risk, assuming reasonable maintenance.
5A (Move or Replace) - Trees which can be readily moved or replaced.
Figure 6.8 Western specimen, Moreton Bay fig tree

Figure 6.9 Eastern specimen, Moreton Bay fig tree
Figure 6.10  Lemon-scented Gum, growing in planter bed located near the existing gym facilities

Figure 6.11  A resprouting Tallowwood tree
Site survey undertaken on 6 March 2018 noted that the fig trees are in a state of accelerated decline, which has occurred as a result of a combination of factors including age, soil compaction, inadequate moisture and nutrient regimes, location as well as previous translocations.

In addition to the physical properties, the heritage values of the trees on the site were assessed in the context of details provided in the Silverwater Correctional Complex Conservation Management Plan (Graham Brooks and Associates, 2004). The authors noted that the relative value of individual trees has been assessed according to a number of aspects such as historic, aesthetic, horticultural, landscape and/or contextual value, contribution to the overall landscape and general condition. The trees were categorised under 5 broad categories of significance (ranging from exceptional significance to intrusive) and then were further graded under four categories of landscape significance, ranging from L1 (retain because of historic, aesthetic, horticultural, landscape and/or contextual value) to L4 (may be removed due to poor health, intrusive or too close to historic buildings) (Taylor Brammer, 2004).

The two Moreton Bay Figs (*Ficus macrophylla*) located at the proposal site were identified as of ‘some significance’. This rating recognises that while the trees comprise plant material with some heritage value, their original significance has been compromised by their relocation and later modifications to the area (Taylor Brammer 2004) The authors note that the trees form an important landscape element of the MRRC but do not assign the trees a graded landscape significance rating or identify them for retention. On this basis, and while the trees provide some contribution to the overall landscape they are not considered to be of high landscape or heritage significance.

The remaining trees in the MRCC, described in this report, are not identified in the Taylor Brammer (2004) report. They have low landscape values and are not of heritage significance.

**Trees within the temporary access footprint**

A small stand of trees is present within the footprint of the proposed temporary secondary construction access on Jamieson Street. Vegetation mapping by OEH (2016) described this and the adjoining patch of vegetation adjacent to Jamieson Street to the north as “urban exotic/native”. Trees in this area include one necrotic over-mature Wattle, three early-mature Smooth-barked Apple (*Angophora costata*), two juvenile Smooth-barked Apples and a small thicket of Swamp Oak. 

![Figure 6.12](image-url) **Tree group near south-eastern corner of the subject site**

Site survey undertaken on 6 March 2018 noted that the fig trees are in a state of accelerated decline, which has occurred as a result of a combination of factors including age, soil compaction, inadequate moisture and nutrient regimes, location as well as previous translocations.

In addition to the physical properties, the heritage values of the trees on the site were assessed in the context of details provided in the Silverwater Correctional Complex Conservation Management Plan (Graham Brooks and Associates, 2004). The authors noted that the relative value of individual trees has been assessed according to a number of aspects such as historic, aesthetic, horticultural, landscape and/or contextual value, contribution to the overall landscape and general condition. The trees were categorised under 5 broad categories of significance (ranging from exceptional significance to intrusive) and then were further graded under four categories of landscape significance, ranging from L1 (retain because of historic, aesthetic, horticultural, landscape and/or contextual value) to L4 (may be removed due to poor health, intrusive or too close to historic buildings) (Taylor Brammer, 2004).

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(Casuarina glauca), which has probably resprouted from the original (probably damaged) leader (trunk).

**Fauna**

Vegetation in the proposal site is restricted to planted individual trees, a small group of trees and two large fig trees, with vegetation over most of the subject site consisting of a groundcover of regularly mown exotic grass species. Mid-storey vegetation is almost completely absent from the subject site apart from several of the smaller specimens in the group of trees. This provides small potential for suitable fauna habitats on site. Site survey confirmed this condition through the absence of deep hollows in the trees, nests or temporary roosting places. The only evidence of foraging on fig fruits was recorded in the Small-leaved Fig tree at the Holker Street entrance. No bat guano or chewed fruits were recorded beneath the canopy of the two mature Moreton Bay Figs or beneath the canopy of the Port Jackson Fig. Only one bird species, Masked Lapwings (*Vanellus miles*) was recorded in the proposal site during the survey.

The trees and shrubs proposed for removal within the temporary secondary access area have low and restricted habitat value, although it is likely that the trees are occasionally visited by common birds typical of urban parks and gardens for foraging purposes.

Given there are no stands of native vegetation and the highly modified environment, all the individual trees and small patches of trees to be removed do not provide habitat of importance for threatened or migratory fauna species identified through the desktop review.

An active camp of threatened Grey-headed Flying-foxes (*Pteropus poliocephalus*) was observed along the banks of Duck River, near Clyde Station, approximately five kilometres west of the site.

**6.7.2 Construction impacts**

**Removal and disturbance of trees**

The proposal would require the removal of all of the early-mature trees listed in Table 6-16 including two mature fig trees, a Lemon-scented Gum, a resprouting Tallowwood and the group of trees near the south-eastern corner of the subject site.

Additionally, a small stand of planted trees along Jamieson Street would be removed to provide temporary secondary access to the MRRC for construction vehicles. The proposal site has been cleared of native vegetation for more than 100 years and it would not remove or modify any habitat of importance for threatened biota. The site and construction access path do not contain suitable habitat for any threatened ecological communities or threatened flora species.

The proposal would not have a significant impact on any threatened biota (or associated habitat) listed under the BC Act and therefore will not trigger the requirement for a Species Impact Statement under the provisions of the EP&A Act.

Similarly, the proposal would not have a significant impact on any listed biota under the EPBC Act and consequently a referral to the Australian Government Minister for the Environment is not required.

**Disturbance of fauna**

The proposal would not involve removal of any intact patches of native vegetation. It is likely that the trees, including the two mature fig trees provide only minimal fauna habitat value. There is the chance of injury or mortality of some smaller common species, such as small lizards, that may be sheltering in leaf litter or between buttress roots during construction activities. However, more mobile fauna, such as birds, that may forage in the subject site on occasion are likely to move out of affected areas during excavation and construction activities.
The groups of trees within the subject site provide limited habitat for native fauna. These habitats are located in a built-up area with a dense human population, and in some cases surrounded by high mesh fences and electrified wires which are already subject to high levels of noise and vibration. The use of machinery and general disturbance associated with the proposal in the subject site may deter some fauna species from utilising potential habitat in the study area. However, this would only be temporary for the duration of the works and is unlikely to cause significant impacts to fauna in the study area that is already habituated to noise and vibration given high-density human occupation.

6.7.3 Operational impacts
Operation of the proposal would not result in any impact to biodiversity.

6.7.4 Mitigation measures

Construction
- All tree removal is to be undertaken in accordance with the guidelines outlined in Guide to managing risks of tree trimming and removal work (Safe Work Australia, 2016)
- A bush regeneration specialist would be engaged to take cuttings prior to the removal of fig trees for propagation and replanting at appropriate locations within the wider Silverwater Correctional Complex.

Operation
No mitigation measures would be required.

6.8 Socio-economic
This section provides a summary of the results of the socio-economic assessment of the proposal undertaken by GHD. The full assessment report is provided in Appendix H. The methodology for the assessment is described in Section 2 of Appendix H.

