# 1 Introduction

# **1.1 Proposal identification**

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# **1.2 Purpose of the report**

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# 1.2.1 Commonwealth legislation

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# 1.2.2 NSW legislation

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<sup>'</sup>V@ Áå^•& å] œi } Ái Áœ Á; [] [•^åÁ [ ¦\ Áæ) å Áæ• [ & ãæe^å Á } çã [ } { ^} œi Áãe Á@æç^Áà^^} Á `} å^ ¦ œa ^} Á§ Á@ Á&[ } c^¢o Á Á&] ĕ \* ^ ÁQCÌ Á; Á@ ÁEnvironmental Planning and Assessment Regulation 2000É Áæ& d ¦• Á§ Ás an EIS Required? Best Practice Guidelines for Part 5 of the Environmental Planning and Assessment Act 1979ÁQ Áæ) ÁOQÌÁ ` ă^å ÅÑ \* ă^|ã ^• DÁÇÖ WOELÉFJJÍ EFJJÎ DÉ @ Á Threatened Species Conservation Act 1995ÁQ/ÙÔÁC & DÉ Management Act 1994 ÇOT Á OBCDÉ à Å @ ÁE • dæi ÁÕ [ ç^¦} { ^} œi ÁEnvironment Protection and Biodiversity Conservation Act 1999ÁQÙ ÓÔÁC & DÉ Á

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  Õ[ç^\}{ ^}oÁO^]ada( ^}oÁ[+ÁO)çã[]{ { ^}oÁsa) å Ác@Á,^^å Å ([A; ae ^ÁsadÁ^-^||adÁ[Ás@ÁOE•cladañaa) Á
  Õ[ç^\]{ ^}oÁO^]ada( ^}oÁ[+ÁO)çã[] { ^}oÁsa) å ÁO}^\\*^ Å[ !Ásadáa^&ãa[] Åa ^Ás@ÁOE •cladañaa) Á
  Tājãc^!Á[ !Ás@ÁO}çã[] { ^}oÁ[+ÁO]çã[] { ^}oása) å Ác@ + •• { ^}oása) å Ásad] ![çadÁã A´a^ ă â ^ å A´A`a A´A`a A`Lás@ÁOÚÓÔA
  OBCIDÁ

Á

V@s ÁÜÒØÁ; ¦[çãå^•Á∞Á\*}çã[}{ ^} cæk/æe•^••{ ^} óA; ¦Á∞Á; ¦[][•^åÁ, [¦\•Á; ¦Á∞Á, `;][•^•Á; -Á •^&cā;} ÆFFEŽV@s ÁÜÒØÁ&[}&]`å^•Ás@æck@;!^ÆrÁ;[Áã^|î Á\*ã\*}ã&cæ)ó&;] æ&cá'}å^!Ás@ÁDÚBOEXO&o&;)åA coœexÁæjÁDÒÙÆrÁ;[óA^``ã^åEŽV@Áæ;]; ¦[çæk/i, -Ás@Á¤ÙYÁTā;ã a\*c°¦Á{¦ÁÚ|æ}}ā; ÆrÁ,[óA^``ã^åEŽ



Øā ʿ\^ÁFËHÁU|[]|•æļÁæ^æðā, ão@áj, åã&ææãç^Á; ãr@áj, åã&ææãç^Á; ãr@áj, åã</ [ ] الكَهُمُ اللهُعَةِ المُعَامَةُ Á

# 2 Need and options considered

## 2.1 Strategic need for the proposal

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Α

V@ ÁDisability Standards for Accessible Public Transport 2002 ÇÖÙŒÚVDÁæ) å ÁDisability (Access to Premises – Buildings) Standards (2010)Á( æå^Á} å^¦Ác@ ÁÖÖŒÁ^˘`ã^ÁæļÁ`à|ã&Áæ) •] [¦cÁ āj ¦æ d`&č ¦^Êáj &|`åāj \* Á, @æç^•Ê&[Á¦[çãâ^Áč||^Á&[{] [ãæ) c%aã æà|^å Áæ&A^•• Áa^ÁG€CŒÁÁ Á

V@^Á,\[]][•æ‡%aí&@\^-{\^Á,^^å^åÁ{{Á{]}}[;ç^Á^\\^Á,^\ç&&^•Á\$J&\`åð,\*Á\$z^{ •Á`&@Áze Áæ^Áa^\c@3,\*ÉÁ |ð?@23,\*ÉÅd`&c`\æ‡45Jc^\*\äĉÁze}åÁ{[Á\[çãa^Á^\ç&&^•Á@ezA{ ^^ó&@Á^``ã^{ ^}@A( ^}@ÁÖÖCDÉze)åÁ &`\\^}oÁcee}åæå•Á{[¦Ásia?æà|^åÁxe&&^••ÉÁ

. V@Á/¦č•oÁ@æe,Á&¦^æz^åÁæÁT æ)æti^{^}oÁÚ|æ)Ás@æeAæã(•Á{[Á¦d^}\*o@}Ás@A´}&@Á`}&cã(}Á;áA@Áãr|æ)åÁsæ Á à[c@ásaÁt[č¦āroÁŝ^•cā)æsā(}}Áse)åÁse†•[Át]¦Ásãç&SA´+•Aåč¦ā)\*Á?ç^}o•ÈÁÓæe ^åÁ[}Á@ärd[¦&Sæa‡Ás!^å\*áse)åÁs@Á [àb^&cãç^•A[,Ás@Á[æ)æti^{^}oA]|æ)Ê£s@Á/¦č•oÁ?}çãræti^•Ás@Áse)}čætAše[A@áse]\*Áš[Ásk]&s¦^æ=^Ás[Ásea][čóA H΀ÊEEEÁs^ÁGEFJÁse)åÁ[č]åÁ^ččã^ÁseÁ;@æt-Ásæa]æa)|^Á[-Áse&Sa[{{[åæsā]\*Áčč¦^Á[]^¦æsā]}æaA^^åÉÁÁ

### 2.1.1 Strategic planning and policy framework

V@Á,¦[][•æþ/ឆ´Á^^å^åÁţíÆţ]¦[ç^Á^¦¦^Á^¦çã&^•Áæ)åÁţÁ¦[çãå^Á^¦çã&^•Áœ)æÁ ¦^˘`ã^{ ^}œÁ,Áœ ÆÖÖOŒæ)åÁ&`¦¦^}ơÁœ)åæåå•Á[¦Æåãæàà|^åÁæ&&^•Æ Á \/@Á ![][•æþ/ឆ´Æk]}•ã «\}cÁ ã@á@ Á¢ dæv\*ãkéæĩ,•Áæ)å&ä^&æī}•Á Á^/ocæ)dé dæv\*ãAá læð

V@^Á,¦[][•æ‡k¥árÁ&[}•ãrc^}ơÁ,ão@xb@^Ádææc^\*ã&k4æã[•Áæ)å/ååå^&cã[}•Á;~Á^|^çæ)ơÁdææc^\*ã&Á,|æ)}ãj\*Á å[&č{^}o•ÉÁUdæec^\*ã&Á,|æ)}ãj\*Áå[&č{^}o•Á,[•ơÁ^|^çæ)ơá[Áo@A,¦[][•æ‡k4æc^A\$aå^}cãað\*åAà^|[,ÈÁ

### NSW 2021 – A Plan to Make NSW No.1

NSW 2021 A Plan to Make NSW No.1 QÖ^] æld(^} chi - ÁÚ¦^{ al kæj å ÁÔæàāj ^ dÉGEEFDÉa Ás@ Á>ÙY Á Õ[ç^¦}{ ^} cq Á dæe^\* ã&kái • āj ^•• Á |æj Ék ^ ccāj \* Á, lāj lãa? • Á[ lás&cāj } Áæj å Á`ãaāj \* Á^•[` k& Áæ][ &ææāj } Á [ç^¦Ás@ Á ^ ¢ cÆEA ^ æl•ÈKQÁ ^ or Á[` cháēç^Á dæe^\* ã • Ás] &|šāj \* Á^à`āäj \* Á^à`ãaåj \* Á^e[ { ^ ÉA ^ č ¦} Á`æ‡äč Á • ^ ¦çã& • ÉA ^}[ çæe^Ás] - ¦æe d` &č ¦ ^ ÉA d^} \* c@} Á[` ¦Á[ &æ‡Á\*} çã[] { ^} cÁæj å Á&[ { { ` } ãa? • Áæj å Á^• e[ ¦ ^ Á \* [ç^¦} { ^} cÁæs&[` } cæe`As] - ¦æe d` &č ¦ ^ ÉA d^} \* c@} Á[` ¦Á[ &æ‡Á\*} çã[] { ^} cÁæj å Á&[ { { ` } ãa? • Áæj å Á^• e[ ¦ ^ Á \* [ç^¦} { ^} cÁæs&[` } cæe`As] = ÉA

V@^Á\*[æ†+ ÉÁsæt\*^or-Ása)åÁsæSca∏i}•Á§iÁs@ãrÁj|æ)jÁ^∧Ás@?Áj¦āj¦ãoã∿•Á[¦Á\*}åāj\*É4\*`ãâāj\*Ása^&ãrāj}•Ása)åÁ -[&\*•āj\*Ás@ Ásiæ∂Á[ÁsæÂ,[¦\Aj-Ás@Aj\*à|38A/^&q[¦ÈÁ Á

V@arÁj¦[][•æ‡ÁarÁjæica8&ĭ|æ#|^Á^|^çæ);cÁt[Ác@∘Át[||[¸ā]\*Á⊃ÙYÁO€GFÁ\*[憕KÁ Á

- •Á Õ[æ‡Ä Á Á^å & Å á æç^|• Áæ] ^• Á
- •A  $\tilde{O}$ [  $a = A \dot{A} \dot{A} \dot{A}$ ] | [  $c^{A} \dot{A} \dot{x} \cdot d$  {  $A \dot{A} \dot{x}$ ]  $A \dot{A} \dot{x}$ ]  $A \dot{A} \dot{x}$
- •Á Õ[æ¢ÁFIÁŧ8¦^æ•^Ás@Á[]][¦č'}ãtã'•Á[¦Á]^[]|^Á,ãt@ászásãã æsiājãĉ ÁsìÁ]![çããā]\*Á`]][¦œÁs@æzÁ ^^óÁ c@ã/Áşiåãçãã`æ¢Á,^^å•ÁsejåÁ^æðã,Á@ãA[[c'}cäsdÁ
- •Á Õ[æ‡ÁƏ€Á Áàč đå Áãç^æà|^Á&^} d^•Á
- •Á Õ[æ¢ÁGÍÁÁ§3,&¦^æ•^Á;]][¦č}ããð•Á;[¦Á^^}ā;l•Á§3,Á¤ÙYÁ;[Á\*||^Á;æb;ä&ajæe^Á§3,Á&[{ { `}}ãĉÁjã^A
- •Á Õ[æ¢ÁGÏÁÁ\*}@æ)&^Á&`|覿¢É&\^ææã;^ÉA][¦cã;\*Áæ)åÁ^&\^ææã;}æ4Á;][¦cč}ãæ?•ÉA

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V@^Á,\[][•æ‡ÁārÁ懕[Á^|^çæ)óAt[Ás@/ÁÞÙYÁGEGFÁ,\ā[\āc&ascāt]}Át[Áa`āţåÁ,@æ¢ç^•Át[Áa`}ãa3bæ)d^Á ā]&\'^æ•^Ás@/Á]^^åÁsæÁ,@a3k@A,æ•^}\*^\•Á{ àæ\Áæ)åÁsåã^{ àæ\děĂ Á

V@A,|æ)A^æ{ æ\•Ash^[ãç^¦^A,[¾]]![ç^åAs[[¦å3]ææā]}Ash^ç ^^}Adæ][¦d4;[å^+æā]å&å\*A;^}^,^åA -{&`•A;}As`•q[{ ^¦A;ææā-æskaā]}As[Ash^[ãç^¦As@A@ã@•d4;[••ãa|^A:aea}åæå\*A;An^¦çã&^As[Asba}\*][¦dÁ `j•^¦•Aseski[••As@ApÙYA;^ç [¦\ÈA

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### State Infrastructure Strategy 2012-2032

V@ÁState Infrastructure Strategy 2012-2032 CQ ⊰æd`&č¦^Á⊳ÙYÉAO€FCDÁa ÁæÁO€Á^ælÁdæe^\*^Áo@æaÁ ●`]][¦œÁs@Áa^|ãç^¦^Áæ)åÁ`}åãj\*ÁţÁ&j⊰æd`&č¦^Á§ Á₽ÙYÈÁ Á

V@ Ádæ^\*^Á, čdā ^•Á@eezÁed{ [•O €Á, ^¦Á&^}OÁ, Á&[{ { čo¦Áb[č¦}^•A&[Áo@ ÁU^å}^^ÁO^}dædÁ Óč•āj ^••ÁÖã dãb AQÔÖD Áed^Áa^Áa^Á, ča jāb Áda) •] [¦oÁeg) å Ás@eezÁ, ča jāb Ada avati avati avati avati avati āj & '^æ^Áaš ^ Áb[Á, ![b^& c^å Á^{ } ] [[^{ } ^ of +] c@ Áeg) å Ás@eezÁ, ča ja ka avati avati avati avati avati āj & '^æ^Áaš ^ Áb[Á, ![b^& c^å Á^{ } ] [[^{ } ^ of +] c@ Áeg) å Ásč !!^} of Ada avati avat

### A Plan for Growing Sydney

A Plan for Growing Sydney (Ö^] æˈɑ{ ^} ɗʌ ِحْلَاهِهُ } ð] \* Áæ) åÁÒ} çā[ } { ^} ɗῷÚÓDÉAGEFI DÁ ^ œ ʎ ِ` ơُአ@ Á ﷺaʿA; ﴾ Áæ) åÁ¦æ{ ^, [ ¦\Ás@æcÁ, [ ` |åʎå^|ãç^¦Ấ[ 憕 Áãa^} cãa? åÁ[ ¦Ás@ Á'¦[ , c@á, حÂĴ à} ^ ÈÁ Á

U}^Áţ-Ás@ Áţ`¦Á^^Á\*[憕Áţ-Ás@ Áşlæ) Á≋iÁţÁsAÁseÁS[{]^cãaãç^Á\*&{]}[{^Á ão@Á[¦|åËS|æe•Á^¦çã&^•Áse)åÁ dæ)•][¦dĚ4QuÁţ¦å^¦ÁţÁse&@a°ç^Ás@ařÁ\*[æ†É4ţ}^Áţ-Ás@A^^ÁseScāţ}•Ása^}cãa?åÁsiÁsa^åa^[ãç^¦3]\*Ás@ Á 3]-¦æed`&c`¦^Ás@æeÆsiÁj^^å^åÁsa^ÁS{[}}^&c3]\*ÁSA}d^•Á,ãc@ÁseÁj^ç[¦\^åÁslæ)•][¦cÁ\*^•c\*{ÈÁ Á

V@A,\[][•æ‡A\$arÁ&[}•ãrc^}oA,ão@Ax@arÁ,|æ}Á&rÁ\$[]\[çā]\*Á^¢ãrcā]\*Á,`à|3&Axlæ;•][¦oAi^¦çã&^•Á§J&|`åã]\*Á āj&\^æ•^åAxe&&^••ãaājãĉÊ£\$3j&\^æ•^åA&[{ -{\cAa}åAx[[\ArX~a&zā}}oAtæ;^|Axā[^•Axa}åAx@\\^-{\^Ar`]][¦cA āj&\^æ•^åA,æd:[}æt^A,-Á,`à|3&Axlæ)•][¦cA\$JAÛ^å}^ČA

### **Central District**

Ô[&\æd][[Á@|æ)åÁY@eb-ÆinÁ[&æec^åÁ, ão@),Á&|[•^Á,¦[¢ã[ãc Át[Ás@AÔ^}dæhÖād&boÁ}å^!Ás@Á,|æ)ÈŹv@Á |^\*ā]}ÆinÁ[&`•^åÁ]}ÁsA}d^•A, ār@Å[[[åÁ]`à]&AAdæ)•][!óAea)åAsaā[•Át[Á,~^!ÁseA\*![]3]\*Ásâā;^!•ãc Át-Á@at@A æt{^}ãc Áaã;ā]\*Ása)åA[[¦\ā]\*Á}çã[]{ ^}orÈdu}^A, -Ás@A;!ā[!áãa\*•Át[!Ás@AÔ^}dæhÓãd&boÆi At[Ai]![ç^A dæ)•ãxAs[}}^&cai]+Ás@[`\*@[`\*@[`\*@[`As@AÔ[[àæhÓ&s[][{ & AO[[!!ãa][!Át[Ás^^cc^!Aj]\/&A^}d^•Aea)åAdæ)•][!óÁ \*æe^,æê•É&ea)åAs[]![ç^A&t]}\*Asaā]•ĚÅ Á V@Aj![][•^åÁ]\*!æså^Át[-Ás@A;@ed-ÆinAs[]•ã:c^}oÁ;ã@As@Açãaā]}Át[!Ás@AÔ^}dæhÖãd&boAs@[`\*@Á ãt]![çā]\*Ás@Aœada[`!Asa)åAsaA, `a]&Asa&As^••ĚA

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# Disability Standards for Accessible Public Transport (2002) and Disability (Access to Premises – Buildings) Standards (2010)

V@ ÁÖÙŒUVÁea) å ÁÖ ãi æaàðjaã: ÁÙcaa) å ælå e ÁG€F€Áesk ^ Ás[co@4/^\* ãi |æaāg^Á ácaa) å ælå e Á; æaå ^ Á`} å ^ ¦ Ás@ ÁÖÖO⊞Á Òæ&@Á cæa) å ælå Á∿e cæaà |ãi @ • Á, ¦ ^ • &lãa ^ å Á{ ājā[` { Ár cæa) å ælå e Á[-Áes&& ^ • e ãaðjãa: Á[¦Á]``à |ã&Áslæa) • ] [¦cÁ à`ājåāj \* • Áea) å Á&[}ç^^ æa) & ^ • Áea) å Á,``à |ã&Áslæa) • ] [¦cÁ, ¦^{ ãi ^ • Á^•] ^ &cãg,^ |^ EÁO[co@A\*e cæaà |ãi @ÁesA[æ) å æa[¦^ Á `] \* ¦æaå ^ Ásā[ ^ cæaà |^ Á{[¦Á]``à |ã&Áslæa) • ] [¦cÁ]¦^{ ãi ^ • Áslæa} ( ^ ^ o Áso@ Á; \^ • & að ^ å Áes&& ^ • e ãaðjãa: Á^```ã^{ { ^} œ ÉÁ

. V@Aj\[][•æ‡Aşi&|čå^•Áx@A^å^ç^|[]{ ^}ơh(Ax@AÔ[&\æti[Á@]æ}åAY @ee+Ati[Aj\[çãa^Axe&&^••A[¦A ]^[]|^Á,ão@axa&ãaãaãcAşiAxe&&[¦åæ}&^Á;ão@axi\]^}ơh(\*ã=]æsãç^Ase}åA^\*č]æti[¦^A(ce)aåe+EA

# Ferry Wharf Upgrade Program

Ü[zeå•Áse)åÁTzetőrát ^Ást Ás@Áå^|áç^¦^Ász\*^}&°Át[¦Ás@Á]\*¦zeå^Át[~Ás@ÁÙ^å}^^Á<!\^Á? (zestç^•Á, áro@tj Ás@Á V[ze)•][¦ÁÓDB&&^••ÁÚ![\*¦zet[ÁÇVOEÚDEÁ/@Á]^&ãáBA4(àb%&cáç^•Át[Ás@ÁU]^å}AY (zest-ÁN]\*¦zeå^ÁÚ![\*¦zet[Á ÇZY WÚDÁsj &]čå^Ás@Át[||[]]]\*KÁ

- Ą
- •Á Q ] ¦[ ç^Áæ&&^••Á[ ¦Áj^[ ] |^Á, ão@&a æa äjaãa?•Á
- Á Ò} @ e) & Á @ Á ~ a) & Á / Á j c \ & @ e) \* a \* Á
- •Á Q ] | [ ç^Á æ •^} \*^\Áæ ^} ãæ A

- •Á T ^^ ơ & ːˈi/^} ơ & ^{ a) å ka) å A; aa) å A; aa) Å č i^ A; [, c@ Á
- •Á Tājāįār^Á&[}•d 8cāj}Á&[]a&sorÁţÁ&\*•d[{^!•Á=b}åÅ;@ad-Áj]^!aæāj}•Á
- Á Tājājā ã^ Á @ Á & [• A [, ] ^ !• @ ] Á a a A a a a 8 A A
- $\bullet \dot{A} \hat{O}[\dot{A}] | \dot{A} \tilde{a} \otimes \dot{A} \hat{A} \otimes \dot{A} \otimes \dot{A} \hat{A} \otimes \dot{A} \hat{A} \otimes \dot{A} \otimes \dot{A} \otimes \dot{A} \hat{A} \otimes \dot{A} \otimes \dot{A}$
- Á Öã & [ ` ¦ æt ^ / \$ j æt ] ¦ [ ] ¦ãæe^ / Áse& cãçãã à / Åse / s@ A @ e c ^ A
- •Á Ò}•̦^ÁæļÁ, @eecç^•Áæ&@avç^Á&[{] |ãe) &^Ás^ÁOECCÁÇ, @:\^Á,[••ãa|^DÁ, ão@ko@ ÁÖã æàããĉ Á

### Á

. V@A,\[][•aaþ/ਬiA&[}•ãrc\*}oA,ão@abaļAo@A(àb%&aãç^•A(-Ao@AÜ[æå•Aæ)åATælããã(^AØYWÚEAQA)ælc&&`|ælÁ c@A,\[][•aaþÁ,[č|åA,\[çãå^AoæA^å^ç^|[]^åA,@eel-Ao@oeaA(^^orA&`\\^}on&åãræà|^åAoæ&&^••A(cæ)åælå•Aæ)åA ]\[çãå^•A,[c\*}cãæpA{[\A`č\^A`\[,c@EA Á

### NSW Long Term Transport Master Plan 2012

V@ÁNSW Long Term Transport Master Plan ÇŠVVT ÚDÁná ÁzáG€Á^ælÁ,jæ) Át[Án[]¦[ç^Ás@Áslæ)•][¦óÁ •^•c^{ Ánj Áp-ÙY EÁQÁ\*^o-Á[`Ónô@Áslæt\_^, [¦\Át[¦Ás@Áp-ÙY ÁÕ[ç^¦}{ ^}ónt[Æn\*]åç^¦Áæ) Ánj c\*\*¦æe\*åÉÁ {[å^¦}Áslæ)•][¦óÁ^•c^{ Ás@æeÁ]`o-Ás@Áslě•d[{ ^¦Áã•óAçV-p-ÙY ÉAG€FGæeDÉA Á

#### , . V@•Áj|æ)Áæ†+[KÁ

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- $\bullet \acute{A} \quad \tilde{O} \quad \tilde{a} \\ \dot{a} \\ \bullet \dot{A} \\ \dot{a$
- •Á Cā^}cāā?•Áǽ, |æ) \* åáæ) åíæ] [¦åā] æz^åÁ•^ớ, Áǽ£cā] + 4͡ç^-{ ¦çā8^Aī; ] |[ç^{ { ^} { ^ 3 o Áb}} åÁ ā] ç^• c{ ^} o Dá; Áæåå!^•• Á&@æd|^} \* ^• Á
- •Á Ú¦[çāà^•Áæá; æj Á; Áč č ¦^Á^¦çãk^Áæ) å Áşi નæ d`&č ¦^Áå^ç^|[] { ^} @ A @ Bk@Áč č ¦^Áå^&ã ā; •Á āļÁà^Á |^``ā^åÁţ Á`]][¦dÊæ) å Áæt æj • oÁ, @ Bk@á; ![][•^å/áşi ç^•q` ^} or Á&æ) Áà^Áçæti ær^åÁ

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CEÁ ^ Á {|^{ } A} QÁ, Á \$@ Á, |æ), Á≣, Á@ Á, ^^ å Á[Áæåå ¦^•• Á&[}\*^• qā]} Á\$J, Á@ ÁÛ^ å} ^ ÁÔÓÖÈÁ/@ Á, |æ), Á[ c\*• Á c@æaf, ç^¦Áv@ Á, ^¢ dQ€Á ^æ• ÉÅtā]• Á\$J, q[Áx@ ÁÛ^ å} ^ ÁÔÓÖÁæ ^ Á[¦^&æe Qát[Á':[\_ Ásî Á+FÁ, ^¦A&^} dĚ /@ā Á |^] |^•^} or Áæj, Áæå å ãaā]} ælÁ ÎĒE€Átā]• É&@ Á``ãçæ† } QÁ, -ÁU GÁ cæ) å ælå Ásì • ^• È/@ā Á':[\_ c@Á&æ} } [ OÁs^Á æ&&[ { [ åæc^å Á]} Ás@ Á ¢ã cā]\* ÁÔÓÖÁ[æå Á, ^ç [ !\Ê4, @&@4 [ ` |åÁ&[ { ] [ ` } å Á&[ } \* ^• qā]} Áse} å Áse -^ &oÁ ^&[ } [ { æA\* ![\_ c@Æd£], Ásj c\* !æc^å Á, ` à ]æA4 æ] • ] [ !OÁ[ ] ` aá & aæ a Åsi ` 4^- à Åa ( Á æe - Á&[ } \* -• qā] } Ásj á ^&[ } [ { æA\* ![\_ c@Æd£], Ásj c\* !æc^å Á, ` à ]æA4 æ] • ] [ !OÁ[ ]` qā]} Ásī Ás@ (Å - [ !^ A, ^^ å^å Ase - Á&[ ] \* ^• qā] } Ásj á c@ ÁÔÓÖÉÆsJ &|` åā] \* Ásj & '^æa ā] \* Ás@ Á; æd[ } æt ^ A; -Átā] • Át Ás@ Á&ãc Ásî Á+!!^ ÈÁ Á

V@^Á,¦[][•æ‡/āi/Á&[}•ã:c^}c^{,}ão@ko@/A\*[懕Á;~kó@/Á,|æ);Áæ:/ãoA;[`|å/A;¦[çãa^ÁæÁ^å^ç^|[]^åA;@æ‡-Áæ‡[}\*Á c@ 碢ã:cāj\*Á^¦¦^Á[`c^Á;@a&@á;[`|å/A;&\~æ\*^Áx@/A;æd:[}æ\*^A;Aki]a;•Át;Ás@AÙ^å}^^ÁOÓÖ/As^Á^¦¦^ÈA

### Ferry Strategic Operations Plan

V@Á/-ÞÙYÁFerry Strategic Operations Plan [čd], ^•Á@Á¦æ{ ^, [¦\Á[¦Á[]]¦[ç]];Á@Á&čki] › Á Ù°å}^^ÁØ^¦lði•ÁÞ^ç [¦\Á;ç^¦Á@Á@¦dÉ( ^åã { Áæ)åÁ[}\*Áv¦{ Åæ Á ^||Áæ Áã^} @â`j;Á^^Áæ•^o Á æ)åÁ^•c^{ •Á^č ă^àÁ[Áŝ/jãç^¦ÁæÁæ)\*^Á[Áj]¦[ç^{ ^}oÈV@Á]æjÁ`{ { æëā^•Á@Áœĕ •Á[Áœ &č¦l^}oÁ, ^ç [¦\Áæ)åÁŝæ^åÁ[ÁsAæ)\*^Á[Áj]æ]}j;Áæ)åÁ[]æ}åA[]æ &č¦l^}oÁ, ^ç [¦\Áæ)åÁŝæ^åÁ[ÁsAæ]\*^Á[Á]æ]}j;ÁæjåÅ[]æ] ãa^}cãði•Áæ^æ Á[Ái]]¦[ç^{ ^}oÁæ)åÁ]œe^•Á[Á]æ]}j;ÁE[Áæ&@ãç^Áœ®•^Ái]]¦[ç^{ ^}oÈV@Á aj]¦[ç^{ ^}oÁæ^Ási][\^}Ás]d[Áç][Á]œe^•Ká

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# 2.2 Existing infrastructure

### 2.2.1 Cockatoo Island

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V@Á[ ^ \/Áseh~æáţ, Ás@Ásē |æ) å Áse6&[ { { [åæe\*•Ás] å\*•dãed4si ã¦åð] \*•É6&[ }&¦^c/Ájæeh•Áf[ { /ás^{ [ |ã @åÁ à ã¦åð] \*•É6&¦æ) ^•É6s¦^Ás[ &\•Áse] å Á @æb-Á^|æe\*åÁrd \* &c' ¦^•È6P[ \_ ^c^|É4( æ)^Áţ-Ás@Ási ã¦åð] \*•Áse) å Á g @æbç^•Á ^ ¦^Ásh~{ [ |ã @åÁsee\*¦Ás@Áse[ •` ¦^Át, Ás@Ás[ &\ asåÊ5, @ãk@é@æe ÁråAk[ Át] ^} Áseb^æe Át} Ás@Á } [ ¦c@¦ } Áse) å Á\*æe e\*¦} Át ¦^•@¦ !^•É4, ãs@ás@Á\*æe e\*¦} Áse] ![ } Ás^ð] \* Ás@Á[ &ææāt] } Át Ás@Ási !!^ } e4, @æb-ÈÁ Á

V@\Á\æe\_c^\}Aæg`|[}A\$g&|`å^•Ax@AÔ[&\æq[[Á@|æg`aÅAY@eeb-Æxx@A[¦{^\Axeab{ 5]}ãdæeqā]}Abi`āpåā]\*Axeg`aÅA |^{}æg`o=Aj\_AxeAj\_^{{ [|ãæqA\*(æbå^}ExeAjaA)ExeAxeg+[A&[];cæg]•Á;æec^\;-{[}o4,[|\•@[]•EA/@•^AxeA^Aj[&æec^àAxeg æê -{[{ Ax@Aj,\[][•æqAxeA^æEA/@Axeab{ 3];ãdæeaā]}Asi`āpåā]\*•AxeA&`;\^}d^AgA`•^Á;ãx@Axe[{ { ^\&ãæqAx^}æg`o=Á `j•ā]\*Ax@Asi`āpåā]\*EAA

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V@^Á,[¦c@\_¦}Áæ];|[}Á&[}cæa]•Áv@^Á&æa[]ā]\*Á\*![`}å•Áæ)åÁārÁ[&æae^åÁ5jÁ&|[•^Á];|[¢ā[ãc`Á[Áo@^Á,@aeb-ÈÁÁ Á

Ö`^Át[Ác@Á@ard[¦^Át,-Ác@Áar|æ), åÁt[¦Ár@a], Áa`a], ákæi), åÁt}\*āj^^¦āj\*Édo@¦^Áar, Ázek/@ard[¦^Át,-Á&[}cæt[ājæeaf], ÈÁ V@¦^Á@æç^Áa^^}, Áçæta]`•Ác`]^•Át,-Á&[}cæt[ājæojorÁs], Ás@Ár[ā]+ÉAt`¦-æ&^Ë;æc^¦ÁæojàÁt'|[`}å,æc^¦ÉÁUç^¦Á ca[^ÊAc@Á/¦`•Ó@æeAt[æ]]^åÁæojàÁ^{{ ^åãæc^åAj,æojorÁs], Ás@Áar[æ];åÁæojàÁsJ&j&ajàÅt'[`}å,æc^¦ÉÁUç^¦Á &æ]]āj\*ÉA,ãc@Azej^Át'][`}åÁt[¦\•Áj¦[][•^åÆsJÅc@•^Áæt^æeAt[Áa^Ásãã&`••^åÁ,ãc@Ác@Á/¦`•o4j,¦ãt¦Át[Á à^āj\*Á}å^¦cæt^}EX

### 2.2.2 Landside facilities

- •Á OEÁ@ád[łačkáːǎpláð]\*Á}[,] Ásee Ás@ÁT`•oc`¦ÁÙcæeða]}ÊÁ,@a&@A^¦ç^•Ásee Ás@A'}d;a) &^Át æe^; æ Ák[Ás@A] ã/aa) åÁsa Á ãč æe^åAsiða Asqî Áqî Áqî Asqî Áqî Ágê çad-Á
- •Á OEå{ āj ār dæzāņ^Ábǔ āja āj \*ÁÇ•^a Ásee ÁseA æj \*^¦Ð^&č ¦ãĉ Áţ~a&A Ásej a Á&[}~^¦^} & Abǔ āja āj \*DÁ[ & æz^a Á æåbæ&A> 6As@ ÁT `• c^¦ÁU æzāį }Á
- $\bullet \acute{A} OBS \& [ \{ \{ [ å a eetil ] \} / A ~ a e c h e e h a c h e e h a e h a$

- •Á OEÁ,^¦{ æ}^}o\*&æ{ ]Á;āc^Áţ Á;@Á,^•oA; Á;@A; @ed-A;~^¦ā;\*Áçã;ãt !•Á;@A;] cā;}A;Á;&æ{ ]ā;\*Á;ç^¦}ã;@A [}Á;@A;]æ}åÅ;QP[¦o@';}Á;Q;![}ÅUæ\A;!^&ã;&dDÁ
- •Á Y ãā^Á, æt\, æ`•Ás@æcÁ`} Áset[}\*Ás@A{[ !^•@! !^Á\$[ }}^8cÁ\$[ Ás@Á\$ee{ ] ā]\*Á\*![`}åÁ\$[ Ás@Á, ^•oÁse) åÁs@Á ^æ c^\}Áse] ![}Á\$[ Ás@Á[ čoÁ
- $\bullet \acute{A} | \acute{A}_{a}a \& \& | \land \acute{A}_{a}a \& | \land \acute{A}_{a}a \& \land \acute{A}_{a}a \& \bullet \acute{A}_{a}a \& a \& \land \acute{A}_{a}A \& @ \acute{A}_{a}a & \acute{A} & \acute{A} & \acute{A} &$
- •Á T [ ¦^Áaː [ ﷺ] ʿÉko@ Áāj å`•d ﷺ A' ko@ Áāj å Á [ ¦\āj \* Á@ æbà ] ʿÁA / [ ] Å æc à Á` ko@ A @ æb A' [ { Áb@ Á @ æb A æ[ } \* Áb@ Á [ ` o@ +] Á ¢ c^} o A Áb@ Æ |æb å ÈA

V@Á, @eet-AfarÁ&[}}^&c^åÁ&[Afar]eet;å#ajaåÁ;¦^&aj&orÁçãæA(`|caj|^A);æc@EÁ,@ank@A(^¦\*^Á,AeetAk@AT`•c^¦AÙcæeafi}ÈÁ QuÁ([•cArãčæeafi}•Ak@Á);æc@Aket^Á}¦^•c1a8cc^åAfarÁ;åac@AetjåA(;{{AjætoAjrAeet\*^A&[}&i^cAjæç^åAket^ærÁ c@æeAket^Á[}|^Á^•c1a8cc^åAs^Áx@Aj[•ãafi}āj\*ÁjAáx@ÁT`•c^¦AÙcæeafi}As`ājåāj\*EÁ;@ank@Ax[}cāj`^•Ak[A[;{A c@ÆAtæc^,æÂ{}d^A[Axec@Aket]a;jäj\*ÁjAkec@AT`•c^¦AÙcæeafi}As`ājåāj\*EÁ;@ank@Ax[}cāj`^•Ak[A[;{A

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# 2.2.3 Cockatoo Island Wharf facilities

- •Á OEÁ { æl¦Á } &[ç^¦^åÁ\*æ) \*, æ̂Á, Áæà[čóÆrÍÁ; Áæ) åÁ } &[ç^¦^åÁ, [}d[]}d[] A[Áæà[čóÆrGÁ; Á , @3&@Áæ^Á&[}} ^&c^áAá[Áæ&[] & '< AborcôÁ; } Ás@A[ !^• @2 !^A
- $\begin{array}{c} \bullet \dot{A} & \dot{O} = \dot{A} & \dot{A} &$

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Øāt`¦^ÁGËFÁ,¦[çãå^•Áæ)A,ç^¦çãh, Á,-Á •^•ÁæaÁc@^Á,[¦co@È>æec^¦}Á&[¦}^¦Á,-ÁÔ[&\æe[[Á@e|æ)åÈÁ Á



Øāt`¦^ÁŒËHÁUç^¦çāt, Áţ-Á•^•ÁææÁv@^Á,[¦v@ë>æevc\}Á&[¦}^lÁţ-ÁÔ[&\æq[[Á@]æ}åÁ

A Qiæ\*^•A(Áx@∿Á\¢ãicā)\*Á,@æel-Áæe)åA(`¦|[`}åāj\*Ápae)åÁ'•^•Áeel^Aj,¦[çãa^åÁ§JÁc∂āt`¦^ÁGËCA4[Ác∂āt`¦^ÁGËİÈÁA Á



Øār`¦^ÁGĒCHÁXār, Áļ-Ár¢ārcāj\*ÁÔ[&∖æq[[ÁQe|æ);åÁY @æs-Áræ)\*,æîÁæ);åÁj[}d[[}Á Á Á



Øãtč¦^ÁGËTHÁXãr,Ąí~Ár¢ãrcāj\*ÁÓč}å^ÁJ~a&∧Á Á



Øāt`¦^ÁGËIKKÔ|[•^Á]Á(\*ÁÓ`}å^ÁJ~~38^Ás;)åÁ[]æþ/&æs¦åÁ^æs^¦•Á





Ø8T`¦^ÁGEÉHÁX&?,Á¦[{Áx@:Á¦[\[`GĚAT`•o^¦ÁÙcæaa‡}}Áæ)åÁOEå{3;ĕrdæaa‡}Áa`3‡å3;\*Á9;Áx@:Áaæa&\\*¦[`}åEÁ OB&&[{{[åæaa‡}}Á;~a&^Á:@{,}}Á9;Áx@:Á&^}d^Ê&eo}åÁ&æe:.Á{[&ææ\*å/59;Áx@:AÔæe:o^¦}ÁOE;¦[}ÈÁ Á



Ø8T`¦^ÁGEÏHÁX&?,Áį~Á&æ{]\*¦[`}å/\$jÁs@ÁP[¦c@;¦}ÁO5;|[}ÈÁ Á

### 2.2.4 Wharf Statistics

ÖæææÁæçæājæà|^Á¦[{ Áx@ ÁÓ`¦^æ`Á, Á/¦æ)•][¦AÛcææã cã& ÁÇÓVÙDÁ§ åã&ææ^•Áx@æaÁ āj &^ÁT æî ÁCEF€Áx@¦^Á @æe Áà^^}Áxá\*¦æå`æþÁj &i^æ^Áşi Áx@ Á;i[][¦cā]}Á; Á, ~Äj ^æà Átāj•ÉÄ, @ã&@Á^]¦^•^} o Áxæà[`A\ÍÁ, A';Á&^} o Á [ Áxeþ[Átāj•Áxeáx@ Á, @æi-ĚÁ/@ãrÁ`]][¦orÁæj å Á^āj-[¦&^•Áx@exáx@ Á;lāj æî Á •^Á; Áx@ Á; @æi-Æá Áxe ÁxeÁ [^&i^æaāj}æáÁ, @æi-ĚA/@Á, @æi-Áxek{ [•orás[`à|^•ÁāorÁ, ^^\åæî Á?}dã•Áæj å Á¢ãorÁ;}ÂÚæči¦åæî ÉÅ, ãx@Ax@ Á Ù`}åæî Á; ~Á, ^æi Á, ^!aj å Ás^āj\*Áx@ Áa`•ãx•oÁ{!Áx@ Á; @æi-ÉÁ

### 2.2.5 Future Demand/Patronage

Ö`^Áţ[Áx@:Á•^Áţ-ÁÔ[&\æq[[Á@]æ]åÁæe Áæák[`¦ãró4å^•cājææāj}}Ê&x@:Áţ!^&æe óÁãt`¦^•Áţ|!Át'|[, c@4å`¦āj\*Á ,^^\åæ`•Áæb^Á;¦āj ælājî Ájāj\^åÁş[Áæák]æsh\*ājæ4Áş]&¦^æe^ÁşjAkjà•Áş]Ás(à•Á;}Áx@:Áār|æ)åÈÁ\ Á

. T`&@Aţ~As@At¦[, c@Aţ¦As@A,@eet~A^|æet^eAţA≦er^A te^Aţ~Ëţ^æetÊj¦aţædaţAţ}A,^^\^}å•ÈAYār@As@AV¦`•cA &¦^æaaj\*&eATæ)æt^{^}oAU|æ)As@eet&aaξ=At[Atc^}\*c@}As@At`}&ca‡}Aţ~As@AserAs[ca&etAt[`;arA å^•cajæaaţ}Ase)åAsep•[A{¦&aa;a&A`•^&a`¦a}\*Arç^}c•Ê5an/asejæetåAs@eerAse}}`æpAçãrãaæaaţ}Aţ[`|åA aj&¦^æe^A¦[{ AGÌ€E€€At[Asea]`cAnfi€Ê€€As^AG€FJÈA

# 2.3 Proposal objectives and development criteria

## 2.3.1 Proposal objectives

V@Aţàb/&&ãç^●AţAœAÚ¦[][●æ‡A&[{]¦ã^KA Á

- •Á Ú¦[çãa^Ásá,@de-Ás@ex/á Ász8&^••ãa|^Áţ Á;[] \^Á ã@ászákā æàāãč Áş Ász8a[ ¦åæ) &^Á ã@ás@ ÁÖÖOEÁ Ó ãåā] \* ÁÔ[ å^Át ÁOE • dæjãzáQCEFFDÉÖÜOEUVÉZÖã æàããč ÁQCB8&^••Áţ ÁU¦^{ ã ^• Á ÁÔč ãåã] \*•DÁ ٜ) åæåå•ÁQCEFEDÉæ) åÁOE • dæjãzi ÁUœ) åæååÁ^¦ã•ÁFI Ġ Á
- •Á Ô¦^æ¢ Áæá ¦ askataæá kæj à aki a ak
- •Á Ú¦[çãå^Ášāçājãa) ÉÁā^Ás) åÁ; æbjā^Á^•&`^Đæ^ĉÁ``j] { ^} óÁ
- $\hat{A} = \hat{A} =$
- •ÁÜ^å`&^Áçæ)åædaã{{Á,ãc@Ác@A`•^Á(,Ásd)]¦[]¦ãæe^Á(,æe^\¦ãed+ÊA`¦æe&^éæ)åÁs^•ã}•Á
- Á Ò |āįā aze^ Á } ze co@ |ā ^ a Aze a Az

### 2.3.2 Development criteria

V@Á/-ÞÙYÁ&læeÁ^][¦ÓAMaking Interchange Places Ç@ÁÖ¦æeÁÚ¦[å`&oÁÚdæe^\*^DÉA,`à|ã@åÁ&jÁTæÂ GEFGÉA•cæà|ã@•Ác@Ádæe^\*ã&Áa^•ã}Á,¦ãj&ãj|^•Át[Áa^|ãç^¦Á@ã@Á``æ†ãĉÉ&&`•d[{ ^¦.-{&`•^åÁ d;æ}•][¦ó&g c^¦&@æ)\*^•ÈA

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Making Interchange Places æåç[&æet+ Áãç^Á&[¦^Ás@{ ^+ Áş[Áş[&`+ Ás@ Áå^ç^|[] { ^} óÁæ) åÁ ã[] ¦[ç^{ ^} ó∱ Á§ ơ\&@æ) \* ^+ Á[} Á&` • d[ { ^|+ Ê4~~ & &ãç^} ^ + • E5@ Á§ ơ` \* ¦æeā[} Á[ Á]` à|ã&Á;æ) •][ ¦óÆe) åÁ |æ) åÁ • ^ Á[] čã[} • Áæ) åÁæ&&[ { { [ åæeā[} } Á[ Áš č ¦^ Áš č ¦^ Á; [ ] o@eĂ Á

V[Áæåå¦^••Á@•^Á&[¦^Á@{ ^•Êå^•ā}}Áj¦āj&ā]|^•Áæh^Áj¦^•^} &åÅî^ÁMaking Interchange PlacesÉÁ [čdāj^åÁ§jÁ/æà|^ÁGЁÁa^|[, ĚĂ Á

Væà |^ÁGËFÁY @et÷Á&[ ¦^Á@{{ ^● Á\$;} å Á\$;^●ã } Å, ¦ã; &ã; |^●Á\$;/-ÞÙY ÊG€FGàDÁ

Core Theme	Design Principle
T^^o%&`∙d[{^¦Áj^^å∙Áæ)åÁã[]¦[ç^Á dæ)•][¦oÁ∿¢]^¦ãN}&^Á	●ÁÚ¦[çãå^Á;æ^É?;~~a3&a?}ơ?bc)åÁ&[}ç^}ā?}ơ?bc)åA*[}ç^}ā?}ơ?bc+Á{¦Áqe Á ●ÁÚ¦[çãå^Ásoz%2[{ -{¦caeà ^É?}}b[^2æà ^Ásob)åÁ}[●ãoãç^Á &`●đ{ { ^\Á¢]^iā}&^ÉA

Core Theme	Design Principle
U]cãįãr^Áæ&&^••ÁţÁj`à &&Áta)•][¦cÁ	•Á Ô[}}^&&ó4\$\$\$\$\$\$\$\$\$ qi Á*¢ã:cāj * Ásej åÁč č ¦^Átiæj •][¦oÁj,^ç [¦\•Á æ) åÁj ¦[çãå^Áč č ãææà ^Áse&&^•• Át[Á&A} ^{{] [^{{ ^}} ^} dÊt ^¦çã&^• ÊtÁ^& 'aæāt]} Ásej åÁ*åč &ææāt]}Á •Á Ú¦[çãå^ÁseÁr^æt] /^•• Át] c°¦&@æ) * ^ÈÁ
Q,c^*¦æe^Á§j;c^¦&@ea)*^Á§j;ç^∙q(^}cÁjã@Á  aa)åÁ•^Áj, aa)∙Á	<ul> <li>•Á Tæ\^Áæedæ&amp;aãç^Áæ)åÁçãa læ)oÁ]æ&amp;∧•Á[¦ÁA{] [^{ ^} oÁ æ)åÁ@{`•ã}*Á</li> <li>•Á Ò{à læ&amp;∧Á@ lãæ*^Áæ)åÁ&amp; lč læÅçæ `^•ÈÁ</li> </ul>
C5;c3&24;æe^Á*¦[,c@Áæ);åÁ&@æ);*^Á§;Á å^{æ);åÁ	•Á Ùæ^*迦åÁčč¦^Á∿¢ơ\}•ã[}Áæ)åÁj¦[]^\ĉÁå^ç^ []{^}ơÁ []][¦č}ão2ne Aàæe^åÁj}Áj¦^åã∨åÁt¦[, c@A
Ò}•`¦^Áo@^Á`•cæaājæàājāĉÁaajåÁčči^Á ]^¦-{¦{ æ}j&^Á(Ás@^Áj`à a&A≾tæ)•][¦cÁ }^ç[¦∖Á	•Á Ö^ ãç^¦Á`•œaajaaà ^Á•[ čaj]}•Ás@aadki ājājā ^Á Á ^}çā][}{ ^}œadaa)å&[{ { `}ãc Áāj]a&asor Ás@aadaad ^Á aabaa]caab ^Á¢[Á&]äjaac^Á&@aa)*^Áadaadaad[{ [ åaac^Á,^ c^&@][][*ā*•ÈÁ

# 2.3.3 Urban design objectives

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- S^^Á,¦àæ),Áå^•ã\*}Áį,àb%&ãç^•Á[¦Áo@Aj,¦[][•æ‡Á§,&|ĭå^kÁ
- Á
- •Á Q, c\* ¦æchÁo@Á, @eet-Á, ão@Áv č č ľA làæ) Á&[} c ¢dÉkælð; ð ¢Å ág ág \*Áş q Áv ð ág \*Ás að \*Ás að ág \*Ás að \*As að \*Ás að \* Ås að \*Ás \*Ás að \*Ás að \*Ás að \*Ás að \*Ás að \*Ás að \*Ás

 $\bullet \acute{A} ~ \acute{O}|^{} a e^{A} \acute{A} e e^{A} \acute{A$ 

# 2.4 Alternatives and options considered

# 2.4.1 Methodology for selection of preferred option

Ø^¦¦^Á,@eetç^•Áeet^Á,[oÁ\æeāîÁ^ᄇệ[&eeet^åÁ&`^Áq[Áo@Á&[}•ãå^¦æè|^Áā[]æ&oÁv@eeeÁ^•`|oÁg[Áeeåbæ&A}oÁ ]`à|ã&Ád\æ}•][¦oÁea}åÁç^••^|Á,[ç^{ ^}oÁ,ão@3,ÁÛ^å}^^ÁPætà[`¦Ê58]&|`åā}\*Á&@eet,\*•Ág[Á,æçã\*æaā]}ætÁ |æ}^•Áea}åÁ[`c^•È42[¦Áx@a\*Á^æe[}Á^¦¦^Á,@eetç^•Áeet^Á\*^}^¦æth^Á]\*¦æth^åÁţ¦Á^å^ç^|[]^åAşiÁt¦Á,^ætÁ ç@ãLÁ¢æicāj\*Á[&æeaā]}•ÈÁ

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ŒÁ ^^ Árcæk ^@[lå^¦Áː[l\•@[]ÁCSÙY DÁ, æe Á@|låÁ;}ÁFHÁOE;lāÁGEFÍÉÉeeec^}å^å/åá`Á^]¦^•^}cæaãç^•Á¦[{Á Ü[æå•Áæ)åÁTælããā; ^ÉÉV-ÞÙYÉÉPæ)•^}Äï`}&\^}ÁÇ;æ)æ"ä]\*Á&[}dæ&d[¦DÁæ)åÁPælà[`¦ÁÔãĉÁØ^¦¦ã•Á Ç^¦¦^Á;]^¦æa[¦DÉEV@Á`[¦\•@[]Á5]&{`å^å/á5]-¦æe d`&c`¦^Áæ)å/áa^•ðä}Á^~`ã^{{ ^} @ Á[¦Áo@Á`@eel-Á `]\*¦æå^ÉÆe)å/ko@Á\*^|^&cā‡;}Á;ÁæÁy¦^-^¦¦^å/&[}&^]dĚÁ Á

, Xælā[`•A[]cā[}•Á,^¦^Á\$ā^}cāa?a Áse)a Áse)a¢\*•^a Á{[¦Ás@^Á,@ad-Á]\*¦æå^ÈŹV@A,¦^~^¦¦^åA[]cā[}Á,æe Á •^|^&c^a Ásee ÁsoÁ,æe Á[`}a Á{[Ás^•cA[^^cAse@A];¦[b%&o4[àb%&cãç^•Êšå^ç^|[]{ ^}c4&¦ãe^¦ãæase)a Á'¦àæ)As^•ã}}á [jàb%&cãç^•Êsee)a Áso@Á[||[],ā]\*Áseåa ãcā[}æ4&slãe^¦ãæbA

•Á Ùdæe^\* &AÁ ^^åÁ[¦Á@?Á¦[][•æ4Á

 $\bullet \acute{A} \ \ddot{U}^{*} \ddot{a}^{+} \land \acute{A} \ \dot{a}^{+} \dot$ 

•Á Xæ¦ \* ^Á [ ¦Á [ } ^ \* ÈÁ

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20[||[] قَا\* ٨٤{] -قَا{ حَقَتُهَ الْمُ حَمَّقُ الْمُحْالَاتِ الْمُعْلَى الْمُعْلَى الْمُعْلَى الْمُعَالَى م GEFÍ ٨٤{ ٨] - ^ كَشَرُ الْحَقَقُ الْمُعَالَى اللَّهُ مَا اللَّعَانِ مَعَانَ اللَّعَانِ مَعَانَ اللَّعَانِ مَعَا GEFÍ ٨٤{ ٨] - ^ كَشَرُ اللَّعَانِ مَعَانَ اللَّعَانِ مَعَانَ اللَّعَانِ مَعَانَ اللَّعَانِ مَعَانَ اللَّعَانِ مُ å^cæa‡Á(}Áx@^Á(^c@[å[|[\*^Áae)åÁ&[]æ&oA(~Áx@^Á,[¦\•Á\$jç[|çā)\*Áx@^Á&|[•`¦^Á(~Áx@ Á×¢ãrcā)\*Á,@eet~ÈÁ Ø[||[]]ā]\*Áx@ārÁ(^^cā)\*Áx@^Á,¦^~^¦|^åÁ(]cā[}Á ÁU]cā[}Á/ÄEÄ,ærÁ&[}~ā{ ^åÁeerÁx@^Á,¦^~^¦\^åÁ&[}&^]dÈÁÁÁ Á

### 2.4.2 Identified options

Q[`¦Át] cāt}•Át¦¦Ás@^Á, @eel-Á, ^¦^Á&[}•ãa^¦^àÈÁ/@•^Át] cāt}•Áed^Át`dāt,^åÅa^|[、ÈÁ

### **Option 1 – Do nothing**

#### **Option 2 – Existing position**



Øãtč¦^ÁGEİKÁU]cāį}ÁGÁ^č•^Á,[}d[[}áj,Á\*¢ãrcā)\*Á,[•ãaa]}Á Á

# Option 3 – New pontoon further north off shore bridge $\acute{A}$

 $\begin{array}{l} U] \ call \} \acute{AH}4Q2 \ dash \$ 



ŹŒłč¦^ÁŒĖJKÁU]cāĮ}ÁHÁ,^,Á,[}d[[}Ač¦cœl¦Á,[¦cœk,/~Á;@;¦^Ás¦ãå\*^Á Á

### Option 4 – New pontoon north off former Bundy Office



Ø8tč¦^ÁGËF€KÁU]cā[}ÁĺÁ^,Á[}d[[}A[[\c@á[~~Á[|{ ^¦ÁÔč}}a^ÁU~a8∧Á

### 2.4.3 Analysis of options

Ďæ&@Á,Áo@Á,]cā,}•Á,^¦^Áea)æ¢,•^å Áezt æð,•okó@Á,¦[b%&A,àb%&ãç,^•É&s^ç^|[]{ ^}o%&lãc^¦ãæEÁ¦àæa)Á å^•ā\*)Á,àb%&ãç,^•Áea)å Áso@Á&lãc^¦ãæ&so^•&lãa^å Áeaa[ç^A§JÁÔ@ea]c^¦ÁOEÈEAOEA`{ { æć^Á,-Áo@Áea]æ¢,•ã EÁ āj&|`åā]\*Áo@Áeaåçæa)æet^•Áea)å Áso≊ æsåçæa)æet^•Á,-Áræ&@A,Áo@Á,]cā,}•Á&[}•ãa^¦^åA{{ ¦Áo@Á,¦[][•æ4É&arÁ [čdā]^åAàa^|[,LÁ,ão@Á/æaà|^ÁOECA&a?]|æ?ā]\*ÁQ,Áræ&@A,Áæ&@A,Áo@Á,]cā,}+Á&[}•æ4Á,àb%&ãç,^•Á,čdā,A§A Ô@ea]c^¦ÁOEÈEÁ

#### **Option 1 – Do nothing**

V@Aå[Á[c@a]\*A[]ca[}Á[`|åA[cAá[]¦[ç^Aá@A;@ee-Aæsaājānā)•AæeA]^¦A@A[àb/scanç^•A[-Aá@A]¦[][•^åA æscançanc ÈAQA] æicaax |æAānA[['|åA[cAá[]]¦[ç^Aáo@Ar^ç^|A[-Afee&a&•aājānc A[Ao@A] @ee-AajAfee&a&[iåæ] &^A áo@A c@Á^``ā^{ ^}o~A[-Aáo@AÖÖODÉ#ÖÙUCEUVA[:|Áa@AÖZaræaàjānc ÁUcæ)åæiåa•AGEF€EAV@¦^A[[`|åAáa^A][Á ã]]¦[ç^{ ^}oAq[Á •^¦A&[{ -{|cÉ4:æ^c A[A^&`]anc ÈAA Á

V@¦^Á,[`|åÁà^Á,[Á],{[Ś],~[}oó&æ}jãzæ‡Á\*¢]^}åãč¦^É4@;^ç^¦ÁázÁ\*jÅå^|^Ás@æc/(;æ#j¢}æ)&^Á;Ás@Á;@æ÷Á ,[`|åÁ&[•o4(,[¦^Ás@æ),Á;c@¦Á;]cā]}•ÁæeÁs@Á;@æ÷Å,[`|åÁå^ơ^¦ā];æe^Á;ç^¦Ásā;^ÈÅ Á

V@ěrÁ[]cā[}Á,[č|åÁ^•č|oÁ5)Áçã?,•Át[Áæ)åÁ¦[{Áx@\*Á@ez⇔à[č¦Á&a]\*Á;æa5)cæa5)^åÈÁQA,[č|åÁxe+=[Á@exç^Áx@\*Á |^æ=oÁ}çã[]{{}}œe†Át[]æ&o=Á;Áx@~Áx@Ax@^^Át]cā[}•Áxe=Áx@~¦^Á,[č|åÅx^Á,[Áxæååãa5]}æ‡Á\*dč&cč¦^•Áxe)åÁ;[Á åã\*č¦àæ)&^Át[Áx@:Áæ)åÁ\*¦-æ&^•ÈÁ

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OE Ác@er Á[]cā[}Á[`|åÁ[cÁeeee@cç^Á?æ&@á[-Ác@Á]¦[][•æ4Á[àb/&æç^•ÁQ=^^ÁÔ@ee]c^¦ÁCÈÈDÁ[¦Ác@Á [àb/&æç^•Á[-Ác@ÁÜ[æå•Áe)åÁTælãaã[^ÁQYWÚÁQ=^^ÁÔ@ee]c^¦ÁCÈÈDÁA[ælcæ]`/æl|^Á9;Á^\*ælåÁ[Á æ&&^••āalãaĉÉÁeÁ]æ-Á[cÁ]`¦•`^åÁ¥¦c@¦ÈÁ

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Q,Á[ơ,Áː[&^^åā]\*Á,ão@ká@A´]\*¦æå^Áį,Áo@A,@eel-Ébá@}Áo@Aj;[][•æþÁ[č'|åÁ[ơkæ&@a∿ç^Áo@Ajčo&[{ ^•A [~Áo@AÖÖÖDExbe)åÁ/^\*ãi|æeãç^Árcee)åæelå•ÉAj[¦Á[č'|åÁoaÁj;[çãa^Áč æ¢ãĉÁæ&ã†ããð•Áoe)åÁxeÁč]^¦ā];Ásč•d[{ ^¦Á ^¢]^¦ã}}&^ÈV@Aj@eel-Á[č'|åÁoe‡=[Á[ơka^Á'}ãaðaÁk[Ájc@;¦Á@eelà[č';Å]@eelç^•ÉAj@3&@Aj[č'|åÁ/>æåÁk[Á ^ç^}čæþÁaj&:/~æ^åÁjæaej¢}æ)&^Ás[•o=ÈÁ

### Option 2 – Reuse pontoon in existing position

U]cā[}ÁGÁ,[`|åÁ,¦[çãå^Ás@^Á[||[,ā]\*Ás^}^ão•KÁ

- •Á Ü^œaað •Áx@ Ásæåå¦^••Áseð åÁçã čæþÁ¦^•^} &^A Áx@ Á&č¦!^} oÁ @ed-Á

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- V@^Áåãaæåçæ);œ\*^•Áį-Ás@ãA[]cā[}Áæ^KÁ
- •Á Ô[{] هڂ^åÅų Ás@ Á ¢ã cā \* Á } & [ ç^\^åÅ, @eb-Æs@ Ą, ^, Áæ&ājãč Ą [ ` |åÁ@eç^Áæ4`\^æc^\\Áçã `æþÆj ] æ&oA ] As@ Áse{ ^} ãc Ą, Ąçã ، •Át Ása , åÅ; [ { Ás@ Áãç^\A
- •Á V@^Á, @eet-Á, [č|åÁ, [cÁ&æer>¦Á§[Áčč¦^Áå^{ æ})åÁ
- •ÁÞ[Á[]][¦č}ãĉÁ[¦ÁæÁ^&[}åÁa^¦c@ÈÁ

### Option 3 – New pontoon further north off shore bridge

U]cāį}ÁrkÁ,[č|åÁ);¦[çãå^Ác@?Á{[||[, ā]\*Áà^}^ão•kÁ

- •Á T ^^ cho A, |[] [ ad A, à lo & aç ^• Áa ^ A, |[ çãa 3, \* Áse A, @eet Ás@eet A, [ ` |å A& [ ] [ ] Á ac@ A@ O A ` ` ã^ ( ^ ) o A, A A o A, A o A, A o A, A o A, A o A, A o A, A o A, A o A, A o A, A
- •Á Ú¦[çãå^•Áx@Á;]][¦č}ãĉ Á;[Á•^ÁxzÁ^&[}åÁà^¦c@Á
- •Á Öãr&[}}^&c^åÁ{[{ Ác@ Á^¢ãrcā}\*Á, æãnā}\*Á @ |c^¦ÁÇ[ |{ ^¦ÁO`}å^ÁU~a&^DÁ[Áœç[ãåÁæ)^Áæåç^¦•^Á @ ¦ãæ≛^Áã[ ] æ&dĂ
- Á
- ... V@\A\$iãranaiçaa)cae\*^•A[-Ás@ārÁ[]cā[}Ásek^kA[
- $\bullet \dot{A} \dot{O} \varphi \tilde{a} c \tilde{a} \star \dot{A} (200 + A \tilde{s}) + A \tilde{s} \star \dot{A} \tilde{s} + A \tilde{s} \star \dot{A} \tilde{s} + A \tilde{s} + A \tilde{s} \star \dot{A} \tilde{s} + A \tilde{s} + A \tilde{s} \star \dot{A} \tilde{s} + A \tilde{$
- A Ô[{] هَجْهُ هُمْ اللَّهُ مُعَمَّكُمْ اللَّهُ مُعَمَّكُمْ اللَّهُ اللَّهُ الْمُعَامِ عَمْدُ الْمُ أَعْمَا ال [} كَمْ هُمُعْمُ مُعَمَّكُمُ إِنَّا اللَّهُ مُعَمَّلُهُ اللَّهُ عَمْهُمُ إِنَّا اللَّهُ مُعَمَّلُهُ اللَّهُ مُعَمًا إِنَّا اللَّعَامَ اللَّهُ مُعَمًا إِنَّا اللَّعَامَ اللَّهُ مُعَمًا إِنَّا اللَّعَامَ اللَّهُ مُعَمًا إِنَّا اللَّعَامَ اللَّهُ مُعَمًا إِنَّ
- •Á Ü@;¦^Áa;¦ãa\*^Á¢¢c^}•ā[} A&;'^æ\*•Áæååãaã]; a‡Á&æ\*^Áæ}åÃaã]; a‡Á&æ\*^Áæ}åÅa`|\Á; @3&@49;&¦^æ\*^•Áçã ` æ‡Á§[] æ&dĚA

### **Option 4 – New pontoon north off former Bundy Office**

U]cā[}ÁiÁ;[č|åÁ;![çãå^Ác@^Á[||[,ā]\*Áà^}^~ão•kÁ

- •Á Ú¦[çãâ^•Áo@^Á;]][¦č}ãĉ Á[¦ÁozÁ\*^&[}åÁs^¦c@Á
- •Á Ô[}}^&cāt} Át Át@ Át¢ã cāt\*Á æãtāt\*Á @ |c\*¦ÁÇ{ |{ ^¦ÁÔ`} å^ÁU ~38 ^ DÁ^å` & Át` |\ Áset å Át & æt^Êset å Át |^ cæat • Áçã` ætÁt |^ • ^} & ^Át Át@ Ás` || ^} cá @ed ~ÈÁ Á
- V@Áåãæåçæ}cæ\*^•Á,4ô@āÁ]cā}}Áæ\*AÁ

- Á

Væà|^ÁGËGÁU]cãį}ÁOE;æ∲`∙ãrÁ

Option	Project objectives met	Project objectives not met
U] cā } ÁFÁ Ö[ Á [ cœ] * Á	•Á Ö[ Á[ c@3 * Á] [ `  åÁ, æğ cæ3 Á ¢æ @3 * Á çã` æh4] ] æ&o4[ { Á çã c3 * Á @2+A [ } &@ &&@eb æ&o*] { A * Ô[ & æ4[ [ Á @  æ] å&@ å &@ A` !![ ` } å] * Á , æc*], æ • Á +Â` à} ^ A * A æ à] ` ! Åa * Á { æ3 cæ3 3 * Á ¢ā c3 * Á±1 æ) * ^ { ^} d Å	æ&&∿••ãa ^Á{[Á]^[] ^Á] ãu@kækåā?eæàāfãĉÁ ā] Áæ&&[¦åæ}&^Á] ãu@k@ ÁÖÖODEŹÓĭā¦åā]*Á Ô[å^Á] -ÁQE •dæa≆ækQG€FFDĚÆÖÙOEÚVEÁ Öã?æàāfãĉ ÁQDE&&∧••Á{[ÁÚ¦^{ ?ã^•AÁ Á

Á			

Option	Project objectives met	Project objectives not met
U] cāj } ÁGÁ Ü^* • ^ Á ^¢ã cāj * Á , @æt-Á	<ul> <li>Á Y [ `  å Å     çã ^ Ásk @eb - Ácœstá Á æ&amp;&amp; • a ã  ^Á [ Å [ ]  ^ Å ã @b A åã æb ajã Å Ásk [ ] å æb &amp; A ã @b @ Á ÖÖODÉÓ aj å aj * ÁO   å ^ Å - ÁOE • d æb á A ÇEFFIDÉÖUCUVÉÖ ä æb aj â (ÅCE • d æb á A ÇEFFIDÉÖUCEVÉÖ ä æb aj â (ÅCE • d æb á A Ù œb à æb å Á ÂCE • ED bb à ÅCE • d æb á A Ù œb à æb å Á ^ [ @ - ] æb Å ÅE • d æb á A Ù œb à æb å Á ^ [ @ - ] æb Å [ à * • A · Å Y [ `  å Å   [ çã ^ Å [ @ - ] æb Å [ à * • A ~    ^ Å @b - Å ã @b b ]   [] ] äæe Å æb å Å e ^ æb å æ • ^ } * ^   Å ^ æb à Å [ à * • A ~    ^ Å @b - Å ã @b b ]   [] ] äæe Å æb å Å e ^ æb å æ • ^ } * ^   Å ^ æb å Å @ e - A ã @b b ]   [ ] äæe Å &amp; æb å Å e - æb å ä * Åb à Å @   e '   Å @h Åb b ] &amp; e - æb å ä * Åb à Å @   e '   Å @h Åb b ] &amp; e - A i : É - æb aj Å A @   e '   Å @h Åb b Å e - æb å ä * Åb à Å @   e '   Å @h Åb b Å e - æb å ä * Åb à Å @   e '   Å @h Åb b Å e - A ' [ `   å Å ] [ çã ^ Å Åā @ h @ ] e ' Å @h Åb b Å { ab a ^ A · &amp; X ~ D @ A · ^ Å A { ab a ^ A · &amp; X ~ D @ A · ^ Å A { ab a ^ A · &amp; X ~ D @ A · ^ Å A e aj a ^ Å · &amp; a @ @ / a ^ Å / A e A ' [ `   å Å ] [ çã ^ Å [ e } œ + Å &amp; A e aj å &amp; - Å a e @ ] ā ^ å / a @ A · A e aj å &amp; - Å a e @ ] ā ^ Å &amp; A e A ' [ `   å Å ] [ çã ^ Å [ e ] œ + Å / A e ab a / A · &amp; a e @ ] a ^ Å / A / A e ab a / A / [ e - ] æ / A / [ e ] æ / Å / A e A ' [ `   å Å ] [ çã ^ A Å [ e ] œ + Å / A e - &amp; A / ] [ ] äæe / Å a e @ ] ā ^ Å / A / A e - &amp; A / ] [ ] äæe / Å æ : Q ] ā ^ Å / A / A e - &amp; A / ] [ ] äæe / Å æ : Q ] a / A / A / A e - &amp; A / ] [ ] äæe / Å æ : Q ] a / A / A / A e - &amp; A / ] [ ] äæe / Å æ : ] æ / Å / A / A e - &amp; A / ] [ ] æ / Å æ : ] / A / [ e - &amp; A / ] A / ] [ @ a / Å / [ e ] @ a / Å æ / ] / A / A / A e / A / ] [ ] æ / Å æ / ] / A / A / A / A / A / A / A e / A / ] @ a / Å / @ A / A / ] / [ / ] Å / A / A / A / ] e / A / ] [ / ] Å / ] / [ / ] Å / A / A / ] / A / A / ] e / A / ] / ] / A / ] / ] / A / / ] / ] /</li></ul>	<pre>c@[`*@&amp;@A*•A; -&amp;#] `![]'!ä#erA { aec^!ä#e EA*'!-a&amp;r*•A#] à&amp;a*a*aa# As@eaA -a&amp;a#aaerA*ae ^&amp;4/a) a} *A; -&amp;a@A ed &amp; &amp;c !^• EA*T am can a *A &amp; A ed &amp; &amp;c !^• EA*T am can a *A &amp; A ed &amp; &amp;c !^^ !aA [ oA] ![ çaa Am A []][!c } äc At A * A* • can a main A { aec^!am A a @AmAI , A @ !^E -Aa^A&amp;I • dA { aec^!am A &amp; A *A A</pre>
U]cā[}ÁHÁ Þ^,Á ][}d[[}Á }[¦c@A[-Á •@2¦^Á àlãa*^Á	<ul> <li>•Á Y [ `  åÁ, ![çãâ ^ ÁxÁ, @æ - Áv@æz/ár Á æ&amp;&amp; ^ • að  ^Áţ Á, ^[]  ^Á, ã @áxÁ åã æðiðjãč Áð Áx&amp;&amp; [ åæ] &amp;^Á, ã @áx@ Á ÖÖODEÓ ðjåð * ÁÔ[ å ^Á, -ÁŒ • dæjãæÁ ÇGEFFDÉÖÙOEÚVÉÖã æðiðjäč ÁÇE&amp; ^ • • Á q ÁÚ!^{ ã ^ • Á ÁÔ ðjåð * • DÁ Ùæð åæ å Á ^ § EFEDÁx) å ÁŒ • dæjãæ) Á Ùæð åæ å Á ^ § A A A STE C A Ùæð åæ å Á ^ § A A A STE C A Ùæð åæ å Á ^ § A A A STE C A Ùæð åæ å Á ^ § A A A A A A A A A A A A A A A A A A</li></ul>	<ul> <li>Á Y [ `  åÁ; [ ớ], ! [ çãå^Á; [ ơ } ữadÁt Á { ∄ ã ă ǎ ^ k; ã ` adÁt ] æsof } kô@ Á &amp;@ebæsoc'i Á; AÔ[ &amp; æet [ Á@ æ) å/seb å/sœ á e` i ! [ ` } å ∄ * Á æet ! , æê • Á; AÛ å } ^ Á Pæba [ ` IÈÁÞ ^ Á dč &amp; č ! ^ Á [ `  å/A ¢ơ } å/ ~ ¦ c@ ! Áb d / Pæba [ ` ! Áæ) å Á [ `  å/A ¢ơ } å/ ~ ¦ c@ ! Áb d / Pæba [ ` ! Áæ) å Á [ `  å/A ¢ơ } å/ } [ ! c@ A ¢ã c∄ * Êb [ ơ } ữad ^ Á ] æscā * Á [ } AÔ[ &amp; æt [ Á@  æ) åÉM e Á Y [ `  å/A [ ớ], ! [ çãa ^ / A [ ơ } ữad Át ] æscā * Á æ) å/A } @eb &amp; A &amp; @ A æet ! ^ A &amp; Ø æ) å/A @eb &amp; A &amp; @ A æet ! ^ A &amp; Ø ã  æ) å A @eb &amp; A &amp; @ A æet ! ^ A &amp; Ø ã  æ) å A &amp; @eb &amp; A &amp; @ A æet ! ^ A æ / æ / Å &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp;</li></ul>

Option	Project objectives met	Project objectives not met
	<ul> <li>^</li></ul>	
U] cā[}ÁIÁ Þ^,Á ][}d[[}Á &[]}^&cā]*Á d[AOY}å^Á U~-a32^Á	<ul> <li>Á Y [ `  åÁ ![ çãi ^ Ásé , @st - Á @se /s &amp;se /s @se /s @se /s &amp;se /s &amp;se /s @se /s &amp;se /s &amp;se /s @se /s &amp;se /s</li></ul>	

Option	Project objectives met	Project objectives not met
	{ æŋ c } æ) & Áv@[ * @k@ Á • ^ Á, Á æ] ] [] læer Á ær lær far læx • Á æ) å Åå ^ æn Å ær lær far læx • Á æ) å Åå ^ æn Å @ ær Å ær Å ær Å Å ( æ) ĝ * Å Å @ ær Å ær Å ær Å çæ) å ær Å i [ c å Å f [ c } ær Å Å Å çæ) å ær Å ær å ær å ær å Å æ] ] [] lær Å ær ær å ær å Å æ] å ] [] lær Å ær å ær å Å æ] å Å • ær Å ær å ær å Å æ] å Å [ c å Å [ c } ær Å Å a) å Å • â Å [ c } ær Å Å a) å Å • â Å [ c } ær Å Å a) å Å • â Å a ær Å Å ær Å a) å Å [ c å Å Å Å Å Å a) a Å ] [ c å Å Å [ c } ær Å Å a å a Å ] ær Å å ær Å Å Å ær Å Å Å Å Å Å Å Å Å Å a ær Å Å Å Å Å Å Å Å Å Å Å Å a ær Å Å ær Å Å Å Å Å Å Å Å ær Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å a ær Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å a ær Å Å ær Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å	
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#### 2.5 **Preferred option**

V@^Á,¦^^¦¦^åÁ, @ee'-Á[&æeāj}}ÁsēÁsédå^ç^|[]{^}ơl(-ÁY @ee'-ÁU]qāj}ÁiÁq2281ĭ`¦^ÁGËE⊂DÁ, @a&@ásj&[¦][¦æe^•Á  $a \dot{A}_{1} ^{\dagger} \dot{A}_{2} ^{\dagger} \dot{A}_{1} ^{\dagger} \dot{A}_{1} ^{\dagger} \dot{A}_{1} ^{\dagger} \dot{A}_{1} ^{\dagger} \dot{A}_{2} ^{\dagger} \dot{A}_{1} ^{\dagger} \dot{A}_{2} \dot{A}_{2} ^{\dagger} \dot{A}_{2} \dot{A}_{2} ^{\dagger} \dot{A}_{2}$ .c@ Á^¢ã cāj \* ÁÓ`} å ^ ÁJ ~-a&^ ĚÁ/@ Á,^ , Á, @eel-Á, [`|å Á, ¦[çãå^Áç, [Áa^¦c@āj \* Áæ&∧●ĚÁ Á

V@^Á^,Á[}q[[}&a)åÁ\*æ)\*,æÂ,[č|åÁ^]]æ&^Áo@A^¢ãrcā}\*Á,[}q[[}Aæ)åA\*æ)åA\*æ)\*,æÊ&o@æAæA\*A§A,[[¦Á &[}åãqā]}Ê&e}åA,[č|åA\*A\*&]&{{ ã • ā}}^åA&e}åA^{{ [c^åA\*}-{ [c^aA\*}-{ [c^aA\* , @aal-A,[ĭ|åÁ@aaç,^ÁaaA,^, ÁGÏ{ Á[}\*Áaî ÁFG{ Á, ãã^A,[]}d[[}A, ão@A&aa}[]^Á:@∘|c^\HÉA;[Áaa&&&[{ [åaae^ÁaaA ænāj\*Áseh^ænāj\*ÁsejåÁsj-{;{ ænāj}ÈÁV@^Áj[}d[[}Á,[`|åÁsh^Áse&&^••^åÁçãæáseÁ,^、Á};[[-^åÁrÌÁ {^d^•Á(}}\*Ási`ælÁtæ)\*, æÊÉ&(}}^&c^åÁsiÁs@Á^¢ã;cā;\*Á@{|^Ási¦ãa\*^Áæ}åÁā\\^åÁsi@Áy;l{ ^¦ÁÓ`}å^Á U~a3&^Áa°ãååã,\*ĖÁ

Á

QxÁxzååããā}}ÁtÁà^•oÁx^cā\*Áx@Ax¦[][•aaAxÁàb%&ãc^•ÁxeeÁx\*dā^åAşA/aæà|^ÁQBCBÉAx^}^áæAx4@eÁx\*da\*AsA 憕[Á§]&|ĭå^kÅ

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 $\bullet$ Á W] \* ¦æåā] \* Ás@ Á ¢ã cā] \* Á @ed-Á ão@áxá, ^ Áæ&ãããĉ ÁÊ; @ā • cá æāj cæājā] \* Ás@ Á ¢ã cāj \* Á} dæj & A

- •Á Ú¦[çãå^•Á&æ]æ&ãčÁ[¦Áčč¦^Á;æd[}æ\*^Á
- •Á V@^Á]\*¦æå^Á,[č|åÁee•ãroÁ,ão@Á&;[,åÁ,æ)æ\*^{ ^}oÁ{[¦Árç^}or ÁeeAr@eAfar[æ);åÁ
- •Á V@Á、^^]Ás^¦c@a)\*Áæ&^Á(~Ás@Á,^、Á,[}d[]d[]}ÉÉsrÁ(¦ã^}c^åÁsjÁs@Á;æ{^Ásiā^&caj}}áse Ás@Á;¢ã;caj\*Á
- c@ Áçã ča‡Ázet^}ãc Ázet å Å@ ¦ãzet ^Á ã }ãã3zet &^Át Á@ Át ¦^• @ ¦^Á
- •Á Ùd[}\*Á @æb-Á\$na^}caĉ Ása) åÁ (æna) cæna) •Ás@ Á\*}&ca]; æb/(x`¦][•^A(x-Ás@ Áv[¦{ ^¦ÁÓ`} å^ÁU ~-a8<^Ás`a]aa],\*Á
- •Á V@Á}&[ç^¦^åÁ;æ)\*, æÂ^å`&^•Áçãi`æ4Á¦Á@¦ãæ\*^Á§[]æ&dʧ§Ás@Á,¦[¢ã[ãĉÁy[Ás@A^¢ã;cã]\*Á •@\|c^\|Áa`ãåã\*Á
- •Á Ù^&[}åÁà^¦c@a)\*Áæ&^Á,¦[çãa^Á,]][¦č}ãĉÁ{|¦Á^&¦^æeā,}}ædÁà^¦c@a)\*ÉA`&@Áæe Á, æe^¦Áæætã ÉA;Á•^Á c@^Á§;•ãå^Áæ&^Á;~Ác@^Á;[}d;[}Á Α

V@Á∿¢ãrcā;\*Á[¦{ ^\ÁÔ`}å^ÁU~382^Ás`āla`ā;\*ÁsīÁs Ás^Ás^Ás^Ás^Ás^Ás^Ás^Ás^Ás^Ás^Ás^A^?;/582\*6s\*;!\^}oĆ•^Áse ÁszÁ, asaīdā;\*Á @|c^\Á æ);åÁn}d^Áaĭājåāj\*ÉÁv@:ÁÓĭ}å^ÁU~a8x^Á[ĭ|åÁ@æçr^Á;āj[¦Á^~ĭ¦àãa@;r^}orÁå^œaaj^åÁsjÁÔ@e0;or¦ÁHÁ;Ás@ãrÁ ÜÒØËÁ

# **3** Description of the proposal

## 3.1 The proposal

V@A,¦[][•æ‡Á,[č|åÁsj&|čå^Áx@A^]|æ&^{{ ^} of, 4x@A^¢ãro3;\*A\*æ}\*, æÊÉ,[}d[[}A;]\*læååAx@A`]\*¦æå^A, 4x c@Aã¢^åÅ, @æd-A\*dč&cč¦^Áæ}åAæe•[&ããæe\*åA;aa;å•ãå^Asj-kærdč&cč¦^AsæA©[&\æt[[A@[æ];åĚAv@A&[}&^]oA å^•ã}}Áu[¦Áx@A,¦[][•æ‡ÁsīAsµ]č•dæe\*åAsæA/26ãč¦^CEE=Ása;åAsjAOE,]^}åã¢AOE,]^}äã¢AOEA, 4x@ãrÁÜO20ÈXÁA

, Ø[¦Áx@;Á,`¦][•^•Á;-Áx@á;ÁÜÒØÉæá,¦[][•æ‡Áæb^æá,i-Áæà[čóÆFÊEE€Á``æb^Á;^d^•Á@àà[čóA:ÊEE€Á``æb^Á {^d^•Á;}Áx@:Áæà;å•ãå^Áæà;åA:ÊEE€Á``æb^Á;^d^•Á;}Áx@:Á;æe^!•ãå^DÁ©;@[;}Á§;Á28ā`¦^ÁFËHDÁ@æe/Áà^^}Á æ•^••^åÁ;[Á&[}•ãå^¦Á;[c^}cãæ‡Á&@æa)\*^•Á;[Áx@:Á;![][•æ‡Á:@[č|åÁx@^Áà^ÁA^``ã^åÁ;[||[;ā]\*Áč¦c@¦Á å^•ã?}Áå^ç^|[]{^}dÉ

Ö`¦āj\*Ás@Á&[}•d`&cāţ}Á;@ee•^Ébs@Á¢ārcāj\*ÁÔæ; à^¦ÁY@ee+Á{[Ás@Á[`c@A;ÁœA&[`d@A;[ab)åÁ[[`|åÁà^Á\*•^åÁ q[Á;ænājcænājÁs@Á\*¢ārcāj\*Á^¦¦^Á^¦ça&^ÉzV@a\*Á;@ee+Á;[`|åÁ^``ā^Áe^{][¦æ}^Á^|[&æenāt}A[A'(ab)a#Á ^``āj{ ^}cæa‡aæāt}Aj¦ātiÁætj]āj\*Á;}ÁætjåA;~ÆbbajåÁ%a[]]āj\*Á]+ÁU]ætÁ&ætå•ÉbbajåÁe^{{][¦æt^Á;æfajåāj\*Á ā]•cæa‡aæātt}Aj¦iātiÁ¢tÁ•^ÈÁ Á

Ŵ@^ÁT˘•ơ\¦ÁÙcæea‡i}ÊÉæe-Á:@, }Á5jÁ⊘ãt˘¦^ÁGËEÊ£&[}cæa‡j•Ás@^Á\*|^&cta8æa‡Asia\*daāiča‡i}Ási[æsåÁæayåA &[{{`}}a8ææa‡i}•Ásæaàā]^oÁ{[¦Ás@,Áai|æayåÈÉQA5arÁa,'[][•^åÁs@exeÁs@••^Æar{•Á{[¦Ás@,Á]@est-Á]a‡IAsi^Á &[}cæa±j^åÅjãa@ajÁs@arÁ\*¢ãrcāj\*Áses!æay\*^{^}dÊÅjãa@Aj[Áset{^}å{ ^}œ-Áj\[][•^åÈÁÁ Á CEAr{][¦æs^Á&[}•d`&ca‡i}Á&[{][ĭ}åÁşÁæà[ĭcAiÍÁrĭ{ÊÅjãa@Aj]æ&oÁ{[¦Áse4\*áaoÁş~ãoAf]~a&oÉbeet^}ãað+ÉÅ

Uzer{][,;ze; Aou]}•C; ouai}Aou[{][}ant, Aoue][UnitAt { Ex; auger]zecr/At, Aoueracr/At, ~aourizeut(`);auar• Ex |æâå[,]}Áod)åÁto[¦zet^Á[¦Á( zec∿¦ãed+Á,[č|åÁour/Át+ozeà|ãr@aÅ(i}}Ás@A5ik]æ}åÉÅ,ão@ajÁc@Aj,¦[][•æ‡Áoer/æÈÁWWÁ

### 3.1.1 Proposal description

V@^Áj¦[][•æ†Á,[č|åÁ&[{]¦ã^^Áœ^Á{[||[, ã,\*Á\*|^{ ^}@•KÁ

#### Demolition of the existing gangway and pontoon

•Á V@ Ár¢ārcā) \*Áræ) \*, æĉÁæ) åÁj[}d[]£ÉBj&|čåā) \*Ár¢ārcā) \*Á<del>F</del>€Ájā}^•ÉAj[`|åÁa^Á^{{ [ç^åA`+ā] \*ÁæÁ àæš\*^Ájão@Áæáj([`}c^åÁ&læ)^ÈA

#### Construction of a new bridge, gangway and pontoon

- •Á OEÁ, ^, Ásiláa\* ^ Áseá[č xós@ ^ A, ^d ^ e, ása ^ Áse) å Á ãc Á; ^d ^ e, A[ } \* Á [č | å Ás ^ Áse] e d č & c å Á [ { Ás@ Áãc ^ å Áse) å Á; @ ed AÉV@ / ásiláa\* ^ Á; [č | å Ás ^ Á; [č | å Ás ^ Ásil ] ] [ l c ^ å Ás ^ Áseá] č xít = ( Å ã ^ e, Ase) å Á; [č | å Ás ^ Ásil ] ] [ l c ^ å Ás ^ Áseá] č xít = ( Å a ^ e, Ase) å Á; [č | å Ás ^ Ásil ] ] [ l c ^ å Ás ^ Áseá] č xít = ( Å a ^ e, Ase) å Á; [č | å Ás ^ Ásil ] ] [ l c ^ å Ás ^ Áseá] č xít = ( Å a ^ e, Ase) å Á; [č | å Ás ^ Ásil ] ] [ l c ^ å Ásil ^ áseá] č xít = ( Å a ^ e, Ase) å Á; [č | å Ásil ^ Asea / Å; ] ] [ l c ^ å Ásil ^ áseá] č xít = ( Å a ^ e, Asea / Åsea - •Á OEÁ,^, Á } & [ç^\\^å Áset { 引 ã { Ásů a d/t a d) \*, æ Á Çaza [č o Frì Á; ^d^• Á[ }\* Áset å Â Á; ^d^• Á, ãa ^ DÁ; [č | å Á & [č | å Áset [č a há î Ésc@ Ási lãa \* ^ Áset à â Á[ æ a d há i Ésc@ Ási lãa \* ^ Áset à â Á[ æ a d há i Ésc@ Ási lãa \* ^ Áset à â Á[ æ a d hí ] ] [ | d há ka i Ésc@ Ási lãa \* ^ Áset à a d hí [æ a d hí ] ] [ | d há ka i Ésc@ Ási lãa \* ^ Áset à d hí [æ a d hí ] ] [ | d há ka i A há i Ésc@ Ási lãa \* ^ Áset à d hí [æ a d hí ] ] [ | d há ka i A há i Ésc@ Ási lãa \* ^ Áset à d hí [æ a d hí ] ] ] [ | d há ka i A há i Ésc@ Ási lãa \* ^ Áset à d hí [æ a d hí ] ] ] [ d há ka i A há i Ésc@ Ási lãa \* ^ Áset à d há i Esc@ A há i ã hí ] ] ] [ d há ka i A há i A h

- •Á Ô[}}^&&aį}Åį-Á\/&da&a¢Ą[,^\ÁįÁ&a;Á\¢ã cā}\*Á`]]|^ÁţÁj¦[çãå^Á,[,^\ÁįÁœA,@ed-Á[¦Áā\*@aj\*Á a) åÁ^&`¦ãč ÈÁ
- •Á Ü^|[&ææā]}Á(,-ÁU]æ¢Á^æå^\+•Áæ}åÁ?\\:^ÁU]^\'ææā,}•Áæ}åÁÔ`•({ { ^\:ÁQ,-{:'{ &æã}}}ÂÛ^•c^{ (A, ZUÔQ)DÁ •&\^^}=Áæ}åÁ^\;æe^åÁ^``ā] { ^} dĚA



|^c^|• Áã c^åÁ§ Ás@ Á cæ) 忦åÁãå^Á&@ed c ĔÁ

#### **Construction of landside infrastructure**

- •Á Ó`}å^ÁU~-a&^Á^~~`¦àãa@@;^}o•Á§j&|`åãj\*kÁÁ
  - •Á Š^ç^||ā] \*Ás@ Á¢ā;cā] \*Á|[[¦ā] \*Á āc@ā,ÁÓ`} å^ÁJ ~a&^Áţ Áţ] Á; Á\*æ) \*, æÁ •Á Ü^|[&æaa]}Á, Á ¢ã cā \*Á æa•Ð[•oÁ`]][¦orÁtÁ} æà|^Áæa•ÁtÁā, ^Á]Á, ão@ko@Á^, Á ãi c@Á
  - \*æ))\*,æÂ

#### **Ancillary Facilities**

- { æe^¦ãæ+•ĚÁ/@\Áe^{ ][¦æ+^Á&[{ ][`}åÁ;[`|åÁs^Á;]^¦æe^åÁ{[¦Ás@\Ás`¦æeā;]}Á; Ás@\Á;[¦\•ĚÁ
- •Á V^{ ] [ ¦æ' Á^|[ &æa] } Á -Á ¢ã cā \* ÁJ ] æ ÁU^æ\*^!• Áæ} å ÂU^|-ÂU^ ¦çã & ÁT æ &@] ^ Á+[ { ÁÔ[ & æ[ [ Á@ ]æ} å Á Y @eee<sup>\*</sup>Á( ÁÔæ( à^\ÁY @ee<sup>\*</sup>Á( Á\) æa\^Á@ei Á( Áa> Áe^{ ] [ ¦ædaî Á( ] ^¦æda[ } ædA
- •Á V^{ ] [ ¦æh^Á, æĥ-āj åāj \*Ág Ðł [ { ÁÔæqi à ^¦ÁY @æb;-Á+ [ { Áx@^ÁÔ [ &\ æqi [ ÁQ|æb; å.ÁXãrãu; | •ÁÔ^ } d ^ ÈÁ
- Á Á

# 3.2 Design

# 3.2.1 Design criteria

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## Horizontal and vertical alignment

V@Á,¦[][•æ‡Á,[`|åAşiç[|ç^ÁæáA^æ†ð]}{ ^}ơ4, Ás@A\*æ)\*, æîA, Áæà[`ơÁƏEAŝ^\*¦^^•Á\[{ Ás@A&`¦!^}ơÁ \*æ)\*, æîÁ,[•ãāā]}Ê&e)åÁs@Á, @ee+Á,[`|åÁ,¦[d`å^Áč¦c@¦Áşiq[ÂU^å}^^APæba][`¦Ásî Ásæà[`ơÁ ã¢Á( ^d^•ÈÁA V@Á@ãt@A, Ás@A,^,Á,[}q[]q[]A[[-Á:d`&c`¦^Á,[`|åAs^Áæ4{ [•ơÁãç^Á( ^d^•Áæà[ç^Ás@Á,^,Á,[}q[]}A å^&\Á^ç^|ÈÁ Á

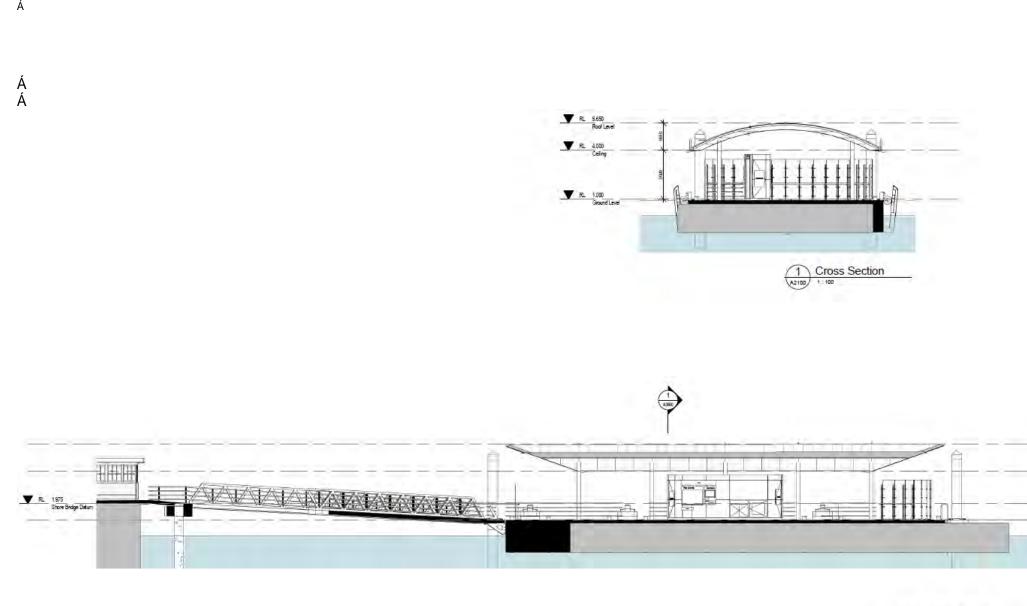
. V@Aç^¦ca8cep/t\*¦æå^Aţ-As@Aţ¦[][•æp4Ă,[č|åAs^A&[}•ãrc>}cĂ,ãc@ks@A^ččā^{ ^}@A\$@A\$@A\$&č;!!^}cÁ åãæài/^åA\$we5&^••A`cæ) åæbå•Ase) åA^ččā^{ ^}@A{ ^&@A\$@ à^&&[}ed`&c^àA{[A\$@exeA@A}@exb-A`[č|åAs^Ase&&^••ãa|^At[A,^[]|^A,ãc@kse&ãæàããcAt[¦A,[A,^••As@exb]A`&A ]^¦&x^}cAt\_As@A@at@kse) åA[, Asãa^Arç^|•Aãrc^åAşA\*cæ) åæbåAsãa^A&@exb=DEXO[¦As@A^{ æsb]3\*AG€Aţ^!&x^}cA [~As@Asat\_^As@A\*C\_As@A\*C\_As@A\*c\_As\_2\*, æôAş[č]åAsa^At\_æsb\_asååAsãa^A&Asa\_c^^}A\*Asat\_c^ [~As@Asat\_^As@A\*C\_As@A\*C\_As@A\*c\_Asat\_c^]\*@A\$a^At\_æsb\_asååAsãa^A&Asat\_c^^}A\*Asat\_c^ [~As@Asat\_^As@A\*Lasata}cAt\_As@A\*c\_Asat\_c^]\*@A\$a^At\_æsb\_asååAsat\_c\_Asat\_c\_^ [~As@Asat\_^As@A\*Lasata}cAt\_As@A\*c\_Asat\_c^]\*@A\$a^At\_æsb\_asååAsat\_c\_^A A\*Asat\_c\_Asat\_c^Asat\_c^At\_c^Asat\_c^Asat\_c^Asat\_c^At\_casb\_asååAsat\_c\_Asat\_c\_Asat\_cAt\_cAsat\_c

### **Typical cross section**

Ô¦[••Á^&qā]}•Á;Á@A;¦[][•a‡Ázd^Á;¦[çãå^åÁzeÁ2ðāči^¦^Á+EE7Áze)åÁQE]]^}åãcÁQE4;Á@AÜÒ20ÈÀ/@A&¦[••Á •^&qā]}Á;Ás@Á;@zd-Á;[č|åÁ;¦[çãå^ÁzeÁsčášča‡Áze)\*;zêÁ;ãåc@4;Ázeà[čo4;ãcÁ;^d^•EÁ Á

CE[]¦[]¦ãææ∿Á&æa]æ&ãĉÁ{[¦Ás@A,æãã]\*Áæ4^æ4{[}Ás@A,[}d;[}d[[}Á@æeAà^^}Aå^or\{ā}^åÁ\[{ Ás覦^}oÁæ)åÁ ]¦[b^&c^åÁčč¦^Áà^{ æ}åÁ{[¦ÁÔ[&\æa[[Á@|æ)åA[ç^¦Ás@Aí€A^æAÁã^•]æ)A[,≁ás@Aíd`&č¦^ÈÁ Á

Á



2 Long Section

Á Øätč¦^ÁnHËFKÁÔ¦[••Á:^&cāţ}•Á;~Á;¦[][•^åÁÔ[&∖æe[[Á@()aa)åÁY@ad--ÁÁ Á

### Consistent wharf design

OEÁ&{}•ãrc^}cÁs@o{ æa38k/ås^•ãr}Á{{¦Áse||Á]\*¦æå^åÁ; @ed-ç^•Á§jÁÙ^å}^^Á?ræd-à[č¦Á@ee-Ás\^^}Ás^^^[]^åÁ{[Á `}ã^Źa⇔àÁãå^}cā~Źa@oÁ@eebà[`¦Á @eeċc^•Áep}åÁ^¦!^Á •^¦Á^•c^{ Év/@Aå^•ã\*}Á; Ác@Aá¦[][•áekÁã;Á &[}•ãrc^}c^{}ãc@Á@cA\$a^•ãr}Á&[}&^]cA{[¦Ác@cÁÜ[æå•Áæ}åÁTæláãã;^ÁÛ^å}^^ÁO^¦!^Á?@eel-ÁW]\*¦æå^Á Ú¦[b%&dĔÄ

### **Service life**

Ùd čk 覿4Á^]|æ&^{ ^}o/æ}åÁ]\*¦æå^Á[¦\Á[č|åÁà^Áå^•ðt}^åÁ¦¦Áæáí€Á^æAÁ^¦ca&^Áã^Ê4`àb/&o/átÁ ^æ¦Á\;[{Á\a^\c@a]\*Á\;\&^•Á\æ}åÁ ^æc@\¦Á\a\* &^åÁ\d^••^•ÈĂ

### 3.2.2 Engineering constraints

Ô[}•dænā, œÁnā^}cāæð åÁu¦¦Ás@/Ási^•ã!}Áæ);åÁsu}}•d`&cāi}Áu,As@Ai![][•æa/Asi&u`å^kAi Á