6.8.1 Existing environment
The community with the potential to be impacted by the proposal would include:
- visitors, inmates and employees of the MRRC and other facilities within the Silverwater Correctional Complex
- employees and visitors of surrounding commercial land uses
- nearby residents in the suburb of Newington
- users of surrounding recreational facilities (described in section 4.1).
- users of local community facilities

Visitors, inmates and employees
The existing operation of MRRC with regards to visitors has been described in section 4.2.4

Based on a survey of visitors to NSW Correctional Centres conducted by the CSNSW in 2012, 23% of visitors reported visiting their ‘son or daughter’, 19% reported visiting their ‘husband or de facto’, 8% selected ‘other’ relationship (which includes cousins, grandchildren, aunts and uncles, nieces and nephews, and in-laws). Six percent did not disclose the nature of their relationship with the prisoner they were visiting.

There are 1,163 inmates within the MRRC. The inmates spend their time outside the cells between the hours of 8am and 4pm.
There are about 485 staff employed at the MRRC, consisting of about 335 custodial officers, 55 justice health staff, 55 program staff and 40 administration staff.

**Employment for inmates**

The MRRC provides opportunities for paid employment for inmates. These include:

- Corrective Services Industries (CSI) Textiles - Two large textile workshops are run at the facility, which produce inmate clothing as well as garments for hospitals and nursing homes.
- CSI Laundry Service - The laundry service at MRRC services the Silverwater Complex and court cells.
- CSI Technology - Production, repair and packaging of airline headsets.
- Ground Maintenance - Inmates maintain gardens and manage the landscape and grounds within MRRC.
- Domestic jobs - Inmates can work as cleaners, store persons and painters within the Silverwater Correctional Complex grounds.

Employment for inmates who are on remand is optional, whilst sentenced inmates are expected to work.

**Local residents and users of commercial land uses**

The nearest residential areas to the proposal site are in the suburbs of Newington and Silverwater. Newington is largely a residential suburb with the following characteristics (Australian Bureau of Statistics, 2016 Census):

- Population of 5,802 people
- The median age is 35.
- 49.4% are male, with 50.6% being female.
- Aboriginal and Torres Strait Islander people made up 0.2% of the population.
- There are 1,643 families, with average of 1 child per family
- There are 2,078 private dwellings
- 54.8% of people were born overseas, with top countries of birth including Korea (11.4%), China (8.7%), Hong Kong (3.4%), India (3.0%) and Indonesia (2.2%).
- 68.3% of people work full time, 23.7% working part time. The unemployment rate at Newington is 4.4%, which is less than the national average of 6.9%.

Silverwater is home to a number of small to medium enterprises, light industrial/commercial properties and small pockets of residential dwellings, as well as the Silverwater Correctional Complex. The following characteristics are recorded for Silverwater (Australian Bureau of Statistics, 2016 Census):

- Population of 4,166 people
- The median age is 33.
- 66.2% are male, with 33.8% being female.
- Aboriginal and Torres Strait Islander people made up 8.8% of the population.
- There are 574 families, with average of 0.8 children per family
- There are 913 private dwellings
47.3% of people were born overseas, the top countries of birth being Korea (8.4%), China (3.8%), Vietnam (2.3%), Lebanon (2.2%) and New Zealand (2.0%).

66.2% of people work full time, 24.3% working part time. The unemployment rate at Silverwater is 8.0%, which is above the national average of 6.9%

Commercial land uses in the area include owners and employees operating businesses within the vicinity of the Silverwater Correctional Complex, particularly those along Holker Street and within the Newington Business Park and retailers at Newington Marketplace.

**Users of surrounding recreational and sporting facilities**

Recreational and sporting facilities in the vicinity of the proposal site are described in section 4.1.

Blaxland Riverside Park is a popular attraction for families from many parts of Sydney, particularly those of western Sydney. The majority of people who use this park come on a Sunday between the hours of 9am and 4pm, with the peak number of visitors recorded at midday. Saturday is its second busiest day of the week, also between the hours of 9am and 4pm but peak activities occurring at 10am.

The majority of sporting facilities associated with Sydney Olympic Park and the Sydney Showground are located to the east and south of Edwin Flack and Kevin Coombs Avenues, about one kilometre to the south-east of the site at the nearest point.

**Users of community facilities**

Community facilities within close vicinity to the proposal include SHINE for Kids, a Child Care and Family Centre located within Silverwater Correctional Centre fronting Holker Street. The centre provides drop-in services for families visiting inmates and opens on Wednesdays, Saturdays and Sundays.

**6.8.2 Construction impacts**

**Impact for visitors, inmates and employees**

As identified in Section 6.8.1, the majority of visitors to correctional centres are family members of inmates. Maintaining family ties during imprisonment is important for both inmate and the family members. Moreover, maintaining these relationships could contribute to inmate’s successful re-integration into community life (CSNSW, 2010). This will in turn result in a benefit to the wider society.

As such, it is important that visitors’ access to the MRRC is maintained during construction. Construction activities may result in temporary adverse impacts to employees, inmates and their visitors through changes to conditions including, traffic, noise, air quality and visual amenity, potentially increasing their level of anxiety. Access to SHINE for Kids Child Care facility is expected to remain unchanged during construction.

Social impacts may also be experienced by MRRC inmates due to construction occurring at the site of the current outdoor recreational area (sports oval), particularly during the hours they spend outside their cells between 8am and 4pm. Following development of the proposal, inmates will have access to a new indoor sports facility.

**Impact on local economy and employment**

There are a number of positive economic benefits that would potentially occur during the construction phase, including employment opportunities and income generation for local businesses.
It is expected that up to 100 jobs would be created as part of this proposal, largely construction workers working on site, with employees sourced from throughout the Sydney region. Once operational, the MRRC is anticipated to increase the number of staff as well as double the number of visitors, bringing more people to the Silverwater Correctional Complex.

The presence of workers (during construction) and additional visitors and staff (during operation) could potentially lead to an increase in use of local businesses and amenities. This may mean additional income for local cafés, shops, restaurants and retail outlets, particularly those within Newington Marketplace located less than five minutes’ walk from the facility. This would be a positive impact both over the duration of the construction and operation of the project.

Impact on amenity and quality of life of residents and local businesses

Construction has the potential to impact on amenity and quality of life of residents and local businesses through noise, air quality, traffic and visual amenity.

As indicated in sections 6.3 and 6.6, construction is expected to cause a short-term increase in background noise level and disturbances to air quality.

The potential increase in traffic associated with construction (detailed in section 6.2) includes heavy vehicles entering and exiting the site throughout the day, which may in some instances lead to delays for people travelling through the area, particularly in peak travel times. This may impact on ease of access to local facilities and services, businesses, and general movement throughout the area. Mitigation measures in Section 6.2 would reduce the magnitude of these impacts, should they occur.

Additionally, local residents and employees of businesses may experience a temporary change to the visual landscape due to construction activities. Residents living in apartments located on Holker Street are likely to be most impacted by potential changes, although the potential impacts would be limited.

Impact on users of nearby recreational and sporting facilities

Users of recreational facilities including Blaxland Riverside Park, Parramatta River and Wilson Park may also experience additional noise, dust and visual impacts at times, however, these users are likely be travelling directly through the affected area, so are considered less likely to be impacted as a result of construction.

Summary of socio-economic impacts during construction

Construction impacts are summarised Table 6-17.

<table>
<thead>
<tr>
<th>Impact</th>
<th>Who is impacted</th>
<th>Nature of impact</th>
<th>Type of impact</th>
<th>Duration of impact</th>
<th>Level of impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air quality and noise</td>
<td>Inmates, visitors, staff, residents, businesses, recreational users</td>
<td>Negative</td>
<td>Direct</td>
<td>Short term</td>
<td>Minor</td>
</tr>
<tr>
<td>Visual amenity</td>
<td>Businesses, residents (particularly)</td>
<td>Negative</td>
<td>Direct</td>
<td>Short term</td>
<td>Minor</td>
</tr>
</tbody>
</table>
### Operational impacts

**Impact for visitors, inmates and employees**

The operational impact of the proposal for visitors, inmates and employees is generally expected to be a positive one.