- c@Á æ) åæ å•Á -Á@ ÁÖÖCE á å Á& !!^} cÁ^\*ã |æã;^Á æ) åæ å•Á[ !Ásã æ) /^å Áz&&^••ÈA
- •Á Ù^æ/h^c^|Áã^k/@Á @ed-Á@ee/Áa^^} Áa^•ã}^aÁ{;¦Áčč¦^Á^æ/n~?/Áã^Á{;{ Á;[b/8c/aÁ8]ã æe/Á &@ee)\*^bĂODÁ^æá{^ç^|Áãr^Ásel|[, æ);&^Á[, Áseà[ĭ 0Ái€€Á; ãilã[, ^d^•Á;ç^¦Ái€Á^æe) Á@ee,Áà^^} Áseå[] c^åÁ  $+\frac{1}{4}$ ¦^∙` ldĚÁ
- cãa^ÉAq[;{Á`;\*^Áse) åÁ; æç^Áse8cã;}Ás`;[ā;\*Á;]^;æã];}Á; Ás@A; @ee-ÉAÔæ;{Á;ā; åÁse) åÁ; æe?;[Á c@ Á ā^•Êx æ)\*, æ Áæ) å Áaj •œelæeaj } Á, Á\* |æ • Áæ) å Á œeaj |^• • Á c^^ | Áa æi\* • d æå^• Áæ) å Á &¦^^} • ÈA
- $a^{*} |\bar{a}| * A \otimes A = \frac{1}{2} \cdot A = \frac{1}{2} \cdot A = \frac{1}{4} \cdot A = \frac{1}$ \_[č|åÁa∿Áí∙^åÁač¦āj\*Ác@∕Á&[}∙dč&caj}Áj^¦ājåĚÁ
- $\bullet$ Á P^¦ãzeť ^ kÁÔ[&\ æ[ [Á@]æ] å /áz ÁzeÁNÞ ÒÙÔUÁ [ ¦ | å Á@ ¦ãzeť ^ Áã c^ å Á ãr ÈQ ] æSor Á[ Á@ ¦ãzeť ^ Ázeť ^ 4 Á Á c@∿Ááãc∿Áse¦^Ás[Ásì^Á;ājā]æebÉÁÁ Á

# 3.3 Construction activities

### 3.3.1 Work methodology

Ô[}•dǐ&aāį}ÁārÁr¢]^&cvåÁqiÁ&[{{^}&^ÁgiÁo@A^&[}åÁ`æd:v¦Áį~ÁGEFÏÁæ)åÁæd:^Á]ÁqiÁæda[ĭoA\*ã¢Á {[}c@AqiÁ&[{]|^cvĚÁ Á

V@^Á;¦[][•^åÁ&[}•d`&cāt}Åæ&cãpãa?a•Á{¦Áx@^Á;¦[][•æ4Áæ4^Áãå^}cãæ?åÅå^|[,ÈÁ/@ãrÁrcæ\*ä]\*ÁärÁ§tå&ææãp^Á æ)åÁärÁsæe^åÁ{;}Áx@^Á&`;!^}cÁ;¦^[ať]ājæ4^Áå^•ãt}Áæ)åÁ(æ?Á&@æ)\*^Át}&^Áx@As^œæa†^åÁs^•ãt}Á { ^c@[å[|[\*^ÁárÁajæ‡ař^åÈÁ Á

CE;^Á(æe^¦ãed+Á&@ee)\*^•Á(tÁc@/Á&[}•d`&cāt})Á(^c@?(å[|[\*^Á,@3&@4&[`|åÁ^•`|oÁs)Áscååãaāt}}ædÁ ^}çā[]{{^}cæd+Át[]æ&orÁ(tÁc@(•^Áse•^••^åÁs)Ás@ãrÁÜÖØÁ,[`|åÁs\^Á`àb/&cA(tÁseååãaāt}}ædÁ?;çã[]{{^}cædÁ æ•^••{^}dÉ

### Site establishment and wharf closure

- •Á Ò-œæi (ā @ ^) ofi, -Áæi (] [ | æt^Á&[ { ] [ ` } å Áç> | & & Ó@ ætå ā, \* ÉA ãe A; ~ ãe A\*, Ãæi (\* ] [ ` } å Áæi Áæi (\* ] [ ] æthát (\* ] [ ] æthát (\* ] [ ] æthát (\* ] [ ] æthát (\* ] [ ] æthát (\* ] [ ] æthát (\* ] [ ] æthát (\* ] [ ] æthát (\* ] [ ] æthát (\* ] [ ] æthát (\* ] æthát (\* ] [ ] æthát (\* ] [ ] æthát (\* ] æthát (\* ] [ ] æthát (\* ] æthát (\* ] æthát (\* ] æthát (\* ] æthát (\* ] æthát (\* ] æthát (\* ] [ ] æthát (\* ] æthát (\* ] [ ] æthát (\* ] æthát (\* ] [ ] æthát (\* ] æthát (\* ] æthát (\* ] [ ] æthát (\* ] [ ] æthát (\* ] æthát (
- •Á Ô•cæaijã @ ^} Aj ... Astaka [} d`&cāi } Á [ :\ Asta ^æa 4 ai \* Á![æcāi \* Á![ æcā / ák ^ ai / ák ^ ata ^æa Asta ^æa Asta / æa - •Á Ùãơ Á\*}d^Á;d^Á;d^Á;a; a Á\*¢ãA;[ã; o Á;[č|åÁà^Á\*•cæà|ã\*@\*åÁ;[¦Áo@\*Á&[}•d`&cā;}Á;[¦\Á\*ã¢ÁÁ
- •Á V¦æ-æskál] ¿l[ \Á, ^æ'; <sup>1</sup>/• Á, <sup>3</sup>/<sub>4</sub> &| <sup>×</sup> å <sup>3</sup>/<sub>4</sub> \* Á, æc'; <sup>1</sup>/<sup>8</sup>/<sub>4</sub> &| <sup>×</sup>/<sub>4</sub> &|
- •Á Ò}çā[}{ ^}œqk&[}d[|•Á,[`|å.kåv^Á\*•œæà|ã:@å.kåj.kæ&&[¦å.æa}&^Á,ãc@k@.k&[}•d`&cā[}A'}çã[]{ ^}cæqkÁ { æajæ\*^{ ^}oá,|æajAÇÔÒTÚDÁ{[kó@.á,![][•æqbÊ4,@3&@4,[`|å.kåv^Á,![å`&^å.A{[||[, ā]\*Ás@A å^cv:{ ā]ææā[}Á\_kœ.KÜÒZDĚÁK
- Á Ü^ļ^çæj óÅ šā (أ) أَلْمَ اللهُ مُعَامَةُ اللهُ الل المُحالي اللهُ مُحْمُ اللهُ اللهُ اللهُ اللهُ اللهُ اللهُ اللهُ اللهُ مُحْلَمُ اللهُ ال المُحالي اللهُ مُحُولًا اللهُ اللهُ اللهُ اللهُ اللهُ اللهُ اللهُ مُحْلَمُ اللهُ اللهُ اللهُ اللهُ اللهُ اللهُ اللهُ ال

### Demolition and removal of the existing ferry wharf

- •Á Ŵ Áţ Åd@^^Åaà'^ Á@aa' ` dQeA' ^d^ A`a^Â`Á`EÂ' A' A' A' Âà Â`â ^DA' [` a' A' ac'  •Á V@ Ávçãrcāj\*Áj[}d[[}dī[] ÉÅ að)\*, æ Áse) å Áse •[&ãæe^å/kāj -{æ d`&c`|^Áj[` |å Ásu^á/a, [ a éu^á/a, ] d Ásuka að\* ^ Ásu à Ásuð a Ásu

### Removal of piles

•Á Ùch \Ág \Ág \Ág \Ág \Ág \Ág \Ág \Ang \Z

- Á

  - Á

### Installation of piles within the waterway

- A Ô[}•d`&cāj\*Ájā^Áţ`}åæāţ}Á^•c^{ { •Áş Ás^å|{ & Astal

### Construction of the bridge, gangway and pontoon

- •Á Q, cl asæck Á asá (Å asá Å Å asá Å asá Å asá Å asá Å asá Å asá Å
- •Á V@Á,^,Á[}d[]}d[]}Ád`&č¦^Á[[`|åÁa^Á&[])•d`&c^åÁæc/æ}A, A àæ\*^ÈV@Á[]}d[]}Á[`|åÁa^Áæcæ&@åÁa[ÁœA\*a]\*, æÁ
- •Á Ô[}}^&cā;}Å
  •Á Ô[}}^&cā;Å
  •Á
  ## Landside infrastructure

- •Á Q,• cæl|æeā] }Á(-Á,^ (Á æ Ëð) åð) \*Á ð }æ\* ^Áæ) åÁð @z) \*Á

# Site clean-up and opening of the new wharf

- •Á V@:Á;ãč^Á;[č|å/Ásà^/Á&|/~æ);^å/Á;] Áse);å/Á/•q[¦^å/Áş[/Ãser-Á;¦^çã[č•Á;cæec^Á]
- •Á Ô[}d[|•Áæ)åÁơ{][¦æ'Ád`&č ¦^•Á[ĭ'|åÁà^Á^{ [ç^åÅ
- •Á OĐÁ ﷺ أَلَّهُ أَنَّهُ اللَّهُ مَعْدُ هُ اللَّهُ مَعْدُ هُ عَلَى اللَّهُ مَعْدُ هُ عَلَى اللَّهُ مَعْدُ هُ عَلَى اللَّهُ مَعْدُ هُ عَلَى اللَّهُ مَعْدُ هُ عَلَى اللَّهُ مَعْدُ هُ عَلَى اللَّهُ مَعْدُ هُ عَلَى اللَّهُ عَلَى اللَّعَلَى اللَّهُ عَلَى اللَّعَلَى اللَّهُ عَلَى اللَّعَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَ المَالِ اللَّهُ اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّعَلَى اللَّهُ عَلَى اللَّعَلَى اللَّهُ عَلَى اللَّالَةُ عَلَى اللَّهُ عَلَى الْحَ المَعْلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّا عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّعُلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَّهُ عَلَى اللَحْعَلَى اللَهُ عَلَى الللَّا عَلَى اللَعُ عَلَى الللَهُ

# 3.3.2 Construction hours and duration

Ü[æå•Áæ)åÁTælānā[^Á;|æ)Á[Á&æl¦^Á;óks@A;\[][•æþ4;ç^\ÁæA;^\ajå4;Áæà[`ó4\ä¢Á;[}o@AÇ^æe@\Á ]^\{ ãuāj\*DÉ4:cælcāj\*Á§;Á@Á^&[}åÁ`ælc^\Á;ÁOEFÏÈÁ Á Ô[}•dǐ&cā[}Á,[ǐ|åÁ,[¦{æ‡|^Áa\^Áa[ãc^åÁ([Áa\^ç, ^^}Áo@A[[||[,ā]\*Á-cæ)åæbåÁ,[¦\Ácā[^•kÁ Á •Á ïæ{Á[Â]{ ÁT[}åæôÁ[ÁØ]äåæôÁ •Á ìæ{Á[ÁT]{ ÁUæč¦åæôÈÁ

●A Taq Aq Arj{AOae: aa Á

Y [¦\Áæ&cãçãoã∿•Á;`oraã^Á;-Á;cæ)åæ⊎åÁQ2`¦•Á; [`|åÁsà^Á^`ĭā^åÁşiÁ;lå^¦Á{¦å^¦Á;A%c榦Á,`cÁjāj\*Áæ&cãçãoã)•Á æ)åÁşidã&æe^ÁãorÁ¦[{Ác@>Ásæ}\*^E;[`}c^åÁ&¦æ)^É&š`^Á;[Á^`ĭā^{ ^}orÁ{¦Á;cā||Á;æe^¦ÉAOBcãçãoã)•Ác@æeÁ æ^Áã^|^Á;[Ás\Á'}å^¦cæs^}Å;`oraå^Á;—Á;cæ)åæbåÁ;[¦\ÁQ2`¦•Áse'∧Á;`dā]^åÆs^|[; kÁ

#### **Piling activities**

Úãjā;\*Á,[¦\Ácî]a8æe|/Áæe;^•Áæe[`}åÁc@^^Á,^^\•Át;Á&[{]|^c^Á@ee`[`oÁãe^^}Á;ã @e•Ás;Át;œe;DÁt;;æe°åÁc@éA à^\*ą]}ą̃\*Áį Ác@Á&[}•d`&cąį}Áį^¦ąĩåĖQo•cæe|æcąi}ÁįÁc@Áją?^•Á`[`|åÁ^``ã^Á&ea{ Á};cã[}{ ^}cæeÁ &[}åãdā[}•ÁQ;dāļÁ,æe^¦Áce)åÁ[ā]ā[æhÁ,ā]ā[æhÁ,ā]åDÁ[Ás@eenÁ@AH[æenā]\*Ásael\*^Á•^åÁ[¦Ás@·Á[ā]ā]\*Ásae)Á^{æaājÁ • cāļļÁĮ ¦Ás@^Ájā^•ÁĮ Ás^Á§j• cæļ/^åÁse&&` ¦æe^\^ĚÔæ{{ Á&[} åãāj} • Áse^^Áse+[Á^~~ ă^åÁ§ Á ¦[çãå^Áæ^Á 81;}åãaā;}•Á1;¦Ás@Á81;}•d`8aā;}Á84^, ÈÁ/@Á æe^¦, æÂã;Á•čæl/Á8æk/^¦Á?æl/Á§;Ás@Á1[[';}ð;\*ÉA ão@Á ∄ å Áse) å Á, ∄ å Á&@[] Á§, &\^æ•∄ \* Ás@[`\* @[` ó k@ Áseê ÈÁ/@ Á&[} å ãã∄} • Á^`` ã^åÁ{[¦Á, ã∄ \* Á •` æ||^Á, &&`¦Á å`¦āj\*Áx@2a;Á^æe¦^Á;[¦}āj\*Á,^¦ājåÈÁ А Úājā;\*Á,[¦\•Áse^Á@at@;Á][¦æåa8bĚV@¦^Á;æ?Áse^Á;[ãr^Á;[{ Á@ee;{ ^¦ā;\*Áse}a,Åsi;ajlā;\*Á;-Áse4;ārÁ;[A æl[`}åÁF€Á\āj`c^•Á;¦Á[Áæ)åÁs@}}Á;[Á`à•cæ)cãædÁ[ã^Á;¦ÁH€Á\ā`c^•Á;¦ÁH€Á\ Á Ùĭ{ { æ¦^Át -Á@;ĭ¦∙Át-Á;ãt @A,[¦\•Át¦Átājā;\*Ásilājlā;\*Áse&caā;ãuā)•KÁ. А FÈÁÙ^č]Á{¦Áå¦á|jā}\*Á¦[{Á∓Gæ;{Á{Á∓æ;{Á  $\dot{\mathbf{GEA}}$ Ölalla \* Å  $\dot{\mathbf{A}}$  ar  $\dot{\mathbf{A}}$   $\dot{\mathbf{A}}$  ar  $\dot{\mathbf{A}}$ HÈÁÚæ&ÁÁ]Á\*^}^¦æ|^Âíæ{Á¢IÁíæ{ÈÁ Á Ù`{ { æ\$^Á; Á@?`¦•Á; Á; ã; @A, [¦\Á; ¦Á; ã;ā; \*Á@æ; { ^¦ā; \*Áæ&cā; ã;ã; •KÁ Á FÈÁÙ^č]Á{¦Á@æq{{^¦ãj\*Á¦[{Áiæq{Ái[áiæq{Á GĐĂ Pæ{{^¦ã} \* Á; Á; ã^ • Á¦{{ æ{ Á; æ{ É Ă Á

#### Intricate lifting activities

V@¦^Á,[`|åÁsà^Ásaà[`Óh∓€Ásjda8aæevÁjão+Ás@[`\*@[`\*@[`ókô@Á&[}•d`&caā[}Á,^¦ā[åÉAQ)da8aæevÁjãca3j\*Ása)åÁ ]|æ&^{ ^}oÁ[-Ása[{][}^}orÁ[-Ás@Á,@ad-Á,[`|åÁsà^Á&ad+lä∿åÁqi`óA\*•3)\*Ásad+\*^Éξ[[`}c∿åÁ&Laa)^ÉÁV@ärÁ æ&caāçãcîÁ,^^å•Ás[A][}}\*Ásad+?JÁsi`¦ā]\*Ásad+{A?}çã][}{ ^}cæ4Ás[}åãaāt}•Áojecā‡|Á,æev¦Ása)åÁtājāt\_æ4Á jā åDDÆÁ Á

Òæ&@\$43,da&æe\*\Áão%ea)åA,j|æ&^{ ^}o%sæ)Áæà^A ] Át[Á ã¢ÁQ[č¦+ĒÁO[¦Áãæā]\*Áea)åA,j|æ&^{ ^}o%t[Ás\^Á &[{]|^c\*åÁ @å^Ax@^A^}çã[]}{ ^}æa‡A&[}åããt]}•Áea^Áæi]]¦[]¦ãæe\*Ĕ43,da&æe\*Aáaā]\*Áea)åA,j|æ&^{ ^}o%teA ^¢]^&c\*åÁt[Á&[{ { ^}&^Áee[č}}åÁFF]{Áea)åÁ&[}cãjč^Át[Áæà]čA[čá]čA Á

### 3.3.3 Plant and equipment

V@^Á\*``ā]{^}ơ&q[Áa\^Á•^åÁ,[`|åAa^Á&q[}~ā{ ^åAa`¦ā]\*Áx@^Á&q[}•d`&cāq[}Á,|æa}}ā]\*Á,\[&^••È4√^]&&æq4Á ]|æa}oAæa}åA\*``ā]{^}oAjā`^|^Áq[Áa\^Á•^åAa`'¦ā]\*Á&q[}•d`&caq[}Á,[`|åA5y&q|`å^hA Á

- •Á Õ^}^¦æ[[¦•Á
- ●Á Šãt @2ā) \*Á{[[|●Á
- •Á Ú[ , ^¦Á@e) åÁ[ [ |•Á
- ●Á Šãt @Aç^@38|^●Á
- •Á Ó[æe•Á
- ∙Á Óæ'\*^•Á
- Á ÖlálÁð 
   Á
- •Á Ô¦æ}^•ÁĢaæ!\*^Á;[`}ơ\åDÁ

-Á Y æe^\¦Áj`{]•Á
-Á Ô@æaj•æ;•Á
-Á Xãa¦æe[¦^Á&[{]æ&q[¦Á
•Á Ô[}&\^c^Át] & •Á
•Á Pæ{{^\¦Ás¦ã]•Á
•Á Ô[}&\^c^Ás[[{ Áj`{]•Á
•Á Pæ}åÁg[|•ÈÁ

### 3.3.4 Earthworks

V@^Á,¦[][•æþÁ,[č|å/á9,ç[|ç^Áo@Á[||[, ā]\*Á,ā][¦Áæ)å•ãa^Á,[¦\•kÁ •Á Ùãc^Á,¦^]æbæaā[}Á[¦Áæ)&ã||æb^Áaīc^Á •Á Q,•æe||æaā[}Á[-Ác^{{][¦æb^ÁU]æþÁ&æbåÁ^æbå^¦•Áæ)åÁÙ^|-ÁÙ^¦çã&^ÁTæ&@3]^ÁeazÁÔæ{a`A`¦ÁY@eb-ÈÁ Á V@^Á,¦[][•æþÅs[^•Á,[cÁ^ččā^Áeb)^Á[æab]¦Áæ)å•ãå^Áræbc@;[¦\•Á;¦Ár¢&æçæaā[}ÈÁ

### 3.3.5 Source and quantity of materials

V@Aj¦[][•æ¢/\$i[^•A,[cA,^``āl^As@A5ą]][¦cææāj}}Aj,-ÁājļAj,æer\¦ãæ¢Aj,¦Ašiār][•æ¢Aj,-Aj,æer\¦ãæ¢+A¦[{ Ás@·Á •^æà^åAserAj,[A^&]aej,æaāj}Aj,¦Áāj]ā,\*Asi,Án``āl^åĖŽÁ Á Þæč¦æ4Á/•[`¦&<•Aj,¦Á&]}•d`&caj,}Asj,&j,&j,&i^\*eerAj,¦Á\*•^Asj,A&]}&;</table>

Pætia#A∿•[`i&∿•A{iA&}\*C`&a#}A&j&q`a^&e`i^`æt^A{iA\*\*A}jA&j&o`@A&j&aA&&`{`}A&j&aA •aðjåÉ&et\*¦^\*æt^ÅæðjåÁ<^|^&oA{{aet}ãædÁ{iÅœ^Aj¦[å`&aāt}}Á{iÁ&^{{ ^}&^{{ ^}}}ó&a}åÁtjæ•EATaðj`~æ&č`¦^åA&t{ āj&]`åāj\*Árc^^|ÉAj¦^E&æro&{{ [ } [ } ^}oAæðjåÁjāj^•ÁæðjåÁcājãæði•Áj [`|åÁæd+[Á&^Á∧``ā^åĔÁ Á

Tæc^¦ãæþ•Á[č|åÁà^Á[č|&^åÁ¦[{ /áːç^¦•^æ-Áæ)åÁ[&æ¢Á&[{ { ^¦&ãæ¢Á`]]|ã^¦•É<.i]\* Á[&æ¢Á`]]|ã^¦•É<.i]\* Á[&æ¢Á`]]|ã^¦•Á \_@`¦^ç^¦Á^æ=ãa|^Áæ)åÁ&[•Ó<-~&&cã;^ÈÁ

### 3.3.6 Traffic management and access

OĘ|Á&[}•d`&cā[}Á]|æ];dÊA``ā]{^}dÊA``ā]{ ~}dÊA; æe^¦ãædp•Áæ);åAj,^¦•[}}^|Á,[`|åAd;æç,^|Ád[Áo@Aiãe^Aa`Aa;a&;\*^Aj,¦Aa[æeA -¦[{Áo@Aj,~E=ãe^A&[{][`}}åEÁ

Á

Ú[c^}caadyÁa[]æ&co Á[}Á;æc^!&!æcEÁ]^^å^•c'aða•c'aða) •Áæ) å Ásiða&`&|^•Á[[`|å Ási^Á;æ) æt ^å Ási Áse&&[!åæ) &^Á;ãc@Á c@ Á[æ) æt ^{ ^}cÁ[^}cÁ[^][•ædÆ],^å Ási Ás@ Á/!æ-ðaÁTæ) æt ^{ ^}cÁ[|æ] Á[!Ás@ Á;![][•ædÆ],@3&@Å[[`|å Á à^Á;![å`&^å Á{[||[,引\* Ási^c':{]æati]}Á;Ás@ ÁÜ ÒØÆÁA

# 3.4 Ancillary facilities

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V@ Áţæ•@eqlaj\*ÁsejåÁq[læ\*^Áţ-Á[[•oÁ,æer\+ãa^Á&[}•d`&aā]}Á``āj{^}d5, læjoÁsejåÁţæer\iãad+ÉsejåÁ c@ Á] !^Ëæailã&æaā]}Áţ-Ájæo Éźţ!^Ë&æ•cāj\*Áţ-Á@æå•q[&\+kejåAãoÁţ`orÁ[lÁc@ Á,@ed-Éžţ[`|å/ka^ksæblä\*åÁ [`o%a^Ásoksu]}dæsq[}dæsq[lÁsocAsejÁţ~ËäerÁæsäjãč ĚdDE•[&ãæerå/&[]+d`&cāt]}Áţær\iãad+ÁsejåÁ\*``āj{^}o4,[`|å/ka^ksæblä\*åÁ [`o%a^Ásoksu]}dæsq[lásocāt]}á,~ËäerÁæsäjãč ĚdDE•[&ãæerå/&[]+d`&cāt]}á,ær\iãad+ÁsejåA\*``āj{^}o4,[`|å/ka^ksæblä\*åÁ a^lãt^!^aÅsobjåÁ^{{[chaska]}Aţ~EšarÁæsäjãč ĚdDE•[&ãæerå/&]}+d`&cāt]}áţær\iäad+Áse]}áA\*``āj{^}o4,[`|å/ka^Ásæblä\*á a^lãt^!^aÅsobjåA^{{[chaska]}}áA\*{[chaska]}áţč Á\*0@áj\*Á±adbiiset\*^•EðdDž4;ædbiisetÅ; aær\iäad+Áse]}ed`&cāt]}á,[`|å a^A{} a^A[ãt^!^aÅsobjåA^{{[chaska]}}áA\*{[chaska]}á, aær\iá ãtoÁt\*] a^A[ata+Aset]}áA[[{ Ásad\*^•A[A]}Ato@Ajæer\iÁjãtoAset]}abjiisetÁjæer\iaãAAset] a^A[ata+Aset]}áA[[{ Ásad\*^•A[A]}Ato@Ajæer\iÁjãtoAset]] a\*Aset]}át, ak@átaAset] a\*Aset]atoAset] toAset] a\*Aset]atoAset]atoAset]atoAset] a\*Aset]atoAset]a

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# 3.5 Public utility adjustment

QÁ#áÁ,[cÁ∿¢]^&c^åÁs@eeeÁs@~¦^Á,[č|åÁaà^Áee)^Ájčà|ã&Á cajãĉÁseaåbŏ∙d;^}cÁ^ččā^åÁų[¦Ás@^Áj¦[][•æ‡ÈÁ Á

ÖãadaÁÓ∧-{¦^ÁŸ[`ÁÖãtÁÇÖÓŸÖDÁşiç^•cãtaæaāt}•Á,[`|åÁsà^Á&ads¦ātàáÁ,`ó4s`¦āj\*Áx@Ash^aa4sh^aAsh^•ãt}Á,@ee•∩ÉÁ QÁsej^Á^|[&aæaāt}}Át,–Át^¦çã&∧•ÁsrÁ^``ã^àÁ`¦c@¦Áse•^••{ ^}ơ4,[`|åÁsà^Á&ads'ātáÁ,`ó4siÁse&Q[¦åaa}&^Á,ão@Á Ü[aast•ÁsejàÁTastāaāt, ^ÁÒ}çãt[}{ ^}ơÁC;aa)&@A^``ã^{ ^}œAsejåÁs@Aset]¦[]¦ãæerAícāpäĉÁ,¦[çãa^¦•Á,[`|åÁ à^Á&[}•`|c^àÈÁ

# 3.6 **Property acquisition**

Þ[Á, |[]^\c´Áæ&č´ãrãdā, }Á, [č|åÁsAÁ^ččā^åÁ{; |Ás@A, \[][•ædÈĂŠā&^}& ^•Á{; |Ác^{ ][ |æ^Â&[ { ][ `}åÁ , [č|åÁsAÁ^ččā^åA; [{ Ás@Á/;`•o4, |ã; |Át; Á&[ { { ^}&ā] \* A&] }•d`&cāt } ÈÁÁ OEA, `{ à^\A, A^œ ^•A{; | {Ás@Á+A, 3] \* Aso, c, ^} } ÁU[ æå •Áæ] åAT ædãdā; ^Áæ) åÁs@ÂÛ^å}^A Pæbà[č|ÁZ^å^¦æaāt } Á/;`•o4; |Ás@Á; \*[ā] \*Á, }^!•@3; ÉA; ]^¦æaāt } Áæ) åAT ædãdā; ^Áæ) åÁs@ÂÛ^å}^A Pæbà[č|ÁZ^å^\aæāt } Á/;`•o4; |Ás@Á; \*[ā] \*Á, }^!•@3; ÉA; ]^¦æaāt } Áæ) åAT ædãdā; ^Áæ) åÁs@ÂÛ^å}^A O^c^!{ ā] æaāt }Á; Ás@ÂÜÒØÆ; Á, [o4^|ãæ) o4; } Ás@Á&[ { ] |^cāt } Á; -Ás@Á^|^çæ) o4/ æ\*• ÈÁÁ Á

# 4 Statutory and planning framework

# 4.1 Commonwealth legislation

### 4.1.1 Environment Protection and Biodiversity Conservation Act 1999

W}å^\ká@ ÁEnvironment Protection and Biodiversity Conservation Act 1999ÁQDÚÓÔÁOB&DÁ&Á^^\\æká^ \ \^``ā^åÁţ Á@ ÁQE •d ﷺ ÁÕ[ç^\}{ ^} ض{\Áj\[][•^åÁæ&cąt} • Ás@æÁ@æç^Ás@ Áj[ơ} cætÁţ ǎā}ãææ) dî Á āt]æ&o∱} Á, ææ∿\•Áţ -Ájææaţ} ætÁ}çã[]{ ^} cætÁã}ãææ} &^Áţ\Ás@ Á\*}çã[]{ ^} o∱ţ -ÁÔ[{ { [}, ^ætc@Á |æ}ådeĂÁ Á

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HÁ	Q; ]æ&o‱;[ãåæ);&^Á æ);åÁ;ãã∄æaã;}Á	Tão∄æa‡i}Á,^æ*`¦^•Á@eç^Áà^^}Á9;& `å^åÁ9;ÁÔ@ed;c*¦ÁìÁ,-Ás@e:ÁÜÒØÈÁ Þ[Á:ð]}ãa8æa;oÁ4i]æ∨Á@eç:^Áà^^}Áæa*^åÁæeAjæorÁ;-Ás@A æ•^••{ ^}oĚÁ
ΙÁ	OEI^Ás@/Ás[]æ&c●Á ●∄}ãa3&æ);cÁ	Þ[Á:ð]}ã&3&æ)oÁ\$[]æ∨Á@æç:^Áa^^}Áæãi^åÁæiÁ;æio4[,~Áo@A æ••^••{^}oÈÁ

Væà|^ÁtËFÁĴ/\|~Ëæ••^••{ ^} oÁ ¦[ &^••Á

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¦^|^çæ) oÁ; ææc^¦•Á; Á; ææā; }æþÁ\*}çãi[}{ ^}œ¢Á\*ã\*}ãæ3æ3; &^Á; ¦Á;}ÁÔ[{ { [}, ^梜∮æ3; åÈAOE&&[¦åā;\*|^Êbo@A ]¦[][•æþÁœæ•Á;[oÁa^^}Å^~^¦¦^åÁ¢[Ác@·ÁOE•dæ†ãæ3; ÁÕ[ç^¦}{ ^}o/Ö^]æ+d{ ^}o/A; ÁÒ}çãi[}{ ^}o/sæ3; åÁ Q}^¦\*^Á`}å^¦Ás@AÒÚÓÔÁOE&dĚA

# Á

### 4.1.2 Sydney Harbour Federation Trust Act 2001

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CE] ] ¦[çæ|Á[¦Áæ), Áæ&cā[} Áçæ, Áš, ~ā] ^å Á§, Ác@, ÁÒÚÓÔÁOE8cÁ[Á§, &]`å^ÁæÁ[¦[b/8cDÉædå, ^ç^|[] { ^} dźæ), Á `}å^¦cæ); ā] \* É&æ), Áæ&cāçāc Á[¦Á, ^¦ã) • Á[, Áæ&cāçātā) • DÁa; Á^` ă^åÁ'[ { Ác@ Á/¦` • cÁ{ ¦Áæ|Á [ ¦\ • Á] } Áāe Áæ); å • ÈÁ V@ Á/¦` • cÆa; Ác@ Á&[} •^} cÆe c@ ¦āc Á[¦Á([• cÆe&cā] } • Á] ![] [•^å Á] } Æe Áæ); å ÈÁOE8&[¦åā] \* |` Á[ &æ4Á&[` } &ä æ); å Ác@ Á¤ ÙY ÁÕ[ç^¦} { ^} cÆa[Á] [ cÁ@æç,^Áæ), Áæ] ] ¦[çæ‡Á[|^Á{ ¦Áå\_ç^|[] { ^} cÆa; ÅC/ič • cÆa; å ÈÁ Á

Ø[¦Áx@ārÁj¦[][•æþÁ@[,^ç^¦É&æÁ\*^]æ+ææ\*Áæ]]¦[çæþÁ'}å^¦ÁpÙYÁ/^\*ãi|ææa[}Á&iA^ččā/^åÁæeÁæÁ\*{æ¢lÁ ][¦œ]}Áį́-Áx@Á;¦[][•æþÁ[&ææ\*åÁæåbæ&A}oÁ[É&ičof{čorãa^Áx@A/¦č•œqÁ;![]^¦ćÁa[č}åæå?•ÁÇA-^¦Á[Á Ô@æ]c^¦ÁÈEÈEÁa^|[, DÉÁ

. ∇@:Á/¦č•oÁ@æeÁ?}å[¦•^åÁ,|æ}}ðj\*Á&[&č{ ^}orÁx@æeÁ\*čãå^Áx@:Á•^Áţ,ÁãerÁæ)å•Ě4/@•^Á&[&č{ ^}orÁæ}^Á åãr&č••^åÁà^|[,ÈÁ Á

### **Comprehensive Plan**

V@AÔ[{]¦^@}}•ãç^ÁÚ|æ}ÁáiÁæáà¦[æåÁdæe^\*ã&Áj|æ}Á;@ã&@Á^o•Áj`óÁæáçãrā[}Á{¦Áó@Árãe^A(Ç\_}}^åÁà^Á c@Á/¦`•dDáæ}åÁāj&{j`å^•Áæáj¦[&^••Á{¦Á]^]æ}ä}\*Á[[¦^Áå^œãA^a@aAá(æ)æ\*^{{^}}ó∱]æ}aÅ ]|æ&^•Á;¦Áà`ā¦åāj\*•ÈÉÔ@e‡jc^¦ÁiÁ;~Ác@ÁÚ|æ)Á{{&`•^•Á;}ÁÔ[&\æt[[Á@]æ}åÅæ}åÅa^œa‡•Á@Á{||[]]ā}\*Ká Á

●Á V@•Á\*^}^¦æ‡Á\*ãe^Áæ)åÁ&[}c^¢cÁ

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#### Management Plan – Cockatoo Island 2010

### Objectives

V@••^Áįàb∿&cãç^•Áæ]]|^Áq[Áæ)^Á;[¦\•Á;¦[][•^åÁq[Áå^Á;}å^¦cæà^}Á;}ÁÔ[&\æq[[Á@|æ)åÈÁJàb∿&cãç^•Á æ)åÁ&[{{ ^}cæ}^Á;-Ás@^Á;æ)æ\*^{ ^}c^j,|æ)Áæ^^A;¦^•^}c^åÁ§iÁæåå¦^••^åÁ§iÁ/æà|^ÁiÈGÁà^|[¸ÈÁ Á

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Ó^Á&[}•ã:c^}cĄã@kó@Á¤æaā[}æµkæ)åÁ?P^¦ãaæ*^Á {æ}æ*^{^}o∱¦ãj&a] ^•LÁ	O EÁU cæe^{ ^} ơ∱ ÁP ^ ¦ãæ t ^ ÁQ ] æ SơÁQ U P O ÞÁ@æ Á à^^} Á } å^ ¦ cæ * } ÁF ^ ¦ãæ t ^ ÁQ ] æ SơÁQ U P O ÞÁ@æ Á à^^} Á } å^ ¦ cæ * } ÁF ^ ¦ãæ t ^ Á ; æ) æ * ^{ ^} ơÁ ] ¦ā 8ā, æ • EÁ ⁄ @ ÁU U P O SS[ } 8   č å • • Á Sœæ / Ša * A a) cã 8a] æ * å Å sœæ Á @ Á ! [ ] [ • ^ å Å [ !\ • Á 3a] 8   č å 3a] * Á c^{ ] [ ¦æ ^ Á sæ sa a a sæ * Ô æ i à ^ ! Á ⁄ @æ + D Á [ č å å a æ * ^ Á ŝa @ ! Á sœ * Ô æ i à ^ ! Á ⁄ @æ + D Á [ č å å a æ * ^ Á ŝa @ ! Á sœ * Ô æ i a * ! Á @ æ + D Á [ č å å a æ * * Á ŝa @ ! Á sœ * Ô æ i a * ! Á @ æ + D Á [ č å å a æ * A ŝa @ ! Á sœ * Â â æ i a å a å å a æ æ * A ŝa @ ! Á sœ * Â â æ i [ Á @ ] æ à Å i Å a æ i æ * Á ŝa @ ! Á sœ * Â â æ i a å i a å a å æ & Å í a å a ã æ å / á sœ ! Á sœ *  â @ ! Å â a å a æ i a å a å a å a å a å a å a å a å a å a
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Øæ&ãñãææ^Ás@ Ástæ)•][¦ơÁ,-Á),^[] ^Áæ) å Át[[å•ÁstÁ æ) å Á¦[{ Ás@ Ásr æ) å Ási^Á,¦[çããã]* Áse]]¦[]¦ãææ^Á ,æe^¦-¦[} óÁsj -¦æ•d`&c`¦^LÁ	V@^Á,¦[][•æ¢Áæáa[•Áq[Á,¦[çãáa^Á,æec^¦-¦[}oÁ ā]-¦æ•dč&cč¦^Áx@æex5a[]¦[ç^•Axô@aÁdaæ)•][¦o4[,-Á ]^[] ^Áq[Áæ);åÁ¦[{Áx@?a@i4@e]a3);åÈÁA
Ü^çãç^Áx@? Ásē  æ9; å Ási^Á^ā]d[å`&ā];*Á; æ9;ããã; ^Áse9; å Á  ^ æ2^å Ásg; å`•d^Ásee Á; ^  Ásee Ásca4)æ3; *^Á; -Á &[{] ^{ ^} ?} œ9; Á`•^•Ásg; & `åā];*Ásči [c`læ9;ÉÅ ^} c^l; œæ3; { ^} cDÉssã]ā];*ÉÅ\å`&ææ3ā]}ÉÅ^&\'^æa3ā];ÉÅ  ^cæ3a)ÉÁ; ~a33A^•Áse3; å Átic`åã];•LÁ	V@^Á,¦[][•æ‡Á,[č åÁæ&&&[{ { [åææ^Á,[c^}œæ‡Á;¦Á *¦[, c@Á§jÁ,æes'[}•Açã:ãã;*As@:Aiãc^Á;¦Áæákæ;*^A;-Á č•^•ÈÁ
Ò•cæàlãr@ÁÔ[&\æt[[Á@[æ]åÅ&eÁxeÁ, æ&^Á[~Á]čàlã&Á ^}b[^{ { ^} o&a^Á,'[[çãå3]*Á]čàlã&4[]^}A[æ&^Á&)åÁ o@/Á&¦^æaā[}A[,Á\$,^}`^•Á[¦Á&č 覿4A;ç^}orLáæ}åÁ	V@^Á,^,Á,@eeb-Áecaaī,●Áq[Á,ājā[ã=^Á,^Á,^å^●dãaeo)Á &¦[,åāj*Å,[ājo=Áeo)åÁ``^`āj*ÁeceAío@eÁaejaåÉako@●Á ā[]¦[ç^Á&x`●d[{ ^¦Eoçãrãa[¦Á%¢]^¦ã?}&^ÈÁ
C1, ]  ^Ás@A,¦āj,&aj, ^●Á, ÁO&[  [*ā&aa ^ÁÙ˘●caaā);aaà ^Á Ö^ç^ [] { ^} cÁs[ Ás@Á^çãaaa†ã; aaaā];}Á, Ás@Áãr  aa);åÈÁ	V@^Á;¦[][•æ‡Á@æ•Ásà^^}Áså^•ã*}^åÁsjÁse&&{ ¦åæ)-&^Á jãr@ÁÒÙÖÁ;¦3j&aj ^•ÈÄÜ^-^¦ÁtĮÁÔ@æ];c^¦ÁìÈGÁt[¦Á ~`¦c@:¦Áså^cæaäÈXÁ

#### **Design Outcomes**

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• Conserve and adapt heritage sites to ensure they are important element of the island's attractions.

Specific design outcomes have also been established for each precinct on the Island. The proposal is located in the 'Eastern Apron' precinct. The Eastern Apron has three distinct areas: the Cockatoo Island Wharf entry at the northern end of the apron; the Plaza in front of the cliff face; and the Workshops on the southern side of the apron. Appendix A provides the proposal drawings, including information regarding the boundary of Commonwealth owned land.

Summarised below are the design outcomes for Cockatoo Island Wharf entry area:

- Provide the main entry point for visitors arriving by ferry or charter boat.
- Retain entry via the Gatehouse to the informal forecourt (formed by the Administration Building) to create a sense of arrival
- Improve amenity and comfort through the provision of seating, shelter and installations that facilitate interpretation of the island
- Make use of the existing palette of materials which will improve the definition of the area and improve the control of stormwater runoff
- Retain the openness and flexibility of the area so that it works well for managing arrival to large scale events as well for day to day, more casual visitation.

The proposal is consistent with the design outcomes listed above. The proposal would retain the existing entry point and provide new shelter and seating on the pontoon, without compromising on the Islands historic values or iconic harbour views.

### 4.1.3 Disability Discrimination Act 1992

The *Disability Discrimination Act 1992* (DDA) is the Commonwealth legislation that seeks to provide equity for people with disabilities. The main objects of the DDA include the elimination, as far as possible, of discrimination against persons on the grounds of disability in relation to access to premises and the provision of facilities and services. The proposal has been designed to respond to the requirements of this Act.

### 4.1.4 Disability Standards for Accessible Public Transport (DSAPT) 2002

The *Disability Standards for Accessible Public Transport 2002* (DSAPT), made under the DDA, prescribes minimum standards of accessibility in relation to both public transport buildings and conveyances to remove discrimination from public transport services. The proposal has been designed to respond to the development standards identified under the DSAPT.

#### 4.1.5 Native Title Act 1993

A search of the National Native Title Tribunal search application returned no active native title claims for Cockatoo Island (accessed 2 September 2016). Accordingly, no impacts on active native title claims are likely.

# 4.2 NSW legislation

#### 4.2.1 Environmental Planning and Assessment Act 1979

The EP&A Act establishes the system of environmental planning and assessment in NSW. A portion of the proposal falls outside the Trusts boundary; as such this proposal is also subject to the environmental impact assessment and planning approval requirements of Part 5 of the EP&A Act. Part 5 of the EP&A Act specifies the environmental impact assessment requirements for activities undertaken by public authorities, such as Roads and Maritime, which do not require development consent under Part 4 of the Act.

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. Ô|æĕ•^ÁQCÌÁ;Á@@ÁEnvironmental Planning and Assessment Regulation 2000ÁÇÒÚBCÆÜ^\*\*|ææā;}DÁ å^-āj^•Á@Áæ&d;I•Á;@&@@{\`\*o%a^Á&[}•ãa^I^åÁ;@}Åa^c^I{ājā;\*ÁāÁæjÁæ&ãçãčÁæ•^••^åÁ}å^IÅ ÚæċdĂÁ;Á@AÔÚBCÆO&o^@æ•Áæ4ā;ãã&æjdãi]æ&o4;}A@A^;çã[}{ ^}dĚÔ@æ]c^IÂÁ;ÁœAÜÒØA;I[çãa^•Á æjÁ?}çã[}{ ^}œa4Æ[]æ&oÆe•^••{ ^}o4;Á@A;I[][•æ4Æ;Áæ&[Iåæj&^Á;ã@Á@AÔÚBOÆO&A;å QE]^}åã¢ÁÓA]^&ãã&e|^Á^•][}å•Á[Á@Áæ&d;I\*A[IKE]}•ãa^Iæã]}Á}å^IAS

# 4.2.2 State environmental planning policies

# State Environmental Planning Policy (Infrastructure) 2007

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# State Environmental Planning Policy (State and Regional Development) 2011

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# Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

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#### Væà|^Ái Éi k Őãçãa ãi}ÁGÁi æec^¦∙Á

Division 2 matter	Comment
Ô æĕ•^ÁGEFÁÓāţåãç^¦•ãcîÊ24&&[ [*^Áæa}åÁ ^}çã[]{{^}oÁj¦[c^&cāţ}Á	Ø[['æ&æ)åÁæ`}æ&a`*^•Á@æç^Áa^}Á&[]•ãa^!^åÁ æ)åÅæ•^••^åÁ['!Á@A,'[][•æ‡ÄQE,Áæ`*ææ&Á ^&[ [*^Áæ•^••{ ^}cÓ@æAa^}A']á}å^!æa^}Á ,@&@&a***A@æe%@'!^Á [`jåAa^A;[A •ã*}ã&æoA[]*Á?!{ Á@æ{Åi[A[æa]^A]^&a**Aæ æÅ^•`[oA[-Á@A,'[][•æ‡ÄQ]]æ&oA[}Áç^*^cææā]}Á ,[`jåAa^Áe^{][!æ^Aæ}åAa}åA[3]ā[ã*^åAa`A æ]]![]!ãæe^Á?çã[]{{^}oA;![c*&a]}Á { æ}æ*^{{^}oA;ca};^*e``A
Ô æ`•^ÁGGÁÚ`à ã&Áæ&&^••Á[Éæ)åÁ`•^Á[-ÉA -{¦^•@;¦^•Áæ)åÁ;æe^¦,æî•Á	V@`¦^Á, [` åÁa^Á[{^Ác^{][}æ <sup>+</sup> /&iā']]cā[}•Át[Á ]`à 3&Á, æe^¦Áta)•][¦dÉai`iā]*Ác@Á&[}•d`&dā[}Á ]^¦ā[åÉÁQ, ^ç^¦Ác@•^Á,[` åÁ,[oÁa^Át]}*Áe^¦{ &@ea)*^•EAV+^¦•Á,[` åÁa^Á^`ă^åAt[Á •^Á Ôæ{a^!ÁY@ea+Af[&æee^àAt}}ÁÔ[&\æt[Á@ æ)åÉA@A &@ea)*^•Á,[` åÁa^Á&[{{`}3&æe*åAt[Á^•ãa^}œA &@ea)*^•A,[` åÁa^Á&[{{`}3&æe*åAt[Á^•ãa^}œA à`ēā]^•••^•ÉA •^!•Áæ)åÁ&[{{`}3&æe*åAt[A^•ãa^}œA []^¦æt[¦•Áæ@æåAt[~Ác@Á,[¦\Á&[{{ ^}&ãa+
Ô æĕ•^ÁGHÁTæaājo?}æaj&^Áį-Áazáj[¦\āj*Á@zebà[`¦Á	V@^Á,¦[][•æ‡Á,[č åÁ*}@æ)&^Ác@-Á[ ^Á,-Ác@-Á @æd-à[č Áee-Áki[co4áezÁ,[¦\ā;*Á@ed-à[č Áea)åÁea)Á ^~~^&&ãç^Ád:æ)•][¦o4&[¦¦ã£[¦Ásî^Ási]]¦[çā)*Áez&&^••Á d[Á,æez^¦Éāæe-^åÁjčà]&3&Ád:æ)•][¦o4æ&ājãa?•Á5jÁ []^¦æaaj}}ÉÁ
Ô æĕ•^ÁGIÁQ;c∿¦¦^ ææāį}•@ājAį́-Ájæe¢\',æÂæajåÁ -{¦^•@;¦^Á•^•Á	V@\Á\$jc^¦¦^ æeā[}●@3jÁ[,-Á]æe^\; æêÁea)åÁ[¦^●@2¦^Á `●^●Á[[` åAsà^A`}&@aa)*^åA\$jÁo@A[[}*Áe^\{ Áee AsaÁ ¦^●` cA[-As@A].[][●aa†ÉA
Ô æĕ•^ÁGÍÁØ[¦^•@[¦^•Áæ);åÁ;ææ^¦;æê•Á&&^}&&Á ~~~æ‡ãĉÁ	V@^Á,¦[][•æ‡Á,[č åÁ@æç,^Áæák,[å^¦ææ^Áq[Á[,Á ã[]æ&o4(,}Á©ÓÁ,&^}&&A`æ‡ãĉÁ(,-Ás@/Á∞a/æéæ Á åãr&č••^åÁ∞eAÔ@æ‡jc∿¦ÂiÈEÉA
Ô æĕ•^ÁGÎÁTæaāj৫^}æaj&^ÊÁ¦[৫^&cā[}/kæjåÁ ^}@æaj&^{ ^}oA[-Aşā?j•Á	V@:¦^Á;[č å.Áa^ÁæÁ;[å^¦ææ^Á4;Á[,Á1;,Á31;]æ&o4}Áo@Á  æ)å•&æ3;^Á&@æbæ&c°¦Á;Áo@Áæb^æ <del>5æ</del> Á∞Á^•č o4;Á c@Á;¦[][•æ‡ÉÄÜ^-^¦Á1;ÁÔ@æ3;c°¦Á:ÈÉĂ
Ô æੱ•^ÁGÏÁÓ[æéÁq[¦æť^Áæ&ájãíðě•Á	V@^Á;¦[][•æ‡Áå[^•Á,[ơÁ§;ç[ ç^Áå[ææÁ;q[¦æ≛^Á -æ&ā†ãæ?•EÅ

Á

Ô|æĕ•^Á+FÁ; Á∞@ÁÛ^å}^^Á₽æà[ૻ¦ÁÙÜÒÚÁ^˘˘ã^•Á&[}•č|œæą;}Á{[¦Á&^¦œæ;Aå^ç^|[]{ ^} @∱¦[][•æ†Á }[ơÁ^˘˘ãą]\*Áŝ^ç^|[]{ ^}ơ&[}•^}dĚO[}•`|œœą]}Éäşkä|ĭåą]\*Á}å^¦ÁœAÛ^å}^^APæba[ĭ'¦ÂÜÜÖUÆsÁ åã & ••^åÆşk@eb]ơ\Á A[-Á@aAÜOØĖĂ

Á

 $\overline{a}$   $A^{-1}$   $A^{$ @¦ãæť^Áįàb/8cãç^•Á¦[{ Ás@ÁÙ^å}^^ÁPæà[`¦ÁÜÜÒÚÆ) Á8¦æč•^•Á HÇFDæ)åÁÇEDæd^Æ{]}•ãå^\^åÆ] Á Væà|^ÁiÉĪÁà^|[〔ÉĂ

- Á Á
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- Á

Væà ^ÁiÉİkÁP^¦ãuæť^Ájiàb∿&cãç^∙Á	iæ≛^Áiàb∿&cãc^∙Á	Væàl^Á∖
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Objective	Comment
FÇæÐÁv[Á&[}•^¦ç^Áx@Á*}çāl[}{ ^}cæ‡Á@¦ãæe*^Áţ-Á c@Áæ)åÁt[Á,@38k@Áx@ärÁÚæ÷cÁæ]] ã*•ÈÁ	OZÂÙUPO(Á@æ=Áa^^}Á}Å}å^¦cæà^}Á[¦Áô@Á,![][•æ)EÅ V@AÛUPO(ÁS[}& `å^•Ás@æ>Éavá*A,[ofæ);c&ajæ*åA o@æxÁs@Á,![][•^åÁ,[!\•Á3j&]& `åāj*Áe^{}][¦æ3^Â ~æ&ajāna?•ÁæzÁûæ{à^!A'@æ+DA,[`' å Åaæ{æ*^Áañ@!Å o@Áæà: &3A,[!Á;ã}ã&æ;&^A,[-Åjåān;ãå`æ)Ase^{}(•Á;}Á Ô[&\æti[Á@]æ}åÁ;!Ás@Á@]æ}åAseA,@[ ^EÄÜ^~^!ÁtiÁ Ô@æ];c^!ÂÈTCÁL;!Á`¦o@:!Áa^cæajEXÁ
FÇaDÁV[Á&[}•^¦ç^Áx@Á@¦ãæe*^Árât}ãa&æa)&^Á[+Á ^¢ãrcā]*Árât}ãa&æa)cÁæaà¦ã&ÊÁ^ ã&eÊA^ccā]*•Áæ}åÁ çãr_•Áæe•[&ãææråÁ_ãc@Áx@kaæe*^Árât}ãa&æa)&^Á [~Á@¦ãæe*^Áñzr{•ĚÅ	V@∿Áj¦[][●æ‡Áæäą́●ÁtįÁ&[}●^¦ç^Ác@A@¦ãæe*^Á ●ã*}ã&Bæa}&^Át,~Á∿¢ã•cāj*Áæà¦ã&Éã\^ ã&•Áæ}åÁçāð,●Á [~ÁÔ[&\æq[[Á@e æ}åĚÁ
FÇ&DÁV[Á^}•`¦^Áx@eeeAx@eeeAxe&@eee^[ [*&&eeeAxe}&@eee^[ [*&&eeAxe}å& ] æ&A^•A{i~Axxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	、V@~ÁÙUPC\$&[}-ā{ •Áx@eexÁx@¦^Áset^Á,[Á æ&&@ev^[ [*3&æt4Áãr^•Áse}åÁ, æ&r^•Á, ÁOEa[¦ãtā]æt4Á @¦ãæt*^Áāt}ã&Bæt}&rÁ[&æez^åÁ,}ÁÔ[&\æt[[Á @ æt}åEÖ`^Á{[Áãr^Ástãrč¦àæt}&rÁsejåÁ^& æt[[Á •ā]&rÁj[•cn4^cd^{ ^}d5c@Aj¦[][•æt4Á,[č]åÁ@ætçrÁ }[Á5t]]æ&c4j}&c2~Aáãr^6ætjåAj æ&r+ÉA
FÇâDÁV[Áæ‡ [, Á[¦Ás@A]¦[c^&cā]}Á[,A] æ&^•Á,@a&@Á @æç^Ás@A][c^}cãæ‡Á[Á@æç^Á@¦ãæ±^Á;ā]}ãa&æ}&^Á à`cÁæ†^Á][cÁsã^}cãaðåÁseÁ@¦ãæ±*^Ásc{•ÈÁ	V@^ÁÙUPQÁ@ee=Ásà^^}Áj¦^]æb^åÁ§jÁæ&&&[¦åæa)&^Á ¸ã@Áx@Á⁄¦ĭ∙oÁ&[}∙^¦çææāį}Á(æa)æ*^{^}o/j, æa)Á -{¦ÁÔ[&\æe[[Á@e]æa)åĎÁÁ
QaaĐÁV[Á∿•cæà ãr@Áscáà`~^¦Á[}^Ásd[`}åÁs@A Ù^å}^^ÁU]^¦æÁ?[`•^Á[ÁseAá[Á*ãç^Áscåå^åÁ ]¦[c∿&cã[}Á§[ÁserÁ;[¦¦åÁ@¦ãæð*^Áçaa†`^ÈÁ	V@^Á,¦[][●æ¢/≨arÁ,[cÁ,[&æær∿åÁ,ão@ajAo@~ÁÙ^å}^^Á U]^¦æáR?[ĭ●^Áaiĭ~~^¦Á[}^ÈÁÁ
CÇaDÁV[Á^&[*}ã*^Áx@eeeÁçã³, •Áæ) åÁçã cæe Áà^ç ^^}Á c@ÁÛ^å}^^ÁU]^¦æÁP[`•^Áæ) åÁ(c@¦Á)`à &BÁ ] æ&^•Á,ão@3,Áx@eeeÁ[}^Á&[}dãa`c^Áx[Áãe•Á,[¦ åÁ @¦ãæet^Áçæqi`^ÈÁ	OZĂŠæ)å•&æ]^Áæ)åÁXãrčæļÁQ]æ8cÁQE•^••{ ^}cÁ @æ-Ás^^}Á}å^!œà^}Á[!Ác@-Á]![][•æ‡ÁV@Á U]^!æ#P[č•^ÆiÁ][c4çãiãa ^Á+[{ Ác@-Á]+[][•æ‡Á •ãc ĚAUc@!Á:ã}ããæ)c4æ)å{ æ\•Á`&@æe-Ác@-Á Ù°å}^ÁPæbà[č+IÁC!ãã*^Á@æç-Ás^^}ÁS[}•ãa^\^åÈÁ Ü^∞\Á[ÁÔ@æ]c^!ÂÊÊA[!Áč¦c@:¦Ás^cæä‡Ě∰Á

Á Ô|æĕ•^•ÁĭlÉ΀Á;¦[çãå^Á;¦[çã ð[}Á[¦Ás@Á;¦[c^8cð]}Á; Ak@ ¦ãæ≇ ^Áãc{•ÉÅ;|æ&^•Á; -Á[c^};ãæ‡Á@ ¦ãæ≇ ^Á ÇÜa[¦ātā] æļ Áæ) å Á [] { Ëæà[¦ātā] æļ Ď Áæ) å Á Û ^ å } ^ Á U] ^ ¦æÅ P[` • ^ Áa` ~^ ¦ Á [] ^ ËÁO @æ] & ¦Â Ē Áæ) å Ē GÁ ] ¦ [ çãå^ Ása) Ásaé • ^ • • { ^} ô {\ Así@ Á@ ¦ ãæ \* ^ Ásá) å Áçã \* æ Ásų ] æ &o• ÈÁ Á

$$\begin{split} & (J_{ab} \circ A) \stackrel{*}{A} = A \stackrel{*}{A} \stackrel{*}{A$$
 $\delta_{ae}$ ãa^} cãã à Áse Ás^ã, \* Áf & æe^ à Á ão@a ÁseAY ^ dæ) à ÁÚ! [ c^ & cã } Á ÓE^ æÁ } å^¦Ás@ ÁÜÜÒÚÉ#Á Á

V@Á, ^dæ) å•Á, àb/s&aã,^•Á, [{Ás@ÁÛ^å}^^Á, æàa[`¦ÁÜÜÒÚÁ), Á&, æ\*•^Á, FÁse/^Á&[}•ãå^¦^åÁ&, Á/æà|^Á, ÉľÁ à^∥[,ÈĂ Á

Á

# Á

Væà|^Á Ëi KÁY ^ dæ) å Á( àb/ & cãç^• Á

Objective	Comment
ĢæÐÁ/[Á,¦∧∙∧¦ç∧ÊĂ,¦[ơ\&o/sə) å/A}&[`¦æt'∧Áv@A ¦∧•q[¦ææậ]}Ásə) å/A^@æàäjäizæaậ}}Aţ-Á, ^qæ} å•ÈÁ	$ \begin{array}{l} & \bigvee ( \hat{A} \cup \hat{a} ) \wedge \hat{A} \cap \hat{A} \cap \hat{a} \hat{a} \hat{a} & \langle \hat{A} \cup \hat{a} \rangle \hat{a} \hat{A} & \langle \hat{A} \cup \hat{a} \rangle \hat{a} \hat{A} & \langle \hat{A} \cup \hat{a} \rangle \hat{A} & \langle \hat{A} \cup \hat{a} \rangle \hat{A} & \langle \hat{A} \cup \hat{a} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \rangle \hat{A} & \langle \hat{A} \cup \hat{A} \rangle \hat{A} & \langle \hat{A} \rangle \hat{A} \end{pmatrix} \hat{A} & \langle \hat{A} \rangle \hat{A} \end{pmatrix} \hat{A} & \langle \hat{A} \rangle \hat{A} \end{pmatrix} \hat{A} & \langle \hat{A} \rangle \hat{A} \end{pmatrix} \hat{A} \end{pmatrix} \hat{A} \end{pmatrix} \hat{A} & \langle \hat{A} \rangle \hat{A} \end{pmatrix} \hat$
ÇaDÁV[Á(æaā) cæaā) Áse) åÁ^∙∙d[¦^Ás@Á@æ¢c@Áse) åÁ çãæaàājãc Á(-Á, ^d,a) å∙EÁ	V@\Áeĕ`æa£34Áee•^••{ ^}oÁ@ee-Á&[}& `å^åAs@eeeAs@A c^{][¦æ}`Á•^Á;AÓæ{à^\ÁY @ee+Á;[` åA;[oÁ æåç^¦•^ ^Áee-^&oóko@A@æ¢o@áee)åAşãæàājãĉA;Ako@A ,^dæ)å•ÈÁ
Ç&DÁV[Á,¦^ç^}oóko@Á¦æt"{^}cæeaą̃}Á,i~Á,^qæa)å∙BĂ	V@ Ásē ǎ æāð Áse • ^ • • { ^} o Áœe Á&[} -ā { ^ å Ás@æe Á c@ ¦^Á, ^ ¦^Á, [Áā ] • Á, -Áse ^ Á &[ ` ¦ā * Á, -Á[ & Á l`àà  ^Á, ¦Ásecce&@ å Áset æð Áset ā ā * Á ¦ [ { Ás@ Á ] ¦^ • ^ } o Á[ ` cā ^ Á • æť ^ Á, -ÁÔæt à^ !Á' @æt -Ás ^ Ás[ c@Á ] ¦ā çæe ^ Áse à Á Xe[ { { ^ ! & ãe 4 Å æ • ^} * ^ !Á ^ @et -Ás ^ Ás[ c@Á ] ¦ā çæe ^ Áse à Á Xe[ { { ^ ! & ãe 4 Å æ • ^} * ^ !Á ^ @et -Ás ^ Ás[ c@Á Å Őã ç^ } Ás@ Ás ^ ! c@ * Ás ^] c@ Ás@ !^ /ás Áãe ^ Áā ^ Á { [ àã ã ā * Ás[ cu { { ^ A ^ å ã } ^} o Áse ^ / ¢ d ^ { ^ A[ , Áãa ^ Á cã ^ • Ás ` ¦ā * Áç ^ • • ^   Ást ¦ã çæt • Áse à Ås ^] æt č ¦ ^ • Á } [ Áã \ Ásec Á c@ ! Ásã ^ E Å
ÇâDÁV[Á,¦^∙^¦ç^Áo@Á,&^}ã&Á ča‡ããð∙Á,-Á,^qaa)å•ÈĂ	V@\Á\&^}&&Á ઁæ¢ããð∙Á[Á@@Á∫^dæ)å•Á 覦[č}åð]*Á Ôæ{à^¦ÁY@ed-Á,[č åÁà^Áj¦^•^¦ç^åÈÁ
Ç DÁ/[Á^}•`¦^Ác@æeÁ,^dæ)å•Á&[}cā)`^Á{[Á],^¦-{¦{ c@ālĂ,æe覿4Á*&{[[*ā&æ4Á*}&6ā]}•Á9`&@ⅇ Á@A ]'[çãā]}Á[,-Á,^dæ)åÁ@æaäæe£A@A]¦^•^¦çæaā]}Á[,-Á ,æe^¦A`æ4ãĉÉ£ko@A&[}d[ Á[,-Á+[[åā]*Áæ)åÁ ^¦[•ā]}DeÁ	OE Á,`dậ,^å Áşi Á, àb/skaặç^ÁÇÔDÁseà[ç^Êác@ Á, ^daa) å•Á •`¦¦[`}åâ,*ÁÔaa(à^¦ÁY @eel-Á, [` å Ás[}dā,`^Áqi Á ]^¦-{¦{ Áqi Ác@ ãi Á, aec`¦aa‡Á*s[ [*ã&aa‡Á`}skaāį}•ÈÁ

Á V@^Á(ææc^¦•Á([Áa^Á&([}•ãa^¦^åÁ([¦Á,[¦\•Á,ãc@);ÁæÁ,^qæ);åÁ,¦[c^&cā(]}Áæ4^æÁ'[{ Á&|æ\*•^ HÇEDÁ(-Ác@:Á Ù^å}^^Á@eetà[č¦ÂÜÜÒÚÁæt^Á&(]}•ãa^¦^åÁ6;Áa^|[,ĔÅ

Væà ^Á Èİ KAÔ æĕ∙^Âi HÇƏDÁ(æcc^¦•Á	
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Clause 63(2) matter	Comment
ÇaeDÁV@A‰^ç^ []{^}ơÁ@(같` åÁ@eeç^ÁacaÁ,^čdaelĄ(¦Á à^}^-a8aãedaÁ~~^&oA,}Á©0Á`adaãĉA(,-Á,aee^¦A^}o^¦a)*Á o@OÁ,aee^¦,aê∙ÈÁ	V@^Á,[¦\•Á,[` åÁ,[ơkæảç^¦•^ ^Áæ-^&oko@éA, æe^¦Á ``æ¢aĉÁ`¦¦[`}å∄,*ÁÔæ{a`^!Á?@ed-ÈEÔæ{a^¦Á Y@ed-ÁarÁ&`¦}}d^Á•^åÅa`Á^&\^æã}}ædÁa[æerÁ æ}åÁ;!ãçæe^Á&@edec^¦Aç^••^ •Á;}Áæ}Á%æerÁ^``ã^å+Á àæeãeÈEÁ
GaDÁv@Á}çã[}{ ^} cædÁ~~^80 Á, -Ác@Á å^c^\[] { ^} cædá~~^80 Á, -Ác@Á å^c^\[] { ^} cæða &] & GaDÁ@Á`!çãçædA, -Áæãç^Á, ia) có8[ { { `} ãæì • ÉA GaDÁ@Á`!çãçædA, -Áæãç^Á, ia) có8[ { { `} ãæì • ÉA GaDÁ@Á`!çãçædA, -Áæãç^Á, ia) ia? -ÉA GaDÁ@Á`!çã i } & do aA´ æi ac Á, -Á@æi aææ Á[ ! Ai[ cœA i à åî^] [` • Ási) åÁ, i a !æe[ !^ Á] ^8a • ÉA GipDÁ@Á`!~æ82^Asi) åÁ` adac Á ~á@æi aæe A[ !Ai[ cœA i à åî^} [` • Ási) åÁ, i a!æe[ !^ Á] ^8a • ÉA GipDÁ@Á`!~æ82^Asi) åÁ`![` } å, æe^!Á&@ebæ8c^!i aca& Á [ -Ác@Á ãc^Á] Å, @a&@ác@Ai^c^\[] { ^} c/s A [ -Ác@Á ãc^Á] Å, @a&@ác@Ai^c^\[] { ^} c/s A [ -Ác@Á ãc^Á] Å, @a&@ác@Ai^c^\[] { ^} c/s A ] ![] [ • ^ à Ái f Asi^ ae Ési &] ` ái] * Áæi ai a A • ` !![` } åi] * Ási ^ æe Ési &] ` ái] * Áæi ai a A æi ai a A `` ædãc Ási) åÁ, @c@!Ác@Á ^ dæ) åA &[ • ^ • c^{ { • Asi}^A * '![` } å, æe^!Asi^] ^} å^ deA	$ \begin{array}{l} & \bigvee ( \emptyset \land \mathbb{R}^{A} \land \mathbb{Q} \land \mathbb{R}^{A} \land \mathbb{R}^$
Ç&DÁY@°c@°¦Áscá^č``æe^Áræo^*`æ¦å∙Áse)åÁ ¦^@æaàāfañæaā[}Á(^æe`¦^•Á@æçç^Ás\^}ÉÁ(¦Á,ā Ás\^ÉÁ {æå^Ás[Á]¦[c^&cÁscÁs@Á*}çã][}{ ^}dĚÁ	Ò}çã[}{^}œa¢Á;æ^*`æ¦å∙Áį`qāj^åÁşiÁÔ@eajoc¦Á ïÈCA[-Ás@eáÁÜÒ⊘Á[č åÁsh^Ás[] ^{ ^}c^åÁs[Ás]•č¦^Á ]¦[c^&cā[}Á;-Ás@eÁ*}çã[]{ ^}dĚÁ
ÇaDÁY @ c@ ¦Á&æ ¦^āj*Á,`ók @ Áå^ç^ [] { ^}óÁ, [` åÁ à^Á&[}•ã:c^}óÁ, ãc@ ko@ Á,¦āj&āj ^•Á^óA,`óás Á/@ Á ÞÙYÁY^dæ)å•ÁTæ)æ*^{{ ^}óÁU[ ã& Á@ e Á ]`à ã:@ åÁsjÁTæ &&@ FJJÎÁsîÁc@ Á@}Å Ö^]æ to{ ^}óA, ÁŠæ)åÁse)åÁYæe^¦ÁÔ[}•^¦çæaā[}DěÁ	. V@~Á,¦[][•æ‡∜ærÁ&[}•ãrc^}ơ4,ão@&@@A,¦āj&a] ^•Á •^ơ4,ĭơ4ajÁo@ApÙYÁY^qæa)å•ÁTæa)æ*^{^}ơ4 Ú[ a&îÈÁ
ÇDÁY @c@;kó@kå^ç^∥[]{^}okæå^˘˘æe^ ^Á ]¦^∙^¦ç^•kæ)åA^}@e)&^•A[&æ4A,æaãç^kç^*^œæã[}È	V@^Á,¦[][•æ‡Á,[č åÁ,¦^•^¦ç^Ás@_Á*¢c?}å^åÁ[&\Á ¦čàà ^Á@æàãææÅd[č}åÁs@~Ás[æe∄æ{]Ás@æeÁ •č]][¦orAs^}•^Á,æ&¦[æ‡*æ?Ás^å•ÈÁ

Clause 63(2) matter	Comment
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Ç`DÁY@°c@°¦Á&[}åãaā[}•Á`@[` åÁà^Á&[][•^åÁ[}Á c@^Á&æe¦^ā]*Á[`oÁ[-Ás@Aå^ç^ []{ ^}oÁ^``ãā]*Á c@^Á&æe¦^ā]*Á[`oÁ[-Á[[\\•Á&[Á]¦^•^¦ç^Á[!Á ^}@æ)&^Ás@Aşæq*^Á[-Áse}^Á`'!![`}åā]*Á_^dæ)å•ÈĂ	Ò}çã[}{^}œapÁæ≏^*`æ¦å∙Á(`dậ,^åÁ§)ÁÔ@ee);c*¦Á ïÈGA(-Ás@áAÜÒ⊘Á,[` å/ás^Áã(]] ^{ ^}c^åÁ§(Á ]¦^•^¦ç^Áæ);åAj¦[c^&cA((-Ás@)Á*}çã[]}{ ^}dÈÁ

## 4.2.3 Local Environmental Plans

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# 4.3 Other relevant NSW legislation

### 4.3.1 Contaminated Land Management Act 1997

Ù^&cā[}Âi€Á[-Ás@-ÁÔŠTÁOBSc/á[][•^•Áscášič ĉÁ[}Á;a)áa]a[]}^¦•Ás[Á;[cā-Ás@-Á∪--a8\Á[-ÁÒ}çā[]{ ^}o/soáa]aÁ P^¦ãcet^ÁQUÒPDÉas)åÁ;[c^}cāce‡î/Ásjç^•cātaet^Áse)åÁ^{ ^åãcet^Áaa}åÁsáks[}cae[ā]aeaā[}ÁsiÁsaa[ç^ÁÒÚOEÁ \*\*ĭãa^|ā]^Árç^|•ÉÁ

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OE ÁÔ[&\æti[ Á@|æ) å Ási Á[&æer å Ási Á@ Á, ãå å|^Á, ÁÙ å } ^^ ÁP ætà[ ` ¦Éko@ir Á, ætoá, Á@ Á@età[ ` ¦Ási Á &[ } •ãå^\^å Ási Ási Ási Ási Ási Ási A ^|Áši • @ å Ásig å Ás@eteá, [ c } cãæt Ási] ; cæt āj æ) or Át ^} ^!ær å Ási[ { Á ¦àæ) Á æh ær Ási J Ási[ coén ãå ^• Á; Ás@ ÁP ætà] ` ¦Ást ^ Á, [ chã ^| ^ Áti Ási ^ Áse&& { ` |ær å Åste[ ` } å Ás@ Æ |æ) å Ét /@ ¦^-t !^ Ésteá • ^æt&@a, } Ás@ ÁP ÙY ÁÔÚ OEá, } |ā] ^ Ási[ } cæt āj ær å Ásig å Ásig å Ásig å Ásig å Ásig å Ásig å Ásig å Ásig QU] ^ ¦ætā] }• DÁOB cáFJJI Ár &[ ¦å• Á, ær Á, [ cát] å ^ ¦cæt ^} å ^ ¦cæt ^} ÉstU ^ ~ ¦Áti ÁÔ @etj c \' ÈE Áti ¦ Áti \c@ ¦Ási ^ cætiÈA Á

Ø`¦c@`¦Áræ{]|ā]\*Ása)åÅse••••{ ^} oÁsiÁ^``āl^åÅsi`¦āj\*Á&[}•d`&aāt}`At[Åsi^or';{āj^Áājæe∱áæerc^Á &|æ•ēãa38æeāt}}ÈÁU`à•^``^}oÁt[Ás@arÉasa)^Át[æer\!äætp+Á&|æ•ēã3\åÅserÁPæætå[`•ÁYæerc^At[æÂA^``āl^Á d^æe{ ^}c^{t};/&ep}Ást{{[àājāræeāt}}Áset]]![çæd,4siÁsæ&&[¦åæ)&^A ão@ÁUæto/Fr€At\_Ar@AÚ![cr&aāt}At\_Ar@Á Ò}çāt[]{{^}oÁU]^¦æeāt}]•ÁQYæerc DÄÜ^\*`|æeāt}}ÁGEFIÁ;!a[!Át[Át\_~EēãrAstā][•ædAtA

### 4.3.2 Fisheries Management Act 1994

V@ÁFisheries Management ActÁÇZT ÁCBaDÁ^~~ã^•ÁæÁ^\{ãóAţ Áà^Áţ à cæãj ^åÁţ ¦Á [ ¦\•Ás@æÁæ^Áã ^|^Á q ká

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V@:ÁØTÁ028xó4^~`čāl^•Áx@eeekó@:ÁTājãrc\*¦Á[¦Á/¦æå^Áæ);åÁ0Q;ç^•q(^}orába^Á,[cãa3\*å4[,~Á,[¦\•Á5];ç[|çāj\*Á å¦^å\*āj\*Á[¦Á^&|æ{æaā]}ÈÁ

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#### 4.3.3 Management of Waters and Waterside Lands Regulations – NSW

Ô|æĕ•^ÂÎÍŒkæ)åÂÏÁ, Ás@ÁTæ)æ\*^{^}ơ4, ÁYæx\+Áse)åÁYær\+áse)åÁYær\+áse)åAÍŒka)å•ÁÜ^\*`|æsa]}•ÁÁ>ÙYÁ ¦^``ã^•Ás@exAj^\{ ã•ā]}Ás^Á;àcæaj^åÁ\[{Ás@Á?æbà[`¦ÁTæ•ơ\¦Á[¦Ás@Ásā\*č'|àæ]}Á;Á, Á;lÁsev\æsa]}Á;lÁ æååãaā]}Á{[Á,@eb-Á;lÁ;c@\Ád`&č'|^ÁsjÁs@ÁÚ[¦ơ4;ÂÛ^å}^^Á;lÁs@Ásā\*č'|àæ)&^Á;Á@As^åA;ÁsœAs ][¦dÉA^•]^&caç^|îÉA

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V@:Á`àb^&oÁ, @eet-ÁārÁ[&eeer^åÁ, ão@ajÁo@:ÁÚ[¦oÁ, ÁÙ^å}^^Á, @a&@áarÁed+•[Áå^-āj^åÁ, ão@ajÁo@:Á^\*`|æeaa[}+Á æerÁsaÁ]^&ãedAj[¦dÈÁA Á

. V@AÖ^]čćA?æaà[č¦ATæeco¦AjæeAj[cãa3oåAj-As@Aj¦[][eaapAj}AîAU&q[à^¦AGEEÎAjão@Aj^e][}e^A&a^cæaaphåA 3jAQE]]^}åãçA?EÁV@Aj¦[b%&AxiaetAj[čãa3oA;lc@lA5j4[{æaapi}Ai^\*æaå3j\*Ax@Ajk[][eaapAq[Ás@A Pæaà[č¦{æeco¦Aj¦aj¦Aq[Aicæadapi\*A&]}edč&aapi}E&eeAj¦^çapiče|^A^čč^ecoåAq[¦Ajc@lAj@eeç^eAjão@aphá@A Ø^¦¦^AY@ee-AM]\*¦æaa^AÚ|[\*¦æqEÁA/@A5j4[¦{æaapi}}Ai^čč^ecoåA@eeAsa^^}A5j&jča^åAseAseAjæ\*A{ ^}cA {^æč¦^Ajão@ajAÔ@eopico¦AiEXXX

#### 4.3.4 Heritage Act 1977

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OEAl^æal&@Al/cæet^ÁP^¦ãæet^ÁQiç^}d[¦^Ásiæææalæer^Áqi}ÁGARt'|^ÁG€EFÍÁq[`}åÁj[Áset^{•Ási}&qi`å^åÁqi}Ás@@Á ÙPÜÁse)åÁj[Áset^{•Ár`àb^&cAsi[Áse)Ásict'lä[Édqi¦Ásečc@gl¦ãer^åÁsict'lä[Á@el¦ãæet\*^Áqilå^¦ÉdA Á

Onē ÁÔ[&∖æq[[Á@e|æ);å/¥arÁÔ[{{[}, ^æ¢c@A∖, }^åÁæ);åÉ2anA¥arÁ\`oraå^Áxo@Axi¦ãråa3kca[}Á{[¦ÁÙcææ^Áæ;•ÈÁ Á

ÜÚÙÁ@œe Á;¦^]æd^åÁæAÛUP ŒA{¦Áx@ ÁÚ¦[][•æ¢ÉÅ; @38&@%arÁ}¦[çãa^åÁ&jÁŒL]^}åã¢AÕÈAÜ^~^¦Á&[ÁÔ@œe]c^¦Á ÎÈEFÁ{¦ÁX`¦c@¦Á&^œaapÈÁ

#### 4.3.5 National Parks and Wildlife Act 1974

Ù^&cā[}•ÂÎÊÂÏÁæ)åÁJ€Á[-Ás@ ÁNational Parks and Wildlife Act 1974ÁQÞÚY ÁOB&OÁ^˘˘ã^Á&[}•^}oÁ ⊣[{ÁJÒPÁ[¦Ás@ Ás^•d č&cā[}}Á[¦Ásæ{ æ\*^Á[-ÁQåã\*^}[č•Á[àb/&o•ÈÁ Á

OEÁ ^æok & @ Á} æ Á} å^¦æa ^} Á[,-Ás@ ÁOEa[¦ätā] æ ÁP?^¦ãæet ^ÁQ;-[¦{ æ ati}}ÁT æ) æ \* ^{ ^} of Û^•c^{ { ÁÇEPOT ÙDÁ;}Á GIÁØ^ঠĕ \* ÁGEFÍÁ5JÁæs&[¦åæ) &^Á,ão@ás@ ÁÖ \* ^ÁÖäjät ^} &^ÁÕ[å^ÁQÖÔÔYÁGEF€NFFDĚÁ/@éiÁ^æ&@Á ¦^ç^æ†^åÁs@æná@¦^Áæt^ÁGIÁ;¦^çã[\*•|`Á^&[¦å^åÁOEa[¦ätā] æ†Áãr∿•Á,ão@ejÁs@ Á]^&ãatå & k&[[¦åa] æe\*•EÁÁ V@Á^æb&@Á^•\*|o=ÉÉ@[, ^ç^¦ÉÁ@[, ^åÁs@ænÁ;[}^Á;Ás@[•^Áãr∿•Áæ\*AÁ[&ææråá[;}ÁÔ[&\æa[[Á@]æ)åÉÁ The Proposal is unlikely to disturb any Indigenous objects. Refer to Chapter 6.11 for further information.

#### 4.3.6 Marine Safety Regulation 2016

Under Section 18 of the *Marine Safety Act 1998*, the marine-based investigations are considered an aquatic activity as they would be undertaken on navigable waters and would temporarily restrict the availability of those waters for normal use by the public.

As such, Section 97(1) of the Marine Safety Regulation 2016 would require the works to be subject to an aquatic licence issued by Roads and Maritime. Notwithstanding, Section 97(2) would allow the investigations to proceed without an aquatic licence if Roads and Maritime approve the works when conducted in accordance with any conditions that are imposed.

#### 4.3.7 Ports and Maritime Administration Regulation 2012

Section 67ZN of the Ports and Maritime Administration Regulation 2012 requires the written permission of the Port Authority of New South Wales' Harbour Master prior to any disturbance of the bed of Sydney Harbour.

As the marine-based investigations would disturb the bed of Sydney Harbour in a number of locations, Harbour Master approval would be required prior to the marine-based investigations commencing.

# 4.4 Confirmation of statutory position

#### 4.4.1 Commonwealth legislation

Having regard to the applicable Commonwealth legislation, Roads and Maritime has concluded that the proposal can be carried out under the Sydney Harbour Federation Trust Act 2001. The Trust is the consent authority for the proposed actions on its land. Roads and Maritime will review the REF and conclude if the proposal is likely to have a significant impact on the environment. Should the Trust determine a significant impact may be likely, the proposal may be referred to the Department of Environment and Energy.

#### 4.4.2 NSW legislation

Roads and Maritime is the approval authority under the NSW EP&A Act for the portion of the proposal outside of Commonwealth owned land.

This REF provides the environmental assessment for the proposed works for the purposes of section 111. This REF concludes that there is no likely significant impact under the EP&A Act and that an EIS is not required. The approval of the NSW Minister for Planning is not required.

# 5 Consultation

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#### 5.1 Consultation strategy

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#### 5.2 Community involvement

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Á/@^Á&[{ { `}ãa?)•Á`¦¦[`}åā]\*ÁÔ[&\æq[[Á@|æ);åÁÇY[[|,ā&@ÉÖ¦`{ { [^}^ÊÓæ+{æn];Áen);åÁÕ¦^^},ā&@DÁ ,ā|Á&^Áeæ)|^Áq[Á]¦[çãa^Áx@?ãÁ^^åàæ&\Áq}}Áx@^Á,'[][•æ+Éx@[`\*@xk@^Á&[{ { `}ãô Á&[}•`|cæan];Áq`^c@[å•Á å^cæan]^åÁ5JÁÔ@en];c^¦ÁIĚĚÁMÁ

#### 5.3 **ISEPP** consultation

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# 5.4 SREP (Sydney Harbour Catchment) 2005 consultation

# 5.5 Government agency and stakeholder involvement

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· Q• ઁ ^• Ác@aac/@aqç^Áa\^^} Áæāi^å Áæe ÁacÁ^• č |c/[(, , Á&[; }• č |cæaā[; } Á; ãc@Ác@• ^ Áæti ^} &ā^• Áæ} å Ácæai ^ @; |å^¦• Áæb ^ Á [č dā] ^ å Áa ^ [[, Á\$j Á/æài |^ Á Ё HxQe č ^• Áæãi ^ å Ác@[č \* @Ácæai ^ @; |å^¦ Á&[; }• č |cæaā[; } Á

Agency	Issue raised	Response / where addressed in REF
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Φ}^¦ÁΥ^•ơÁ Ô[`}&ậÁ	<ul> <li>Á V@ÁÜÒØÁ @`  åÁæ • ^•• Á@Á[ c} @#Á ã ] æšo Á Á@Ác { ] [ !æ Â • ^Á AÔæ{ à ^! Á Y @#-Á} Á@ÁOæ Å AØ @ ^! AØ æ ^! ÁÓæ@ Áæ ÁæÁ @!ãæ ^ÁñaæÁ[ , Áæd æ *! Á ã { 3 * A[ [ ] EÁ , @&amp;@á Á] ^} ÁJ A ^!ā åÁ! [ { ÁU&amp;Q à ^! Á! ÁQ] !äE •Á Ó ãdá Á@Áæ] ÁFÌÌ € EÖæ } ÁØ æ ^! ÁØ æ E [ &amp;æ* åÆ A@Áæ] ÁFÌÌ € EÊÖæ } ÁØ æ ^! ÁØæ@ ÊA [ &amp;æ* åÆ A@Áæ] ÂFÌÌ € EÊÖæ } ÁØ æ ^! ÁØæ@ ÊA [ &amp;æ* åÆ A@Áæ] ÂFÌÌ € EÊÖæ } ÁØ æ A! [ &amp;æ* åÆ A@Áæ] ÂFÌÌ € EÖæ } ÁØ æ A! [ &amp;æ* åÆ A@Áæ] ÂFÌÌ € EÖæ } ÁØ æ A! [ &amp;æ* åÆ A@Áæ] ÂFÌÌ € EÖæ } ÁØ æ A! [ &amp;æ* åÆ A@Áæ] ÅFÌ È € AØæ [  Å • oÅ] [   /æ} åA, ã { 3 * /&amp;] Å/E • dæfæ AØ Å Ø Å Ø Å Å Å Å Å Å Å Å Å Å Å Å Å Å Q % ÁæA A Å Å Å Å Å Å Å Å Å Å Å Å Q % ÁæA A Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å</li></ul>	][c^}caad, 43[] a& or A ] [][•ad, A] A az A az A a`  a] * A @ A az A az A az A A a a A a A az A ] ^  a] * A a A az A ] ^  a] * A a A az A A a a A a A az A A a a A a A a A az A A a a A a A a A a A a A a A a A a A a

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Φ}^¦ÁΥ^•ơÁ Ô[`}&ą́Á	•Á Ù å} ^ ÁP æla [ `   ÁØ å ^   æaā ] Á/ ` • oÁ āļ Á ` à [``à c'à] Á& ] -ā { Áœ Áā ] [   æa & Á/, -Á æl čová [ / Á& ] -ā { Áœ / Áa ] [   æa & Å/, -Á æl & @et [ [] * ãlæd Áā ] ] æl o Áa & Å @ ÁÜ ÒØÁ Õ šã ^ [ā] ^ • Á ^ - ^   Á[ Ác@ Áa & Å] Å & Å & Å] ÒØÁ Õ šã ^ [ā] ^ • Á ^ - ^   Á[ Ác@ Á & æc `   Áa / Á ^ )  Õ šã ^ [ā] ^ • Á ^ - ^   Á[ Ác@ Á & æc `   Áa / Á ^ )  Õ šã ^ [ā] ^ • Á ^ - ^   Áa ^ Áa & æc `   Áa / Á ^ )  Õ šã ^ [ā] ^ • Á ^ - ^   Áa ^ Áa & æc ` Áa / æc `   Áa / Å ^ )  Õ šã ^ [ā] ^ • Á ^ - ^   Áa / Áa ^ / Áa & æc `   Áa / Å ^ )  Õ šã ^ [ā] ^ · ÁA - ^   Áa / Áa / Áa / Áa / Å  Õ šã ^ [ā] ^ · ÁA - ^   Áa / Áa / Áa / Å  Õ šã ^ [ā] ^ · ÁA - ^   Áa / Áa / Áa / Åa / Å  O [ ` ] & Åa / Åa / Åa / Åa / Åa / Åa / Åa / Åa	•Á ŒÂÙœæ^{ ^} œ́{ ^} œ́{ ^AP^¦ãæª ^Á Q ] æsoáQÙUPODÉ@æ /á^^} Á ] ![ å` &^åA{[ !Á@ Á] ![ ] [ •æ/Á , ã@ @ lãæª ^Æ[ ] æso Á æ • ^ • • ^åÆ] Å @ @ dù ô @ Đ æ • ^ • • ^åÆ] Å ÊFÁ æ) å ÈGA f. ~Á@ AÜ ô Ø ĐÁA
Q}^¦Á⁄ ^•ơÁ Ô[`}&ặÁ	<ul> <li>V@ÁÜÓQÁ, æe^!, æê kaj æf •ā Á @ `  å Áş &amp; ` å^kœ Á f   [, ] * Åa^cæi + kéká</li> <li>•Á V@Á, æe`! ^ kaj å Á ¢ c? ofi - Á ![] [ • ^ å Á</li> <li>[]^!æiā } æf á kac ĉi âi â · A @ [ ^ A ] A [ ] [ • ^ å Á</li> <li>·Á V@Á * æfač Á - ko@Á ! ^ @ ! ^ A ] A [ ] [ • ^ å Å</li> <li>·Á V@Á * æfač Á - ko@Á ! ^ @ ! ^ A ] æfa * A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A</li></ul>	A Á Á Á

Agency	Issue raised	Response / where addressed in REF
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	<ul> <li>Á Ú! [ c' &amp; Cāi } Ásə) å Á! !^ • ^!; çætāi } Á! - Á. ætāi ^ Á8 ætai ? É8 ætai ? É8 ætai</li></ul>	OE • • • • { ^} oÁ^] [¦oÁ@ee Áå^^} Á ] ¦[å`&^åÁ{{¦Á@^Á}![][•æ‡Á @3&@4;![çãā^• Áå^œæ‡Á; Á ^¢ã cāj * Ásĕ `ææ3&Á &[ [*^Áse) åÁ æ• ^ • • ^ • Ás@ Á§]] æ8o4; - Áse) åÁ ] ¦[][•æ‡Å; ão@Á  ^&[{ { ^} åææ‡}} • Á{ æå^Á§[Á  ^å`&^Á§]] æ8oÅ; @;!^Á
Φ}^¦ÁΥ^•ơÁ Ô[`}&ājÁ	OEalÁ * zejáč Á •Á V@á Áţ ] a&Á @ *  å Ás ^ Ás ^ zejoÁ, ã @ás ^ Á ¢ ] ^ !oÁ !^çã, Á -Á @ Ás ^ ç^  [ ] { ^} oás a ák ^ [ ] [ !zé ^ Á * ^ Á, Á @ Á Ô zet à ^ !Á @et -É * ] ^ & & a k * { ] [ !zé ^ Á * ^ Á, Á @ Á Ô zet à ^ !Á @et -É * ] ^ & & & a k * { ] [ !zé ^ Á * ^ Á, Á @ Á Ô zet à ^ !Á @et -É * ] ^ & & & & & & & & & & & & & & & & & &	

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ĚÁ Á Væà|^ÁÍËFKÁQe•ĭ^•Áæãa\*^åÁo@[ĭ\*@Árcæà^@[å^¦Á&[}•ĭ|cæaã[}Á

Agency	Issue raised	Response / where addressed in REF
Φ}^¦Á⁄^•ơÁ Ô[``}&ặÁ	<ul> <li>Á Óæ ^å/i, } Á@ Á^ -^!^} &amp; A [ ` /i, æ ^ Ái Á</li> <li>• œ åæ åá [ ' ` • /i, ` œ â ^ Ás[ } • d` &amp; œ j } Á@ ` • ^ Á</li> <li>• CY ÔÁ [ `  å Á^ &amp;[ { ^ } å Á@æx Á@ A Ü Ò ØA @ `  å Á</li> <li>ĝ ç[  ç^ / Æ] } • `  œ aj À á õ @ A @ A D ØA @ `  å Á</li> <li>æ å Á Ö ä &amp; @ ![ ç^ Á ^ a ã @ A @ A A A A A A A A A A A A A A A A</li></ul>	ā,& `å^åÁş,ÁÔ@æaj,c^¦Á,Ě,ÈƏŻÁ Ô[}•` cææāj},Áæd^æá,ā Aş,& `å^Á Óæa¦(æäj,Áæ),åÁÓā&@'¦[ç^Á ¦^•ãå^}o•Á,@2,Á,[` åÁ ][c^}cãæa ^Áa^Áş,Ía ]'[][•^åÁ,[]æ&c^å,ásî Á c^æa;Áæq+[A];'[][•^•A[{AS[}cæ&cÁ æá,ãå^Éæa;*^Á;-Á;æe^\;æá `•^¦•É&æ-Ás^cæa‡^åÁş,ÁÔ@æaj;c^¦Á

Agency	Issue raised	Response / where addressed in REF
Q}^¦Á⁄ ^∙ơÁ Ô[`}&ą́Á	•Á V@ÁÙ^å}^^ÁPæla[`!ÁØ^å^!æla]}Á/!`•oÁ ^à•ãrÁcær*•Á@en%ä/&ens@j*Ás4\?i*Ét[`dlÁ -ājåÁ] ^}c´Á;Á;}Ëd^^of,æl\?i*As[[•^Ás[[*A@^A @elc?*AseAY [[]], 38.@ÉÖ[*^}, 38.@ÉO@s, 38.EA P`}d^^*ÁU[?]dEO]*{{[^}^ÉO38@'![c^Ás}}åA Oæl{ær}ErAV@ÁÜOØA @`låAs[}*aa^!A`@c@!A Oæl{ær}ErAV@ÁÜOØA @`låAs[}*aa^!A`@c@!A Oæl{?*Iaab^åAY @el-Á;?a@AseAseAseAseAseAseAseAseAseAseAseAseAseA	ārÁr¢]^&c^åÈÁQQ]aæ&cA(}}Á;a)åÁ dæ)•][¦cÆsiÁ&[}•ãå^¦^åÁč¦c@∘¦Á ājÁÔ@æ‡ic^¦AîÈDÉÁ
Q}^¦ÁY ^∙ơÁ Ô[ັ}&äjÁ	•Á Ôæţ à^!Á' @æţ-Ă; Á@ ÁÓã&@ ![ ç^Á ãa^Á, Á@ Á ã  æ) åÁ āļÁ@æţ^Áţ Áæ&& [ { [ åæe^ÁæţA, ` à]ā&Á ~!!ā* Áæj å ÁæţA, !ā;æe^Áç^**^]e Ág &!` åā * Á æe^!Á œætā Á @a^Á@ ÁUæł!æţ æcæá? @æt-Æi Ás[ * ^ aæ^!Á ač !ā * Á\$[ } ed` & at ] Å [ !\ĔMÞ[ !{ æl^ ÁÔæţ à^!A ač !ā * Á\$[ } ed` & at ] Å [ !\EMÞ[ !{ æl^ ÁÔæţ à^!A [ } !Å@æ Áţ Áæ&& [ { [ åæe^A Å !ā;æe^Áç^***]A { [ ç^{ } } e Áæ} å Áa^!c@a * ÉÅ @a^ÁUæł!æţ æcæá Y @æt-Áæa ^* Á@ Áj` à]ā&A*!!ā* EÁ/@ ÁUOØÁ * @`  åÁæå å!^** Á@ Át ] a&e Á -Á@æ Á' [ !^Á ā ec } * ^ Af át ät æe^A [ ec } et A ā ec } * ^ Af át ät æe^A [ ec } et A a e ` !^* Át A it ät æe^A [ ec } et A a e ` !^* Át A it at ae^A e A Cæţ æt Áuæta * Â æt A ê e A i A æt A A æt A et A A et A A et A et A A et A et A A et A et	āj&ļĭåāj*Á,íãnātænāj}Á,í^æer`¦^∙Á d[Á,iājā[ãr^Áāj]æ8dbb¥Á
Q}^¦ÁY^•ơÁ Ô[`}&ą́Á	<ul> <li>Á V@ÁÜÒZÁ @`  åÁæ • ^ • • Á@Á[ c} mathá ã ] astor Á A@Ac{ ] [ !at A • ^ A A • A 4 A 0 at a a A A A A A A A A A A A A A A A A</li></ul>	(2) (2) (2) (2) (2) (2) (2) (2) (2) (2)

Agency	Issue raised	Response / where addressed in REF
	<ul> <li>åæaļî Ábî ÁP æbà[`¦, æz&amp;@Ĕ¥KÔ[}•^``^} dî Ás@ Á</li> <li>][[ Á&amp;æði Ábi ÁR][•^å Ábā Ás@ Á æz²\á`æði Ábi Ás[[oÁ</li> <li>di Ár æði ába Ák][ Ábi &amp;\'^æ ^å ÁA\\\î Atiæ-æbá *aj * Á</li> <li>Ôæ{ à^\áY @æbi Æk[` jå Á][•^ Á\\[à]^{ * Átiæ-æbá *aj * á</li> <li>Ôæ{ à^\áY @æbi Æk[` jå Á][•^ Á\\[à]^{ * Átiæ-æbá *aj * á</li> <li>Ôæ{ à^\áY @æbi Æk[` jå Á][•^ Á\\[à]^{ * Atiæ-æbá *aj * á</li> <li>@á æz^\á`ææbá Å[[ à]^{ * aba *aba *a[` jå Á][•^ Á\\[à]^{ * Atiæ-æbá *aj * á</li> <li>@á æz^\á`æbá *aba *ak[` jå á][ • Af\[à]^{ * Atiæ-æbá *aj * á</li> <li>@á æz^\á`æbá *aba *aba *aba *aba *aba *aba *aba *a</li></ul>	å`¦āj*Áo@,Á& [•`¦^Áj,^¦ājaáÁj,-Á c@(Á,[[ ÊÁ`¦c@¦Á(ājājărā)*Á æ)^Áj[c^}cãæ‡Aáj]æ&dĚÁÁ
Q}^¦ÁY^∙ơÁ Ô[`}&ą́Á	•Á Ùˆå}^´ÁPæài[`¦ÁØ^å^¦æaā]}Á/¦`•oÁ āļÁ `}å[`àc^å]^Á&[}-ā{ Ác@Aã[]['æa}&A/Å-Á æ&@æ^[][*ã&æ4Æ]]æ&o Ás}åÁ@ÁÜÒØÁ Õ`ãå^]ā}^•Á^_^¦ÁţÁc@áÁ;æc^!Á§Á^}^\addebá Õ[`}&āA^]ā^•Á^_A[ÁţÁc@áÁ;æc^!Á§Á^}]]['oÁţ!ÁseÁ ô[`}&āA^][` åÁã^Á{ţÁc@áA}{ æc^!Á§Á^]]['oÁţ!ÁseÁ c@![[`*@se •^••{ ^}of <sub>t</sub> -Á][c^}cãadA æ&@æ^[][*ã&æ4Æ]]æ&o Á§Á^•]^&oft-Ás@áA a@&@æ^[[[*ã&æ4Æ]]æ&o Á§Á^•]^&oft-Ás@áA ]![b&dÃ*•]^&ãæ4Æ]jæ&o Á§Á^{[3}åAc@æAs@ ]![b&dÃ*•]^&ãæ4Å[jæso Á§Á]A[ajåAc@æAs@ Addebá]*Á9]A Oæ{{ æa}Adæaaja;*Á0]`àÆajåAas@aAs[]^q`}Á Û`æê •Áæ&aaja*Á6][&æc^àft]}Ás@Acdebá Qa&{ æajAûaaaja;*Á6][`àÆab&@æ^[][*ã&æ4Æ]äæ*^Á ãa&@`![c^AO[]]a?!^Ása&@æ^[][*ã&æ4Æ]äæ*^Á ãa^{{ AãoAÉM}	•Á ŒÂÙœæ∿{ ^}ơ∮, ÁP^¦ãæ≛ ^Á Q ] æsoÁÇÙUPŒDÉ@æ Ás^^}Á ] ![ å` &^åÁ{[ !Á@ Á} ![ ] [ •æA , ãœ́@@ ¦ãæ≛ ^Áã[ ] æso Á æ•^••^åÁ§ ÁÔ@e] ơ:!•ÂÈFÁ æ) åÂÈFGA[, Á@ ÁÜÒØÈÁÁ
Q}^¦Ár ∧•ơÁ Ô[`}8ājÁ	<ul> <li>V@ÂÜÒQÁ æer!, æf kæj æf •ā Á @ `  å/kj &amp; ` å^kæ@ Á f   [, j * kå^cæi hkki</li> <li>A V@A, æei !^ kæj å k ¢ c^} of A, j    • ^ å Á</li> <li>[]^!ææi } æf kæstar j æf • a ka ¢ c^} of A, j = a k kæstar j æf kæstar j æf kæstar j æf kæstar j æf kæstar j æf kæstar j æf kæstar j æf kæstar j æf kæstar j æf kæstar j æf kæstar kæst</li></ul>	A Á Á Á