The proposal incorporates expansion and redevelopment of the existing Visits building to provide capacity for additional visitors and inmates. The redeveloped Visits building would include additional interview rooms and professional visits rooms, improved visitor amenities and children’s play areas. The increase in the number of visitors may increase the demand for use of community facilities such as SHINE for Kids Child Care and Family Centre. Analysis on current use of this facility and potential increase in demand resulting from the proposal is not part of this REF.

Given the proposed development of new facilities would occur on the existing sports field, which is a major recreational area for the existing inmates, there would be a reduction in outdoor recreational space. This impact would be mitigated by the proposed indoor sports building, which would be constructed within the new accommodation area as described in section 4.1.1. This new multi-purpose sports building would include a basketball court and facilities for group activities, such as TV, major events, movies, etc. Additionally, the existing gym would be redeveloped and upgraded to provide additional capacity.

Paid employment opportunities are expected to increase in proportion with the increase in the number of inmates.

**Impact on safety and security of surrounding neighbourhood**

Social impacts in relation to the operation of correctional centres are generally related to the safety and security of residents of the adjoining neighbourhoods. It is a commonly held fear that the introduction of a correctional facility (or the expansion of an existing facility) to an established community will lead to increased crime in the area, committed by prison escapees, families of inmates or by visitors to the centre or inmates choosing to remain in the area upon release.

The following key points are noted for the MRRC expansion project:

- the proposed development is to occur entirely within the site of existing correctional centre
- the proposed buildings and the building platforms will still enjoy a setback from the surrounding land zoned for residential purposes
- the remand and reception centre will have a high quality perimeter security zone

<table>
<thead>
<tr>
<th>Impact</th>
<th>Who is impacted</th>
<th>Nature of impact</th>
<th>Type of impact</th>
<th>Duration of impact</th>
<th>Level of impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic congestion</td>
<td>Road users, residents, businesses</td>
<td>Negative</td>
<td>Direct</td>
<td>Medium-term</td>
<td>Minor</td>
</tr>
<tr>
<td>Economic benefit due to construction work</td>
<td>Construction workers in the area</td>
<td>Positive</td>
<td>Direct</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Economic benefit due to increase in people frequenting the area</td>
<td>Local businesses</td>
<td>Positive</td>
<td>Indirect</td>
<td>Medium to long term</td>
<td>Medium</td>
</tr>
</tbody>
</table>
activities will be managed by qualified staff and the community will not be exposed to any undue risk

the proposed development is within the confines of an existing correctional centre and is not expected to have a significant adverse impact on the amenity of the surrounding residential areas

given the metropolitan location, it is anticipated that inmates or visitors would return to their previous address or suburb upon release.

Recent communication with staff of Parramatta City Council indicated that correspondence about these issues in relation to the Silverwater Correctional Complex are very infrequent.

Impact on property and land values

There are potential concerns that property and land values in the area will be negatively impacted by the expansion of the MRRC. Despite these concerns, property trends have shown that the presence of the established Silverwater Correctional Complex has not deterred or impacted on development of the residential areas surrounding the site, such as the Newington Estate. Rather, property prices within the surrounding suburbs have continued to increase over time following similar trends to that for the Greater Sydney Metropolitan Region.

The area surrounding the Silverwater Correctional Complex has developed into a well-established and desirable residential area. It is considered unlikely that the presence of the Silverwater Correctional Complex has impacted on the rate of development or resale values of properties within the vicinity.

Overall, it is expected that, following the upgrade of the proposed facility -

- the incidence of families moving to the Newington area would remain unchanged
- the likelihood of released inmates (not previously residents of the local area) remaining in the area would not increase
- there would be no negative effect on the image of the local suburb, in fact it is likely to have a positive impact through increased economic opportunities
- there would be a small impact on increased demand for services such as educational, health and social services, which can be managed through Centre management maintaining open lines of communication with the relevant agencies
- potential improved benefits for the Indigenous community, such as the maintenance of social networks, employment and training opportunities.

Impact on local economy and employment

As stated in Section 4.2.4, the proposal could potentially lead to an additional 140 full time staff members in various roles, creating long term employment opportunities arising from the expansion of the MRRC. This is considered a benefit for people from across Sydney, particularly in the greater Western Sydney region.

There is also potential for an increase in income for local businesses and services in the surrounding area from the additional MRRC staff and increased number of visitors to the facility. External businesses that provide the centre with food and other supplies are also expected to benefit due to the need for additional goods and services.

Impact on demand for parking in the area

The increase in demand for car parking due to the proposal is a social impact as well as a transport impact. Parking at Silverwater Correctional Complex is currently very limited. Visitors to the
complex may choose to park at the Newington Marketplace Shopping Centre carpark located directly opposite the complex. The shopping centre car park has capacity for approximately 180 cars and allows free parking for the first two hours. Alternative parking locations are within the Sydney Olympic Park, approximately two kilometres away. The increase in number of visitors would increase the demand for parking in the local area.

Impact on local profile and values

There is potential for local community members to perceive a link between the facility expansion and decreased safety in the Silverwater / Newington area, as well as possibility of reducing the socio-economic index of the locality. Given the small overall increase of additional inmates, this is unlikely to be

Long term changes to local amenity

Amenity impacts during operation would mainly be changes to visual outlook resulting from the new buildings and infrastructure on currently open space. This is considered to be a temporary impact and given the width of Holker Street and other facilities in the foreground, a negligible impact.

Impact on wider community

It is considered that the proposed development will have an overall positive benefit on the wider community. It will provide much needed relief for the already overcrowded correctional facilities within the metropolitan area and the associated high risk issues. The industries program would continue and would provide a positive contribution to the corrective function of the MRRC.

Summary of socio-economic impacts during operation

Operational impacts are summarised in Table 6-18.

Table 6-16 Summary of social impacts during operation

<table>
<thead>
<tr>
<th>Impact</th>
<th>Who is impacted</th>
<th>Nature of impact</th>
<th>Type of impact</th>
<th>Duration of impact</th>
<th>Level of impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional capacity to meet additional demand of prison beds across the state</td>
<td>Regional CSNSW</td>
<td>Positive</td>
<td>Direct</td>
<td>Long-term</td>
<td>Medium</td>
</tr>
<tr>
<td>Changes to socio-economic index of Parramatta LGA</td>
<td>Parramatta LGA</td>
<td>Neutral</td>
<td>Indirect</td>
<td>Long-term</td>
<td>Minor</td>
</tr>
<tr>
<td>Increased perception of high crime rate</td>
<td>Residents of Parramatta, City of Parramatta LGA</td>
<td>Negative</td>
<td>Indirect</td>
<td>Long-term</td>
<td>Medium</td>
</tr>
<tr>
<td>Increased opportunity for employment</td>
<td>Job seekers</td>
<td>Positive</td>
<td>Direct</td>
<td>Long term</td>
<td>Medium</td>
</tr>
<tr>
<td>Increased need for businesses</td>
<td>Business leader/employees</td>
<td>Positive</td>
<td>Indirect</td>
<td>Long term</td>
<td>Medium</td>
</tr>
<tr>
<td>Impact</td>
<td>Who is impacted</td>
<td>Nature of impact</td>
<td>Type of impact</td>
<td>Duration of impact</td>
<td>Level of impact</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------</td>
<td>------------------</td>
<td>----------------</td>
<td>-------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Increased need for external service providers to deliver goods into MRRC</td>
<td>Service and goods providers</td>
<td>Positive</td>
<td>Indirect</td>
<td>Long term</td>
<td>Minor</td>
</tr>
<tr>
<td>Visual amenity/landscape</td>
<td>Some residents</td>
<td>Neutral</td>
<td>Direct</td>
<td>Long term</td>
<td>Negligible</td>
</tr>
</tbody>
</table>

6.8.4 **Mitigation measures**

**Construction**

- Mitigation measures included in Sections 6.2, 6.3, 6.6 and 6.9.1 would be implemented to minimise impacts on traffic and transport, noise, air quality and visual amenity.
- Notification regarding construction activities is to be provided on site as well as on the CSNSW website, advising visitors of any alternative access arrangements in place and to exercise patience when visiting the MRRC during construction works.