Agency	Issue raised	Response / where addressed in REF
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Q}^¦ÁY^•ơÁ Ô[`}&ậÁ	OžáÁ * zapáč Á         •Á V@s Áţ] 38.Á @; *  å/ku^Ásh^zeloÅ, ãr@sh^Áxc] ^ !oÁ         !^çã, Á, -Á@ /ku^ç^ [] { ^} ofes å/kv] = /ku^2         !^çã, Á, -Á@ /ku^ç^ [] { ^} ofes å/kv] = /ku^2         * ^Á, -Á@ /ku^2         * ^Á, -Á@ /ku         * ^Á         * ^Á@ ab@ /ku         - Áste ab         * ^Á         • A Ciā[] c^ a/ste ab         · A Ciā[] c^ a/ste ab         · A Ciā] c^ a/ste ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā] ac ab         · A Ciā         · A Ciā         · A Ciā         · A Ab         · A Ciā         · A Ab         · A Ciā         · A Ab         · A Ab         · A Ab         · A Ab         ·	•Á Q ] æ&o Á Á@ Á ¦[ ] [ • æÁ¦[ { Á æ) Áæá Á č æáĉ Á ^ !• ] ^ &æĉ ^ Áæ^ Á æ• ^• • ^ å 為 Á @æg c^ ! Â È Á Á c@ ÁÜÒZĚÁEÁ

Agency	Issue raised	Response / where addressed in REF
	][c^}cãæ‡Á^¢][•`¦^Á;-Ás@^Á[&æ‡Á;[]` ææã;}Á q[ÁæãiÁ;[  `cā;}Áæ;àá;à[`¦Á^{ã••ã;}●Á¦[{Á c@^Á;¦[b%&dĚÁᠱÁ	
Q}^¦ÁY^•oÁ Ô[`}&ą́Á	<ul> <li>V@ÁÜÓZÁ @`  å/set=[ Áş &amp; ` å^ká</li> <li>•Á Œ Á{ ^!*^} &amp; Â á æ) æ*^{ ^} of jæ) Á</li> <li>•Á Œ Á{ ^!*^} &amp; Â á æ) æ*^{ ^} of jæ) Á</li> <li>•Á Œ Á{ ] æ æ ^ A í æ) æ*^{ ^} of jæ) Á</li> <li>•Á Œ Ó ã å ã * A í í å æ æ * A í ^ of jæ) Á</li> <li>•Á Œ Ó ã å ã * A í í a æ * A í <sup>2</sup> of jæ ã <sup>3</sup> A í í a æ a í í <sup>4</sup> í æ í a í í í a £ a æ í í <sup>4</sup> í æ í a í í a £ a æ í í <sup>4</sup> í æ í a í í a £ a æ í í a £ a æ í í a í a æ í í a í a æ í a í a í a</li></ul>	

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#### 5.6 Ongoing or future consultation

`}å^¦œè^}Á§IÁ@A^œåA`]Á{IÁe}åÁo@[`\*@[`M@A`[¦\●ÈV@●^Áæ&ãããa•Á[`|åA\*}●`¦^Ás@A´ &[{{`}}ãĉÁsēÁ`||^Ásj-{¦{^àÁseà[`OÁc@^Á,¦[][•æ)ÉĂ

•Á Œáç^¦cã^{ ^}œ^Á; ^}œ`Á; Á`à|a&Aŝã] |æ`Á; ÁœAÜÒØÁ; [č|åÁŝ^Á; æå^Á§; ÁœA{; ||[, ā]\*Á;`à|a&æaā;}•kÁ •Á Q}^¦ÁY ^• ÓÔ[`¦ã\¦Á •ÁÞ[¦c@ÂÛ@;¦^Á/ã\_^•Á

- •ÁÞ[¦c@\¦}ÄÖã:dã&cÁ/ã[^•Á
- - •Á P`}c^¦q-ÁPāļ|ÁÔ[`}&ãjÁse) å ÁÕ |æå^•çāļ|^ÁŠãa ¦æ'^Á
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  - •Á Q}}^¦ÁY^•oÁT`}a&a]a¢kÔ[`}&ājÁsè)åÁÓæk{æajiÁŠãa:¦æ¢^Á
  - Á Ôæ) æåæ 4Ôæ; 4Ôã; 4AÔÅ; 4AÇÖ¦ { [ ^ } ^ ] ^ Dæ; å AZÃ; 4CÃ; 4AÇÃ; 4AQZÃ; 4AÇÃ; 4AÇÃ; 4AÇÃ; 4AÇÃ; 4AÇÃ; 4AÇÃ; 4AÇÃ; 4AÇÃ; 4AÇÃ; 4AQÅ; 4AQÃ; 4AQÅ; 4
- •Á Ú¦[][•æ‡Á§;-{¦{ æēā]}Á,[`|åÁ&[}cāj`^Á§[Áa^Áåã?]|æ^^åÁçãæáx@A,\'[][•æ‡Á,^à•ãcA
- •Á U}Á áz^Á áł}æt^Á [`|åÁå^Áşi• cæd|^åÁşiÁşi+[;çãå^Áşi+[;{ææāji}}Ásæà]` ÓÅv@A, @æd-Á&][•`|^É&s]}•d`&caji}A , [¦\É&s]} cæ&o%a^cæaji• Áse) åÁsede^\;}æaãç^Ás!æ)•][¦Ó&se!æ}\*^{ ^} o Á
- •Á OEŹ&[}cæ&o4,`{à^¦Á,[`|åÁà^Á,¦[çãå^åÁ{[Ás@^Á&[{{`}ãĉ Á{[Á^\*ã c^¦Áæ}^ Á&[{{ ^} o A;¦Á&[{]|æ]]} o Á åč¦āj\*Á&[}∙dč&aāį}Áį,~Ás@∘Áj¦[][•æ†ÉÁ

# 6 Environmental assessment

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Ùãr^Ë]^&ãã&Á;æ^\*`æ¦å•Áæ)åÁ;æ)æ\*^{ ^}ơ4;^æ\*`¦^•Áæ'^Á;¦[çãå^åÁ(;Á;ãã∄æe^Ác@Áãã^}cãã}åÁ ][c^}cãæ)Á§[]æ&ceÉÁ

## 6.1 Land surface

#### 6.1.1 Existing environment

#### Land based

#### Historical Uses

Ô[&\æq[[Á@|æ)åÅ,æ Áā•oÁ•^åÁæe Áæé\*æ[jÁbjÁo@ÁFÌl €•Áæ)åÅ,æ Á\*¦æå\*æ|^Ábå^ç^|[]^åÁ[¦Áçæ4ā]\*•Á ^}\*āj^^¦āj\*Ébå[&\^æåÁæ)åÁ @3jà`ā¦åj\*Áæ&c@çãa3•Á3j&^Áæà[`óÆJÍ€•Ě4/@Á[¦c@\*¦}Áæ)åÁ\*æe <r\}Á æ]¦[}•Á@æç^Ába^}Á^&A@aa[^åÅa^Áa]j\*Á ão@Áæ)å•o[}^Á&`óÁ'[{ Ác@Áar|æ)åÁæ Á ^||Áæe Á\*æ}åA à\*ā¦åāj\*Á`àà|^Ébå^{ [|ãa‡]}Á,æ c^ÉA|æ\*Ébæe @£&Q[\^ÉA&!æ]Á(^cæ†ÉÁæa![Á&^{ ^}cæ†ÉÁæa] Á V@Á[¦{ ^¦Á\*æ‡|ÉA][、^¦@{`•^ÉA,`{]Á@?`•^Áæ}åÁçæ4ā[`•Á[[¦\•@]]•Áæ^Áæ\*^|A;Á[&æe\*åÁbjÁc@Á

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Ô[}œæ{ājææ^åÁ,æec^•Á¦[{Áār^Á;]^¦ææā[}•Áœb^Á}[,}Áq[A;]ák[Áa^Áaā][•^åA[-ÉA;|Á,æe@åÁ5gd[ÁœA •d[¦{,æe^¦Áæ)åÁ,æec^,æe^¦Ár^•c^{•Á;}Áx@Æa;|æ)åA[ç^¦Áx@Á^æ+EA;@3&@Áa;A&[}•ãa^¦^åAq[Áa^Áx@Á ]¦ā[æ\*^Á;^&@æ)ā{Á[¦Á&[}œæ{ājææā[}A[-Á;^æA;@;!^Á\*^åã[^}c4`¦![`}åāj\*Áx@Æa;|æ)åEA Á

Uc@\¦Á[`¦&^•Á&[}dāa`cāj\*Á{[Ác@\Á^åã[^}cÁ&[ác@\Á ;æ•c^Á¦[{Áa^@3jåAå^c^¦ã[¦ææ3j\*Á^æ;æe|•Áæ)jåÁc@Á{[¦{^¦Á@3jà`ã¦åäj\*Áæ&cãçãdã•ÈACE•^••{^}cÁ }^æ÷c^Á¦[{Áa^åãj\*Áæ3då^c^¦ã[¦ææ3j\*Á^œ;æe|•Áæ)jåÁc@Á{[¦{^\@@aç^Á{]^æa3j\*Áæ&cãçãdã•ÈACE•^••{^}cÁ }^æ÷A`@[¦^Á^åãā]^}orÁ@æe Áæ^}cãa³åÁ`|^çæe\*åÁ^ç^|•Á{\_Á@æç^Á{\_^cæ+Á}J^æåÊ&[]]^¦Áæ)jåÁ{\_^l&`i^DÉA V¦ãa`c°|ÁcājÁÇVÓVDÁæ)jåÁÚ[|^&`&}a&Ja&ACE[{æa3&AP^å¦[&æa3a]}•ÁÇÚCEP•DÁÇÙPØVÉACEF€DĚA Á

Ö`^Áq[Áo@ Á@ãrd[¦&Baa‡Á•^•ÁeæÁÔ[&\aeq[[Áq0|aa)åÉbo@ ¦^Á@æç^Áa^^} Á@æe adå[`•Á,[¦\•Á`}å^¦caa\^}ÈÁ OB&&[¦åā]\*|^ÉA[{^Áaãč{ ^}áaġ åÁ&[}&\~c^Á`¦~aa&^•Áe&aAe]]ā]\*Áaê^^!•ÉAOE^^Á[¦\•Á,![][•^åÁşiÁşiÁ |[&aaaā]}•Á,^ad-Á,@ \^Á&aa]]ā]\*Á@æe Áj&&č`¦\^åÁ,[č'|å/ka^Á&[{{`}}&Baaec^åÁ,ão@Áo@ Á/\`•o4,\ai¦ÁqiÁa^ā)\*Á `}å^!caa\?

#### Desktop Review

V@AÛ^å}^^ÁFK<del>E€EÊE€</del>ÁÕ^[|[\*38æ¢AÛ^¦ã∿AÛ@^oÁJFH€Á§jåa8ææ¢•Ás@æeÁs@A[¦[][•æ¢Á§aA^i¦æa§jÁå^Á c@APæç\^•à`¦^ÁUæ)å•q[}^ÁQ[¦{æaāį}ÊÉå^•&¦äå^åÁæeA(^åãã{Á§[A&[æ6•^Ё'¦æa§j^åÁ`æcA(æ)å•q[}^Á jã@Áş^¦^Á(ā][¦Á:@æ¢^Áæ)åÁæ{jãæ^Ár}•^•ÈÁ Á  $\begin{aligned} & CEA^ca^{A}_{A} & A = A = A \\ & CEA^ca^{A}_{A} & A = A \\ & CEA^ca^{A}_{A} & A = A \\ & CEA^ca^{A}_{A} & A = A \\ & CEA^ca^{A}_{A} & A$ 

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Ce ÁÔ[&\æ[[Á@|æ]å/ਬi Á[&æe^å/āj Á@ Á[ääå|^Á[×ÁÛ^å]^^ ÁPæba[`¦Ék@a Á]ædá[\*Á@ Á@eba[`¦Áa Á &[}•ãa^¦^å/á[Áa^Á^|æaā^\^Á\_|æá]^ Á ^||Á|`•@ å/æbj å/k@eeA[[c]}œædá[}ce& []æc^å/áb] ^ kæc^å/ál[{ Á ¦àæ) Á æc^æa Á] / áb[c@Á ãa^• Á] ~Á@ ÁPæba[`¦Áæc^Á][cÁa ^|^A[ka-/áxe&&`{`|æc^å/ke[`}}å/ko@ Á@|æ) åÈADEA ^æ&@A[ ´ c@ ÁP ÙY ÁÔÚOEA] }]] ^ / á&[} œa[] æc\*å/æbj å/kæj å/kæj å/kæ Afrotection of the Environment (Operations) Act 1997 ¦^&[|å• Á] æ Á] å^¦cæ A] ÉA] ã@A][Áxe&ã@AA] Á& @]\* •Á[ ÁÔ[&\æ][[Á@]æ] å/A] ^• ^} dÉA

#### Water based

#### **Desktop Review**

Q\$arÁ}[,}Áx@eeeA^åã;^}o•Á,ãc@a)ÁÙ^å}^^ÁPæbà[`¦Áeeh^Á\*^}^!æe|^Á&[}cæa;ãjæer\åAsi`^Áq[Áq[¦{,æer\!Á \`}Ë;~Á+'[{ Á`\\[`}åāj\*Á5jå`∙dãeehÁeejåÁ'àæ)ÁeehAeehAزç^\Ás@AfæeoK&^}č\^ÈÁ Á

Ô[} cæ{ āj ææāt}}Át, Á\*^åāt, ^} or ÁsjÁt, æj^Át, æj^Át, &ææāt}}•ÁsjÁÛ^å}^^APæbà[`'¦Áæ)åÁsor Á\*•č æbā\*•Á&[} cæātjÁ ^|^çææ^åÁr^ç^|•Át, Á&[]]^¦É4r^æatÉ4.āj8&É4sia&@['|[åāj@}}^|da&@['|[^c@@a)^Á¢ÖÖVDÉA Öa&@['|[åāj@}}^|åa&@['|[^c@@a}^Á¢ÖÖÖDÁseatjåÅÖ^åtå¦^}Á¢Ô[~~^ÊÉGEFÎDÉA

#### Sampling

V, [Á<^åā[^}œ´{æ{}]|^•Ą`^¦^Á`}å^¦œà^}Áå`Á\*^[co&@)&38æ4Áå¦ājā]\*Á[}ÁGCÁR\*`}^ÁGEFÍÁÇĈ[~^^ÉAGEFÎDÈÁ V@Áç [Á:æ{]|^•Ą`^¦^Á[&æex^åA`ão@3,Ás@A`^`Aj[}d[[}Ásek^æEAÜæ{]]ā]\*Á^•`|o=Á^ç^æ†^åÁs@A -{I||[¸ā]\*Áse\*ænāj•oÁs@ÁGE•dænáanàÅæa)åÁp^`AZ^æ†æa)åÁO}çã[]{{^}oÅæa)åÁÔ[}•^¦çæeā[}ÁÔ[`}&ã†Á ÇCEÞZÒÔÔDÁQ?co¦ā[ÁÙ^åã[^}cÁŨ`æ†ãĉÁÕ`ãa^|ā]^ÁÇQÙÛÕDAÁ

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•Á Ù^åā; ^} •Á\*} •Á\*} ^{a\*} ^{

•Á Tælāj^Ái^åã[^}œÁ,^l^Á}å^l|æãjÁà^Áæ)å•d[}^Á

●Á Ùæ{ ] |^ÁFKÁ

- •Á Ùæ{ ] /^ÁGHÁ
  - •Á Þ[Á¢&^^åæ) &^Á ÁQÙÛÕËŠ[, Áťã\*^¦Áçæ; ^Á æ Á^][¦c°åÁ ão@Ác@Á¢&^]cā[} Á Á^æåÊ{( ^¦&`|^Â æ) åÁ/ÓVĚÁ
  - •Á Þ[Á\x\$\$^\aabel{eq:achieve} & A[\addit AQUÛÕËPāt@&&\addit achieve} az A[\construction][\constr

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V@ Áājåāj\*•Áæo¦^Á\*^}^¦æo¦^Á&i} eãrc\*}c^}a¢jāc@ko@;•^Á^][¦c\*å/ÁşiÁj¦^çāj`•Á&i}aæati]}Áære\*••{^}orÁ &[{{ãr•āj}^å/ás`Áx@ Á/i`•o%aær/ásjåã&æes\*åÅjãx@3piÁx@ ÁÔ[}•^¦çæetaj}ATza)æt\*^{^}o/Á∪|æ)EŽV@ ¦^-{¦^ÉÄ &[}cæetjājæetaj}Áãe\Áæbarāj\*Á+[{Áj![][•^å Á^!!^Åj@eb-A&i]}•d`&ataj}Åj[¦\•ÆarK&i]}•ãa^¦^å/AtiAs^Á[jÁtiAs^Á[jÁtiA {^åã { Ás`^ÁqiÁc@ Á@arqi¦&&A´+^•Aju-Áx@ Árão^ÉÄ

#### 6.1.2 Potential impacts

#### Construction

#### Land based

V@?Á,\[][●æ‡Á,[č|åÁ\$jç[|ç^Áo@^Á[||[,ã;\*Á;ã;[¦Áæa)å●ãå^Á,[¦\●kÁÁ

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Õãç^}Ás@Á[&ææā]}Áţ-Ás@Á[¦\•Ásæåbæ&^}cÁ{ÉÁܿ妿{æææ4Üãç^¦ÉÁs@¦^ÁãrÁ[c\*}œæ4Á[iÅ¢][•^åÁ[ā‡A{ à^Á\*¦[å^åAŝ`Á,ājåÁţ¦Áæa3jÉáţ¦Áj[||˘c\*åAŝ`Ásæ&&ãå^}œa4Á]ā]|•Áţ¦Á{Aæ}æ\*^•Á¦[{Á,|æ}cÁsa}åA``āj{^}čÁs V@áÁ&[č]åAj[c\*}cãæa|^Áţ&&`¦Ásč`¦āj\*Ás@Á^|[&ææā]}Áţ-ÁU]æ4A``āj{^}cÉ4Q;^ç^¦ÁsiÁ`}|ã^|^Ási^Aá[Ás@Á {ājā[æ4Á,[¦\•Á,¦[][•^åÈÁ á

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Üã \ Á; -Á\*¦[•ā] } Á; [č|åÁa^Á[, Á&[}•ãa^¦ā] \* Ás@ Áæ) å Ásir Á\*^}^¦æ)^ Á¦æeÁ ãr@3; Ás@ Áçã&āj ãĉ Á; -Ás@ Á; @ee-Á æ) å Ás@ •^Á [¦\•Áæ^Á{; ā] [¦Áæ) å Á; [č|åÁ; } |ˆÁ; &&č|Á[¦ÁæÁ\*@]¦ơý,^¦ā] å Á; -Ásā; ^ÈÓE; ^Á\*¢&æçæe\*å Á; æe\*¦ãæ [č|åÁa^Á^\* •^å Á{; Á^@eæiāfaïæe\*Ás@ Á:ãe\*Asiæ&\ Á{; Á; ¦^Ë; [¦\Á&[} åãaā] } •ÈÓ@ Á; [c\*} cãæ‡Áā; ]æ&c• Á; [č|åÁ à^Áe{{]['æ}^Áæ} å Á{; &æ#i\*^åÈÁ

#### Á

V@;¦^ÁarÁ,ājā[a=4;Á,[c\*}cāad+Ás@aecAs@A;¦[][•=a4;Á, a∂ Ásiārč¦à ÁOEÙÙÁsi`¦āj\*Ás@,Áaajå•aő-Á;[¦\•ÈA/[Á {ājā[ā\*^Ási]]æSko•Éalsārč¦à^å Á[ā+A;['|å Ási^Ás@&\^å Áy['A;[c\*}cãad+ÁOEÙÙÈAOE;^ÁOEÙÙÁ;[`|å Ási^Á^{ [; c^åÉA &[}cæasj^å Ásið å Ásiār][•^å Á; Ási ÁsaS&[¦å að &^Á; ão@sk@ Ár ærc\*ÁÔ]æ•ēã-Baaeaaāi}} ÆÕ`ãa^|āj^•KAÚzeko/FÁ Ô]æ•ē~ã;āj\*Ár ærc\*ÁçDÚOEÉAOEFIDÉAOE® #Éals`^Ási Áso@ Á;ājā[æ4;Áæ)å•ãa^A;[¦\•Á;¦[][•^å Åso@si ÁsiÁ]]á^|î ÉÁ

#### Water based

#### Á

Ù@``|åÁ^åã[^}œ^``ãð]\*Á;~•ã¢Áåã][•æ¢Áåã][•æ¢Áå^Źr^}^\æevåÁå`¦ð]\*Á&[}•d`&œ1}Aæ&ãçãæ?•ÉA`¦œ®\Á •æ{]|ð]\*Áæ}åÁæ}æf`•ãrÁ@``|åÁà^Á`}å^\œev^}Á;-Á©@•^Ár^åã[^}œrÁ{Ka}}•d`Ka@;ãæ?ečÁ&|æe•ã&Bææãi}A ]¦ð]¦Á§Áåã][•æ¢ÉA`æc^Á&|æe•ã&Bææãi}A`@``|åÁà^Á&æe\ãråÁi` óÆ;Áæ&&[¦åæ}&^Á;ã@Ás@ÁrÙYÁÔÚOEÁ ýœcAÔ|æ•ã&Bææãi}AÕ`ãa^|ð]^•ÈÁ

#### Á

Ùæ^\*ૻæ¦å•Áæ)åÁ(ão∄aœaā)}Á(^æ•`¦^•Áv[Á(ā)ā[ãr^Ábåācč¦àæ)&^Á(-Ái^åā[^}œ-Ábå`¦ā)\*Á,ājā)\*Á[¦\•Áæ)åÁ •^åã[^}œAs[}d〔|Ábà`¦ā]\*Áæ)å•ãa^Á[\*¦æbå^Á[¦\•Áæ^Á5ba^}œãàÅk]ÁÔ@edjc∿¦ÁIÈÈÈEÁ

#### Operation

#### Land based

V@^Áæ)&āj|æ}^Árãz^Á [č|åÁa∿Áč||^Á^āj∙cææ^åÁææÁ@/Á&[{]|^cāj}Áj.-Á&[}•d`&cāj}Ê&@~¦^-{¦^Á∞@¦^ÁarÁ `}|ã^|^Áj.ÁavÁæ)^Á[ājAáarč¦àæ)&^Áači]a;\*Áj]^¦ææaj}Áj.-Á@Aj![][•æ‡ÉÁ

#### Water based

V@Á,^, Ásilāa\*^Ét æ)\*, æ Áse) å Á[}d[]}d[[}Á,[`|å Ási^Á[&ææ\*å Á\* ¦o@¦Á, -• @ ¦^ Áse) å Ás[Ás@ Á,[ ¦o@á, Ás@ Á ^¢ã cā]\*Á @ze-Ét æz'¦Árç^|•Ásec Ác@ Ái`c'¦Ås^¦o@ð]\*Áæ&r Á; Ás@ Á,^, Á,[}d[[}A,[`|å Ási^Ási^A]^!Ás@eb ^¢ã cā]\*Étee) å Ás@ Ási[]æ&or Á; Á\*^å ä [^}or Á; [çr{ /}or Áse) å Á &[`'|å /\* Åse Á ^||Áse Ás@ Á ã ^ A; Ás@ Ásæ^æÁ,[`|å Á,[c'}cose]^ás Čes A: A\* å Ét @ ási Čes A: A a a fill a fill a fill a fill a fill a fill a fill a fil æ a fill

#### 6.1.3 Safeguards and management measures

Væà|^ÁÎÜ Ë ÁÛæ^\* 迦å• Áæ) åÁ(ããã æãã[}Á(^æ°č¦^•Á

Impact	Environmental safeguard	Responsibility	Timing
Šæ)åÁæ)åÁ ,æ∾∖Áaæ•^åÁ  æ)åÁ`¦~æ&∿Á	OEÁÙ[ā/Áæ) å ÁY æ æ^¦ ÁT æ) æ č^{ ^} oÁÚ æ) ÁÇÙY TÚDÁ ,ā  Áã^Á, [^] æ ha Áæ) å Áã[]  ^{ ^} c^ á Áæ Á, æ ó∱[ .	Ô[}dæ&q[¦Á	Ú¦^Ë &[}•d`&dā]}ÊÁ -{  [, ā]*Á å^c^\{ ā]ædā]}Á [-Ác@AÜÒØÁ

Impact	Environmental safeguard	Responsibility	Timing
Šæ), åÁæ), åÁ , æe∿¦Aaæ-^åÁ ∣æ), åÁr`¦~æ&^Á	OEÁ ãơ Á] ^ &ãã&ÁÔ¦[•ā] } Ás) å ÁÙ^åā[ ^} ơÔ[ } d[  Á Ú æ) Á āļÁs ^ Ás[]  ^{ ^} ơ å Áse Á æd Á æd Á Åœ Á ÙY T ÚEŹ/@ Á  æ) Á āļÁs] &ĭ å ^ Áse Jæ) * ^{ ^} o Á[ ¦Á { æ) æ ∄ ∄ * Á ^ oÁ ^ æc@ ¦Á ç^} o Eấs] &ĭ å ∄ * Á { [} ã[ ¦ā] * Á - Á [ ơ } œae Áœ Ø æ Á ç^} o Á§ * &@Á æ Á d[ ¦{ • Dás) å Á] ^ &ãã& Ás[ } d[  • Ás) å Á[   [ , Ë] Á { ^ æ `  ^ • Ás[ Ás^ Ás] ]  ð å Ás] Á @ Á ç^} o Á, ~ o Á ; ^ æc@ ¦ĚÁ	Ô[}dæ&q[¦Á	Ú¦^Ë &[}•d`&cā[}ÊÁ -{  [, ā]*Á å^c^¦{ ā];æcā[}Á [-Án@AÜÒØÁ
Šæ)) åÁæ) åÁ ৢæe∿¦Aaæo^åÁ ∣æ)) åAt`¦~æ&∿Á	Ùā¦cÁæ) åÁi^åã[^}cÁ&[}d[ •Á,ã  Áà^Ái•cæà) ã:@åÁ ]¦ã[¦Áú[Áæ)^Áàã cč¦àæ) &^•Á[-Á∞@Áæ) åÁič¦-æ&∧ÈÁ Ô[}d[ •Á,ã  Áà^Á5] Áæ&&[¦åæ) &^Á ão@Ái àããã[}ÁiÁ[-Á ⊞æ) ætā]*ÁV¦àæ) ÁÙd[¦{, æer\¦ÉÂÙ[ã]•Áæ) åÁ Ô[}•d`&cã[}dÁÇ>ÙY ÁÕ[ç^¦}{^}dÃGE€EIDÁÇ©@Á à]`^Áà[[\DÁ	Ô[}dæ&q[¦Á	Ú¦^ËÁ Ô[}∙d`&cąĩ}Á
Yæe∿¦Áaæer^åÁ  æ)åÁrĭ¦-æ&∿Á	O EÁ áj cÁsč¦ cænaji ÉÁ ¢ cơ} å áji * Á¦ [{ Áscrá, áji áji `{ Áji - Á F € € Á, áji áji ^ d ^ • Áscaji [ç ^ Ásc@ Á, æz^¦ Áji ^ Áscaji à Á ^ ¢ cơ} å áji * Áti Á (^ • • Áscaga)i Á C EI { Áti Ása^ [[] Á ^ æsá[^ ç^   Á , áji Ása ^ Ásji • cæna] ^ å Áscaji [`} å Ásc@ Á?i cái ^ Á ; áji Ása ^ Ásji • cæna] ^ å Áscaji [`} å Ásc@ Á?i cái ^ Á ; áji Ási ^ Ásji • cæna] ^ å Áscaji [`} å Áscaji Ascaji Åscaji Åscaji [`] { A ^ æsá[`} à Áscaji Ascaji Åscaji Ascaji Åscaji Ascaji Åscaji	Ô[}dæ&q[¦Á	Ô[}∙d`&cąį́}Á
Yæe^¦Áaæer^åÁ  æ)jåÁrĭ¦-æ&∿Á Á	Q•]^&cal } Á Á Ó Á á ó Á í ó Á í á Á í Á í Á í Á í Í í í í í Á Á ç á A í Ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í ó Á í í Á í ó í í í í	Ô[}dæ&q[¦Á	Ô[}∙dĭ&aaji}Á

Impact	Environmental safeguard	Responsibility	Timing
Yæe∿¦Áaæ•^åÁ	OEJ Á ¢ & æçæc å Á ^ å ã ^ } o Á œ k A ^ ` ã ^ Å ã ã ] [•æ Á ,	Ô[}dæ&q[¦Á	Ô[}∙dĭ&ca‡j}Á
Šæ))åÁÙĭ¦~æ&∿ÁÁ	ÖãdeļÁÓ∧-[¦^ÁŸ[`ÁÖātÁÇÖÓŸÖDÁsjç^•cātacaāt]}•Á , [` å/Ásà^Ásadellātå/k[`ÓÁs`lāj*Ás@/Ás^acaātţ^å/Áså^•āt]}Á ]@ee^ĔÁQÁsaj^Á\[&acaāt]}Át,-Á^\çāsA^•Asadellātå/át ~'lc@!/Ásee•^••{ ^}cÁ, [` å/Ásà^Ásadellātå/tičásjá asasa[låaaj&^Á, ác@ÁU[asateAsajå/tičastatāt] ^Á Ò}çãt[}{ ^}cÁstatatát aetj]¦[]¦ãacetÁcātatcÁj¦[çãa^\!•Á, [` å/ÁsA &[}•č]ctåtĂ	Ô[}dæ&q[¦Á	Ú¦^Ë &[}∙d`&cā[}ÁÁ
Šæ),åA(ř¦-æ&∿Á	2[  [], عَاء * Á&[{] ^دهَا} Á( ﴿عَظَي عَامَ عَلَى مَعْنَى عَلَى مَعْنَى عَلَى مَعْنَى عَلَى مَعْنَى عَلَى مُ د۞ Á^{ [çæ‡Á( ﴿مَعَنَ عَلَى مَعْنَى عَلَى مَعْنَى عَلَى مَعْنَى مَعْنَى عَلَى مَعْنَى عَلَى مَعْنَى عَلَى مَعْن ﷺ عَلَى مَعْنَ عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى إ^ وَسَعَتُهُمَ عَقَتَكَمَ عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى عَلَى ع	Ô[}dæ&q[¦ÁÁ	Ô[}∙d`&ca‡j}Á
Šæ);åÁÙĭ¦~æ&∿Á	CE;^Á;[¦\●Á;¦[][●^åÁq;Áa∿Á'}å^¦cæa•^}Á,^æa√Á ç@`¦^Á&æa‡]]āj*Á@æe•Á;&&č`¦¦^åÁæa†Áq;Áa∿Á &[{{`}}ã&æær^åÁ;ão@Áx@∘Á/¦č•oA;¦āţ¦Áq;Á*¦[č}åÁ åãrcč¦àæa}&^Á	Ô[}dæ&d[¦Á	Ô[}∙d`&cą́i}Á

# 6.2 Hydrological issues

# 6.2.1 Existing environment

### Drainage

Ô`¦!^}d^ÊÁd[¦{ \_ æe^¦Áãæ@¦Á|[ , •Áåã^&d^Á{[Ás@A@edà[ `¦ÉÁ;¦ÁşãæAs@Á^{ æajā}\*Á^•o^{{ Á, Á,ão•ÁsajåÁ ]ā]^•Á, ÁÔ[&\æa][Á@|æ)åÊÁ,ãæ@A[}^Á[&æe^åÁ,ãæ@jÁæ^Aj[][•æ|Áse^æbÀU][{ ^Á,[}åā]\*ÁsajåÁ\*¦[ `}åÁ ā]-ād æaā]}Ásat+[Á;&&`¦+ÉA;æda&`|æ|^Á5J,Åse^æA;Å@'!^Ásiča]\*•Á@eç^Ási^^}Ási^{[{ a@edÁsajåÁ\*¦[ `}åÁ •]æà•Á^{ æajÁQUPØVÉÆEFEDDÁ

## Tides

 $V @ \dot{A} + [] [ \bullet a \neq \sqrt{3} \dot{A} [ & a e \wedge \dot{a} \dot{A} ] \dot{A} @ \dot{A} [ + c @ + \wedge \dot{A} + \dot{A} ] [ & a e a e a + \dot{A} ] \dot{A} = \dot{A} \\ | \wedge a \dot{a} \bullet \dot{A} ] \dot{A} = \dot{A} \\ | \wedge a \dot{a} \bullet \dot{A} ] \dot{A} = \dot{A} \\ | \wedge a \dot{a} \bullet \dot{A} ] \dot{A} \\ | \wedge a \dot{a} \bullet \dot{A} ] \dot{A} \\$ 

•Á Vãå^•Áse^Á<A { ãbãã |}æ¢4(^æ)ð]\*Ás@eenAs; [Á@er@ese)åAs; [Á[, Ásãå^•Á,[|{ æ¢|^Á,&&`¦Á\*æ&@ésæêÁ

- •Á V@ÁÍ€Á^æ;Áæ;^¦æ\*^Á^&`;¦^} &^Á§j c^¦çæÌÁQCEÜQÓA;ﷺ^Á^çç^|Áָ[`|åÁà^ÁGÈ Á(\_^d^•ÁZØÖVŐÁ
- •Á V@A, ā,ā, č, Åãå^A, ç^|Asd[`}åA€EÉA, Åd^•AZØÖVÕÁ

#### Á

#### Currents

Ö`^Á{[Ás@Ásh^]Áse)åÁ[]^}Á;æc`¦^Á[-ÁÙ^å}^^APæsàa[`¦ÉÁsããæa‡Ásc`¦¦^}orÁse4^Á(ā][¦ÉÁ/@Á(^æ)Á]¦ā]\*Á æ)åÁj^æ]Ásãa^•Árcæe^åÁsæà[ç^Ástæ)•|æe^Áq[ÁsæÁ(æçā[`{Ásc`¦¦^}orÁ[-ÁEŤEÁ}[orÁ[¦Ár\••ÁşEŤEÁ(^d^•Á,^¦Á •^&[]åDĚÁ

#### Waves

#### 6.2.2 Potential impacts

#### Construction

Ó^Áçãic^Áţ-Áo@Áţ]^}}^••Áţ-Áo@Á`ãc^Áq[ÁÛ^å}^^ÁPæàà[`¦Êbo@¦^Áæb^Á'}|ã^|^Áq[Áa^Áæb}^Á\*ã\*}ã&Bæb;oÁ &@æb;\*^•Áq[ÁsãaæbÁ{[, É5&`;¦^}o•Ê3,æç^Áæ&cāţ}Áţ;¦Á,æe^¦Á`æbãčÁæbã\*ã;\*Á+[{Áx@Á;![][•æbÉÁ Á

V@Á•^Áį,-Áų[æaāj\*Áa;æ\*^•Á;æô Á@æç,^Áæáų;āj[¦Áį[&æa‡ār^åÁ^å`&cāj}}ÁājÁ;æç,^Á\*}^¦\*^ÁajÁ;@éka;@áaj•@;¦^Á æ^ædĚV@ārÁāj]æ&cÁ;[č|åÁa;^Ác^{][¦æ\*^Áæ}åÁs[}cæaāj^åÁsjÁs@ÁæA;æé,@¦^Ás@Áa;æ\*^•Áæ}&@;¦^åÉÁ ;ãc@Á;[Áāj]æ&cÁæ)cã&ajæs^åÁs[Ás@Á;Q;¦^ÈÁ

Å

Yæç^•Á\*¢]^¦ð}&^åÁsi`¦ðj\*Áx@Á&[}•d`&aði}Àj^¦ðjåA;'ðjåÁ; æ Á^•č|d%jÁæa4;æ^ĉÁã\Ási`¦ðj\*Ájðj\*Áse3saãçãæ3•Á æ)åÁsid 38æe^Ájão ÈÁ/@•^Áse3cãçãæ3•Á,[č|åÁsi^Á;}å^¦æeà^}Ásičiðj\*Ásæ4;{Ájæe^¦Ás[}åãaðj}•ÉÅj@'¦^Á ][••ãa|^ÈÅ

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V@Á,\[][•æ¢kå[^•Á,[ơáşiç[|ç^Áæ)^Á&[}•d`&aāt}}Á,[\\Áœæká,[`|åÁæ-^&aóAãa^A/rç^|•Ékaãaæd-Á|[, •ÉA &`|\^}o•Á,\A æc^\A/rç^|•ÉV@Á`•^Á,-Á+[ææ3]\*Áaæt\*^•Á, æĉÁ@æç^Aæaá, 3][\A/[&æaða\*^åÁ^å`&aāt}ŧ, Á, æç^Á ^}^\\*^ÁşiÁc@Áşi•@{\^&et^æbAv@áAşi]æ&oá,[`|åÁa^Ác^{][\æa^Áæ}åA&[}aæ3]^åÁşiÁc@Áee^æá^@\^Ác@Á àæt\*^•Áed^Áeð&Q,\^àÈĂ

Á

Þ[Á&@æ)\*^•Á{[Áx@/Ás¦æan]æt\*^Áseh^Áj¦[][•^åÉA¢ãrcā]\*Ás¦æan]æt\*^Á\*•c\*{Á¦[{Áx@/Áj[}d[[}Á9jd[Ás@A @eda]č'¦Ájā|Ásh^Ájæan]æan]^åÉÁÁ

#### Operation

Ùā[āpædÁ[Áx@A^¢ārcā]\*Á,@ed-Aæd¦æn)\*^{ ^}dÉx@A[]}d[[}d[[}Á,[č|åAsu^Á[}Áv[]A[-Asu@A,æev¦A,@aµAsu^ā]\*Á @|åAsuÁ,ja&u^Ásu^Árč]][¦cā]\*Ásu+ane d`&cč¦^ÈÁV@Á+[æena]\*Á,[}d[[}Á,[č|åApæd\*^|^Á,[ç^Á]Ásu)åAsu[,}A ,ār@Asu@A,æev¦Á+[Á,[č|åA,[cAsu@abaānÁ∿¢ārcā]\*Á,æev¦Á,[ç^{ ^}cA,æecv¦}+ÈÁ A

V@A[]^¦æaa]}A[~As@A]¦[][•æa¦Á[č]¦å Ásad+[Á^•č|oÁs]A[ā][¦Á&@æa)\*^•Ás]A(d]¦{ \_ æe^¦Ásā &@æa\*^Ásæ ÁsaÁ ¦^•č|oA[~Ás@A[ā][¦Ás]&¦^æe^A5s]Ás@A[[~^å Ásad^æaA[~Ás@A];[][•æakA[]]{0[[}0bÉV@árÁ[č]|å Á@æç^Ása)Á ā]•ã]}ãa3&æa)oÁs[]æasoA[}Å\_æe^¦ÁčæaaãCÁsč^Ás[Ás@A^|ææã;^|^Á{ æa|As]&¦^æe^A5s]Áč¦~æa&^Ásad^æasa)å Ás@A åã &@æa\*^A[~Ád[¦{ \_ æe^¦Ásiān^&d^Asjid[Ás@A@æaà]č¦EÁA

#### 6.2.3 Safeguards and management measures

Væà |^ÂİËGÂÛæ^\*ĭæ¦å•Áæ)åĄ(ããã†æaāį)Á(^æĭ¦^•Á

Impact	Environmental safeguard	Responsibility	Timing
₽^å¦[  [ *^Á	Y ^æc@:¦ÁĮ:¦^&æeorÁ,āļ Áà^Á&@&&\^åÁ^*č æ ^Á åč¦āj*Á&[}•dč&cāį}Áæ)åÁ;@:¦^Á![[åāj*ÁæiÁ -{¦^&æedÉæ‡ Áččă]{^}dæ)åÁ;æe^¦ãæ†∳Á,āļAà^Á ¦^{[ç^åÁ:[{Ác@:Á&[{][č}åÁ;ãe^Áæ)åÁ;@ee+Á &[}•dč&cāį}Áæ4^æ4[;Áæ]]'[]¦ãæe^\^Á+^&č¦^åÈÁ	Ô[}dæ&d[¦Á	Ô[}•d`&cā[}ÁÁ

#### 6.3 Water quality and waste management

#### 6.3.1 Existing environment

#### Water quality

Yæc\¦Á`æ¢ač Á, ÁÚæ¦æ;æcæáÜãç^¦ÁsiÁæ;\*^|ˆÁşi⊣č^}&^åÁa`Â,[ājoÁ;[či&^Á,æc\¦Á,[∥čāţ}Á\*`&@Áæe Á •d[¦{,æc\¦Ásiæanjæ\*^Á,čd^o Áæ)åÆsã~ •^Á,æc^¦Á,[∥čāţ}Á\*`&@Áæe Á'làæ)Á`}[~Ás@æcAs[^•Á,[oÁ\}c^¦Á •d[¦{,æc^¦Ásiænjæ\*A[čofæA~-jč^}oÁ;æÂa=č•A[æc^¦A,[∥čāţ}Á\*&@áæe Á'làæ)Á`}[~Ás@æcAs[^•Á,[oÁ\}c^¦Á •d[¦{,æc^¦Ásiænjæ\*A[čofæA~-jč^}oÁ;æÂa=č(kqe)[As[}dãačc^As[Ac@acd]\*Á;æc^¦Áčæa=ča] æsoPiÁ æ}åÁ'làæjÁč}[~-Á,[∥čæa]orÁs[{ { [}|ˆÁnj&]čå^ká Á

- ●Á Ù^åã(^}♂ÁÇÈĚĂ(ãÁA¦[●ã[}DÁ)
- •ÁÕ¦[••Á,[∥ĭœ;)••ÁÇÈÈÁ,ãœ\¦DÁ
- ●Á V[¢ã&æ};• ÁÇ^● cã&ãâ^● Ê‱&&ãa^} cæ‡Á;]ã||●Á;¦Á&^|ãa^¦æe^Ásǐ{]ã} \* DÁ
- •ÁÞ`dāN}orÁq2ÈÈÁA^,æ\*^Á;ç^¦-{[,•ÊÁ^¦cājã^\•Ê&a^c^\\*^}orÁæ)åÁæ)á[æ‡Áæ\*&^•DÁ
- •Á Uậ≉ Áaa) åÁĭà¦ã&aa) or Á¦[{Á[aná Áaa) åÁà[aaơ/àaæ^^åÁ,[∥ĭ caa) or Á
- •Á U¦\*æ) ã&Á(æcr^¦ÁQÈÈÈÁ/∞eÁãcr^¦DÁ

•Á OB; caĒ-[č|ā]\*Á; æað; or É&sã] [•æ‡Á; ¦Á; ç^¦-|[, Á; -Á^^, ^¦æ\*^É&æ) å Á\*æ‡|^^ Á; æ• c^• Á+[{ Ás[æ• ÈÁ Á

V@ÁPÙYÁU~a&^ÁţÁÔ}çã[}{ ^}ó&e)åÁP^¦ãæ≛^ÁQUÒPDÁţ^æ\*¦^•Ás@Á^&!^ææ‡}a#Á,æe^¦Á\*æ#ãĉÁţÁ Ù^å}^^ÁPæbà[ř|Áe)åÁ\*¦¦[ř}åãj\*Ás^æ&@•Ás@[ř\*@Ás@ÁPæbà[ř¦,æ&@Ás@áAÓ^æ&@,æ&@á}¦[\*¦æ{•ÈĂ Üæāj~æ|Ásæææ¥arÁ•^åÁţÁ,¦^åã&oÁs@Áã^|ã@[[åÁţÁsæ&c?¦ãæ4k&[}œ∉]āæaāt}ÁsæA\*æ{]|^Á\*ãc^•ÈÁ/@Áã\ÁţÁ àjæ&c²¦ãæ4A&[}œæ{i3}æaāt}Áj&&'^æ^•Á{ ||[],i3\*Á,^¦ãtå•Áţ~Aæãj~æ4|ÈÁ

Á

Ùæ{]|^•Á@æç^Áa\^}Áæà^}Áækýædā[`•Á[&ææā[}•Á5JÁ@AÛ^å}^^APæbà[`¦Áab}åAœA[], ^¦ÁÚæk¦æ{æœæÁ Üāç^¦ÉÁ/@Á{[}ãf[¦ā]\*Á~ãe^•Á&|[•^•ck4[Ác@Á;¦[][•æþÁ~ãe^Áab^ÁÕ¦^^}, 3&@ÁOæe@Áab}åÄÖæş}ÁA1æ^¦Á Ú[[|ÁeæÁOæk{æn3)ÉÁ @3&@45Jå&æe\*•Ás@eeAeb}`æþÁa^æ&@A`ãææàajãĉA\*¦æå^Á{[¦Áa[c@Á\*ãe^•Áá\*Á\*[[åÉÁ ā)å3&ææaj\*Á,æev¦Á`æþãĉÁarÁ\*[[åÁÇUÒPÉAG€FÎæ£DĂ Á

V@Á,æe^l+Á,ÁÚæl¦æ;æcæÁÜãç^¦Áæd^Á+^åAsi^ÁæÁçælæic´Á;Áç^++^|+Á,@&&@Asi/\*æe^Á;¦[]^||^¦Á,æe@ÉA æ)&@[¦Á;}Ás@Áãç^¦Ás^åÉX+^Á;āj\*Á;[[¦āj\*+ÁæjåÁ@æç^Ás@A;[c^}œæ4Á[¦Áæ&&ãa^};œe4Á]ā|+Á;¦Árælāj\*Á [~Á@å¦[&ælà[}+ÉA/@+^Áæl^Á?&`;liā\*Áæi+`^+Á;¦Ás@Ár¢ã:cāj\*Á,æe^¦Á`æláčÁ§JÁÚæl¦æ;æcæÁÜãç^¦ÉAP[Á •;āj\*Á;[[¦āj\*+Áæl^Á[&æe^åÁ;ãc@JÁc@Áçã&ajãcÁ;Ás@A;l]][+ælÁãs^ÉA

#### Waste management

Ô[}œ4[ā]æe^åÁ,æe c/•Á¦[{Áãr⁄Á]^¦æ5ā]}•Á;}ÁÔ[&\æ4[[ÁQ|æ3)åÁ,^¦^Áão@¦Á&ã][•^åÁ;¦Á,æ @åÁ5)d[Á c@Ád[¦{,æe^¦Áæ3)åÁ^,^\æ\*^Á^•c^{•Á;ç^¦Ás@Á^æ9•ÈAT`&@4,Ás@•^Á^•c^{•As3}åÁ;[[¦Á &[}åãnā]}Ě4,ão@4|`å\*^Áæ3)åÁ'¦ãnÁ^{æ3]ā]\*Á5jÁjãn•É4ā]^•Áæ3)åÁæ3)\•ÈOE•^••{^}d(-Á,æc^•Á5jÁs@•^Á •^•c^{•Á@eeA(@\_\_}}Á'|^çæe^åÁ^ç^|•Á;Á@æç^Á;^œ4e Ás3)åÁ'OEP•Ê4@],^ç^¦Á;c@¦Á&[}œ4[ā]æ3;o•Á;æ6 æ†[Ás^Á];/••^}dÉÁ Á

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V@^Á{[ ||[ , 引 \* ÁāsÁæ)Á\*¢d æ&oÁ¦[ { Áo@ ÁÔ[ &\ æ{[ ÁQ|æ} å ÁT æ) æ\* ^{ ^} ^} óÁ∪[æ) ÁÇ¢@ãa ãe^å ÁT æ ÁGEFÎ DÁ

"During Dockyard operations, stormwater either flowed directly into the harbour, or via the remaining system of pits and pipes. Some ponding and ground infiltration may still occur, particularly in areas where buildings have been demolished and ground slabs remain... The Harbour Trust initially installed a small temporary sewage plant to meet the needs of visitors and the workforce engaged for rehabilitation of the island, however as use of the island increased, this facility was replaced by a macerator that treats effluents prior to connection with the Sydney Water system near Elkington Park, Balmain."