**Operation**

- A communication and stakeholder management strategy would be prepared to establish a positive image of the facility on the local community. This may include provision of educational material and brochures.
- The Emergency Response Plan for the existing facility would be updated to ensure procedures in the event of an escape are reviewed and updated for neighbours and the surrounding community where necessary.

6.9 **Other issues**

6.9.1 **Visual amenity**

The visual landscape of the proposal site is dominated by corrective services facilities and associated infrastructure, the adjoining road network, existing mature trees and other vegetation along the roads, commercial uses opposite the site to the south, and open space to the east. Views to the proposal site are available from:

- Holker Avenue and Jamieson Street – including from traffic and pedestrians travelling along the roads
- commercial properties on Holker Avenue
- within other Silverwater Corrective Services facilities.

Road users and commercial receptors with views of the site are considered to be the most sensitive receptors. Views from these receivers to the site are currently dominated by vegetation and site security fencing, with partial views of the upper portions of some buildings visible over the fence line (refer to Photos 6.1 to 6.3).

Views from the nearest residences in Blaxland Avenue and Evans Street are screened by the commercial properties on Holker Avenue.
Figure 6.13  View from Holker Street towards the proposal site and existing Block H (looking to the north-east)

Figure 6.14  View from Holker Street to the south-east corner of the proposal site (looking to the north)
There would be limited visibility of construction plant and materials as a result of the presence of the existing security fencing. The main visible feature would be the temporary site access on Jamieson Street and the construction of the car park at the entrance to the Silverwater Correctional Complex.

Overall, the potential visual impacts of construction activities are considered to be minimal as the works would be temporary and short term.

Once operational, upper sections of the new buildings and the refurbished car park may be visible to the sensitive receivers noted above, however, these features would be viewed in the context of the existing facility and surrounding buildings, and would be consistent in appearance and form. No significant visual impacts are predicted and therefore no mitigation measures are considered necessary.

### 6.9.2 Land use

There would be no changes to the zoning and function of the site as a correctional facility either during or following construction of the proposal.

While the land use would change from its current use (as a sports over) to an operational facility, other (indoor) sports and exercise facilities would be provided as part of the proposal. The proposal would expand the operational area of the facilities within the fenced boundary of the existing MRRC site. All new facilities would be consistent and complementary to the existing facilities.

No impacts on land use are predicted and therefore no mitigation measures are considered necessary.

### 6.9.3 Waste management

Currently, wastes generated on site from the operational facility include domestic wastes such as: food scraps, aluminium cans, glass bottles, plastic etc.

Waste is collected and transferred from the inmate accommodation and other functional areas via supervised inmate labour in 600L to 1200L tubs, and transferred to a waste compactor between the Reception and Darcy Accommodation Block. Waste is collected daily via an approved contractor.
Sorting and waste collection of recyclables is not currently undertaken at MRRC.

Construction of the proposal has the potential to generate the following wastes:

- surplus materials used during site establishment such as safety fencing and barriers which may include plastics and metal - this is expected to be minimal as it is likely that prefabricated structures would be used
- general construction waste such as excess concrete, timber, paper, plastic and metal
- domestic waste including food scraps, aluminium cans, glass bottles, plastic and paper containers, and putrescible waste generated by site construction personnel
- surplus spoil from excavation activities (i.e. material not required for backfilling)

Any wastes associated with contaminated soil, leachate, hazardous materials or any remediation activities required would be addressed in accordance with the requirements outlined in section 6.1.

A construction waste management sub-plan would be prepared and implemented as part of the CEMP. It would detail the measures to manage waste during construction, and would include the following measures as a minimum:

- All soil excavated from site would be tested and subsequently managed in accordance with the *Waste Classification Guidelines* (EPA, 2014). Only spoil which meets the specified classification would be used for onsite reuse.
- All waste, including excess spoil, is to be recycled if practicable, or alternatively taken to a licensed waste disposal facility.
- All spoil reused on site as engineered fill is to be clean (i.e. free of organics and inclusions greater than 75 millimetres size) and free of contaminant.
- Classify and dispose of waste (if unable to be reused or recycled) in accordance with the *Waste Classification Guidelines* (EPA 2014).
- Ensure waste is placed in skip bins positioned in defined area(s) onsite or within the site compound (if required).
- Avoid surplus construction materials through appropriate planning of the construction works.
- Recycle waste in accordance with the NSW Government’s *Waste Reduction and Purchasing Policy*.
- Waste receptacles for recyclable and non-recyclable waste are to be provided at each construction site for waste generated by construction workers.
- Construction workers must comply with the smoke-free site requirements whilst within the Silverwater Correctional Complex.
- The EPA would be notified immediately of any pollution incidents or harm to the environment as defined under Part 5.7 of the POEO Act.

There would be an increase in operational waste associated with the increased number of inmates and staff and waste services would need to be increased accordingly. Waste management procedures for the proposal would be anticipated to be an extrapolation of existing services with consideration potentially given to include recyclable waste collection in the future.

### 6.9.4 Sustainability

Specific sustainability initiatives for the proposed development have not yet been identified but would be confirmed during the subsequent detailed design stage. Specific initiatives that could be considered include:
• installing energy efficient light fittings
• reducing potable water consumption during construction
• installing water efficient fixtures and fittings
• using drought resistant species in landscaping
• recycling of construction and demolition waste (if any)
• beneficial reuse of spoil ie that is not contaminated
• specifying the responsible sourcing of construction materials, where possible, in the supply chain
• consider opportunities for the employment of local tradespersons and businesses where possible.

6.9.5 Services and utilities

The design team are currently investigating the capacity of existing services at the site including: stormwater, potable water, sewage, gas, electricity and telecommunications. Any augmentation of services capacity required will be identified at the conclusion of this process relative to the identified additional loadings resulting from the proposed facility design. All utility adjustments and augmentation required would be undertaken in consultation with the requirements of the relevant utility owner. Any upgrade or replacement of services required outside the Silverwater complex would be undertaken in accordance with relevant planning approvals and environmental management frameworks of the utility owners.

6.9.6 Hazards and risk

Occupational health and safety

Accidental contact with, including the storage and handling of dangerous goods, contaminated soils and groundwater and any hazardous materials have the potential to affect the health and safety of site workers and the surrounding community. Given the nature of the proposal, it is expected that very low volumes of dangerous goods/ hazardous materials eg fuels, paint thinners, acetylene, etc would be stored at the site.

As described in section 6.1, intrusive contamination investigations conducted for the REF have identified contamination in soils and groundwater, including high concentrations of landfill gas in excavations. Health and safety issues associated with potential exposure of workers to contaminated soils and groundwater, and potentially landfill gas, would be minimised through implementation of appropriate work health and safety protocols to limit potential for exposure. Mitigation measures are provided in section 6.1.

Health and safety risks during construction would be managed by the implementation of standard workplace health and safety requirements within the construction environmental management plan. A work, health and safety management plan, and safe work method statements would be developed in accordance with regulatory requirements.

Contingency management

As described in section 4.2.3, there may be a requirement for adjustment/ augmentation of a number of on-site utilities services and provision of new services. The potential impact on or severance of underground and overhead utilities during construction could pose risks to worker and public safety and result in temporary services outages.

A contingency management plan would be developed and implemented by the appointed construction contractor to address the potential for these (and any other) reasonably foreseeable
issues to occur. Effective precautionary measures and strategies (where avoidance is not possible), would be put in place.

**Safety and security**

In addition to these, there is the potential for risks to pedestrians/public safety resulting from unauthorised access to construction work areas. NSW workplace safety laws require construction sites to have adequate site security, which includes appropriate fencing. All construction work areas would be isolated from the general public. The construction contractor would ensure that the construction site is secure at all times and take reasonable actions to prevent entry by unauthorised persons.

Fundamental to the safe completion of the construction works will be ensuring that adequate surveillance and security measures are implemented and maintained to manage the existing inmate population. While the proposed work area is already inside a secure zone, Justice propose to further isolate the construction area by construction of an additional security fence around the limits of existing facilities and install additional surveillance equipment to minimise security risks.

Existing risk management and emergency management plans for the facility would be reviewed, including for emergency access/egress from the new construction work area. Revised procedures and training of staff may also need to be undertaken. All construction staff would also be screened and subject to criminal record checks prior to arrival at the site.

Mitigation measures relevant to other specific issues would be implemented as recommended in other sections of this report.

**6.9.7 Aboriginal heritage**

A search of the OEH administered Aboriginal Heritage Information Management System (AHIMS) database returned no record for listed Aboriginal heritage sites within 200 metres of the proposal site.

Construction would not impact on any listed Aboriginal heritage items. Given the prior history of disturbance on site, the risk of encountering any unknown items is considered to be extremely low.

Operation of the proposal would not result in any impacts to Aboriginal heritage.

An unexpected finds procedure would be prepared and included in the CEMP to define the actions to be taken in the event that any previously unidentified Aboriginal heritage/archaeological items are uncovered during construction works. This would include stopping work in the vicinity of the find, and seeking advice from a suitably qualified heritage consultant/archaeologist (and in consultation with the relevant division of OEH, as required). Works in the vicinity of the find would not re-commence until clearance has been received from the heritage consultant/archaeologist.

**6.9.8 Cumulative impacts**

A search of the Department of Planning and Environment’s Major Development and the Parramatta Council databases indicated that there are no major projects occurring in vicinity at the same time as this proposal. Therefore no adverse cumulative impacts (as a result of the proposal being undertaken at the same time as another major project in the vicinity) are expected.

However, this project, along with others under the NSW Government’s Prison Bed Capacity Program, would lead to a cumulative increase in the capacity of the Justice’s infrastructure in NSW which is consistent with the Government’s objectives for the program and respond to the recent sharp increase in demand.
7. Environmental management

7.1 Environmental management approach

Under the State Government’s policy to improve the performance of the NSW construction industry, preparation of a CEMP is mandatory for all projects undertaken by or on behalf of government agencies or where funding is being provided by the government. The Construction Policy Steering Committee and the then Department of Infrastructure Planning and Natural Resources produced environmental management system and environmental management plan guidelines aiming to assist contractors both in complying with the Government’s policy and in demonstrating that compliance.

The CEMP would also consider the operation of the proposal and would include a risk assessment which ensures that the safeguards identified in this REF, as well as any others that are considered relevant, are effectively translated into actual construction techniques and environmental management activities, controls and monitoring/verification to prevent or minimise environmental impacts. The CEMP would also identify the requirements for compliance with relevant legislation and other regulatory any requirements to ensure environmental safeguards described throughout this REF are implemented. The environmental management objectives and supporting actions presented in this section are intended to assist in this process.

The CEMP would generally conform to the structure shown in Table 7-1. It would incorporate, where relevant, the mitigation measures summarised in section 7.2.

Table 7-1 CEMP structure

<table>
<thead>
<tr>
<th>Item</th>
<th>Sections</th>
</tr>
</thead>
</table>
| Background                | Introduction to the document  
|                           | Description of the proposal and project details  
|                           | The context for the CEMP in regards to the overall project  
|                           | The CEMP objectives  
|                           | The contractor’s environmental policy  |
| Environmental management  | Environmental management structure of the organisation and specific team  
|                           | responsibilities with respect to the CEMP and its implementation  
|                           | Approval and licensing requirements relevant to the project  
|                           | Reporting requirements  
|                           | Environmental training  
|                           | Emergency contacts and response  |
| Implementation            | A project specific risk assessment  
|                           | A detailed list of environmental management safeguards and controls  
|                           | CEMP sub plans for specific environmental controls  
|                           | A detailed schedule assigning responsibility to each environmental management activity and control  |
| Monitor and review        | Environmental monitoring  
|                           | Environmental auditing  
|                           | Corrective action  
|                           | CEMP review and document control procedures  |
### 7.2 Consolidated list of mitigation measures

<table>
<thead>
<tr>
<th>Issue</th>
<th>Mitigation measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land contamination and hazardous materials</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Design</strong></td>
<td></td>
</tr>
<tr>
<td><strong>LC1</strong></td>
<td>A Remedial Action Plan (RAP) would be developed for the site, outlining remediation options to reduce and mitigate risks from contamination, including landfill gas, during construction and operational phases.</td>
</tr>
<tr>
<td><strong>LC2</strong></td>
<td>Obligations to notify NSW EPA under the Duty to Report guidelines would be considered.</td>
</tr>
<tr>
<td><strong>LC3</strong></td>
<td>A holistic landfill gas risk assessment would be undertaken, including an assessment of ‘worst case’ meteorological conditions.</td>
</tr>
<tr>
<td><strong>LC4</strong></td>
<td>Groundwater monitoring bores would be strategically installed around the site to determine the potential for contamination entering/leaving the site.</td>
</tr>
<tr>
<td><strong>LC5</strong></td>
<td>Waste classification of materials likely to be disposed of off-site would be performed with consideration to the identified COPCs and the widespread identification of asbestos within site soils.</td>
</tr>
<tr>
<td><strong>LC6</strong></td>
<td>No impairment to the efficacy of any existing on-site landfill gas collection or ventilation systems is to be allowed without adequate alternate infrastructure and procedures in place.</td>
</tr>
<tr>
<td><strong>Construction</strong></td>
<td></td>
</tr>
<tr>
<td><strong>LC7</strong></td>
<td>The construction contractor would be responsible for developing and implementing relevant OHS controls for workers relevant to the site conditions, including those detailed in the RAP.</td>
</tr>
<tr>
<td><strong>LC8</strong></td>
<td>Potential risks to construction workers from contamination and landfill gas would be addressed by completing additional landfill gas monitoring at the site and through the adoption of the results into the RAP.</td>
</tr>
<tr>
<td><strong>LC9</strong></td>
<td>The work, health and safety protocols relevant to the identified issues, documented in Section 6.9.6, would be implemented.</td>
</tr>
<tr>
<td><strong>LC10</strong></td>
<td>Waste classification of materials likely to be disposed of off-site would be performed with consideration to the identified COPCs and the widespread identification of asbestos within site soils.</td>
</tr>
<tr>
<td><strong>LC11</strong></td>
<td>The CEMP would include an unexpected finds protocol in order to accommodate any potential contamination issues not previously identified.</td>
</tr>
<tr>
<td><strong>Traffic, transport and access</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Design</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TTA1</strong></td>
<td>Construction access layout would be reviewed during design development to consider the turn path required for the construction vehicles.</td>
</tr>
<tr>
<td><strong>Construction</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TTA2</strong></td>
<td>A Construction Traffic Management Plan (CTMP) would be prepared prior to the commencement of works with site induction for construction personnel being undertaken to outline the requirements of the CTMP. It would detail the management measures to be implemented to minimise the potential for impacts on the operation of the surrounding road and transport environment. It would include the following information and management measures as a minimum:</td>
</tr>
<tr>
<td>• A Traffic Control Plan (TCP) would be developed in accordance with RMS Traffic Control at Works Sites and AS1742.3 – Traffic Control for Works on Roads</td>
<td></td>
</tr>
<tr>
<td>• Hours of operation, heavy vehicle volumes (numbers) and routes, loading/unloading areas and site access and security arrangements, temporary warning, guidance and information signage, and appropriate traffic control devices.</td>
<td></td>
</tr>
<tr>
<td>• Construction contractor would confirm workforce transport arrangements including transfer of staff between site and public transport system such as the Sydney Olympic Park Station or other alternative arrangement.</td>
<td></td>
</tr>
<tr>
<td>• Construction vehicle movements would be minimised during the AM and PM peak hour and during the middle of the day on the weekend, when higher traffic volumes occur within the road network.</td>
<td></td>
</tr>
<tr>
<td>• Construction vehicles are to arrive to the site from the west, along Holker Street and utilise the site access on Jamieson Street and exit from the site via Jamieson Street and eastbound along Holker Street.</td>
<td></td>
</tr>
</tbody>
</table>
### Issue Mitigation measure