#### 6.3.2 Potential impacts

#### Construction

#### Water quality

V@A^{ [çæ4A, -A^¢ã;cā)\*A,ā^•Aæ)åA5,•cæ4|æ5ā,}A, -A,^, A,ā^•A@ee As@A,[c^}cāe4A(As^•cæaàāa?^A,æ4a)^A •^åã, ^}o•Aæ}åA5,&\^æ^Ać;\àãaãc?A5,As@A,æc^\EXOEA,[c^åA,\^çã,`•|^Ê4č;\àãaãc?A,æ^A@e^AsaA,@e\A c^\{ A^å`&cāt}}A5,A3;@A,\*^cæaA,\*Q,\c@eat}}As@[`\*@As@A,æc^\A&[|`{}A5,As@A5,{{^a&c}AsaA,@e}A5, ]åā,\*A,[\\Ásd^æEA ]åā,\*A,[\\Ásd^æEA

Á

CE[|Á,ājā]\*Á,[¦\•Á,[`|åAsh^Asi[}^Á¦[{ ÁscAsiaa}^Á,[•ãoā]}^åA,[•ãoā]}^åA,[Adi]A, ÁscAsiaa\*^ÈOBB&&ãa^}cea,A]āļ+Á,¦Á åãr&@eeh\*^•Ás`iāj\*Á&[}•d`&cā]}Á,[i\•Á,[`|åÁsh^ÁscAsia\ÁdiÁ, æen\Á`ædaîčÈÁOE],Åa æen\Á`ædaîčÈÁO] &[}•d`&cā]}Á ão^A,[i|Á;}Á,[`c^ÁdiÁ,¦Á+[{ Ásc@A,~Ë=ãc^ÁcæBajãčÈÁOE],Åsæh\*^•Áse}åA&[}•d`&cā]}Å,[aa)o^A,[`|åÁ à^Á^~`^||^åAscAsia},Áse]];[];lãæen|^Áse]];[ç^åAsa}a,Åa&?}•^åAA^~`^||āj\*Ásia][o^1,iā];ÁdiÁse&&^•ðj\*Áso@A ``A(^`\*^}&`A]ā],Áão Á,[`|åAsh^Á^]o^1,}•ãc^ÁseAse|Asā]^^•Asa}åA,æajcæaj,^åAso@[`\*@[``@[``Aso@Asa[}•d`&cā]}ÈÁ Á

Ö`¦ā]\*Áæ)å•ãå^Á,[¦\•ÉA¢][•^åÁ`¦-æ&^•Á,[c^}cãæd,^Á&[}cæäjā]\*Áæ&ãaáA`|-æc^Á[ā+Á; æ`Áà^Á\*¦[å^åÁ ā]q[Á,^æàà^Áq[¦{,æc^¦Á§|^°•Á,¦Áåã^&q^Á§]q[Á©AQedà[ĭ¦ÉA'@àÁ[ĭ]åK&e`•^Á,[c^}cãæd,^A\*aã[^}cæaã]}Á æ)åÐ[¦Á,æc^!Á&[}cæ{ā]æaã}}ÉA'@àÆá\*Á&[}•ãå^!^åÁ`}åA`]å^|îÅ^|îÅa^A(A@eda]['¦Á;æč'!^Á;AœAA)åa \*ãå^Á ,[¦\•ÈĂ Á

CEÁc^{][¦æ²^Á&[{][`}åÁ[&ææ°åÁææÁ@Á;ææ°¦qA°å\*^Á@æ≉Á@Á[c^};@áA<sup>\*</sup>Á@æ\*Á@Á[c^};@áæþÁ[Á]āļÁ&@{ã&懕Éæy}åÁ^æ}Á [ā]•Á¦¦Á`à¦ā&æy orÁ§iq[Ašā^&q^Á§iq[Ás@Á@æ+à[`¦ÈÁV[Á^{[ç^Áā`\Á¦A´]ā]|•ÁæyåA⁄A;æ\*•Á'[{ Áæy&ā]a& ~æ&ājāæ?•Éæy`^Á&@{ã&懕Á¦¦A`^|•Áq[¦^åÁææÁ@Ác^{][¦æ\*^Á&[{][`}åÁş[`][`}åÁş[`]a/ás^Áşã@3jA§[``à|^Éa`}å^åÁ æ<sup>4</sup>~æ ÈÁÁ

Á

Ô[}•d゙&cāį}Áæ&cāçãaā)•Á,[č|åÁ\*^}^¦æe^Áçæetājč•Á,æ•c^Árd^æ{•Áx@æeÁ,[č|åÁ;^^åÁq[Áa>A(æ)æ\*^ákæ}åÁ åã•][•^åÁį-ÈÁ∪[c^}cãæ‡Á,æ•c\*●Æj&|čå^kÁ

- •Á Yæ c^Áč^|•É4, ā•É4ãčãe Áa)åÁ&@{ ã&a+Áá
- •Á Úæ&\æ\*ið]\*Á,æ\*c^•Á\*&@\$ee Á&æ+å&a[æ+åÊkaa]à^¦ÉAjæ}å/\&e+åAj|æ+c&&#Á
- $\bullet \acute{A} ~ \tilde{O}^{+} = \dot{A} = \dot$

- •Á Õ^}^¦æþÁ, æi c<sup>\*</sup>É& j & j \*ÁĮ [åÉ4)ácc<sup>\*</sup>¦Áæ) åÁj c@ ¦Á, æi c\*•Á\*^}^¦æc\*åAsî Ac@ Á&[}•d \*&cāj }Á, [¦\^!•ÈÁ Á
- À¦] قِابُهُ هُمْ عَامَهُ اللَّهُ مِنْهُ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّعَامِ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَامَ اللَّهُ مَعَام اللَّهُ مَعَام اللَّهُ مَعَام اللَّهُ مَعَام اللَّ عَلَيْهُ اللَّهُ اللَّهُ اللَّهُ عَلَيْهُ اللَّهُ عَلَيْهُ اللَّهُ عَلَيْهُ اللَّهُ مَعَام اللَّعَام اللَّهُ م مَعَام اللَّهُ اللَّهُ عَلَيْهُ اللَّهُ عَلَيْهُ اللَّهُ عَلَيْهُ اللَّهُ عَلَيْهُ اللَّهُ عَلَيْهُ اللَّهُ عَلَيْ اللَّعَام اللَّعَام اللَّعَام اللَّعَ مَعَام اللَّعَام اللَّهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْكُوبِ مَعَام اللَّعَام اللَّعَام اللَّعَام اللَّهُ عَ مَعْلَمُ اللَّهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْكُولُ مِعَام اللَّعَ عَلَيْهُ عَلَيْهُ عَلَيْ مَعَام اللَّعَام اللَّعَام اللَّهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْ مُعَالًا عَلَيْعَامُ اللَّعَام اللَّهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْ

#### Operation

#### Water quality

U]^¦æaāį}Áį ~ÁÔ[&\æat[[Á@|æ)åÁY @ed-Á;æâÁ^•č|dág,Ájææ^¦Áča¢áãĉÁã[]æ&oe Á¦[{Á\*^}^\ædÁãæ^¦Á \*^}^¦æe^åÅå^Á;@ed-Á\*•^¦•A;¦Á¦[{Á:]ā|Ág}&ãå^}dág;ç[|çā]\*ÁæÁ^¦!^Á;!Áæ][o@?¦Áç^••^|Á\*•ā]\*Áo@^Á;@ed-ÈÁ V@•^Áæd^Á;¢ã;dā;\*Áā[]æ&oe Áæ)åÁæd^Á;[dá%¢]^&c°åÁa[Ág]&¦^æe^ÁajÁ¦^č`^}}&î{A;k};æf}ãčå^Áæe ÁæÅ^•č|dÁ [Á@@Á;¦[][•ædÉÁ

Á

V@Á,^`Á,[}q[[}4,[`|åÁa^Á[&ææ\*åÁ\*¦c@¦Á,⊶@Q¦^Á,∱@kæ%ä@Á&`¦\^}qÁ@e&+ÈA/@Á[&ææā]}Á;A&@Á à^¦c@3)\*Áæ&∧∙Á,ãc@3)Áå^^]^¦Á,æe^¦Á,[`|åÁ^å`&^Á@Áã^|ãQ[[åÁ;Aæ3)Á3)&ãå^}d&säå^}d&säå^}d&säå^}d&säå} @ācā]\*Ás@Á^æ4[[¦Áæ3)åÁ^•č|cā]\*Á3)ÁæA]ā]IÈAQÁ,[č|åÁsa+[Á^å`&^Ás@Áã^|ãQ[[åÁ;A\*^åā;A}]œAàa;A}œAàA]3 A åãrcĭ¦à^åÁsìÁ, ær@Aţ¦Árdã^Ébo@•Á^åĭ&3j\*Áo@Áðă^|ã@[[åÁţÁæ)^Á&[}cæ{ 3jæ}orÁsA]\*Á{[[àā‡ãr^åÁţ]Áæ)Á [}\*[3j\*ÁsærāÉÁ

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V@A,[]^¦æaaj}}A,(-As@A,\[][•æ4,([`|åA,[OAs(]]æ8cA]][}A`d(;\{ , æc^\Asiar&@ed\*^•Ase=As@e\^A,[`|åA,[}|^A à^Ase4, ā][¦Asj&\^æe^AsjAsiar&@ed\*^A+[{ As@A, @ed-Asiat^&d^&d^Asjd[As@A, æc^\Ase=Ase4,^•`|o4, As@A`¢c^}å^åA \*æ)\*, æ?AsajåA,[}d[]}d[]}

#### Waste Management

 $\begin{array}{l} U \ \wedge \ A_{1} \ \not A_{2} \ end{triangle} & A_{2$ 

#### 6.3.3 Safeguards and management measures

Impact	Environmental safeguard	Responsibility	Timing	
Yæe∿¦Áĭæ¢ãĉÁ	Ò¦[•ā[}Áæ)åÁ(^åã[^}ơ/(^æe`¦^•Á][` åÁa^Á &@ &\^åAj¦ā[¦Á{[Á{¦^&æe c^åÁæaaj,~æa Áæ)åÁ -{I  [],ā]*Áj^¦ā[å•Áj-Áæaaj,~æa ÈÁ	Ô[}dæ&qt¦Á	Ô[}∙d`&ca‡j}ÁÁ	
Yæe∿¦ÁĭaekjãcÁ	Ò{ ^!*^} & Á] ặļÁ ão Á ặļÁa^Á^] ơḥ • ã á <p< td=""><td></td><td>Ô[}∙d`&amp;cą[}ÁÁ</td></p<>		Ô[}∙d`&cą[}ÁÁ	
Yæe∿¦Áĭa¢ãcÁ	Ò˘ă]{^}óAsaet*^•Ásaet¦^j]*Áj aa)oA;¦Á;aa&@j^¦^Á ,ā Ásh^ÁāachåÁ;ãa@Asi}åj=*Áset[ĭ}åÁ'ĭj]{^}óÁ ,@3&@Asi]}aaajA&@{38aet•Át[Á];!^ç^}óAs@{38aetA •]ā]•Á;¦Án>aa aet^•Át[{Á};c^¦j]*Ás@A;aechÈA	Ô[}dæ&q[¦Á	Ô[}•d`&cā[}ÁÁ	
Yæe∿¦Áĭæ¢ãĉÁ	OĘ∥ÁA <sup>×</sup> ˘ ậ] { ^ } dÊ4( æe^¦ãæd+ Áæ) åÁ, æ• c^• Á dæ)•][¦c^åAav, ç ^^} Áæ) Áæ]]¦[]¦ãæe^\î Á æ]]¦[ç^åAæ) åÁã&^}•^åÁæ&ãããĉ Êæe) åÁc@ Á &[}•d šaã[}Á, [¦\Á;ãc Á, ä∥Áa^Á^& č¦^åÁq[Áæç[ãåÁ •]ã∥• Áa č¦â, * Áslæ)•][¦cææã]}ÈÁ	Ô[}dæ&q[¦Á	Ô[}∙d`&cąĩ})ÁÁ	
Yæe∿¦Áĭæ¢ãĉÁ	X^@384/^•Êáç^••^/•Áæ)åÁ; æ)óÁ,ã lÁa^Á;![]^¦ ^Á {æ3jœ33j^åÁæ)åÁ^*č æ¦^Á3j•]^&c^åÁ[¦Á]ĭãaÁ  ^æ•ÈÁ	Ô[}dæ&qt¦Á	Ô[}∙d`&ca‡}}ÁÁ	

Væà |^ ÜHÁÙæ^\* 迦å•Áæ) åÁ(ãæti æaā[}Á(^æ` ¦^•Á

Impact	Environmental safeguard	Responsibility	Timing
Yæe∿¦Áĭa¢ãĉÁ	Ò{ ^¦*^}&`Á&[} cæ∨Á āļ Áa^Á^] cÁaj Áa∌ Áræe āļ^Á æ&&^•āa ^Á[&ææā]}Á[}Á@A&[}•d`&cā]}Á [¦\Á •ãc^Áæ}aÁ]}Á[}Áæ]A&[}•d`&cā]}Á,`A@A&[}•d`&cā] &[}•d`&cā]}Á &[}ed`&cā]}Á,[¦\^¦•Á,ā]Aáz^Áæåçãr^åA[,-Ác@•^Á &[}cæ&cÁa^cæā]•Áæ}aÁ];[&^å`;^•ÈÁ	Ô[}dæ&q[¦Á	Ô[}∙d`&ca‡}ÁÁ
Yæe∿¦Áĭæ†aãĉÁ	O5;^Á&&@{a&adp+Á;¦Á`^ +Á:d[¦^å/\$oco%@Ác^{][¦ael^Á &[{][`}åÅ,ã  Ási^Á;ãc@3;Ási[`à ^Ási`}å^å/ásdo^æeÈÁ		Ô[}∙d`&cā[}Á
Yæe^¦Áĭæ¢ãĉÁ	Þ[Áç^@384^Á;¦Áç^••^ Á;ā Ásà^Á;æ•@°åÁs[;}Á;¦Á ¦^~`^  ^åÁ;@3h^Á;}⋿ëãoÈA	Ô[}dæ&q[¦Á Á	Ô[}∙d`&cā[}Á
Yæe^¦Áĭæ¢ãĉÁ	ÖæajîÁ&l,^æ);Ë]Á,,-Áãơ Á≬Áà^Á'}å^¦æa\^}Á≬Á ^}•`¦^Á,[Á,æe^¦ã憕Á&[č åÁ^}ơ^¦Ás@^Á,æe^¦ÈÁ	Ô[}dæ&q[¦Á	Ô[}•d`&cā[}Á
Yæe∿¦Áča¢ãĉÁÁ	O5;^Áså^à¦ãe Ás@eeeÁ*}c^¦•Ás@∘Á,æer∿¦Á(``•oÁsà^Á ¦^da∿ç^åÁsee Á∗[[}}Ásee Áj[e•āå ^ÈÁk24[æe3);*Áså^à¦ãe Á d[Æsà^Á^da*ç^åÁsî^Á &2[[]ÈÈÙāj∖āj*Áså^à¦ãe Ás[Æsà^Á ¦^{[ç^åÁsî^Ásãç^¦ÈÁÁ	Ô[}dæ&q[¦Á	Ô[}∙d`&ca‡i}Á
Yæe∿¦Áĭa¢ãĉÁ	Q Áag) Á <sup>*</sup> ç^}ớ((, ÁacÁ)] ặl/Åi* ¦ā) * Á(, ] ^ ¦æaā); ÉÁs@ Á ā) &ãâ^}ớA{ ^ ! * ^} & Â(, ]æ) Á, āl/Ái ^ Áã( ]  ^{ ^} c^å Á ā) Áas&&[ ¦åæ) & ^ Á, ão@ÁU^ å} ^ ÁU[ ¦o ÁÔ[ ¦] [ ¦æaā); er Á ¦^•] [ } • ^ Á[ Á @a] ] ā) * Á5) &ãâ^ } o Áse) å Å ^{ ^ ! * ^} & & ^ (Å] ^ å Å5) Ác@ Á£NSW State Waters Marine Oil and Chemical Spill Contingency Pland (QT æ) ãaã ^ ÉASEE) DÉÁ	U] ^¦æţ¦ ¦Á	U] ^¦æaa <b>i</b> } Á
Yæ•c^Á Tæ}æ*^{^}oÁ	Yæ c^Á&ā][•^åÁ, -Á, -Ë ãc^Á @eeļÁà^Á&Jæ•ãā?åÁ§JÁ æ&&[¦åæ]&^Á, ão@ko@ ÁYæ c^ÁÔJæ•ãã&æeā}}Á Õ ˘ãå^ ā}^•KÁJæoÆÁÔJæ•ã~ã * ÁYæ c^ÁÇÔÔÔŶ Á G€€JDÁ, ¦ā[¦Á[Ášã][•æ4Áæ)åÁ @eeļÁà^Ášā][•^åÁ [-ÁæcÁæ]Aæ]]![]¦ãæe^ ^Áã&}&^åÁæ&äaĉ Á[¦Ás@æA [æc ČÉY@¦^Á,^&^•æ EÁ •æ{] ā] * Áæ)åÁæ)æ{°ã EÁ	Ô[}dæ&q[¦Á	Ô[}∙d`&ca‡}}ÁÁÁ

# 6.4 Air quality

### 6.4.1 Existing environment

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V@:Á,^æ}^•oÁUÒPÁæãiÁ ǎæ}ãĉÁ;[}ãī;¦ãj\*Á;œæā;}•Á;[Ás@:ÁãčÁæ}^Á;[&ææ\*åÁ§jÁÜ[:^||^Ê&æà[ǎÁGĚÁ \ã][{^d^•Á;[{Ás@:ÁQe]æ}åÈÁ/@ãrÁ;[}ãī;¦ãj\*Á;œæā;}BÉæd;]\*Á;ãc@Á;œæā;}•Áæ#ÁÜæ}å,ã&àÉŠã;å-ã\*|åÊÁ Ô@ ||[¦æ&e)å ÁÒæe|,[[å/tae\^´A]Áo@ ÁÙ^å}^^ÁÒæe o4^\*āt}ÈĂOEÁ^çãt,Ár.Áenaá Á`æ‡aĉ´Á;[}ãt[¦ā)\*ÁsaææeA{¦¦Á Ù^å}^^ÁÒæe o4^\*āt}Á;[}ÁQ Át[}o@4t,[}o@4t,ÁOE \*`•o4GEFÎÁ:@4,•A;[||`œe)o•Á,ão@3tÁo@Áæ)\*^At;Át[[å/At[ÁæaáÁ ÇUÒPÉAGEFÎàDEA

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OB&&[¦åā]\*Ák[ÁÓ[TÁÇÓ[TÉCOEFÎDÁc@Áxaç,^¦æt<sup>°</sup>Áxay}}`ædÁ]ā\*áA]^^åÁæ)\*^•Áxay\*^•Áxay`\*^•Áxa; ^^}Áxæai[`óAFEEÈ\{ EQÁ ÇæcÁlæ; DÁ¢[ÁFÎĒEÁ { EQÁÇæcÁH] { DDĚY ā]åÁxiã^&cā[}Áxay åÁ]^^åÁçælā\*•Áx@[`\*@[`óAc@Áxiæ`EÄ •`æd¦^Áx^ā)\*Á &æd{ ^¦ÆşlÁx@A[[¦}ā]\*EĂY ā]åÁ]^^åÁxay åÁxiã^&cā[}Áxa+[Áçælā\*•Áx@[[`\*@[`óAc@ÁxælEÁ

### 6.4.2 Potential impacts

#### Construction

Öč¦āj\*Áx@?Á&[}•dč&cāj}Áţ-Áx@?Áj¦[][•æ¢Á&^{][¦æ¢^Áã[]æ&orÁţ}ÁæaāÁ迆ãcÁţæêÁæeã\*^Á¦[{KÁ Á

•Á Tāj[¦Á\*^}^¦æaāj}Å{i,-Ájæda384/^•Áæ)åÅå`•OÁ';[{Á,@eet-ÁA^{[çæ4Á,[¦\•Á\*ÈÈ&8[}&',~c\*Á&`ca3;\*Áæ)åÁ à¦^æ4j\*Á

• Á T ậ [¦Á { ã • ậ } • ÁQ; ¦ã ; æ ă & ð • ^ | Á ¢ @ ĕ • OD Á ; [ { Á ; | æ ; o kæ ; à Á ; æ & @ ; ^ ; ^ A

•Á Tāj[¦Á\{ã•ā;}•Á';[{Á&[}•d`&aā;}Á;ze-38,5e)åÅ;ze-^|•ĔA

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V@••^Áā[]æ&or-Áæ¦^Á^¢]^&c^åÁ[Áa^Á@;¦dĚc^¦{ÊA[, Áa]c^}•ãc Áæ)åÁa^Áæà|^Áq[Áa^Á(æ)æ\*^åÁc@[\*\*@Á ãå^}cãa?åÁæ^\*`æ¦åÁæ)åÁ(æ)æ\*^{ ^}c4(^?æ\*`¦^•ÈÁ

#### Operation

#### 6.4.3 Safeguards and management measures

Væà|^ÁÎËIÁÛæ^\*ĭæ¦å∙Áæ)åÁ(ãæãtæaãi}Á(^^æĭ¦^•Á

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Impact	Environmental safeguard	Responsibility	Timing
OBāÁ ča¢á£ ÁÁ	<ul> <li>T ^ æ * !^ • Áţ Áæåå!^ • • Áæā Á * æţā Áţ ] æ&amp;o Á ặļÁà ^ Á</li> <li>ā &amp; [ ] [ !æ * å Æş q Á @ Á O O T Ú Åæ) å Æş ]  ^{{ ^} } * Ø * ő &amp; æ Å </li> <li>G * Ø * ó &amp; Æ Å § q Á @ Á O O T Ú Åæ) å Æş ]  ^{{ ^} } * Å</li> <li>G * Ø * ó &amp; Æ Å § q Á @ A O O T Ú Åæ) å Åş ]  ^{{ ^} } * Å</li> <li>A @ * Å @ A Ø Ø Å [ ] [ ] ā * Å ^ æ * !^ • Å ä ] Åa ^ Á</li> <li>A Ô [ ç ^ ! ] * Å * Åæ Å [ ] * å Å * Åæ * Å * Åæ * Å å å Å Å</li> <li>A Ô [ ç ^ ! ] * Å * Åæ Å Å ! } * å Å * Åæ * Å å å Å * Å </li> <li>A T æ Ø Ø ^ ! ^ Å Å Å Å Å Å Å * Å Å * Å Åæ Ø Å Å * Å </li> <li>A T æ Ø Ø ^ ! ^ Å Å Å Å Å Å Å Å * Å Å * Å Å &amp; Å Å * Å Å Ø Å Å * Å </li> <li>A T æ Ø Ø ^ ! Å Å * Å Å Å Å Å * Å Å * Å Å &amp; Å Å * Å Å Ø Å Å * Å </li> <li>A T æ Ø Ø Å / * Å Å Å Å Å Å Å Å * Å Å Ø Å Ø Å Å * Å </li> <li>A T æ Ø Ø Å Å * Å Å Å Å Å Å Ø Å Ø Ø Å Ø Å Å * Å Å </li> <li>A T æ Ø Ø Å Å * Å Å Å Å Å Å Ø Å Ø Ø Å Ø Å Å * Å Ø Å * Å </li> <li>A T æ Ø Ø Å Å * Å Å Å Å Å Ø Å Ø Ø Å Ø Ø Å Ø Å</li></ul>		Ú¦^Ë &[}•d`&dā[}ÁA aa)åA &[}•d`&dā[}A

### 6.5 Noise and vibration

OZÁ,[ã:^Ása)åÁşãa¦æaāį}Á5ą[]æ&oÁse••^••{^}oÁ,æ•Á}å^¦æa!^}Á(;¦Ás@A∫,¦[][•æ4Ás^ÁOB&[`•cã&ÁŠ[\*ä&DĚV@Á ~`||Á^][¦oÁsA,ͦ[çãa^åÁsexÁOE]]^}åã¢ÁÖÁsa)åÁseÁ`{{æ'A,í-Ás@Á^][¦oÁsiA,¦[çãa^åÁs^|[, ĚÁ

#### 6.5.1 Methodology

V@^Á,[ã:^Áæ)åÁçãa¦æaāį}Æāį]æ&oÁæ••^••{ ^}oĄ æ•Á,¦^]æ!^åÆ\$&{[¦åæ)&^Á, ão@Ác@^Á{[∥[, ā]\*KÁ

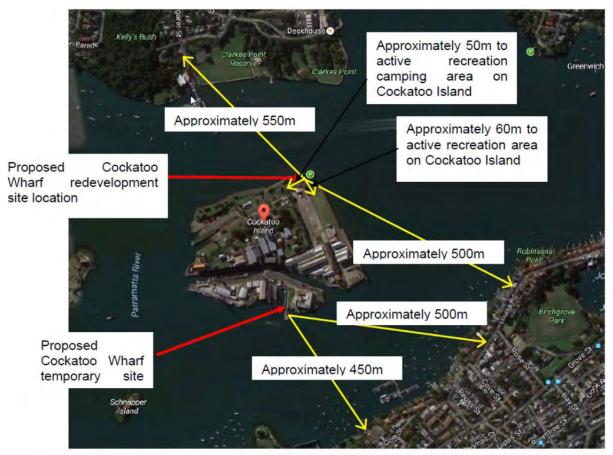
- •Á Q, c^¦ąĩ ÁÔ[}•d \* & cąĩ}ÁÞ[ã^ ÁĐ[ã^ AÕ \* ãå^|ã]^•ÁQÕ ÞÕ ÞÓ ĐÁQÕ ÒÔÔ Y ÁG€€J DÁ
- •Á Ó¦ããã @ÂÙcaa) åzelåÂİİÏ GHÁFJJGÁ ÁÕ ˘ãå^Át[Árçaat ĭaenā] }Áţ Á@2 { aa) Ár¢][•`¦^Át[Áçãa:|aenā] }Áţ Áaŭ ãµåā]\*•Á ĢFP:Át[Â €P:DÁÁ
- •Á Õ^¦{ æ) ÁÙæ) 忦å ÁÖQÞÁ FÍ €ËHÁÇFJJJË €€DÆÅÙd` &č ¦æ∮ÁXãa ¦ææãį} Å ÁÒ~^^&œ Áţ -ÁXãa ¦ææãį} Å Å Ùd` &č ¦^• ÈÁ

#### 6.5.2 Existing environment

V@^Á,^æ}^•o^Á,[ã\*^Á^}•ããã;^Á^&^ã;^\+•Á[Ás@^Á,\[][•^åÁÔ[&\;æe[[Á@[æ];åÁY@æ;÷Á§]&|ĭå^kÁ

- •Á Ü^•ãa^} cãa‡Á^&^ãç^¦•Á[ &aæ^åÁi Ás@Á[ čo@Á Ás@Á ãc^Å ãc@á Ás@Á ãc@á Ás@Á ãc@á Ás@á áj \*Á; [] ^¦cã•Á; } Á Õ[ ÅÜd^^cÁæ} åÄÜãç^¦ÁÙd^^cÉÓã&@¦[ ç^ÉÁ
- •Á Ü^•ãå^} cãæ‡Á^&^ãç^¦•Á[&ææ^åÁ[Ác@Á[čc@4; 4x@Áãæ^Á;ãc@3;ÁÓã&@¦[ç^Ê53;&|čåā;\*Á;¦[]^¦cã\•Á;}Á Š[čã:æ£Ü[æåÊÉÓã&@¦[ç^ĚÁ
- •Á Ü^•ãa^} دَهْطِهُمْ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ الْمُعْمَانِ الْمُعْمَانِ الْمُعْمَانِ الْمُعْمَانِ الْمُعْمَانِ الْمُعْمَانِ الْمُعْمَانِ الْمُعْمَانِ الْمُعْمَانِ الْمُعْمَانِ الْمُعْمَانِ الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامِ عَلَيْهُ عَلَى الْمُعَامِ عَلَيْ الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامِينَ الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامَى الْمُعَامَى اللَّعَامَ عَلَيْ مُعَامَ الْمُعَامَى الْمُعَامَةِ عَلَيْ الْمُعَامَةِ عَلَيْ الْمُعَامَةِ عَلَى الْمُعَامَةِ عَلَيْهِ عَلَيْ الْمُعَامَةِ عَلَيْ عَلَيْ الْمُعَامَعَ الْمُعَامَ عَلَيْ عَلَيْ عَلَيْ الْمُعَا الْمُعَامَةُ عَلَيْهِ عَلَيْ مَعَامَةُ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ الْ الْمُعَامِ الْعَلَيْنَا الْعَلَيْنَا عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ الْمُعَالِي عَلَيْ عَلَيْ الْعَلَيْ عَلَيْ عَلَيْ الْمُعَامِ عَلَيْ عَلَيْعَامِ عَلَيْ عَلَيْ عَلَيْعَامِ عَلَيْ الْعَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَ الْمُعَامِ عَلَيْعَامِ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْعَا عَلَيْعَالَ عَلَي الْعَلَيْنِ عَلَيْكَمَامِ عَلَيْعَامِ عَلَيْكَمَامِ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْعَالِي عَلَيْعَالِي عَلَيْ الْعَلَيْنِي عَلَيْعَالِي عَلَيْكَ عَلَيْكَمَا عَلَيْ عَلَيْعَالِي عَلَيْ عَلَيْكَمُ عَلَيْ عَلَيْ عَلَيْعَالِي عَلَيْعَالِي عَلَيْعَالِي عَلَيْعَالِي عَلَيْعَالِي عَلَيْعَالِي عَلَيْعَامِ عَلَيْعَالِي عَلَيْعَالِي عَلَيْعَالِي عَلَيْ عَلَيْ عَلَيْ عَلَيْعَالِي عَلَيْعَالِي عَلَيْعَامِ عَلَيْكَمَا عَلَيْعَالَيْعَا عَلَيْعَالِي عَلَيْعَامِ عَلَيْعَا عَلَيْ الْعَلَيْنَا عَلَي عَلَي الْعَلَيْلَيْعَالِي عَلَيْعَامِ عَلَيْ عَلَيْ عَلَيْ عَلَيْتَعَامِ عَلَيْعَامِ عَلَيْكَمَا عَلَيْعَا عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْكَلُومِ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيْ عَلَيِ
- •Á V@ Ászskañç^Á^&, ?æaði }æké / æ ál & 200 / æ ál & 200 / æ / æ ál & 200 / æ ál &

Á Á V@Áça&ajāc´Áį-Áo@Á;[][•aaþÁt[Áo@•^Á\*^}•ãnãç^Á^&^ãç^¦•Á&a)Ás^Á;[c^åÁsjÁØatč'¦^Á`ËFÁs^|[,ÈÁÁ Á



Øãt`¦^ÁìËFÁÚ¦[¢ãįãĉĄ;~Á;¦[][•æ†Áţ[Á^^}•ãããç^Á^&^ãç^¦•Á

Š[}\* Ë?\{ Á}ææ?}å^å,Á[ã^A,[ã^A,[]}ã[[lā]\*Á,æ Á&æ]&æ]åå,Á`Ó,ão@),Á@ Ásã&jãĉÁ,Áœ Áse-^& c\*å,Á^&^a,~i•Á ,ão@),Á?[[l], 3&@&e) åÁÓã&@ ¦[ç^ÁsenA^&`¦^Á[&æa]}•ÈV@ Á{&æaā}} e ÈV@ Á{&æaāj} •Å @ \^Á^|^&c\*åA[As^A |^] \^•^} cæaāj^Á; Ás@ Á[c\*} cāæd{^A &` \^Á[&æe AA^\* ã\*]}•ÈV@ Á{&æaāj} +Å @ \^Á^|^&c\*åAsjãc Á |^] \^•^} cæaāj^Á; Ás@ Á[c\*} caæd{^A &` \^Á[&æe AA\*\* |^] ko-^} cæaāj^Á; Ás@ Á[c\*} caæd{^A &` \^Á[&æe AA\*\* ] ko-^} cæaāj^A; A\*@ Á[c\*} caæd{^A &` \^Á[&æe AA\*\* ] ko-^} cæaāj^A; A\*@ A\*\* ] ko\*\* ] ko\*\* ] ko\*

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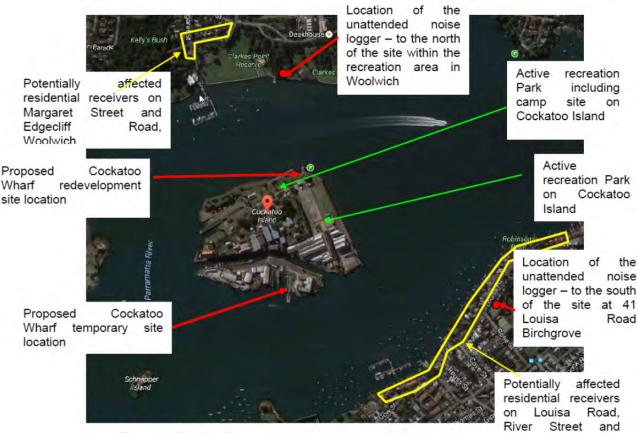


Figure 2 - Site location, receivers and noise monitoring location

Øãt č ¦∧ ËCÁÙãc∧Á[&ææā]}ÊÃ\^&^ãç^¦∙Áæ}åÁ,[ãr^Á, [}ãt[¦ã]\*Á[&ææā]}Å Á Væà |^Â É ÁT [}ãt ¦ã \* Á^∙č |œ Á

Location	Description	Day noise level 7am to 6pm (dB(A))	Evening noise level 6pm to 10pm (dB(A))	Night noise level 10pm to 7am (dB(A))		
Y[[ , a&@Á	Üæaāj*Á Óæ&∖*¦[`}åÁ Š^ç^ Á¢ÜÓŠDÁÁ ŠJ€ÉÉÍ{ājÁÁ	ΠÁ	НÏÁ	Ġ Á		
Óã&@ ¦[ ç^Á	Üæaāj*Á Óæ&∖*¦[`}åÁ Š^ç^ ÁÇÜÓŠDÁÁ ŠJ€ÉÉÍ{ājÁÁ	I HÁ	HÌ Á	НÏÁ		

. V@Áæ&[`•ca&Á`¦ç^^Á^•`|o•Áæ^Á&[}•ãa^¦^åÁ^]¦^•^} caæãç^Áæ)åÁ`ãææì|^Á[¦Áãa^}cā-̂ĝ\*Á&[}•d`&cā[}Á }[ã\*^Á(^ç^|•Áæá@Á,^æ4^•cá\\*•ãa^}cãæ4Á^&^ãç^!•ĚXÓæ&\\*¦[`}åÁ,[ã\*^Á(^ç^|•Á\`¦ã\*Á\æêcã[^Á&A^Â å[{ã;æe^åÅ\^Á\*}^}a#Aç^@&X`|æ4Atæ-ã&A[[ç^{{ ^} o•Á]}Á`;¦[`}åã]\*Á[æå\_æ^•A[}Á©Á(;æã;]æ}åA æh æ Éæ) å Á@ | 88[] ch ' • Áæ) å Áæ[ær Á] } Ás@ Á@ea'a [` ' HÉÁÁ

- Á
- Á Á Á

Gow Street

## 6.5.3 Potential impacts

#### **Construction – Noise**

V@ÁQ,c^¦ā[ÁÔ[}•d`&aā]}ÁÞ[ã:^ÁÕ`ãå^|ā]^•ÁQÔDÞÕDÁj¦[çãå^•Á,[ã:^Á;æ)æ\*^{{ ^}of^ç^|•Á[¦Á &[}•d`&aā]}Áxe&aã;ãa3•ĐÁÞ[ã:^Á;æ)æ\*^{{ ^}of^ç^|•Á;æ& Åsã-^¦Ás^]^}åā]\*Á;}Ás@ Ásî]^Á;aA^}•ãaã;^Á ¦^&^ãç^¦Ás@eeaA;æ Ási^Áee-^&c^åÁee)åÁs@ Ásā[^Á;Ásiæ Ás@ Áse&aã;ãc ÁsiAs^ā]\*Ásæ;¦ã?åA;`dEÁÁ Á

V@ÁÔÞŐÁ[c+ÁœedÉ4[¦Á^•ãa] : áœedÁ^&^ãç^!+É&[}•d : & aj ≵Á[ã~Áţ, ç^|+Á@[`|åÁa^Á; a) æ \* åÁ ãœÁ c@Áæã[ Á; Á;[ơÁ¢&^^åā] : ÁœÁ[ã~Áæ-A&c\*åÁүç^|ÉÅ @ & @ & @ Aæā] : Áaæ&\ \* ![`}åÁүç^|ÁÇÜÓŠDÅ] : •Á FیÓCCEDÁa` !ā] : Áœaj åælåÁ[ !\ā] : ÁQ : !•Á; ¦ÁÜÓŠÁ] : •Á åÓCCEDÁ: : oãa^Á; Á æaj åælåÁ[ !\ā] : ÁQ : !•Á Ç^-A: Å[ Á/æà]^ ÉÎ DÉY @ ¦^Á&[}•d : & aj } Å[ã~Áæ Á; ¦^åã&c\*åÁ[ Á×¢&^^åÁœA; a & æ] Ç^-A: Å[ Á/æà]^ ÉÎ DÉY @ ¦^Á&[}•d : & aj } Å[ã~Áæ Á; |^åã&c\*åÁ[ Á×¢&^^åÁœA; a & æ] Ç^-A: Å[ Á/æà]^Â ÉÎ DÉY @ ¦^Á&[}•d : & aj } Å[ã~Áæ Á; A a& a & c & af^ç^|Éæ [}æà]^Áæ] à Á^æ æia]^Á; ãæã æaā] } Á; ^æ : !^•Á [` |åÁà^Áæ]] |ã\*åÉV@Á@ # @ Â[ã~Áæ-A & c\*åÁ^ç^|Éæ !^æ[}æà]^Á&[}•d : & aj \* Á[ ã ^ Æa Á; A]; ^ åã&c\*åÁ[ Á^æ&@ & æ] ] aš åÉV@ A@ @ Â]; a ^ Æa-A & c\*åÁ^ç^|Æ i í ÁsÓCCEDÉY @ !^Á&[}•d : & aj \* Á[ ã ^ Æa Á; A]; ^ åã&c\*åÁ[ Á^æ&@ & æ] ] a\*àÉV @ A@ a @ A], 'ā a\* Á[ !Áç^!^Â] æ&açã;ãã\*•Á; æ Áa^Á^´` ã^àÉA

Á

CEÁ∄\*|^Á&iãr\lā[}Á&rÁ,l[çãå^åÁà^Ás@ÁCOÞÕÁ[¦Á&[{ { ^¦&ãædÁ^&^ãç^¦•Áæ}åÁCB&cãç^ÁÜ^•^¦ç^•ÊÁ;@ã&@áærÁ Ï€ÁåÓÇCEEÁ{¦Á,~ã&^•Áæ}åÁ^cæaāļÁ,`d^o•ÁĢ3;&|`å∄\*Á@[]Áæ)åÁ^•cæ`¦æ)dDÁ``d^o•ÁÇÔ[{ { ^¦&ãædDÁæ}åÂ\lÁ åÓÇCEEÁ{¦ÁCB&cãç^ÁÜ^•^¦ç^•ÈA'@`Á¢co`¦}ædÁ[ã\*ÁA@[]á\*à@`¦âÁà^Áæe•^••^åÁæeÁ@A[{ d^'¦&ãædDÁæ}åÂ\lÁ [&&`]ā<sup>°</sup>åÁ[ā]oÁæeÁs@A∫¦^{ ã^•ÈA'@A∫[ã\*^Á;æ)æ\*^{ ^}oAf^ç^|•Áæd^Ásj&|`å^åÁsjÁ/æà|^AîÉÉA á

#### Væà|^ÂiÊiÁ⊳[ã•^ÁTæ}æ\*^{ ^}o%Š^c^|•Á

Time of day	Noise management level (LA <sub>eq (15 mins)</sub> )
Ü^&[{ { ^} å^åÁicæ) åæ låÁ@[č ¦●Á	Þ[ã^Áæ-^&c^åÁ
T [} åæ Â Á21 ãã æ kkkiæ (Á[Â] { Á	ÜÓŠÆÆF€åÓÇCEDÁ
Ùaeč¦åæ`kÅaæ{Á{[ÁF]{ Á	Pāt@rÁ,[ār∧Áse⊶∧&c∧åÁ
Þ[Á][¦\Á[}ÂÙ`}åæ°∙Á[¦Á]čà 3&Á@2 ãåæ°∙Á	ïíåÓÇCEDÁ
Uĭo•ãå^Á^&[{{ ^}å^åÁ*cæ);忦åÁ@[ĭ¦•Á	Þ[ã*^Áæ-^&c^åÁ ÜÓŠÆÁÅåÓÇŒÐÁ

Á

Óæ•^åÁ;}Áv@^Á&[}•d`&aā;}Á;[ã\*^Á`ãå^|ã;^•Áå^aã4§;Áv@Á^][¦dÁæ;)åÁ§;æ&&\\*¦[`}åÁ;[ã\*^Á;[}åÁ;[ã\*^Á;[}ã\* jãu@3;Áv@Áçã&ãjãc`Á;-Áv@Áiã\*ÉÁ/æà;|^ÂİËIÁå^cæa‡+Áv@Á&[}•d`&aā;}Á;[ã\*^Á\*[æ†+Á[¦Ás@Á;¦]][•^åÁiã\*ÉÁ&á Á

Væà|^ÂIËİÁÔ[}∙d`&qāį}Á₽[ãr^ÁTæ}æ≛^{ ^}ơŠô^ç^|•ÁÁ[¦ÁÔ[&\æq[[Á@|æ);åÁY@æb;ÁN]\*¦æå^Á

Location	Time of day	Noise Level (dB(A))
Ù`¦¦[`}åā]*Á^∙ãã^}cãæ‡Á ¦^&^ãç^¦∙Á5jÁY[[ ,ã&@Á	T[}åæîÁ.ÁØ1,ãåæîkkű.æ((Át[Ái]{Á Ùæcĭ¦åæîkků.æ((Át[Ár]{Á Á	ÍI åÓÇCEDÁ Á
	Uఀ౮aâ^Á^&[{ { ^}}å^åÁ ●æa)åæååÁ@[č¦●Á	HGåÓÇEÐÁ
Ù`¦¦[`}åāj*Á^∙ãå^}œãd∳Á ¦^&^ãç^¦∙Á5jÁÓã&@'¦[ç^Á	T[}åæîÁ.Á21,ãåæîKÁiæ((Át[Ái]{Á Ùæcĭ¦åæîKAiæ((Át[Ár]{Á Á	ÍI åÓÇEÐÁ
	Uఀ౮aâ^Á^&[{{ ^}å^åÁ ●æ);åæååÁ@[č¦●Á	HGåÓÇEEÁ

Location	Time of day	Noise Level (dB(A))
Ù`¦¦[`}åāj*Á^•ãå^}cãæ‡Á ¦^&^ãç^¦•Á5jÁÕ¦^^},ã&@Á	T[}åæîÁ.Á21;ãåæîk4â.æ{,Á4[Áî]{Á Ùæoč¦åæîk4â.æ{,Á4[Ár]{Á Á	Í HåÓÇEÐÁ
Á	Učorāâ^Á^&{{ { ^}}å^åÁ ●cæ)åæ\åÅ⁄@{č¦●Á	I GåÓÇEÐÁ
Œaçĩ^ÁÜ^∙^¦ç^Á	C≣ Á,^¦āįå∙Á,∽ÁåæîÁæ)åÁ,ã*@eÁ	ÎÍåÓÇCEDÁ
Ô[{{ ^\&ãæ¢ÁÜ^&^ãç^\•Á	Y@}}Áşi,Á[]^¦æeaji;}Á	Ï€åÓÇŒÐÁ

Á

 $\begin{array}{l} & \label{eq:linear_lin$ 

A 13 /A	, ,	~ / /	, , ,
	()/ <b>БГÃ</b> //		
Væà ^ÂÎËİÁÔ[}∙d ĭⅆ		Nualt`ia <del>ltA</del> tiA	Uiiii•^a <i>A</i> riii\●A
		• · · · · · · · · · · · · · · · · · · ·	

Scenario	Description	Equipment to be used	Items of plant required
FÁ	Ü^{ [çæ‡Á,-Ás@ Á*¢ãrcā)*Á,[}d[[}Á	Óæ <sup>*</sup> ^Á	HÁ
	æ)åÁ*æ)*,æÂ	Pæ}åÁq[[∣●Á	HÁ
		P^妿ĕ∣ã&Á@æ€;{^¦Á	FÁ
		Œj* ^∕ft¦ąjå^¦∙Á	FÁ
GÁ	Šãcāj≭Áį,~Aį aee∿¦ãed;⊫Á	Óæł*^Á	HÁ
		Ô¦æ}^Á	FÁ
		Pæ))åÁ{[[ ●Á	HÁ
HÁ	Q•œa‡laaaāā}}Áį.~Á,^,Á,ã/∿•Á	Óæł*^Á	HÁ
		Úąą * Áð Á	FÁ
		Ô¦æ}^Á	FÁ
١Á	Õ^}^¦æ <mark>‡Á&amp;[</mark> }∙d`&aā[}Á,[¦\∙Á	Óæł*^Á	HÁ
		Ô[}&¦^ơ∕Át'`&\Á	GÁ
		Ô[}&¦^ơ⁄Ą́`{]Á	FÁ
		Áæá JÒ	FÁ

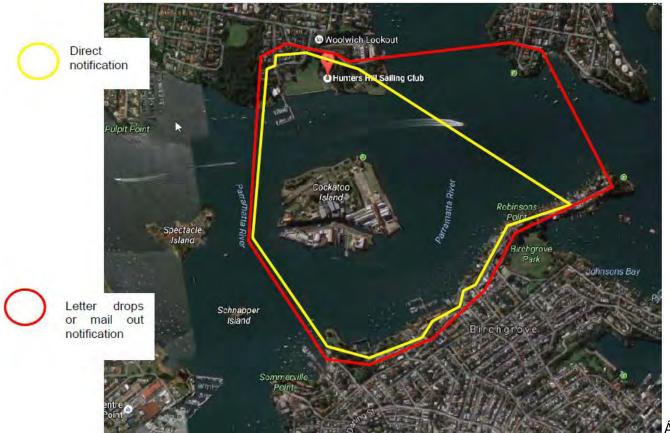
Á

. Þ[ãr^Árç^|∙Á¦[{ Áræ&@Á&^}ædā[Á@æçr^Áa^^}Á,¦^åã&cråÁ{¦Áåæêcā[^Ê4rç^}ā]\*Ê5,ãt@Aáā[^Áæ);åÁ|^^]Á åãrč¦àæ)&^Á,^¦ā[å•Á[¦Áo@^Á,[cr}cãæ4]^Á,[¦•oÁæ-^&cråA^•ãa^}cãæ4Á^&^ãç^¦•È3ÁÁ