- Public access to the site would be maintained on the surrounding road network.
- Carpooling between workers would be encouraged to decrease traffic activity and parking demand.
- Site access is be restricted to authorised personnel only and existing employees on site.
- Pedestrian access to and around the site would be maintained at all times.
- Specific road hazards would be identified, including but not limited to wet weather, pedestrian and bicycle riders, general traffic and bus infrastructure.
- The timing of deliveries accessing the site would be programmed to ensure there is sufficient space within the proposal site to accommodate deliveries, and there is minimal potential for impacts to operation of the MRRC.
- Designated queuing and idling areas would be determined near the work site to minimise disruption to the local community.
- Adequate sight lines would be provided to allow for safe entry and exit from the site.
- All roads would be kept clean and free of dust and mud at all times. Where material is tracked onto sealed roads at any time, it would be removed immediately so that road pavements are kept safe and trafficable.
- Any roads, kerbs, gutters and footpaths damaged as a result of construction would be restored to their pre-construction condition.
- All traffic would comply with all applicable traffic laws and regulations including speed limits.
- All roads and accesses would be rehabilitated post construction to a standard equivalent to, or better than, the preconstruction condition.
- The community would be notified in advance of any proposed road and pedestrian network changes through signage, the local media, and other appropriate forms of communication.

### Operation

<table>
<thead>
<tr>
<th>TTA3</th>
<th>The precinct future planning would be undertaken to streamline parking needs for staff and visitors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTA4</td>
<td>Consideration would be given to the development of a Transport Access Guide (TAG) summarising alternate transport options for staff and visitors to access the Silverwater Correctional Complex.</td>
</tr>
</tbody>
</table>

### Noise and vibration

<table>
<thead>
<tr>
<th>NV1</th>
<th>A noise and vibration management sub-plan would be prepared and implemented as part of the CEMP. It would detail feasible and reasonable management measures to minimise the potential for noise and vibration impacts in accordance with the Interim Construction Noise Guideline (DECC, 2009) and Australian Standard (AS) 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites. It would include the following information and management measures as a minimum:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Sensitive receivers would be identified and marked on plans.</td>
</tr>
<tr>
<td></td>
<td>• Works with the potential to result in high noise levels would be scheduled during recommended standard hours where practicable.</td>
</tr>
<tr>
<td></td>
<td>• Works outside normal hours would only comprise construction works associated with the refurbishment or expansion of existing buildings, delivery of materials outside normal hours required by police or other authorities for safety reasons or emergency work to avoid the loss of lives and/or property.</td>
</tr>
<tr>
<td></td>
<td>• All equipment and construction methodologies would be selected to minimise noise emissions. Equipment would be fitted with appropriate silencers and be in good working order. Machines found to produce excessive noise compared to normal industry expectations would be removed from the site or stood down until repairs or modifications can be made.</td>
</tr>
<tr>
<td></td>
<td>• Truck drivers would be informed of designated vehicle routes, parking locations and the requirement to minimise engine idling.</td>
</tr>
<tr>
<td></td>
<td>• Non-tonal reversing beepers (or an equivalent mechanism) would be fitted and used on construction vehicles and mobile plant regularly used on-site and for any out of hours work.</td>
</tr>
<tr>
<td>Issue</td>
<td>Mitigation measure</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td>• Work sites and activities would be planned and managed to minimise noise generating activities, including unnecessary shouting, loud stereos/radios, dropping of materials from height, throwing of metal items, and slamming of doors, particularly at the start and finish of shifts.</td>
</tr>
<tr>
<td></td>
<td>• Quieter and less noise emitting construction methods would be used where practicable.</td>
</tr>
<tr>
<td></td>
<td>• The simultaneous operation of noisy plant within discernible range of a sensitive receiver would be limited/avoided where practicable.</td>
</tr>
<tr>
<td></td>
<td>• The offset distance between noisy machinery and sensitive receivers would be maximised, and noise-emitting machinery would be directed away from sensitive receivers where practicable.</td>
</tr>
<tr>
<td></td>
<td>• Machinery used intermittently would be throttled down or shut down when not in use.</td>
</tr>
<tr>
<td></td>
<td>• Vehicles, plant and equipment would be regularly maintained and kept in good operating condition. Machines found to produce excessive noise would be removed from site or stood down until repairs or modifications can be made.</td>
</tr>
<tr>
<td></td>
<td>• Traffic flow, parking and loading areas would be planned to minimise reversing movements within the site.</td>
</tr>
<tr>
<td></td>
<td>• Site topography would be considered when siting machinery and use structures (such as site shed placement, earth bunds, fencing, noise barriers) to shield receivers from noise.</td>
</tr>
<tr>
<td>NV2</td>
<td>All construction workers would be educated as to the potential for noise impacts on sensitive receivers and encouraged to take practical and reasonable measures to minimise impacts during the course of their activities. This would include explanation of the measures defined by the noise and vibration management sub-plan.</td>
</tr>
<tr>
<td>NV3</td>
<td>Induction for construction workers would include the specific noise issues and mitigation measures required for the site. The induction would include informing the work crew of:</td>
</tr>
<tr>
<td></td>
<td>• all relevant standard noise mitigation measures</td>
</tr>
<tr>
<td></td>
<td>• relevant licence and approval conditions</td>
</tr>
<tr>
<td></td>
<td>• permissible hours of work</td>
</tr>
<tr>
<td></td>
<td>• location of any sensitive receivers that may exceed the construction noise management level</td>
</tr>
<tr>
<td></td>
<td>• construction employee parking areas</td>
</tr>
<tr>
<td></td>
<td>• designated loading/ unloading areas and procedures</td>
</tr>
<tr>
<td></td>
<td>• site opening/closing times (including deliveries)</td>
</tr>
<tr>
<td></td>
<td>• behavioural practices that help minimise noise</td>
</tr>
<tr>
<td></td>
<td>• avoiding dropping materials from height and avoiding metal to metal contact of materials</td>
</tr>
<tr>
<td>NV4</td>
<td>Where possible, use structures to shield residential receivers from noise within the construction site.</td>
</tr>
<tr>
<td>NV5</td>
<td>Prior to commencement of construction works, a dilapidation report should be undertaken on the heritage structures in the vicinity of the works to identify structures considered structurally unsound, if any.</td>
</tr>
<tr>
<td>NV6</td>
<td>Attended trial monitoring would be conducted during the first stage of construction works to estimate construction vibration levels for the equipment and ground conditions.</td>
</tr>
<tr>
<td>NV6</td>
<td>Based on attended trial monitoring, buffer distances would be established for the different equipment to be used for the proposed works.</td>
</tr>
<tr>
<td>NV7</td>
<td>When work is required within the buffer distances, a permanent vibration monitoring system would be installed on the nearest sensitive structure to the works. Should there be multiple structures, the monitor could be moved or additional monitors could be put in place.</td>
</tr>
<tr>
<td>NV8</td>
<td>The system would include a trigger alarm set up to notify site personnel when vibration limits are approached or exceeded, consisting of two lights: amber warning light and red stop work light.</td>
</tr>
<tr>
<td>NV9</td>
<td>Where practicable, activities with the potential to generate human comfort impacts would be scheduled during standard construction hours.</td>
</tr>
<tr>
<td>NV10</td>
<td>Sensitive receivers within the safe working distance buffers would be informed of the nature of the work, duration and contact details as part of the communication plan for the proposal.</td>
</tr>
</tbody>
</table>
### NV11
Where construction is required within the safe working buffer distance, alternative work methods such as smaller equipment would be considered. If no alternative work method is feasible or reasonable, then compliance vibration monitoring would be undertaken including:
- Site tests to review the measured frequency content to determine the structural damage criteria as per the noise and vibration assessment (Appendix E) for standard dwelling and for heritage structures.
- Continuous vibration monitoring with a visual alarm installed to warn the equipment operator when the structural damage vibration criteria (considering frequency content) is exceeded.

### NV12
Notification undertaken during construction would inform relevant stakeholders of the work locations and timing, the potential for noise impacts, and contact details. These include residents within 200 metres of the proposal site.

### NV13
A complaints management procedure would be implemented as outlined in section 5.3.

### NV14
Where potential noise impacts are predicted to be more than 15 dBA above the noise management levels, the potential construction noise nuisance is considered to be high. All reasonable and feasible noise mitigation measures should be implemented prior to commencement of construction works.

### NV15
Noise levels during construction would be monitored and where exceeded, further noise reduction measures (where reasonable and feasible) should be implemented.

### Operation

#### NV16
Ensure the use of outdoor area is within the day time period only.

#### NV17
No music should be played in outdoor areas

#### NV18
Use of the public announcement (PA) system is to be minimised and used only when necessary and at a suitable volume

#### NV19
If any PA systems are proposed within the outdoor field and recreational areas, assistance of an acoustic consultant should be sought during the detailed design stage of the project to ensure the noise emission from the PA systems does not exceed the relevant noise criteria.

#### NV20
If any large mechanical plant is proposed externally, assistance of an acoustic consultant should be sought during the detailed design stage of the project to ensure the noise emission from the units do not exceed the relevant noise criteria.

### Non-indigenous heritage

#### NIH1
Prior to works commencing, approval from Heritage Council of NSW would be obtained in accordance with section 57(1) of the Heritage Act 1977.

#### NIH2
A permit from the Heritage Council of NSW would be obtained prior to works commencing in accordance with section 139 of the Heritage Act.

#### NIH3
Design of the new elements within the SHR curtilage should be planned to minimise heritage impacts.

#### NIH4
A heritage architect would be consulted during the detailed design stage of the proposal.

#### NIH5
A Heritage Interpretation Strategy would be prepared to explore and guide opportunities for providing historical and archaeological interpretive displays to inmates, visitors and members of the public.

#### NIH7
The MRRC, including the oval that may be altered by the proposed development would be archivally recorded prior to construction works commencing in accordance with recommendations made by the heritage impact assessment (Appendix F).

### Soils, erosion and water quality

#### Construction

#### SW1
A soils, erosion and water quality management sub-plan would be prepared and implemented as part of the CEMP. It would detail the measures to minimise the potential for soil and water quality impacts, and would include the following measures as a minimum:
- Sediment and erosion control devices would be installed around work sites and maintained to minimise the transport of sediment in accordance with Managing...
### Issue Mitigation measure

Urban Stormwater, Soils and Construction, Volume 1 (Landcom, 2004). These devices would be inspected weekly and immediately after rainfall to ensure their effectiveness over the duration of the works. Any damage to erosion and sediment controls would be rectified immediately.
- The area of exposed surfaces would be minimised and disturbed areas would be stabilised progressively to ensure that no areas remain unstable for any extended length of time.
- Wherever possible, soil and sediment that accumulates in erosion and sediment control structures during site restoration would be reused unless it is contaminated or otherwise inappropriate for reuse.
- Cease work in the immediate vicinity of any areas of suspected contamination that are identified prior to or during work. Ensure that these areas are not disturbed and are cordoned off as a safety risk.
- Vehicle and machinery movement would be confined to designated roads, tracks, pathways and work areas. Designated lay-down areas would be selected to minimise erosion or vegetation damage.
- Cease work during heavy rainfall events when there is a risk of sediment loss off-site or ground disturbance due to water logged conditions.
- Ensure equipment, plant and materials are placed in designated areas where they are least likely to cause erosion.
- Following completion of work, restore land surfaces to as close as possible to pre-existing conditions.

### Air quality and odour

#### Construction

**AQ1**  
A dust quality management sub-plan would be prepared and implemented as part of the CEMP. It would detail the measures to minimise the potential for air quality impacts, and would include the following measures as a minimum:
- All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards.
- Machinery would be turned off when not in use and not left to idle for prolonged periods.
- Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust.
- Any waste (such as excavated spoil) produced on-site would be stored appropriately to reduce the production of dust.
- Materials transported to and from the site would be covered to reduce dust generation in transit.
- Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation.
- Shade cloth would be fastened to the perimeter fence on the proposal site to minimise dust transported from the site during construction.
- Stabilisation of any excavated areas would occur as soon as practicable.
- Fixed hoses would be used to dampen exposed surfaces to minimise dust generation, where required.

**AQ2**  
An odour management plan would be prepared by the construction contractor if the proposed works include excavation down to waste level or have the potential to cause the release of landfill gas.

**AQ3**  
RAP would be reviewed for the presence and location of odorous contaminants and gas protection measures incorporated in the RAP are to be implemented.

**AQ4**  
Prior to excavation in an area of known waste, a small scale trial would be conducted to determine the presence, intensity and character of odours.

**AQ5**  
During excavation works, any exposed waste would be covered as soon as practicable

**AQ6**  
Works in odorous area would be avoided when weather conditions may lead to poor dispersion of odour in the direction of sensitive receptors.