Á

Á Þ[ã\*^Á/^c^|•Á¦[{ Á\*æ&@Á;ã\*&^Á;~Ã\*``ā]{ ^}dÐ;|[&^••Á;fÁs^Á •^åÁs`¦ā]\*Á&]}•d`&dā;}Á@eec^Ás^^}Á ] ¦^ å 38 c^ å Á¦ ¦ Á\$izê cā; ^ÊA,ç^} ā; \*ÊÁ, ā\* @2Ásā; ^ Áse) å Á |^^] Á\$iã č ¦ à æ) &^ Á, ^¦ā; å • ÁsezÁs@2 Á, [ c^} cãæ|^ Á, [ ¦ • cÁ æ~^&c^åÁ^•ãa^}cãeÁ^&^ãc^!•ĚV@Á\$\*^cæã^åÅ\*•`jo Á\$\*^Á !^•^} c^åÁ§ ÁOE ] ^} åãcÁÖĔÁ Á } ãt @okkā; ^ Á@Ų` ¦• Áār ÁÎÎ Á&ÓQCEDÁY; ¦ Á@æe; { ^ ¦āj \* Ájā^• ÉĂjãc@Á] Át; ÁÏ Á&ÓQCEDÁY; ¦ Ájc@ ¦ Ájājā \* Áæ&cāçãaā\*• ĚÁV@ Á ] ¦^å&&c^åÁ [ã^Á^ç^|Á•ã] \* Á@Á [^^] Á&ã č ¦àæ) &^Á& ãc^¦ãæá basæe • Á@æe Á@ Á[ã^Á+[{ Á&]} • d` &cã] } Á æ&cāçānā?•Á,æ^Á&æ`•^Áæ}}[^æ}&^Áæ}åÅa;ācč¦àæ}&^ÁţÁ`¦![`}åā;\*Á^•ãå^}&^•Áţ¦Áā;ãc^åÁ,^¦ā;å•Áa`^Á d Á ĺ^^] Ášã č ¦àæ) & Á Ć/Ì o ĔÓæ ^áÁ } Á@ Á& ác ¦ãæå^ cæā^aÁ, ã œã Á@ Á šố A A ČA [ à A ČA] [ à ^ ÉÁ [ ã ^ Á/[ { Ă 8[}•d`8cā[}Áæ8cā;āæ?•ÁæA,ā\*@A@ee•Á@A,[c^}cāe4A;Áæ~^8cAs@A@ea+c@4a+jåA,^||à^ā]\*A,A`;;[`}åã]\*A ¦^●藉ǎ^}c藉垂Á^&^蘢^¦●Áæ}åÁ、刮Áᡈ^Á、æ}æ\*^åÁæe Áå^cæā/åÁ54Áx@Á[ぞ^Áæ}åKoāà¦ææā}Åæ•^●•{ ^}ơÁ^][¦ơÁ æxÁQE[]^}åã¢AÖÁse)åÁÔ@se]c^¦ÁÎĚĖÁţÁţÃjãjãr^Á§[]æ&dĚA Á Á V[Á;ājājā^^Ás@Aāj]æ&oA;~Ás@•^Á;[ã^^Áæ&cã;ãa3•Ês@Áå^•ã}}Áæ}åÁ;^c@lå[|[\*^Á;~Ás@A;![][•æ‡Á;æA ¦^çã\\_^åÁq[Á`}å^¦•œa)åÁ,@c@;¦Áq[]æ&oAq[`|åÁa^Aq[ā]ā[ã^^åÁq@[`\*@Á\|ā[ā]æaāq[}ÊÁ`à•cãčcāq[}ÊÁ ^}\*ā;^^¦ā;\*Á&[}d[|•Á;¦Á∞±å{ā;ã;dææã;^Á&[}d[|•ÈÁÁÅ А Ú[c^}caæalÁ,[ã=^Áā;]æ&o=Á@æeç^Áa;^^}Á; ā]ā[ã=^åÅáo@[\*\*@ko@Aå;^•ã"}Á;-Áo@Á;;[][•æalÁ,@a&@áa;c[|c^•Á \*}å^¦cæèāj\*Áse Á, \*&@Á&[}•d\*&aāj}Á,[¦\Áse Á,[••ãa|^ÁseAsó&{]}cæ&d,¦•Á,~Ëiãc^Áæ&ããc Áæe@¦ÁsœA ÁseA •ãc^É£44&]čåã4\*Ásee•^{à|æ\*^Á1,~Á1,¦^Ëæaà|ã&ææ^åÁ&[{][}^}o\*ÉA Á Òlãi ājæeāj\*Ás@Ájājā;\*Áæ&cāpāc`Á;[{Ás@Á;![][•æk/5a;Á[cÁ;[••āa|^Ási`^Ási`Aki`Ás@Ás^•ãt}Á;Ás@Á^,Á ] [ } dī [ } ÉÁ, @38.@Á\[ ææ• Á ] Áæ) å Á&[ \_ } Á, ão@Áv@ Ásãa^• Éée) å Áãi Á@ |å Á§i Á, |æ&^ Áa` Á c^^ | Á, ã^• ÉÁkØ´ ¦c@ ¦ Á c^^ | Á ] ā^• Áse^ Á^˘ ˘ ã^à Á{[ Á¦ [ çãå^ ÁÖÖCEÆ{[ { ] |ãe); o≴se&&^•• Á{[ Ás@^ A, [ } q[ [ } ÁşãaxÁsaÁs ¦ãå \* ^ Áse); å Á\* æ); \* , æ Á |^æåā]\*Á+|[{Ás@AÁ@[+^Ás|lãá\*^É&e)åÁs[Á,|[çãá^Á,|[c^8cā]}Ás^ç\_^^}Á+|[Ás^\c@3;\*Á,[ā]orÁse)åÁs@A ^¢ãidā\*Á\*æ}\* æੰÈÁÁ Á O≣ Áå^œæij^å/Áşi ÁÔ@æji c^¦Á<del>+È ÈCÉ</del>A ajā \*Á, [¦∖Á[¦Ás@ Á,¦[][•ælÁ@æe Áæ)i Á•caī, æe^å/Ásĭ¦æeaji }Áji Áæai[ĭoks@^^Á ^^\•Á{[Á&][{]|^c^Á(aaà][`cÁãe^^}]Á;ã`@+Á§;Á{[cadDÁ][\_adaÁo@Aà^\*ā]}ā]\*Á[-Áo@Á&]}•d`&aā]}Á;^¦ā[aĚÁ  $Q \bullet czel | zeal \} \dot{A} - \dot{A} @ \dot{A} \ddot{a}^{\wedge} \bullet \dot{A} [ ` | \dot{a} \dot{A}^{\vee} \ddot{a}^{\wedge} \dot{A} zeal (\dot{A}) c a [ ] { ^ } { ^ } c a \dot{A} zeal (\dot{A})$ •[Ás@æeÁs@Ál[æeā]\*Ásæt\*^Á•^åÁ{¦Ás@Á,ājā]\*Ásæ}Á^{ æājÁ<cāļÁ{¦Ás@Á,ā^•Á§[Ás^Á§]•cæ‡|^åÁsæs&`¦æe^|^ÈÁ Ôzak{ Á&[}åãa∄])•Ásel^Ásel=[Á^˘ĭã^ằÁ&[Á,أ[Ç´ãã^Á:ázã^Á&2^Á&]}åãaã])•Å[¦Ás@Ž&2[}•Čĭ&cã[}Á&¦~, ĔÁ/@Á ·æe^\¦, æîÁārÁ`•ĭæ||^Á&æa|{^\¦Á>æ+|^Á§iÁs@eÁ{[¦}}āj\*ÉĂ,ão@Á,ãjåÁæa)åÁ,ãjåÁ&@[]Á§i&\^æ•ãj\*Ás@[ĭ\*@[ĭoÁ c@ Á\$uæ ÈĂV@ Á&I} åããI} • Á^˘ ă^ å ÁI¦Á ãã \* Á • °æ∥^Á &&° ¦Ás `¦ã \* Ás@a Á æ|^Á [|} ã \* Á ^¦ã åĚÁ Á  $\forall \tilde{a}_{i} = \dot{A}_{i} + \dot{A}_{i} = \dot{A}_{i$ ¦^∙dã&c^åÁ{ Á@ Áæ oÁc [Á@ 覕Á Áœ Á ã @Ëã ^Á ^¦ā åÁ{ Á ā ã ã ^Áœ Á ] æ&dĚÄÖč¦ā \*Á@ •^Á @ee({^¦ā)\*Áse&cāçãa?)•Ébán/ás Áse) ca&a] æe^å Ás@een/A æ&@4), ã^Á, [č|å Áà^Á@ee({^\^å Á[¦Á[}^Á; ā]čc^ÁQee[čc/Æ€Á] @are Á ac@ko@ Á@zet { ^ \ Á ac@a; Á } ^ Á; a] ` c^DEXX2[ \ Á ze&@k, a]^ Ác@ Áse&caçac ás Áa; A]^ Ác[ Á; &&` \ Aseà [ ` c^aç^ A

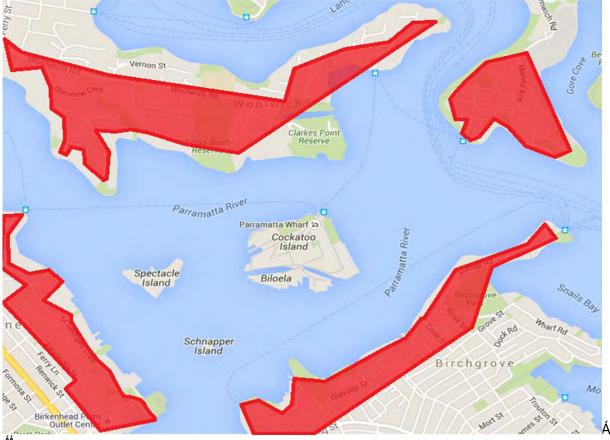
cã; ^•Á;ç^¦Áæá,^¦ã;åÁ;Á;}^Á@;`¦ĚÁU Ás@ Áãe^^}A;áã;@•Á;Á;ãā;\*Á;[¦\Éæè;[`óÁã;^Á;Ás@•^Á;[`|åÁà^Á `•^åÁ↓¦Á@æa!{^¦ā;\*Á&JÁ;ā^•ÈÁÁ Á Ù`{ { æ^Â,Á,Á@;`¦∙Á,Á,ã\*@A,[¦\•Á;¦Á,ã,ã,\*Ás¦ã,lã,\*Áse&açã,ã,ã)•kÁ Á FÈÁÙ^č]Á{¦Á\$s¦á||ð] \*Á¦[{ÁFGæ{ÁţÁFæ{Á GEĂÖ¦ā|jā) \* Á∖-Á∖ā^• Á¦[{ ÁFæ{ Á{ æ{ Á HÈÁÚæ&\Á]Á\*^}^¦æ||^Áiæ{ÁjÁiæ{ÉÁ Á Ù`{{ as^^(a, -4); a\* A; a\* @A, [ \\ A; |A, a\*a; \* A@a; { ^\a, \* A; a\* A; Á IÈÁÙ^č]Á{¦Áœzet;{^¦ãj\*Á¦[{Áiæet;Át[Ãiæet;A ÍÈÁPæ{{^¦ā}\*Á;Á,á^•Á;[{Áíæ{Á;Áíæ{ÈÁ А Ùǎ• cãč cā; \* Áse^ æ Á; -Ás@ Á; ãā; \* Á; ^c@; å[|[\* ^ Á; Á; ā; ā; ã ~ Ás@ Á; [ã ^ Áā; ]æscÁ; æ Á; |^çã; \* • |^ Á &{}}•ãå^\^åÉ&s•cælā\*Á.ā^•Ás\_c[|c^•Ás¦ālā\*Á.ā^^x&æ^•AÁ[Á^~`ă^à&ks^]c@É&a^4`\^Á}à^\cæ\ā\*Á.  $\textcircled{P}{2} = \left\{ \begin{array}{c} A & A \\ A$ @æqi {`^¦aj\*Á{[¦Á\$si¦āj]aj\*ÉÁv¢&^] óÁ{[¦Á,`@}}Á^``ā^āÅ{[¦Ás@`ÁājæahÁ, |æ&^{`^} dÉs@`Ávç^|A;-Á, [ã\*^Á \*^}^¦^¦æe^åÁ[¦Á,ð‡ð,\*Áæe Ásakæe`\Á@æe Ä^å`&^åÉA,ão@4,}|^Ás@?Á,[ãr^Áse&cãçãc Á,-Á@æe;{^¦ð,\*Á,ð?•Á^ĭ\*ð‡,\*Á ~ ¦ c@ \ Á ãcã æcāj } ÈÁÁ Á Ø´¦c@~¦Áįājāįãræaāj}Áį-Áj[ãr^ÁārÁj¦[çãå^åÁo@[č\*@Á^çã^,āj\*Áj|æ);oÁe);åA`č`āj{ ^}oÁq[Áà^Á`•^åAj}Á •ãe^Ê&; Á\*}•``¦^Á;ç^!^o@ã\* Á§; Á;[[åÁ;[¦\ā;\*Á;¦å^¦Á;eð; åÁ;[oÁ\*{ãcā;\*Á\*¢&^••ãç^Á;[ã\*^Á;¢^]•Ě&Û`ã\*e^¦Á ]|æ);dæ);åÁ\*``ā]{^}d^,ā]|Aa^Á\*^|^&c^åA[¦Á,[ã\*^Áæe++Á,@`!^ç^¦Á,[••āa|^ÊA^çã^,ā]\*Á@A[]cã[æ4A ][``^¦Áxa)åÁiã^Á^´´ăľ^åÁx[Á;[•oÁi~a&aði}d^Ă,^'-{'{ أَجْ حَلَيْ اللَّهُ اللَّهُ الْحَصْ أَحْدَى الْمُ Á W}å^¦cæàā;\*Ás@Á&{}}d[|Á{^æ•`¦^•Á[c^åÁæà[c^Á,ã|Á^å`&^Ás@Á&{]a&ScÁ,Á[ã^Áæ&cã;ãæ?•Á;}Ás@Á ] ¦ [ ] [•æker Á^•ãå^} cãæk Á^&^ãç^¦•ĚÁP [\_^c^' ĚÁţ Á\* ¦c@ ¦ Á; ājā[ã\* Ác@ Á [ã\* Ás[]æ&cá[-Á,ã\*@Ėcā[^A æ&cāçãæ?•ÉÅ[cãæ8æǽā]}Á; Áæ¢lÁ[c^}caæ¢Åæ~^&c^åÁ^•ãa^}o•Á álÁà^A \* a^{cæ}^A}å^{cæ}^A}æóÅæóÅ c@^Á\{[][•^åÁ;ã\*@Ásã;^Á;[\\•ĔÁ/@;Á¤[ã\*^Ása}åÁxsãa¦ææã]}ÁQ;]æ&cÁQE•^••{^}cÁÜ^][¦cÁ\{[çãa^åÁş;Á CE[]^}åã¢ÁÖÉÁ•^•Ás@eAsaæ&\\*¦[`}åÁ,[ãe^Áx[]}ã¢[¦ã]\*Ása)åÁ,¦^åã&c^åÁ&[}•d`&cā]}Á,[ãe^Á^ç^|•Á§A ãå^} cã^ Á [ c^} cãæ|^ Áæ-^ &c^ å Á^ &^ ãç^ i • Á @ Á ã|Á^ &^ ãç^ Á\*ão@ ¦ Ásã^ &cÁ ¦ Á ¦ãc^} Å [ cãã&ææã j Á Áœ • ^ Á Á Á



 $\emptyset$ ãt ' |^ Â HÝÔ[ { { ` } ãc Á P[ cã as a ca i } Á CE^ a A

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Ŵ ¦c@\¦{[¦^ÊÁţ|||[] ā]\*Asāa&`••ā]}Á ār@ko@\Á/¦`•oÁ^\*æ¦åā]\*Áx@\Á^ç^|•Á[-Á&[{{`}ā&æaā]}Á•`æ|^Á `}å^¦cæ\^}Á{[¦Á&[]}•d`&cā]}Á[[¦\•Á]}ÁÔ[&\æ[[Á@]æ]å/kadkå^&ārā[]}Á@er/kà^^}Á{[aæ^Ak[A][aæ '^&^āç^¦•Á ār@a]Ak@A{[ae\^åÁ]Aket^ær/A[AØāt`¦^ÂÊ[As^|[] ĚÁ/@ārÁ[[cãa&æaā]}Áket^æksåæët¦æ[A@er/kà^^}Á ]¦[çãa^åAka^ÁAa[A]ae(A',`•oAe)åÁ]a|Áč¦c@:¦Á[a]a[ā^Ake)^AJ[c?}cãe4A[[ā^Aka]]æ&dĚÁÁ Á



#### ÁÁ

Øãt ˘ ¦^Â,Ë Á/¦˘ • ƠÔ[{ { ˘} ãĉ Á¤ [ cãã&ææã] } ÁOE^ æÁ

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Ce ÁæÁ,[cãa&ææā]}Á,-Áo@Á,¦[][•^åÁ&[}•d`&cā]}Áæ&cãçãa?)•Á,ā|Áà∿Á}å^¦cæà^}Át[Áo@Á`¦¦[`}åā]\*Á ¦^•ãa^}cãadÁ^&^ãç^¦q-ÁājÁæåçæ}&^Á;Á@Áæ&cãçãa?)•Áà^ā]\*Á}å^¦cæà^}EÁ/@áAæåçæ}&^Á,æ}ā} ]¦[çãa^Á,]][¦č}ãĉÁæ}åÁ,^&^••æት´Áāj-{¦{ حœā]}Át[Á^•ãa^}&^qAt[Á^}æà|^Á,!A&æěcā]}\*Á;ā]Á jå^¦cæà^}Át[][¦č}ãĉÁæ}åÁ,^&^••æት´Áāj-{¦{ حœā]}At[Á^•ãa^}&^qAt[Á^}æà|^Á,!A č}a^¦cæà^}At[Ač¦c@¦Á;ājā]ã^^Á,[ã^Áåč¦ā]\*Ás@••Áæ-^&c∿åÁ,^¦ā]å•ËÁ&[[•ā]\*Á,![]^¦ćÅjå[,•ÈÁÁ Á

## **Operation – Noise**

V@Á[●ãāā]}Áţ-Á@Á¦[][●^åÁ,^, Á @ed-ÆrÁ[&æec^åAæek\*ā] āped-&āā œeb &^Á+[{Á @ ¦^Ás@eb Ás@á @a \* Á , @ed-Áse) å Ás@Á^¦¦^Ása^!c@a \* Åsā^&cāi,}ÆrÁ&[}●ã c^}cÅ; ô á ã @ás@Á ¢ã œi \*Á @ed-Á&[}åãāj}●ÈÅJā; &^Ás@Á ]¦[][●^åÁ^\¦^Ásāi ^●Áseb^Á,[oÁ\*¢]^&c^åÁ&[Á&@eb \*^Áse) å Ás@Ásā œeb &^Ási^ç, ^^}Ás@Á, @ed-Ásej å Ás@Á }^æd^•oÁ^•ãå^}&^•ÆrÁāi āpedÉsec%a^œaj^åÁse•^••{ ^}ofų-Ás@Á;]^¦æaāj}ædÁ,[ã^Ásūi]æserÆrÁ;[oÁ &[}•ãā^\;^åÁ,^&^••æ^ÈÉ

V@^Á^•č|cāj\*Á;[ãr^Ár\ç^|Áā;]æ&oÁ+[{Áx@^Á;![][•^åÁ;@æel-Á]\*¦æal^Á;[č|åÁsh^Á;ā;⇿elÁ3;Áx@;•^Á &覦^}d^^Ár¢]^¦ãr}&^åÈÁ

#### **Construction – Vibration**

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#### Væà|^ÂİËF€ÁXãà¦æaãj}ÂÛæ^ÁY[¦∖ãj\*ÁÖãrœa}&^∙Á

Equipment / Process	Safe distance for cosmetic damage	Safe working distance for human comfort
Úā)a]*ÉÄ]Á([Á]€€∖*Á§[]æ&oÁ @æ{{^¦∙ÁÅ	í{ÁÁ	FÏ { ÁÁ
Xãa ¦æaāj}ÁÚājāj*Á <sup>~~</sup> āj{^}oÁÁ	í{ ÁÁ	FÍ { Ж́
Œ*^¦ÁÚąłąj*ÁÁ	G Á	F€{ ÁÅ
Pæ)åÁ₽^ åÁ₽æ{{^¦ậ}≛ÁÅ	Þ[Á&[}cæ&cÁ,ãc@&e-^&c^åÁ •d`&c`¦^•ÁÁ	Þ[Á&[}cæ&cÁ,ão@&æ-^&c^åÁ •d`&c`¦^•ÁÁ

А

Óæ•^åÁ;}Áx@A^¢]^&c^åÁçãa¦æeã;}Á^cc^|•Á\*^}^¦æe^åÁà^Á [¦\•Á;}Áx@A^ãe^Áæ}åÁs@Á;|[¢ã]ãcÂ(jÁ ¦^&^ãç^¦•Áçãa¦æqāj} Á&¦ãc^¦ãædæe Áå^œaā/°å/Áşi Ás@^Áææà|^Áæà[ç^ÁãdÆr Á;[dÁr¢]^&c^å/Áşi Áà^Á^¢&^^å/ådæ Áæé ÁæÁ &[{ { ^} & { ^} oh { ~~ A [ |\ • Ďh A Á

#### **Operation – Vibration**

V@Á,^\_Á^\\^Á,@ed-Á,[`|åÁà^Á[&eee^åÁeeA;ã,ãaeAsãa;eea}&^Á\[{Ás@A;@;\^Áea}åÁ,^eda`Á^&^ãç^\+ÁeeA c@A^¢ãcāj\*Á,@ee+-ÈV@¦^-{|^Aeej^A&@eej\*^A\$jAb@Aj[ã^A^c^|+As`|āj\*Aj]^¦æeāj}Á,[`|åAs^Aj^\*|ā\*ãa|^ÈA Á V@^Á\$J&ãå^}cælÁ\$u~{]ā]\*Á;-Á4^¦lā\*•Á;}Ás@A;[}d[[}Áse+Ás@^^Á\$j[&\A;[\*]åÁ^•\*|d45]A;[{^Áçãà}æe3j}A;fÁs@A • \* ] ] [ ¦ cā] \* Ál ā^• EŹV @• ^ Áse ^ Á ¢ã cā] \* Ás[ ] æ8o• Áse) å Áse ^ Á [ cá\* ¢] ^ &c^ å Ás[ Ás] & & ^ ~ \* } & ^ A [ Á  $a^{\pm}$   $a^{\pm$ { Á 

## 6.5.4 Safeguards and management measures

Væà |^ ËF Jæ^\*čælå•Áæ)åÁ (ãcã tæã) þÁ (^æč¦^•Á

Impact	Environmental safeguard	Responsibility	Timing
Þ[ãr∧Áæ),åÁ Xãalæaa[}Á	<ul> <li>Á Þ[ cäðBæeði } Á; -Áedi Á; [ c^ } cðiedi ^ Áee-^ &amp; c^ å Á  ^ • ãa^ } o Á āl Áa^Á í à ^ l cæi ^ } Áee A &amp; a -ãç^ Áa æ^ • Á; lãi ! Át Á@ Á; l[] [ • ^ å Á ð a @ A -ãç^ Áa æ^ • Á; lãi ! Át Á@ Á; l] [ • ^ å Å ð æ A -ãç^ Áa æ^ • Á @ !^ Á [ ã ^ Á; æ) æ ^ { ^ } o  ^ c^  • Á; æ Åa^ Ár c&amp;^ a^ å á Ág@ • ^ Á  ^ c^  • Á; æ Åa^ Ár c&amp;^ a^ å á Ág@ • ^ Á ] ![] ^ ! cði • Á ã@ Áœ Á^ å ^ å Åa A @ * ^ / A î ËDÅ; āl ÁA^ &amp; ãç^ Ás å ã^ &amp; &amp; A î ËDÅ; āl ÁA^ &amp; ãç^ Ás å ã^ &amp; &amp; A î ËDÅ; āl ÁA^ &amp; ãç^ Ás å ã^ &amp; &amp; A c@ee / a áA^ æ / Ás å ã ^ &amp; &amp; A c@ee / a áA^ æ / Ás å a A &amp; a c@ee / a áA^ æ / Ás å a @ A [ ã ^ Áee-^ &amp; c^ å A c@ee / a áA^ é @ A [ ã ^ Áee-^ &amp; c^ å A c@ee / a áA^ é @ A [ ã ^ Áee-^ &amp; c^ å A c@ee / a áA^ é @ A [ ã ^ Áee-^ &amp; c^ å A c@ee / a áA &amp; é @ A [ ã ^ Áee-^ &amp; c^ å A c@ee / a áA &amp; é @ A [ ã ^ Áee-^ &amp; c^ å A c@ee / a áA &amp; é @ A [ ã ^ Áee-^ &amp; c^ å A c@ee / a áA &amp; é @ A [ ã ^ Áee-^ &amp; c^ å A ; cañ æ æ i } A &amp; i [ ! A ] &amp; a A &amp; e A V@ • ^ A [ cañ æ æ i } A &amp; a @ A &amp; a ] æ &amp; A &amp; a áA æ i / A &amp; a / A &amp; a a ] æ &amp; A &amp; a áA æ i / A &amp; A &amp; a a ] æ &amp; A &amp; a áA æ i / A &amp; A &amp; e A v@ • A [ a a &amp; a &amp; A &amp; e A v@ • A &amp; [ a a &amp; A &amp; a &amp; A &amp; e A v@ • A &amp; [ a a &amp; A &amp; a &amp; A &amp; e A &amp; c &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A</li></ul>	Ô[}dæ&q¦Á	Ú¦^Ë &[}∙d`&ca[}Á
Þ[ãr^Áæ);åÁ Xãalææaj}}Á	<ul> <li>Á OZÍP [ã ^ Ásē) å ÁX ãã   æsā] &gt; ÁT æj æt ^{ ^} ó Á</li> <li>Ú  æ) Á āļ Åā ^ í ^ i ^ j æ ^ å Åsö à Åsö à Åsö à Åsö å Åsö Å [ ] [ !æe^ å Á</li> <li>ã @ Á@ ÁOOT ÚÉ/@ Á æj æt ^{ ^} ó Á</li> <li>j  æ) Á āļ Åsö &amp;  ` å ^ Ås` ó Å [ ó Åa ^ Åsö à Åt ! KÁ</li> <li>• Á Ü ^ æe [ } æa   ^ Ásö à Á ^ æ ãa   ^ Å [ ã ^ Á</li> <li>• Á Ü ^ æe [ ] æa   ^ Ásö à Á ^ æ ãa   ^ Å [ ã ^ Á</li> <li>§ ( ]  Á ^ æe` !^ • Åt Á ^ å ` &amp; ^ Å [ ã ^ Á</li> <li>§ ( ]  Á ^ æe` !^ • Åt Á ^ å ` &amp; ^ Å [ ã ^ Á</li> <li>§ ( ]  Á ^ æe` !^ • Åt Á ^ å ` &amp; ^ Å [ ã ^ Á</li> <li>§ ( ]  Á ^ œe` !^ • Åt Á ^ å ` &amp; ^ Å [ ã ^ Á</li> <li>§ ( ]  Á ^ œe` !^ • Åt Á ^ å &amp; ^ Å </li> <li>§ ( ]  Á ^ œe` !^ • Åt Á ^ æt â ^ Å </li> <li>§ ( ]  Á ^ œe` !^ • Åt A ^ æt â ^ Å </li> <li>§ ( ] Å ^ æ &amp; A ^ æt â ^ Å </li> <li>§ ( ] Å ^ æ &amp; A ^ æt â ^ Å </li> <li>§ ( ] Å ^ æ &amp; A ^ æt â ^ Å </li> <li>§ ( ] Å ^ æ &amp; A ^ æt â ^ Å </li> <li>§ ( ] Å ^ æ &amp; A ^ æt â ^ Å </li> <li>§ ( ] Å ^ æ &amp; A ^ æt â ^ Å </li> <li>§ ( ] Å ^ æ &amp; A ^ æt â ^ Å </li> <li>§ ( ] Å ^ æ &amp; A ^ æt â ^ Å </li> <li>§ ( ] Å ^ æ &amp; A ^ æt â ^ Å </li> <li>§ ( ] Å ^ æ &amp; A ^ æt â ^ Å </li> <li>§ ( ] &amp; A ^ æt â &amp; A ^ æt â ^ Å </li> <li>§ ( ] &amp; A ^ æt â &amp; A ^ æt â ^ Å </li> <li>§ ( ] &amp; A ^ æt â &amp; A ^ æt â ^ A ^ æt â ^ A ^ æt â ^ Å </li> <li>§ ( ] &amp; A ^ æt â &amp; A ^ æt â &amp; A ^ æt â ^ A ^ æt â ^ A ^ &amp; A ^ æt â ^ A ^ &amp; A</li></ul>	Ô[}dæ&q¦Á	Ú¦^Ë &[}•d`&qi}ÊÁ -{I  [, ā}*Á å^c^¦{ ā; æqi}Á [-Æ@AÜÒØÁ

Impact	Environmental safeguard	Responsibility	Timing
Þ[ãr^Áæ),åÁ Xãa¦æaa[}}ÁÁ	•Á Y [ ¦\ Á, āļ Áa^Á&æ; lðrå Áţ` óÁa` ¦āj* Áo@Á ¦^&[ { { ^} å^å Á cæ; åæå Á&[ } •d` & cāi } Á @` ¦•Áãa^} cāðrå Áşi Á@ ÁQ cº lãi Á Ô[ }•d` & cāi } Á>[ ã^ÁÕ`ãa^lā ^ÁÇÖÒÔÔÊĂ G€€JæDÁ` }  ^••ÁÜ[ æå•Áæ; å ÁT æbãaãi ^Á æði] ¦[ çædÁ@æe Áa^^} Á; l] çãa^åÈÉÁ	Ô[}dæ&q¦Á	Ú¦^Ë &[}∙d`&caį}ÁÁ
Þ[ãa^Áæ)åÁ Xãa¦æaa[}ÁÁ	•Á Ú¦^]ælæaaaaaaaaa kadaya Afu [ç^{ ^} ơAn -Au æc*lãadaA ,ā Aba^Au æcā[ãr^a/a,Á];lāji kau[Án [ãr^4, [¦\•Á &[{ { ^} & &a * An [Acceandad & & & An An An An An An An An An An An An An	Ô[}dæ&d[¦Á	Ú¦^Ë &[}∙d`&ca‡}ÁÁ
Þ[ãi^Áæ)åÁ Xãa¦æaā[}ÁÁ	●Á V^{ ][¦æl^Á@(ælåð);*Á ð Áás^Ár¦^&c^åÁ æl[`}åÁs@(Á&[{][`}åÁãc^ÈÁ	Ô[}dæ&q¦Á	Ô[}•d゙&cāį}ÁÄ
Þ[ãr^Áæ),åÁ Xãa¦æaa[},}ÁÁ	•Á Ô[}•d`&cāi}Ái^!•[}}^\A,āi/Áia/Ási-[¦{ ^åÁ [-Ás@A[&ææāi}Åi^!•[]}^A,āi/Áia/Ási-[¦{ ^åÁ [-Ás@A[&ææāi]Åi,Ai^}•ãaãi,Ai & ôaãi,Ai & ôaãi,Ai & ôaô,Ai & êá a) å Ás@Ai ^^à å (Ai = ai = ai Ai & î = ai Ai & i = ai Ai		Ô[}∙dĭ&cāţ}ÁÁ
Þ[ãr^Áæ)åÁ Xãa¦æaa[i}ÁÁ	•Á V@Á•^Á;-Á;[¦cæà ^Áæåā;•É4,`à a&Á æåå¦^••Á^•c^{ ●Á;¦Á;c@¦Á; ^c@;å•Á;-Á •ãc^Á&[{ {`}}a&æaa;}Áœæá, æ∂áã;]æ&o4}Á ¦^•ãa^}o•Á}}	Ô[}dæ&d[¦Á	Ô[}∙d ँ&cą́[}Ж́
Þ[ãa^Áæ)åÁ Xãa¦æaā[}Áá	●ÁÞ[}Ё[}ä¢Áæ¢æ;{●Á[Áa∿Á•^åÁæeAjã@ÈÁ₩Á	Ô[}dæ&d[¦Á	Ô[}•dǐ&cāį}ÁÁ
Þ[ãa^Áæ)åÁ Xãa¦æaa[}ÁÁ	•Á Ú æ); c%æ); åÁ*`čā] { ^} cý,ā Áà^Áāj•] ^&c^åÁ -{¦c}āt@d^Át[Á*}•`!^Ác@^^Áæ; ^Áāj Á*[[åÁ ,[!\ā]*Á[¦å^¦Áæ); åÁ;[có4*{ãuā3}*Á ^¢&^••ãç^Á;[ã*^Árç^ •ĐÁ	Ô[}dæ&d[¦Á	Ô[}•d`&cāį}ÁÁ
Þ[ãe^Áæ)åÁ Xãa¦æa‡[}ÁÁ	•Á Û ઁ ā ℃ ¦Á ja) o Á g á Á č č a { ^} o Á g á Á á A č á a j A a A A A A A A A A A A A A A A A A	Ô[}dæ&q[¦Á	Ô[}∙d`&cā[}ÁÁ
Þ[ãr^Áæ), åÁ Xãa¦æaa[}ÁÁ	<ul> <li>•ÁÞ[ã×Á;[}ãi[¦ā]*Á:•ā]*Áx-Á@eð)åÁ@elåÁ</li> <li>{^c^\lai*As^çã&amp;^Á;ā]/As^Á}å^\cæd*}Åá@elåÁ</li> <li>{^c^\lai*As^çã&amp;^Á;ã]/As^Á}å^\cæd*}Åá@elåÁ</li> <li>c@Áãc^Á\[{Áaā[^Ái[Áaā[^Ais]*Á;ā]*Áx@A</li> <li>@at@h,[ã*^A,^\lai*As]&amp;\`aā]*Á;ā]*Áx@A</li> <li>@at@h,[ã*^A,^\lai*As]&amp;\`aā]*Á,ā]</li> <li>A V@Á^•` c#A;<sup>4</sup>,[}ãi[lā]*Á;ā]/As^Á •^àAs[Á</li> <li>a^çã*A; lc@\As[}d[ A; ^c@;å•Á;@:\^A</li> <li>\^``ā^àÈÁ</li> </ul>	Ô[}dæ&d[¦Á	Ô[}∙dĭ&cāţ}Á
Þ[ãr^Áæ);åÁ Xãa¦ææā[}Á	●Á CEÁ,@()d[*¦æa];@286Á^&[¦åÁ,ā  Áaà^Á,¦[çãa^åÁ -{¦¦Á ¢ãrcā]*Á ^æç;æa ●Ê5&[}&\^c^Áæa]'[}●Á æa)åÁ,ā∿¦●ÊÆT `●c^¦ÁUcæaā[}Áæa)åÁ CEå{ājārdæaā]}ÁÓ`ā¦åāj*Áq[Á*•cæaà ār@Á &[}åãaā]}EÁMÁ	Ô[}dæ&q[¦Á	Ú¦^Ë Ô[}∙d`&cąĩ}Á

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# 6.6 Landscape character and visual impact

CEA;ez) å•&ed) ^Á&@edæ&c'¦Áez) åÁçã ٘ طباه [] ækókæ•^••{ ^} óA@ee Áa^} Áy ¦^] æh åÁa ÁRez) ^ÁQ, ā, ÁSez) å•&ed) ^Á CE&@ar &c' ¦^Áaj Áxe&&[¦åæ) &^Á, ão@AU[æå•Áez) åÁT æbãaã ^ Environmental Impact Assessment-Guidance Note, Guideline for landscape character and visual impact assessmentÈV@ Áaj åāj \*•Á, Áx@a Á æ•^••{ ^} ókæb^Áaã & ••^åÁa^|[, Ázej åÁx@ Áč ||Á^] [¦ókæ Áj¦[çãa^åÁxeáOE]] ^} åãtÁOÈÁ Á

CEASL[{ àā]æaā]}Á[, Ás@ Á\*^}•ãaā;ā:Â[, Ása)Ásd->æ4[, ¦Ása4çā', Ása)åÁs@ Á[, æ\*}ã:å^A[, Ás@ Á], [][•æ4ÁQ;&æ4^ÊÁ &@ed=æ&c~¦Éæ3)åÅsã:cæ3;&^DÁ,æ:Á •^åÁt[,Ás^~c';{ ā]^Ás@ Áæ3)å•&æ3]^Êçãi `æ4Ása)åÁ;¦àæ3,Ás^•ãt}Ás[]æ&c•Á[, Á c@ Á];[][•æ4ÁÇ^~¦Át[Á28a\*`¦^Â:É Á[;¦Á\*¦æåā]\*Áçæ4ັ^•DěÁ Δ

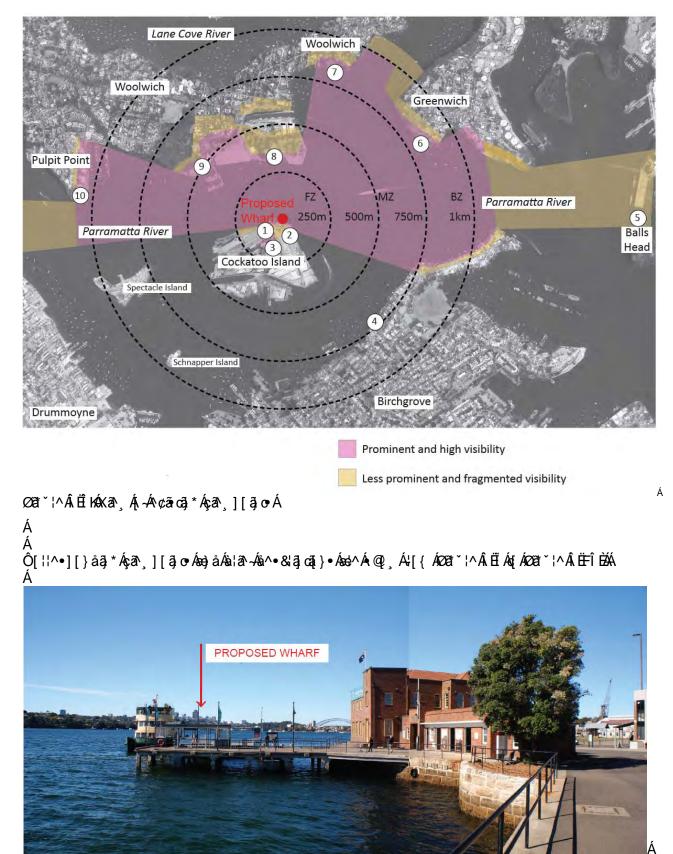
		Magnitude			
	High	Moderate	Low	Negligible	
High	High Impact	High-Moderate	Moderate	Negligible	
Moderate	High-Moderate	Moderate	Moderate-low	Negligible	
Low	Moderate	Moderate-Low	Low	Negligible	
Negligible	Negligible	Negligible	Negligible	Negligible	

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## 6.6.1 Existing environment

#### General description and key viewpoints

S^^ Áçã `, ] [ā] o• Á¦[ { Ác@ Á; ¦[ ] [ • æ Áæ ^ Á @ , } Á§ ÁØã ` ¦^ É ÈÁ



Øātč¦^ÁiĤikáxāt,][ā]oÁ∓ÁÆÔ[&∖æa[[ÁQe|æ)åÁÆA,[¦c@o¦}Á{[¦^•Qe¦^Á

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Xā\, Á[[\ā]\*Á\æ•oka[, ælå•Á&`¦¦^}okj@eel-ÁkovcĉÉkjænnänj\*Á@lå,kænjåAj[}d[[}ÈEP^¦ãnæt^Áa`āplåaj\*•ÁænjåA •æ)å•d[}^Á^ækjænjka[Áāt@oxfi~Ác@lkýat] ĚEÓæ&k\\*¦[`}å,kýat\, •Át[, ælå•ÁÕ¦^^}, ā&@AÚ^}a]•`|æEEÓænj•Á P^ænhÄÜ^•^¦ç^Áænjå,Ác@lÁÙ^å}^^ÁPælà[`¦ÁÓlãna\*^Á Á



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´Xāt`, Á[[\ā]\*Á,[¦c@Á,^•o Á{[, æ¦å•Á&`,¦¦^}oÁ, @æk⇒Á,[}d[[}£[\*(æ)\*, æîÁæ)åÁ, æaña)\*Áæk^æbÈAY[[|, ã&@Á Ú^}ā]•ĭ|æÆa Áçãraà|^Á5), Ábæ&&∖\*¦[ĭ}åÈÁ Á



Øātč¦^ÁiĖJkÁxáa\*,][ā)oÁ+kÁ⊒Ó[&∖æa[[ÁQ|æ)åÁÁ]]^¦Árç^|Á

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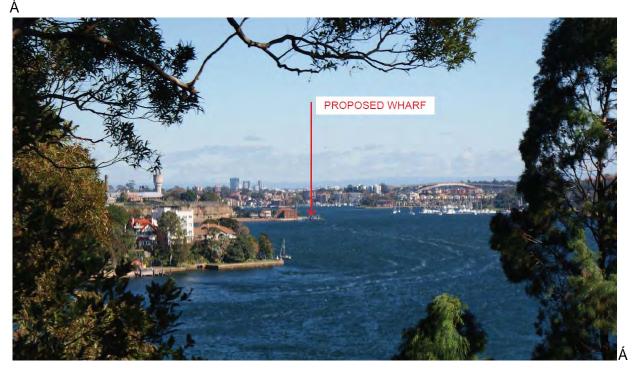
´Ô|^æłÁ}ājơ\¦`]ơåÁçã,•Áæ¢^Áæçæājæà|^Á¦[{Áx@Á]]^\Á^ç^|Áţ-Áx@Áãr|æ)åÁæàðj\*Á§JÁx@Á,@ed-Á ]¦^&ðj&ŒÁ?æ•ơ\}Áæj¦[}Ê&æjåÁ&æ{]\*'[`}å•Á§JÁx@Á{¦^\*'[`}åEÁÓ^^[}åÁx@ÁÚæ¦æ{æææÁÛãç^¦Á§JÁx@Á {ãåË\*¦[`}åÁx@Áçã,][ðjóÁæà^•Á§JÁx@ÁY[[|,ã&œÊ4Yæç^¦d[}ÁæjåÁÕ¦^^},ã&@ÁJ\*}j•`|æ•Á,ão@Áx@Á ÔÓÖq•Áţ-Á¤[¦c@ÁU^å}^^Áæ)åÁÔ@ææ•,[[åÁçããáa|^Áæj[}\*Áx@Áãå\*^ÈÁ Á



Øātč¦^ÁiĒF€KÁXāt,][ā] cÁi ÁËZÔ[ç^ÁÙd^^cÁi ÁÓã&@l[ç^Á

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, V@Áçā³, Á¦[{Áv@Á\*}åÁ(~ÁÔ[ç^ÁÙd^^d\$), ÁÓã&@¦[ç^Áæà^•Á\$JÁÔ[&\æt[[Á@;|æ}åÁseeAv@A&^}d^Á; Ás@Á Úæ¦æ{æcæAÛãç^¦Á,ãr@Áv@AYæç^¦d[}ÁÚ^}∄•ĭ|æÁ{[¦{∄]\*Áv@Asiæ&\\*¦[ĭ}åÈAV@A&ĭ¦¦^}dÁ,@ee+A∫[}d[[}Á ãŗÁçãrãà|^Á(~Áv@Á>æec\}Áãå^Á(~Áv@Ási|æ)åÈÁ



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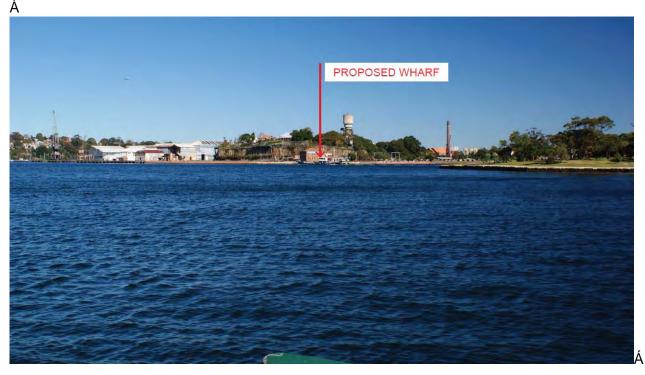
´´ Xā`, •Á'[{ ÁÓæļ|•Á?^æåÁÜ^•^¦ç^Áæ^Áądo¦^åÁ@[`\*@ÁæÁ&¦^}}Á, Æč ¦^Át, æč ¦^Át'^• Æð å/Åi^} •Á ç^\*^œæa]}ÈV@¦^Áæ<sup>†</sup>Áæ<sup>†</sup>Áæ<sup>†</sup>Á cϾá!¦[çãa^Á&l^æáçã`, •Áæ]}\*Á@ÁÚæ¦æ{ ææædŰãç^¦Át[Á@Á, •dĚXā`, •Á'[{ Á@ÁÔ[æ‡Æ[æå^¦Á ãa^A Ͼá!¦[çãa^Á&l^æáçã`, •Áæ]}\*Á@ÁÚæ¦æ{ ææædŰãç^¦Át[Á@Á, •dĚXā`, •Á'[{ Á@ÁÔ[æ‡Æ[æå^¦Á ãa^A æ^Á&l^æáÁæ]åÁ}]o'!!`]o'åÈŐãç^}Á@Asã œ}&^Á'[{ ÁÔ[&\æt[[Á@]æ}åÁ@A, '![][•^åÅ œ&Áæ]•Áş c@Á; ãaË`'[`}åÁ; Á@•^Áçã`, ][]o A;'[b'&ā]\*Áş đ Á@Á&@e}}^A, A; A A



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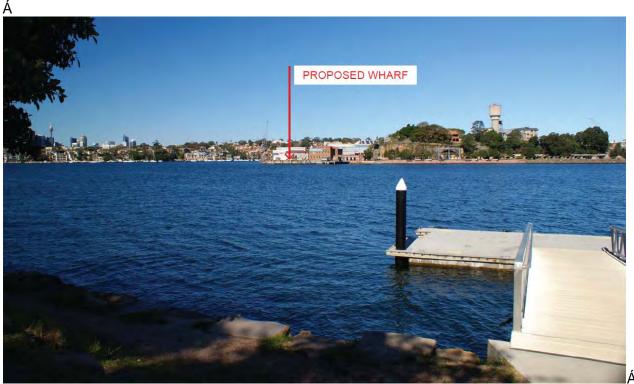
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Ô|^æłÁ}ājc^¦¦č]c^åÅçã^,•Áæçæājæà|^Á¦[{Ás@A{i \^•@{\^Ái ~ÂÔ|æ\ ^•ÁÚ[ā;dŰ/•^¦ç^Áåč^Áq ÁæçÆ  $\bullet d^* \&c^* |^{A} / A + A |^{A} / A^* | a = \bullet A$  $\frac{1}{1} + \frac{1}{1} Á



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Øātĭ¦^ÁìËFÎKÁKār,][ā;oÁ∓€ÁÄÁÚĭ|]ãaÁÚ[ā;oÁ

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Ô|^æk/şå?,•Áæ¢æa‡aæà|^Á+[{ Ás@A[, ^¦Át,+^@;!^Át, ÁÚ`]]ãÁÚ[ā)cA[[\ā;\*Á?æ•cÁæt]}\*Á@A Úæk¦æt;æcæa£Üãç^¦ÉXå?,•Á+[{ Áč¦c@;káæt[`}åká@A['^•@;!^Ás[ækå, æt\Áse^A4ac'!^åAs@[`\*@ás[æeA { [[¦ā]\*•ÈÁ/@;Áçå?, Ása Ása^}d^åA;}Ás@A]+[[{ā]^}cÁ?æč'!^A[,4s@AÛ^å}^A?æaà[`¦ÁO|ãå\*^A+æt ^åAsa^A c@Áç [ÁÔÓÖqe A[, ÁÛ^å}^^ÁæjåA?[¦c@AÛ^å}^^ÉAO[&\æt[[Á@]æjåA{['{ • ÁsaAs[{ ] |^¢A\*|^{ ^} @sa Asa^A \*![`}åA[,4s@sáçā], ÉA

## Á

## 6.6.2 Potential impacts

## Construction

Ö`¦āj\*Á&[}•d`&cāţ}Áx@`¦^Á,[`|åÁa^ÁæÁc^{][¦æb^Áa^&k^&k^@^Á§JÁx@^Á&A^}a&A^} jāc@Áx@^Á§Jd[å`&cāţ}Á{,-Á&[}•d`&cāţ}Á``ā]{^}cÊá\|æbjcÊá&[{][`}åÁ\*ãc^Áæb}åÁ&[}•d`&cāţ}Áç^••^|•Á§JÁ c@Ájæc^¦Êáæb}åÁj^\=[}}^|EÁ Á

. Ú[{^Áçã\,•Á¦[{ÁY[[|, 3&@24Õ|^^}, 3&@3ee}åÁÓ3a&@3¦[ç^Áj^}3j•č|æe,Á[č|å/&a^Ásjoc3;]c\*åÁsč^Ás[Ás@A c^{][¦æ5^Ás[{][č}åÁş^ÁsjaÁs]ác@Asi|æ}åÉAQ]æ&orÁsč¦3j\*Ás[}•dč&caā}Á,[č|å/&a^Ás^Ás^ás}åÁ;3][¦EA Á V@3;^Á[č]åÁs^Ás[]æ&orÁş}Áçã\,•Á{¦Ás@As[}•dč&caā}Áj^;á]aÁ{¦Áj^[]|^Á•3j\*Ás@ÁQ|aãæâÁ

#### Operation

#### Visual impact assessment

Á Væà|^ÂËFGÁ,¦[çãå^•Áæáçã čæþáų] æ&oáæ•^••{ ^}oáų[¦Á\*æ&@áçã\*,][ã,džÁ Á Á Á Væà!^ÂËFGAÁxã čæbáu] æ&oáæ••^••{ ^}oáæà!^ÁA