### Biodiversity

#### Construction

**B1**  
All tree removal is to be undertaken in accordance with the guidelines outlined in Guide to managing risks of tree trimming and removal work (Safe Work Australia, 2016).
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<tr>
<th>Issue</th>
<th>Mitigation measure</th>
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</thead>
<tbody>
<tr>
<td><strong>B2</strong></td>
<td>A bush regeneration specialist would be engaged to take cuttings prior to the removal of fig trees for propagation and replanting at appropriate locations within the wider Silverwater Correctional Complex.</td>
</tr>
</tbody>
</table>

**Socio-economic**

**Construction**

| SE1 | Mitigation measures included in Sections 6.2, 6.3, 6.6 and 6.9.1 would be implemented to minimise impacts on traffic and transport, noise, air quality and visual amenity. |
| SE2 | Notification regarding construction activities is to be provided on site as well as on the CSNSW website, advising visitors of any alternative access arrangements in place and to exercise patience when visiting the MRRC during construction works. |

**Operation**

| SE3 | A communication and stakeholder management strategy would be prepared to establish a positive image of the facility on the local community. This may include provision of educational material and brochures. |

**Waste**

**Construction**

| W1 | A construction waste management sub-plan would be prepared and implemented as part of the CEMP. It would detail the measures to manage waste during construction, and would include the following measures as a minimum: |
| | • All soil excavated from site would be tested and subsequently managed in accordance with the Waste Classification Guidelines (EPA, 2014). Only spoil which meets the specified classification would be used for onsite reuse. |
| | • All waste, including excess spoil, is to be recycled if practicable, or alternatively taken to a licensed waste disposal facility. |
| | • All spoil reused on site as engineered fill is to be clean (i.e. free of organics and inclusions greater than 75 millimetres size) and free of contaminant. |
| | • Classify and dispose of waste (if unable to be reused or recycled) in accordance with the EPA Waste Classification Guidelines (EPA 2014). |
| | • Ensure waste is placed in skip bins positioned in defined area(s) onsite or within the site compound (if required). |
| | • Avoid surplus construction materials through appropriate planning of the construction works. |
| | • Recycle waste in accordance with the NSW Government’s Waste Reduction and Purchasing Policy. |
| | • Waste receptacles for recyclable and non-recyclable waste are to be provided at each construction site for waste generated by construction workers. |
| | • Construction workers must comply to the smoke-free site requirements whilst within the Silverwater Correctional Complex. |
| | • The EPA would be notified immediately of any pollution incidents or harm to the environment as defined under Part 5.7 of the POEO Act. |

**Hazard and risk**

**Construction**

<p>| HR1 | An occupational health and safety management plan and safe work method statements would be developed and implemented in accordance with regulatory requirements. This would address issues including: storage and handling of dangerous goods, exposure to contaminated soil, surface water and groundwater and hazards associated with landfill gas. |
| HR2 | A contingency management plan would also be developed and implemented by the appointed construction contractor to address reasonably foreseeable issues. Effective precautionary measures and strategies (where avoidance is not possible), would be put in place. This is to include emergency access/egress to the construction work site. |
| HR3 | The contractor is to ensure all construction work areas are isolated from the general public and adequately security in accordance with relevant legislation is provided. |
| HR4 | The contractor is to ensure that the efficacy of security of surveillance systems installed by Justice is maintained at all times. |</p>
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<tr>
<th>Issue</th>
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<tr>
<td><strong>Operation</strong></td>
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<tr>
<td>HR5</td>
<td>Existing site entry protocols and emergency procedures are to be reviewed to ensure the hazards associated with landfill gas are incorporated and clear guidance is provided to all site staff and external contractors regarding safe work practices prior to commencing any work on site.</td>
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<tr>
<td><strong>Aboriginal heritage</strong></td>
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<tr>
<td>AH1</td>
<td>An unexpected finds procedure would be prepared and included in the CEMP to define the actions to be taken in the event that any previously unidentified Aboriginal heritage/archaeological items are uncovered during construction works.</td>
</tr>
</tbody>
</table>
8. **Conclusion**

8.1 **Justification of the proposal**

The proposal forms part of the NSW Government’s Prison Bed Capacity Program. As noted in section 3.2.2, there is a high demand for male remand beds in the Sydney metropolitan area. The lack of available remand and reception facilities has contributed to a shortage of front-end maximum-security beds and increased transfers of inmates to regional locations where beds are available. The proposal would provide additional beds where they are needed.

The proposal would also deliver the MRRC necessary infrastructure to ensure that the centre is capable of supporting the increase in inmate population, and maintain the safe, secure and efficient reception, assessment, and screening of newly received inmates to the CSNSW system.

8.2 **Summary of REF findings**

The REF has considered the potential impacts of the proposal. It has been prepared in accordance with Part 5 of the EP&A Act, and in particular, the requirements of section 5.5 of the Act, and clause 228 of the Regulation. The REF has documented the potential environmental impacts of the proposal, considering both potential positive and negative impacts, and recommending management and mitigation measures to protect the environment where required.

8.2.1 **Clause 228 considerations**

Clause 228 of the Regulation specifies the matters that must be taken into account, for the purposes of Part 5 of the Act, when consideration is being given to the likely impact of an activity on the environment. The potential impacts of the proposal have been considered in sections 6.1 to 6.9 of the REF. The Clause 228 matters and how they relate to the proposal are considered in Table A-1 of Appendix A.

8.2.2 **Ecologically sustainable development**

Department of Justice is committed to ensuring that its projects are implemented in a manner that is consistent with the principles of sustainable development. These principles would be incorporated into the management systems for the proposal.

Table A-2 summarises how the principles of ecologically sustainable development adopted by the EP&A Act have been addressed by the REF process.

8.2.3 **Significance of impacts**

Whilst some potentially negative impacts may result from the proposal, these impacts would be short-term and localised and are not considered to be significant. Section 7.2 of the REF provides the mitigation measures that would be implemented to reduce the potential for impacts and manage the environmental performance of the proposal.
8.3 Conclusion

Environmental investigations were undertaken during preparation of the REF to assess the potential environmental impacts.

The REF identifies that the proposal would have the potential for both positive and negative impacts, and it identifies mitigation measures to reduce or manage the negative impacts.

There are considered to be no significant environmental issues associated with the proposal. Any potential adverse impacts resulting from the proposal are considered manageable through the implementation of mitigation measures in section 7.2.

In conclusion, the proposal is needed in order to address demand pressures on the correctional system that has resulted in a number of inefficiencies and operational challenges. It is considered that the adverse environmental impacts would be generally short-term and localised in nature. With the adoption and implementation of the proposed mitigation and management measures listed in section 7.2 the potential environmental impacts of the proposal would be adequately mitigated and managed, and are not considered to be significant.

8.4 Recommendation

It is recommended that the relevant environmental management plans be developed prior to commencement of the construction and operational phases of the proposal, incorporating the mitigation measures outlined in section 7.2 of this REF.

Subject to implementation of the measures to avoid, minimise or manage the environmental impacts listed in this REF, the proposal is recommended for approval.
9. References


Australian Standard (AS) 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites.

Bannerman SM and Hazelton PA, 1990, Soil Landscapes of the Penrith 1:100,000 Sheet map and report, Soil Conservation Service of NSW, Sydney.


Department of Environment, Climate Change and Water (DECCW), 2011, NSW Road Noise Policy.

Department of Environment, Climate Change and Water (DECCW), 2009, Interim Construction Noise Guideline.


Environment Protection Authority, 2012, Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases


Guymer Baileys Architect, 2018, Metropolitan Remand and Reception Centre Master Plan, issued 9 January 2018.


NEPC, 2013, National Environment Protection (Assessment of Site Contamination) Measure, 1999

NSW Acid Sulfate Soils Management Advisory Committee (ASSMAC), 1998, Acid Sulfate Soils Assessment Guidelines.


Roads and Traffic Authority (RTA), 2010, Traffic Control at Work Sites.
Safe Work Australia, 2016, Guide to managing risks of tree trimming and removal work
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<tr>
<th>Revision</th>
<th>Author</th>
<th>Reviewer</th>
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