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Viewpoint no.	Visible elements	Sensitivity	Magnitude	Distance Zone	Overall rating	Comment
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Viewpoint no.	Visible elements	Sensitivity	Magnitude	Distance Zone	Overall rating	Comment
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ΪÁ	Ú[}d[[}ÊÁ *æ}*,æÂ ÉÆa¦ãa*^Á	ТÁ	ŠÁ	ÓZÁ	ΤŠÁ	V@ÁĮ]æ&oÆÁ &[}•ãå^!^åÁ[[å^!æ&^Á d[Á],ÈÁ/@Á;![][•æ4ÆÁ •^^}Á§Á@Á;![aå^!Á @edà[`!Á&[}c^¢dÈ/@Á ]![][•æ4Æjc^!i`]oÁ@Á -{!{ Á@ Á@!ãæč^Á à ãåã*•Á;}Á@Á -{!^•@!^È/@Á -{!^•@!^È/@Á ]![][•æ4Æ]^2e6 A a`āåã}*•Á;}Á c@Á[!^+[}oA;~Æ@A çã,][ã,dĚ
ÌÁ	Ú[}q[[}ÊÁ *æ}*,æÁ ÉÁa¦ãa*^Á	ТÁ	ТÁ	ΤΖÁ	ТÁ	V@Á[ (c^} (cathái ] 2880/58 Á !^]282^å Ái (Á@Á b ¢ cze] [•ãtā] } Ái - Áo@Á }^, Ái :{ Ai - Áo@Á æt 2833, • O Ao@A@ : a a at a t 2833, • O Ao@A@ : a a at a t 2833, • O Ao@A (2 a a t a t 2833, • O Ao@A (2 a a t a t 2833, • O Ao@A (2 a a t a t 2833, • O Ao@A (2 a t a t 2833, • O Ao A (2 a t c a , ] [ a dt Ao A (2 a t a A (2 a t ) • a A (2 a t ) • A (2

Viewpoint no.	Visible elements	Sensitivity	Magnitude	Distance Zone	Overall rating	Comment
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Tãåå|^Át¦[`}åÁ[}^ÁQTZDAÁGÍ€{Á4[ÁÌ€€{Á

Óæ&∖\*¦[`}åÁ[}^ÁÇÓZDA&ec^æÁ¦^æe∿¦Ác@eo)Á €€{Á¦[{Á¦[][•^åÁ,^, Á @ec+Á

#### Discussion

V@Á[&æeā]}Á[×ÁÔ[&\æe[[Á@|æ]åÁæeÁo@Á&^}d^A[×Áo@Á@edà[`¦Ê&e]åÁo@Á,¦[{ ā]^}oÁ[&æeā]}Á;×Áo@Á 、@ad-AaenAi@eAiaj\*|^Ai|^{^}oAi¢c^}åaj\*Ail[{Ai@eAi[lo@el}Ai@el^AieAi@eAia]aa)aÉAi[{Aiĭli[ĭ}åaj\*A æh æ Át Át@ Á [¦c@ÉA æ dæ) å Á [č c@ÉA @ Á @æ -Æ Áte Áte [Á@t @`Áçã ãa |^Á;} Áte]]¦[æ&@ba`Á, ær\¦Á¦[{ Át@ A ^æ•o\$e9`åÅ, ^•oE4O`|[æåE4,]^}Åçã^, •Á{[Ác@`Áār|æ}åÁe2^Å,[••ãå|^Á+[{ Ác@`Á``|`|[`}}å3,\*Á{[ +^•@;\^Åe2^æEA ] ælæði |æ|^ÁÔ|æ\^•ÁÚ[ ∄ dŰ^•^¦ç^Á; @¦^Á@A[]^}Á'!æ•^åAæ^æA; A@A æ\|æj åA;~^¦Á ´}[à•dǐ&c^åÁçã, •Á[Ác@Á[čc@Á[, æå•Ác@Á, @ee-ÈkOājc^¦^åÁçã, •Á[Ác@Áār|æ)åÁee^Áe‡•[Áeçæaajæà|^Á ~{[{ ÁÕ |^^}}, a&@ÁU[ā; cÁÜ^•^; ç^Ác@[`\*@ás@ Á; æaãç^Á; |æ; cā; \*Áse[]\*Ás@ Á; |^•@; |^ÈÁ Á V@A@¦ãæ\*^Áàĭā¦åãj\*•Áæåbæ&^}c4ų Ás@A,@ee+Á\*^}^¦æe¦^Áįà•d`&o4çã^、•Á+[{ Ás@A[、^¦Áu¦^•@u¦^Árç^|Á [~Á@/Aēj]æ)åÁq[Á@Aj:|[][•æ)EÖ|^æ)Áçã,•Áæ;æ]æeà|^Á@;,^ç^:ÉA:[{Ác@Aj[:c@:}}Áq[:^•@;^A |[[\ā]\*Á\æ•oÁ{[, æ¦å•Á@A, @æl-Éæa)åÁ\[{ Ác@\Á[čo@Á\æ•oA, Ác@A, @æl-ÉA А Xā\ •Á\[{ Ás@ Á]]^\A^ç^|A, As@ Ásə |aa) å Ása ^Ása asa A, as caad|^A, à•d` &c^å As^ Ás@ Á@ \aaza ^Ás` ala aj \*•Ása) å Á æh^Á^•dā&c^åÁq[Á]^&ãã&Áçã\\_Á&[¦¦ãã[¦•Ás^ç\_^}}Ás@Á^¢ã;cāj\*Ás`ā¦åāj\*•ÉÄ,ãc@Á;}|^Á¦æt{^};c•Á;Ás@Á ]¦[][•æþÁçãeãaà|^Á¦[{Á;}|^Á;}^Á;[ā)dÉÁ А Xā\,•Á{[, æ¦å•Á@A, @æb-Á{}Áæ]]¦[æ&@Ák][{Áx@^Á^æ•dæ)åÁ,^•dæb^Á{]^}Áæ)åÁ}[à•d`&c^åÈÁ/@^Á @ed-Á^æå•Áæ•ÁæÁā\*|^Á|^{ ^} oÁ¢c^}åā\*Á4[{ Ás@A[¦c@+}A´@;¦^Á`@;hA`A&@Á&;|æ}åĚA Å

V@Á, @et-ÁārÁţç^¦|[[\^åÁ¦[{Ár[[,], a&@£40`|^^}, a&@£40`|¢,^Á]^}ā,•`|æeÉ4, ar@44[}\*^¦Á åãrœa)&^Áçã?,•Á][••ãa|^Á¦[{ÁÖ|`{{[^}^Áse}åA@Aræç^¦d[}ÁÚ^}ā,•`|æE4V@A`]\*¦æa^AārÁse)da&a]æråA d[Á@æç^Áse4[, Áu]]æ&d4]}Á©•^Áçã?,•É4X&?,•Á¦[{Á©•^Áse}^æeÁse^A\*^}`]\*¦æ4A;æa][¦æ4, a&E5kæàā;\*ÁsjÁseÁ çãa^¦Éæa)\*|^Áçã?,•Áţ-Ás@Á@età[`¦ÉÅææ@¦Ás@et}Á;æt¦[, Á{&`••^åÁçã?,•ÈÅ Á ã|aa) åÈÁ/@ Ásĭ |\ Ása) åÁ &aa^ Á; Ás@•^ Ásĭ ã;oÁ\|^{\_^} o Ása^ Á; `&@Át¦^æe^!Ás@aa) Ás@ Á; [[][•^ åÁ; @aa-ÈÁ. V@A`!^æe^•OA`[c^}caedA`[A\$]] æeof\$FA'[{ As@A`[!^•@!^A\$[ { ^aaee^|^A`!![`}}aa!\*As@A`@ed-A (Çã^,][ã]o•ÁFÁBÁGDĐÁ V@\^ÁārÁæÁ{ [å^¦æe^Á§[]æ&oA[}Áçã^、●Á,@\'^Ás@A[\[][●^åÁ,^、Á d`&c`¦^ÉAj,æidã&`|æ|^Ás@^Á[[~^åÁ • ^ & cā } Êžē Á ^ ^ } Ášā ^ & d^ Áset æð • oko@ Á@ ¦ ãzet ^ Ás čašā \* • Á } Ás@ Ál ¦ ^ • @ ¦ ^ Ásecho@ Á [ ā chác a ː ] [ ā o Á ÉA ÏÁæ)å DĚATãnãtænā]}Áidæe^\*ã∿Á{]|[^^å/åi`¦ā]\*Ác@/åi^cæaā/^å/åi^•ãT}Á(¦Ác@/Ái¦[][•æ4/Áj&|`å^Á •^|^&cā]}Á(,-Á,^`dæ4/æ)åÁdæ)•]æ4^}c4(æe^¦ãæ4•É4(ā)ā[ãē];\*Áa[]æ&c4(;}Ás@,Á[¦^•@[¦^Áa;^Á(;ãa];¢æa];ā]\*Á o@^Á&`¦¦^}o^A`}d^´Áa}à^A;¦[çããã;\*Áa)Á`}&[ç^¦^åA\*a)\*, æÊĚÁV@^Á`¦}ãč ¦^Á{[Áa^Á@[`•^åA;}Aố@^Á;[}d[[}A[ Uç^¦æelÁs@A\$[]æ&o%EA\$[}•ãå^!^åÁ[[å^¦æe^Á\$[Á][,Á]ãc@Ás@A`,![][•æ4Á[;{][•æ4Á[;]{ ā]\*Á,æbá];[æå^¦Á @eebà[ǐ¦Á&]}c^¢cÁ{¦Ás@?Á; aebj¦ãĉÁ; Áçã?, •ÈÁ Α V@ Á, æij Áæ) å•&æ) ^Á&@ælæ&c^¦Áij ]æ&oÁ, Ác@ Áir |æ) å Áir Á&|æ•^å Áæ Á@it @ë; [å^¦æe^Á ãç^} Ác@ Á ¢ã ci} \* Á @  $aae ^{Aa} ^{$ c@A,æajA,[ā,oA,Áæ;¦ã;æ4Á,Áœ,Áæ;|æ) å Ás@A,¦[][•^åA,@e4-Aj,c^¦&@ea) \*^A,ā|Aj,d[å`&^ÁæA,^\_Aæ) \*^A,A  $\{ a e^{\lambda} | \tilde{a} e^{\lambda} \tilde{A} \tilde{A} e^{\lambda} \tilde{A} e^{\lambda} \tilde{A} e^{\lambda} e^$ æÁ^^\_Ásĭā/dÁ\^{^}ô/\$;d Ás@ Á&@ ebæ&d^\Á[}^ÈÓEååããā;}æ4Áæ)å•&æ}^A\$e•^••{ ^}d\$iA;|[çãa^åÅ;ã@ 3;Å

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## 6.6.3 Safeguards and management measures

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Impact	Environmental safeguard	Responsibility	Timing
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Šæ);å∙&æ3;^Á &@ætæ&c∿¦Áæ);åÁ çãrĭæ‡Á§[]æ&oÁ	V@\Áå^cæaaj^åAå^•ãt}Áar¥aj&[A5j&[!][¦æe^Aó@A %bőãe∿+A[-Aidč&cč¦^ÉAãcč¦^•Áæ)åAči}}ãč¦^Á å^ç^ []^åA[¦Ác@A]@eb=A[]*¦æå^A[i[*¦æa[ÉA ^}•č¦ā]*Á]@eb=Aããa^}cãcAæ)åAiæ•^A[-A {æanjc^}æ)&^A	Ô[}dæ&q[¦Á	Ú¦^&[}∙d`&cā[} æ)åÁ &[}∙d`&cā[}Á
Šæ);å∙&æ);^Á &@eelæ&c∿¦Áæ);åÁ çãi迆∕≨[]æ&cÁ	V@^Á&[{][`}åÁ+ãơ∿Áæ)åÁ,[¦\●Áæ4^æÁ,[č åÁà^Á \^]oÁ& ^æ)Áæ)åÁ& ^æ∔A[-Áčààã-@Á	Ô[}dæ&qt¦Á	Ô[}•dੱ&cā]}Á

# 6.7 Biodiversity

V@ā Á&@æ] c^¦Á,¦[çãā^•Áæ) Áæe•^••{ ^} of, ~Áv@ Á{[¦æÁæ) å Áæč}æá§[]æ&or Á, ~Áv@ Á,¦[][•æ‡Éæ) å Áæ Á •`]][¦c^å/ás^ Ás@ Áx^&@; &&æ‡Á;æ} ^¦•KACE \*ææ3AÁO&[|[\*^ÁOE•^••{ ^} oÁOT æ}∄ ^ÁÚ[|]`qā, } ÁÚ^•^æ&@ÁÚc`Á ŠcåÉAOEEFÎDÆe) å ÁÓææÁÙ\*¦ç^^ÁçÓa[•]@¦^ÁO}çã[]{ ^} cæ‡ÁÔ[}•\*|cæ) or ÁÚc`ÁŠcåÉAOEEFÍDE/@•^Áx^&@; &&æ‡Á ]æ]^¦•/ásd^Á,¦[çãa^å/á§ÁOE]]^} å ã¢ÁØÉÁ

## 6.7.1 Existing environment

#### Aquatic

#### Desktop Review – mapping

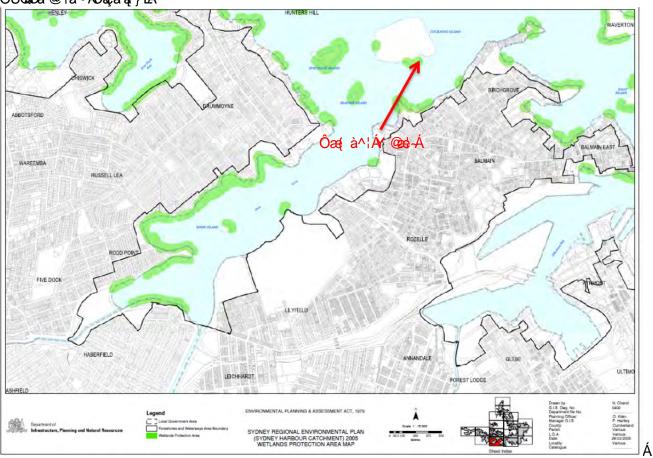
OZÁ, ¦^|ã[ā]æ^^Á^çã^, Á, ~Á^¢ã:cā]\*Ásĕ `æsa&Á^&[[[\*^Á5]-[¦{æsa1]}Á,æ•Á}å^¦cæa\^}á^¦cæa\^}á[Ása4^}cã^A,[••ãa|^Á æ ĭæsa&Á@æàãææ•ÁsæÆÔ[&\æs[[Á@|æ)åÁsa)åÁsa}åãa^}cã^A,[••ãa|^Ás@^æc^}^åáA]^&ã^•Ása]\*ása4 &[{{`}}ãa?•ÈÁ/@^Á, ¦^|ã[ā]æ^^Á^çã^, Á^ç^æ†^åÁs@^Á{[|[;ā]\*KÁ á

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Óæ^åÁ;}Á@Á^çã`,Á;Áæč \* ææA@eeàãæerÁ;¦^•^} & åÁæà[ç^É&@Á; ^dæ)å•oA;@{;}Á;}Á@ÁSydney Regional Environmental Plan (Sydney Harbour Catchment)2005Á;æ}Á\*^}^!æ]^Á&[ā&æA,áã@Á '[&\^Á^^Áæ\*æ Á@eaàãæeA,ã@A^ç^¦æ/Æ[|æe^åÁà^å•Á;Á^æ\*¦æ•Á@eaàãæe/æÁ§åã&æe^åÁ;}Á;æ]]ā]\*Áà^Á ÖÚÓ¢Æa@¦ã•ÁÖãçããį}ÈÁ



Øŧť ¦^Á ĖĖÏ ÁÙÜÒÚĄ́(æ]]ą̃\*Ą́(¦ÁÔ[&\æŧ[[Á@|æ)åĄ́Ǧ^^}Á^]¦^•^} œÁ′^qæ)åÁÚ¦[c^&qa]}ÅÆ^æÐÁ

V@¦^Áæ^ÁZostera•^懦æ•Áa^å•Áajåã&æe^åÁajÁ@Á©ÚQÍZãa@¦ã•ÁÖãçãāāj}Á,æ]]āj\*Áæ{[`}åÁ Ù]^&ææ&{^Á@|æ}åÊŐ¦^^}, 3&@ÍÓæÂÆjåÅÛ}æå•ÁÓæê•ÁÇÖ¦`{{[^}^Á{[¦^•@]¦^DĚV@¦^ÆsÁæ[`}åÁ Halophila•^懦æ•Áajåã&æe^åÁæo∱ ÁY@ěe^ÁP[¦•^ÁÚ[ājÓqÓæk{æajDĚŐãç^}Á©Áæ&óAœæÁ [•o∱ ÁœA Ô[&\æt[[Á@]æ}åÁt[¦^•@]¦^ÆsÁ^&|æāt^åÁæjåÅ;ã©Áæ}å•d]}^Át[Å&[}&\^c^Á^æ;æ]•ÆsA c@¦^Á,[`|åÆa^Á^汦æ•Æa^啯t[`}åÁÔ[&\æt[[Á@]æ}åÈA

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#### Desktop Review – searches

CEÁ ^ æ& @Á, Á @ Á[||[] 引 \* Á ^ |^ çæ) okæt ^}& ´kåæææbaæ ^ • Á, ´Aãe c å Á] ^ &ðe • KáOãe @ ¦ðe • ÁÞÙY ÁOãe @Á Ü^&[¦å•ÁXð?, ^¦ÉLUÒPÁOā[}^oÆDE]æ Á, ÁÞÙY ÁY ā¦å|ã^Áæ) å Ás@ ÁÔ[{ { [}, ^æ|oØÖ^] æld( ^}oA, Ás@ Á Ò}çā[]{ ^}oÁÚ¦[c^&c^å ÁT ææc'¦•ÁU^æ&@Á/[[|Á • 引 \* ÁæÁF€\{ Á ઁ ઁæ^Á ^æ&@Áæ^∞Á^ç^æ/^å Ás@ Á - Ţ||[] 引 \* KÁ

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- •Á V@`¦^Áse'^Á;[Á:æ¢q(æ)•@Á&[{{`}}ãã?•Á}[,}Á;[{ Ás@`Á[&æ¢ãĉ ÁÁ
- •Á Ù^æt¦æ:•Áshå:•Áshå:Á;æs&@•Áseh^Á[`}åÁv@[`\*@[` dv@ Á@esha[` ¦ÈÁ/] [Á; [c^&c^åA]^&s@ ÁyZ[•c^¦æÁ &æd; |ã&[ ¦}ãkshå:ÅPæd[]@ajæákçæda:Dáseh^Á[&æec^åÁset[` }åÁU]^&cæeka[A@[æ)åÁgē[{ ^Â,€€Á; Á,^•dá; Ás@ Á Ô[&\æt[[Á@]æ)åÁ?@eshÁDDÉshÁQ[}ÁÔ[ç^Á[čc@áv@ACX[}ÁÔ[ç^AÓ|ãa\*^ÊsehåAset[} \*Áv@ÁÚæs¦æt[æcæeká Üãg^¦Át[¦^•@]¦^ÁÁ
- •Á Tæ)\*¦[ç^•Á&æ)Á;&&`¦Áæ|[}\*Á© Á`||Á•čæ\*Å@;|^|ậ^Á,ã@@4æ\*^¦Áœa)å•Á\*}^¦æ|^Á&[}-ā;^åÁ§[}-ā;^åÁ§[Â c@Á]]^¦ÁÚæ¦æ{ææææka)åÅŜæ}^ÁÔ[ç^ÁÜãç^¦Áaæ}\•ÉÁ

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#### Fieldwork results

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- •Á V@:¦^ÁārÁ5jc^¦caāaæpÁse)åÁ`àËcaāæpÁæ)å•q{}^Á[&\Á;æ‡|Áse)åÁ[&\Á`àà|^Á^^Áse‡]}\*Ás@Á;@[}^Á -{ ¦^•@[}^Á

- •Á Ū) | ^ ÁxÁ^ , ^A ^Áã @A] ^ &ð Á [ c^ å Áš ` ¦ā \* Áx@ Á` ¦ç^ Áxb) å Á [ Áš¦ ^] æð æð · Á \ A -{ ` } å Åš` ¦ā \* Áš^ æð ^ å Á ^ æð &@ • Êxb@ Áã @kx@æć Å ^ ¦^ Á à • ^ ¦ç^ å Á } Áx@ Á [ &\ ^ Á^ - Á@æà ãæær Á ^ !^ Á æà ` } å æ) óÁ

- •Á V@¦^Á,^¦^Á,[Á^æ\*¦æ•Á,¦Áæ‡\*æ^Á,[c^åÁ,}Ás@Á^åã,^}o4^æà^åÁ
- •Á Öãç^¦•^Á[&\^Á^^Áàā[œz4si^•&ka^^áÁse ká

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  - •Á Þ[Á^æ@; I•^•Êj, āj, ^-æ @h, IA, c@:IA&I^] cã&Áã @h`&@kee A,^\*{ ^A^æ@; Izzz3, ^o A, ^!^A, à•^; c^åA å^•] ãrÁ] ^&ãã&Á^æ&@•EÁ

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- •Á V@:\^Áæ^^Á,[Á,æč ¦æÅá];æiãæ);Å@:\^•ÁæeÁ;\Á,^æiÁ@:\^`æiÁ@ek-Á;ãc^Á@æek&[`|åÁ`]][\oÁ;æiq(æi•@Á •]^&æi•Á
- •Á V@:\^ÁārÁ;[Á`ãzæà|^Ásč`æzā&A; ¦Á æåā;\*ÁàāàåA;[[•cā;\*Á;¦Á^^åā;\*Á@æàãzæÁsæÁ@Áã^ÈÁ Áá

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, OE; ÁÒÚÓÔÁOBBOÁÚ¦[c∿&c∿åÁTææc∿¦+ÁÙ^æt&@AÜ^][¦cÁ;æe•Á\*^}^¦ææ∿åÁ[}ÁGHÁU&d[à^¦ÁOEFÍÁ[¦ÁæÁF€Á ∖ä[{^d^Áæåã•Á[-ÁÔ[&\æq[[ÁQ|æ3)åÁY@ed-ÀEV@Á^][¦óÁãa^}cãæ∿åÁœA[[c^}cäæhÁ{[¦ÁJÁo@^æc^}^åÁ ^&[|[\*ã&æ‡Á&[{ { `}}ãæ∿ÞÉÄJÁo@^æc^}^åÁ]^&æ^\&áA]^&æð+Áæ}åÂÌÌÁ[ā\*¦æq[¦^Á]^&æ∿A{[Á[&&&`¦Á]ãc@3)Ác@Á^æ&&A æ^æÆÁ

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Oz£aæaÁ\*`¦ç^^Á, æ:Á}å^¦cæa\^}Á(}ÁCHÁT æ3&@ÁC€EFÍÁ([Áæe•^••As@A;[••āa|^Á;¦^•^}}&^Á(AÒæe:c^¦}Á Ó^}dË;ā}\*ÁOæe=ÁseaÁÔ[&\æt[[Á@|æ3;å/áî^Óã[•]@\'^ÁO}çã[]{{^}cædAÔ[}•`|cæ3;o:EĂOæe:c^\}ÁÓ^}c;ã \*Á Óæe=Á,^\^/ás^c:&c^aA(;}ÁÔ[&\æt[[Á@|æ3;å/ái^óA(;of),[cÁ,^æ4As@A;@ed-ÈÁOEAS[]^Á, As@AsaæaA;c`å^Æa/ás;&|`å^åA ąjÁOE]]^}åã¢AØEÁ

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#### 6.7.2 Potential impacts

#### Construction

#### Aquatic

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V@\Áà^}c@38\Áæ••^{ à|æ\*^Á\$i, Ás@\Áç38a] ãĉ Á; ~Ás@\Á ā^•Ą [ĭ|å/ás^Ár¢]^&c^åÁ\$i, Á&i } cæaj Á; !\*æ}ã{ • Ás@ænAæ'^Á \*^}^¦æe|^Áo[|^¦æe)oA(-Á(8&&æea[)}æe|Ač¦àãããĉÈÁ

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V@\^ÁārÁæÁā`\Áţ-Áţ[àājārāj\*Á&[}œa;[ājæ);orÁ¦[{Ás@Ai^åāj^}orÁåĭ¦āj\*Á^{ [çæa¦Áæ)åÁ|æ&^{ ^}o/Át-Á c@A`àË`¦-æ&∧A^åã[^}œAs@eeeA&[`|åA&[}cæãjÁ&[}cæãjÁ&[}cæã]á&];cæã]ã;eà;oÊ&eeAs@Ajã^A&¦ãçã]\*Aœ&cãj}A`¦c@¦Áà`¦ã∿A [¦Á\$uã]|æ8x^åÁ`àË`¦æ8x^Á^åã[^}œÉÁÚðľ^Á^{[cæ4Á@æÁ∞ák]ðĩ@tháð\*k@tháðkakatai [àðããð]\*Á^æà^åÁ •^åã[^}oÁsǔ ÓÁs@^Áã\Á;-Á;[àãjããã]\*Á8;]}œe;ã;æ);o•Á;[{Ás@••^Á/^åã[^}o•ÉA;

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Õãc^}Ás@Á\$a^]c@Á;Á;æe^¦Á;ãc@4;Á@Á\$u}}•d`&cāt}Á[}^É\$c@Á[c^}cāedÁu¦Á\$u]}•d`&cāt}Ác^••^|Á;æe@Á åãič¦àãj\*Á^æà^åÁ^åãj^}orÁæ)åÁ([àãjãiãj\*Á&]}cæ;ãjæ)orÁtfÁc@Á,æe^¦Á&[[`{}ÁãiÁ&]}•ãå^¦^åÁ[]ĚÁ Δ

Ö`¦ā]\*Á&J}•d`&aāJ}ÉA¢ā:aa]\*Á^¦¦^Á^¦çã&A•Á;á]/Áa^Áæà|^Á4JÁæ&&A••Á@/Æi|æ}å/áçãæáx@/ÁÔæ4;à^¦ÁY@ed-Á •  $[c^{-} \cdot A] = A [A$  $\dot{A}$  Ü^][¦oÁáē Áðu &|čå^å ÁsecÁOEI]^}åãcÁOÈÉÁÁ Á

#### Terrestrial

Q#ásÁ}|ã^|^Á@eexÁey^Á@eeàãeeeÁv¦¦Áe^¦¦^•dãeelÁ]^&&?•Á[ĭ|å/ás^Á^{ [c^å/ᦦÁs[]æ&c^å/áse/ÁseAéA^•ĭ|d/i, Ás@A ]¦[][•æþÉV@Á,¦[][•æþÁ,[ĭ|åÁà^Á}|ã^|^Át,Át,]æ&aA,}Åæ¢^Ás@^æe^}^åA;]^&&e`A c@^æe^}^åÁ(ã&||àæe•ÈÁ

#### Operation

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V@^Á^\_\_Á\*æ}\*\_\_æÂæ}åÁ[}d[]d[]}Á[ĭ|åÁà^Á@æåã\*Áæ^ÆA^æA^æà^åÁs@æ¢@æç^Á[oÁà^^}A`@æå^åÁ ] |^çāį `•|^ ĖĂP[ \_ ^ç^| É&ee Ás@ Á\*^æà^å Åsee/s@ä Á[ &æeāj } Á\$[ ^• Å [ o/4 ` ] ] [ | o/se) ^ Á [ æeāj ^ Áç^\* ^ cæeāj } Ás@ |^ Á ãrÁ,[Á:@eeåã]\*Á§[]æ&oÁælãrã]\*Á¦[{Ás@∘Á,¦[][∙æebĔÁ

#### Terrestrial

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#### Conclusion on significance of impacts

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19954(, ¦ÁFisheries Management Act 1994/ke) å/ko@ ¦^-{ ¦^/kæÛ] ^&& • ÁQ ] æ&AÛcæ^{ ^} (^} d⁄a Á [ dÁ

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Ŷ@Ą\[][•æ¢ÆA`,[ớĄã^|^ÁţĂ ă ³ããæ;) d^Áξ ]æ&ofx@^æc^}^åA`]^&& \*É,[]`|ææ‡} \*É\*&[|[\*ã&æ¢Á &[{ {`}ãæ\*•Á;¦Á; ã ¦æeţ¦^Á]^&&\* É\$,ãc@;Å&@A`, ^æ;j \*Á; Áx@ ÁEnvironment Protection and Biodiversity Conservation Act 1999È4CEA^-^¦¦æ¢AţÁ@ ÁCE •dæ†ãæ; ÁÖ^]æ4(^}o4; As@ ÁO}çã[]{ ^}ofærÁ }[oÁ^č ă^åÁ{¦Á&aţåãç^¦•ãcÁ; æec^¦•ÈÁ

## 6.7.3 Safeguards and management measures

Væà |^Â ËFI Á Jæ^\* čæ å• Áæ) å Á, ãæ ťæā, } Á, ^æ č ¦^• Á

Impact	Environmental safeguard	Responsibility	Timing
Óą̃i åą̃;^¦∙ãĉ Á	OZÁ-]ā Á(æ)æ*^{^}ơ∱, æ)Á,ā Áa^Áå^ç^ []^åÁ æ)åÁ&[{{`}}ã&æe^åÁ{[Áæ‡ Ácæ-Á,[¦∖ā]*Á(}Ááe^Á	Ô[}dæ&qt¦Á	Ú¦^Ë &[}•d`&da[}ÊÁ ~{  [, a]*Á å^c^¦{ a];aaeaa[}Á [~Ás@^ÁÜÒØÁ
Óą̃i åãç^¦∙ãĉ Á	V@\&{} • d`&cat} } Å [ :\ Á ar Áse^ æ A • ^ å Á , all Ás ^ Ás@ Át al at ` { A a a ^ Áse ^ æ A • ^ å Át Á • æ^ ^ Á } å^!cæ ^ Ás@ Á ![ ] [ • æ A • @ A ! cæ ^ Ás@ Á ! [ ] [ • æ A • ` ` ` ` ` O c & I` • at ] Å [ } ^ • A f al A s ^ A • cæ at ] a @ å Åt [ Á at a a a a a a a a a a a a a a a a a a	ÜT ÙÁæ)åÁ Ô[}dæ&q[¦Á	Ú¦^Ë &[}∙d`&cā[}Á æ}åÁ Ô[}∙d`&ca[}Á
Óą̃t åãç^¦∙ãĉ Á	V[Á; ājā; ã^^Á; æ @ kæj åÁ; !^ç^} óka[ cd; { Á •&[`!āj*Á; -Á;@^Á; æðāj^Á; ^\$, \$ o Ékç^•••^ •Á; ālÁ [ oÁ*•^Á;¢&^••ã;^Á; [, ^!Á;@} Á; æð] [^`ç!āj*Á àæ**^•Æ; d Á; æ&^Á;ç^!Á;@ {A; æð} [^`ç'āj*Á àæ**^•Æ; d Á;æ&^Á;ç^!Á;@ {A; æð} [^`e^A;æ) åÁ ![ &\ A`àà]^^Á@æðāææEĂ U&[`!āj*Æ;æ æ*^Á; ālÆ;e [Æs^A; ā]ā;ã ã^^å/sh^A ± [ !\ āj*Æ;æ;æ*^Á; ālÆ;e [Æs^A; A; ] ^A; [çāj*Á - [ 2005] * Á;æð; d Á; æð] ^Á; [Æs*A; A; A; A; A; A; A; A; A; A; A; A; A; A	Ô[}dæ&q{¦Á	Ô[}∙dĭ&ca‡}Á
Óą̃i åãç^¦∙ãĉ Á	CE   Á cæ-Á [   \ 3] * Á } Á @ Á ã ^ Á 3   Á ^ Á æ çã ^ å Á - Á c@ Á [ & æ ā } Á - Á [ & Å ` à à   ^ Á @ æ ā a æ č Ă Þ [ Áç^••• / Á æ & @ !• Á 3   Á & ^ Á   æ & å Å Å Å Å [ & ^ 4 ^ - Á] Å & æ 3 ^ Á ^ ^ cæ 1   Å & ^ Å & Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å	Ô[}dæ&d[¦Á	Ô[}∙d`&aą́i}Á

Impact	Environmental safeguard	Responsibility	Timing
Óąį̃ åãç^¦∙ãĉ Á	$\begin{array}{c} Off [ \acute{A} \& [ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	Ô[}dæ&q[¦Á	Ô[}∙d`&cą́[}Á
Óąį åą̃;^¦∙ãĉ Á	<ul> <li>OEÁ] ^ &amp; Sándán oÁ, æla A Bač × zenálká 84   [*ár oÁ, [×  å Á</li> <li>* à ^1 cæl ^ Árdéj 1 ^ EB[ } • d × &amp; cal } Ág • ] ^ &amp; cal } Áj · Ac@ Á</li> <li>] ā ^ · Ál 1 Á ^ } * } zer @ añ • Ág ^ zeng 1 • ^ · Árd à Áj a ^ - ár @ ná</li> <li>• Á Q Ár @ A &amp; zer ^ Ar @ ar Ag ^ zeng 1 • ^ · Árd à A a a f a a - ár @ ná</li> <li>• Á Q Ár @ A &amp; zer ^ Ar @ ar Ag ^ zeng 1 • ^ · Árd à A a a f a a - ár @ ná</li> <li>• Á Q Ár @ A &amp; zer ^ Ar @ ar Ag a a g a b a a a a a a a a a a a a a a</li></ul>	Ô[}dæ&d[¦Á	Ú¦^Ë &[}∙dĭ&aą̃[}Á
Óąį̃ åãç^¦∙ãĉ Á	Q Áv@ Á&æe ^ Áv@æeAe) ^ Á } ^ ¢] ^ &c^ å Áv@ ^ æe^ } ^ å Á •] ^ && • Áed^ Ái à • ^ ¦ ç ^ å Á§j Áv@ Á&[ } • d ` &cāi } Áed^ æeÂ , [ ¦ \ • Á, āļ Á& æe ^ Áee) å ÁÜ[ æå • Áee) å ÁT æeðãaāi ^ Á, āļ Á à ^ Á§j -{ ¦ { ^ å Á&[ Á ` ãã ^ Á` ¦ c@ ¦ Áee8cāi } ÈÁ	Ô[}dæ&q[¦Á	Ô[}∙d`&cą́į}Á

## 6.8 Socio-economic

#### 6.8.1 Existing environment

 $\hat{O}[ \& aet[ [AQ]aa) a A far A [ o A [ & aet^a a A far a ga A far a A far a far a far a A f$ 

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Á Ô[&\æq[[Á@|æ]åÁY@æ]-Á&[{]¦ã^•Á, ÁæÁ{ æ]A\*æ}\*, æîÁæ)åÁ,[}d[[}Á;@&&@&e}^Á&[}}^&&^åÁ;[ÅeÁ  $\{\{a_i\} \in \mathcal{A} \ a \in$ &ÎŚ&\^c^Áo/cc^ÉA;@3&@46j,&|ĭå^•Á&;[,åÁ;äa)æ\*^{{^}}oÁ@(æa¦åā);\*Áa);åÁd;æç^|Á5j,-{;{æaāj,}ÈĂ/@/Á&;;\^}oÁ @eet-Á@eerÁ(`|cāj|^ÁÖÖOEÁ&[{]|ãeej&^Á&+\*^+ kÁÅ Å •Á V@-Á\*æ)\*, æî Ás@æeÁ`}•Áa^ç, ^^}Ás@-Á\*¢ãrcā;\*Áã¢^åÁs/ccî Áæ)åÁs@-Á\*¢ãrcā;\*Á,[}d[[}Áæ&@a\*ç^•Á,[}Ë &{{]|ãæ};oÁt¦æå;ãt};o•Á§;Át^}^¦æ4Á;ç^¦Ás@^Á&{`|•^Á; ÁsæÁtãç^}ÁsaêÁ •Á V@Å Į [ ] ڳ • Á Á @Á ¢ã cā \* Á æ) \* ź æ Á æ Á æ Á æ Á æ Á æ Á æ Á æ Á æ Á \* Á @æ Á @Á Å \* Æ ] ] Å @Á Å A @Á Å æ Á Å æ Å Å æ Å Å æ Å Å æ Å Å æ Å Å æ Å Å æ Å Å æ Å Å æ Å Å @Á & æ Å Å Æ Å \* ź æ Å Å Æ Å Å @Á & æ Å Å Æ Å \* ź æ Å Å Æ Å •Á V@¦^Ásd^Á,[Á, æ}}ā,\*Ásæ8cā/Á;[Č}åÁ`¦~æ8⁄Á§jå&8æq[¦•ÁsæÁ`ãc@¦Ás@Á,[}d[]}d[]}Á\*å\*^•Á;¦ÁsæÁs@Á \*æ)\*,ǽÁ •Á V@¦^Ádd^Á[Á @^|&@ediÁ] æ&^•Á}å^¦Áo@Á&`;!^}oÁ@|o^¦Áoedia}^Á[¦oti}A, fa@A @ed-Á Á Ô[&\æ][Á@|æ]å/\$ē Á; æ)æ\*^åÁ\$`Á@^Á/¦`•Á\$#}åÁsec!æ\$c•Ás@``•æ)å•Á; Á\$;ã ã[ ¦•Á>æ&@Á^æ)ÈÁ А Xãrãt[¦•Át[ÁÔ[&\æt[[ÁQ|æ)¦åÁæ);\*^Á¦[{Ásà^c,^^}ÁG̀ʀ€€ËÁHI€Ê€€€ÁæÁ^æ4&å^]^}åæ);óÁ}Å@;,Átæ);^Á ^ç^}o•Áæl^Á@/¦åÁt}}Ás@Áãe/æ);aÈÁV@ÁPælà[˘¦Á/¦˘∙oÁ\*}çãræt\*^•Áæ)}čælÁçãrããææaji}Át[Á^æ&@kæà[˘oÁ HEEEEEEÁa^ ÁGEFJ ÉXÁ Á  $\hat{O}[8] \approx [ \hat{A} = \hat{$ ∙Á Pão[¦ã&Á æ‡∖∙Á •Á OB&&[{ { [ åæaā]; }Á5j &|ĭ åāj \* Á02; |ãåæê Á02; ĭ • ^ • Ê&adj æld( ^ } o Ê&&ad; ]āj \* Ê4k |aad; ]āj \* Áadj å ÁÓŸU Á&ade; ]āj \* Á ÓÓÛ•Á •Á Quả`•dãæd,Á¦^&ã, &cÁ, @38.@45,8,4°å^•Á^•d;¦æea,í}}Á,[¦\•@;]Á • Á OEZ\$& aa) çæ Á(¦Á&\^æexac^• Ása) åÁ&` | č ¦aelÁ\ç^} o Ás@[ `\* @` Óss@ Á^ad ÁÁ •Á U~-3&^Áæ);åÁ&[}~^¦^}&^Á&^}d^Áæ);åÁç [Á&æ;.£)^•œĕ¦æ);o•Á •Á U~^\+ Á¢&` \+ ã} + Áæ} åÁ \ [\* \ æ + Á \ \ Á \ lã æ^ Áæ} åÁ ^ & ] } åæ^ Á \ [\* \ æ + Á •Á Ó [æ ák [ [ ¦ā] \* Ák -Ák ¦ã cæ r ác ^•• ^ |• Á æ ÁÔæ (à ^ ¦Ár @ + -ÈÁ Á Ò{]|[^{ ^}o^}o^{[]][|c`}ãa?)•Á,ãc@a,Ás@ Áçã&ajãc`Á,Ás@ Á,@ad-Ásj&|`å^Á&[}•d`&caj}É&edo•ÁæjåÁ^&\^æaaj}Á æ) å Á å šæn á kiæn á kiæn á \* ÉV @ ÁŬ ¦^æ Á "Á/¦æ) •] [¦AÛ cæn cæ ÁÓ VÙ DÁG æ ^å Á } ÁÖ Ú BÒÁ, ¦[b/8cñ;} • Á àčoÁ]åæe^åÁq[Á@æqç^Á^\*æbåÁq[¦Áq:æbg|¦Ág;~¦æe;dč&č¦^Áj;|[b^&oe•DÁ;¦^å&BoAs@æeAs@e:A,`{à^¦Áq:A4spàe:Á,[č|åÁ ā/&¦^æ^Áa^Áā^Áā^Áa^Áa^A} deFÎÁa;aÅdeFFÊŐ;[\_ c@áaÁ¢]^&c^åÁa Á& }+d\*&ai}ÊÄ ā^¦æA { æ) ~ æ & č ¦ā \* Á æ) å Á å \* & æ ā } Å æ å Á k æ ā ā \* È Á Á V@āÁ^•^æ&@4æt\*^|^Á\$u¦æ;•Á][}ÁÓVÙÁuæç^|Á[}^Ásuææá\^\*ætåã;\*Á[]`|ææãi}Áæt}åA\*{]|[^{ ^} ^}oÁu;¦Á

V@#A^•^æ&@4@#\*^|^&&¦æ;•A`][}AOVUAdæ;^|A[}^&&æææ4^\*ædāj\*A,[]`|æaā[}&ejåAA{]|[^{ { ^} A}@4[¦A dæ;^|A[}^A €€EXÓVÙ&&æææ4@er &a^} Á catar ^å&er &@ ACE • dæ;aae) AO`¦^æ`A, AÙcææar ca&er &&[^•A, [oA,``à]ar @A åæææ&ær&@ A{ æ|Adæ;^|A[}^A(;^|Ê&ejåAùOEGA^\*a]}&&æææfar A,[oA; åa&ææaçar, A, Adv}å•AseAO[&&æe[[A @|æ)åEV@ A[&a]E`&[}[{ a& Ase} æf`•ar Aser A, ¦[çaa^åAseAvæa|^A, ETIEA A

Væà|^ÂiЁŤÁÙ[&ã[ÁN&[}[{ã&Áæ};æf`∙ã ÁÁ

Demographic indicator	2011	2016	Total change	Annual growth rate (%)
Š[&æ¢/Á¶[à∙Á ÇÓVÙDÁ	HÌÁRĮà∙Á	IFÁRąīà∙ÁÁ	HÁRĮà∙Á	fiê <del>,</del> ã á

Demographic indicator	2011	2016	Total change	Annual growth rate (%)
Ö[{ ∄jæ}cÁ Quå`∙dā∿•Á[-Á Ó{] [^{ ^}cÁ Ç/[]Ác@^^DÁ	<ul> <li>•Á Ô[}•d č &amp; cát] À</li> <li>•Á Œ to các) å Á</li> <li>¦^&amp; '^æat] À</li> <li>•^¦çã&amp; • Á</li> <li>• Å Òå č &amp; acata] À fao) å Á</li> <li>d cata) â * Á</li> </ul>	<ul> <li>•Á Ô[}•d`&amp;cā[}Á</li> <li>•Á OE[or Ásc) åÁ^&amp;\action action af a bab a</li></ul>	Þ[cÁ 05]] 38æaà ^Á	Þ[cÁ 05]] a38æà ^Á
Ú æ&^Á;~Á Ü^•ãa^} &^Á Ç/[]Ác@^^DÁ	•Á Þæl¦æà^^}Á •Á Ú^¢\'• @æ{ Á •Á Úæååậ*đ{} •Á Y ậ^^ÁÚæ\Á	Þ[ơ‱ææaajææi ^Á	Þ[ơÁ æ]] a3æaà ^Á	Þ[ơÁ OĘ] 83æaà ^Á
T^o@ĮåĄį́~Á V¦æç;^ Ág[ÁY[¦∖Á	●Á Ôæl <b>áçæ Á</b> ålãç^¦DÁ Ø^¦¦^Á	Þ[ <del>Óæçaðjæà</del>  ^Á	Þ[ơÁ æ]] a&æà ^Á	Þ[cÁ 0][] \$38æà ^Á
Ò{] [^{ ^}oÁ Ú¦[b∿&cą]}∙Á	IHÁRĮà•ÁÇC€CFDÁ	Í€ÁRĮà•ÁÁÇC€HFDÁ	JÁRĮà•Á ÇG€FÎËG€EHFDÁ	FÈHÃÁ

#### 6.8.2 **Potential impacts**

#### Construction

V@:Á^¢ã:cā]\*ÁÔ[&\æe[[Á@]aa}åÁY@ad-Á,[`|åÁa^Á&][•^åÁaa}åÁ^{ [ç^åÁ;¦ã|¦Á[Á&]]+d`&cā]}ÅÁ~Ás@A ]¦[][•^åÁ,^`Á,@eel-ÉAOE ÁeeÁ/^•`|dÉAo@`¦^Á,[`|åÁa^Áe^{][¦æel^Áaã+l`]dā[}•Áq[Á\*•^¦•Áee Á^¦¦^Áee} àÁ;æe^\'Á cæ¢āÁ^¦çã&^•Á,[č|åÁ,[ơÁ,]^¦æe^Á¦[{ ÁÔ[&\æ{[[Á@]æ}åÁ′@e¢-Á[¦A]Å[Á,ã¢Á,[]}c@,Åič¦ã,\*Åo@A &[}•d`&qā]}Áj^¦āj åĖÄÖ`¦āj\*Ás@ā Ásāj^ÊA^¦!^Á •^¦•Á [`|åÁà^Á^åã^&c^åÁ§[ÁÔæéj à^¦ÁY @eel-Á[&æec^åÁ§}Á c@A[ c@'}  $A aa^A + A a@A = ab ab A$ 

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V@^Áæ{^}ãĉÁæ}åÁ&@æbæ&c^¦A[ÁÔ[&\æ{[[Á{¦^• @{\^Á\$}Á@^Áçã&ã]ãĉÁ[ÁœA^@eb-Á[ĭ|åÁà^Á\$[]æ&c^åÁæA }æč¦æ‡Á}çã[}{ ^}okô@[`\*@k&@e)\*^•Á[Áo@Áed^ænpAçã`æ‡Áeð•o@cã&eÉkeaiÁ`æ‡ãĉÁe)åÁ;[ãr^Árç^|•ÉA Á

V@^Ác^{][¦æ‡^Á&[{][`}åÁ;^Á`¦¦[`}åÁà^Á`¦¦[`}å^åÁà^ÁQ?æ‡åā]\*Á{[Á^å`&^Á[ā\*^Ê&;ã\*`æ‡Á&]`œ^¦Áæ}åÁ •æ^c`Á¤;•`^•Á{[Á@^Á,`à]&EÉXã};•Á;[`|åÁà^Ác^{][¦æ‡ã^Âå;ã']`]o^åÁà^Á&[}•d`}&a[]+d?&a[]}ÁQ?æ‡åā]\*É&;^••^|•ÊA àæt\*^•Áæ)åÁ\*``ā]{^}ơÁ, @a&@Á,[`|åÁà^Á, Á'¦^æe^¦Á@?a\*@Áæ)åÁ &æ‡^Ás@æ)Á@?A\*¢ãrcaj\*Á, @ee+ÉA/@ãÁ ,[ǐ|åÁ氡ĺ]æ&oų{}ᡬ@Áæ{^}ãĉĄĺA&^A 〈[ǐ|åÁ氡ĺ]æ&oų{}ÁœAæ{^}ãĉĄĺAœAæA Á

Þ[ã:^Á¦[{ Á&[}•d`&qā[} Áse&qā;ãæ?•ÁsiÁã ^|^Á[Ác^{][¦æ bāî Á&æč•^Ásiārc`¦àæ);&^Á[Á`¦¦[`}åāj:\*Á ¦^•ãå^}&^•Áæ)åÁ•^¦•Áæ)åÁe^}æ)œÁ(×Á@)æ)åÉåP[ã^Áã(]æ&œÁ(}A°)Åæ]æ}åÉåP[ã^Áã(]æ&œÁ(}A`¦|[`}åã)\*Á^&^ãç^¦•Áå`¦ã)\*Áo@Á ,[l\+•Ă,[, |åÁçæh^Á;ç^lÁs@A&[}•d`&aąi}Á;^ląiåAå^]^}åąi\*Á;}Ás@Á\$]^A;i Á; A @A;i Á; [l\AàA; \*Ásæb;l&àåÁ; \*Asæb;A c@∿Ácã[^ÈÉÁ

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V@^Á&[}•d`&cā[}Á?aɛ^Á,[ĭ|å/às^Áaō/áazÁ;a\*@cÁ{;¦Á?æ^c`ÊÁ,@}}Á^ĭ`ā^å/áåĭ¦ā]\*Á,|æ}}^åA;a\*@cÁ,[¦\•ÈÁ Šā\* @AÁĴāļļÁĻ[{Ák@;Á;āē^Á; æ`Á&æ`•^Áæj}][^æj}&^Á{[Á]^[]|^ÈÁMKOE‡|Áā\* @zaj\*Á;[`|åAà^Á&ā^&c^åÁæ; æ`Á\[{ Á ¦^∙ãå^} cãæ‡Áse^ æ•Á[Á[ā]ã[ã\*^Á][c^} cãæ‡Áã\*@cÁ]ã|EĂ Á

Ú[c^}cãæ‡A\${i] æ&orA;A\${i}•d`&cā{i}A\$;^••^|•ÁææÅc@A`ãe^A;[`|åAà^A; ãcã æe^åÁc@[`\*@Ác@A;\^]æbææā{i}A` æ)åŧ[]|^{ ^} œea¶[}Å[i -ÁsaÁdæ-æ3kÁ[æ)æ\*^{ ^} oÁ[æ)ÈÁ

#### Operation

V@^Á,¦[][•æ‡Á,[č|åÁæ&a‡ãææ^Á^¦¦^Á,]^¦ææ‡i}•Ás^Á^åč&äj\*Ás[æ‡åaj\*Ásā]\*Ásā, ^•ÈÁ/@ærÁ,[č|åÁs^Á ]ælcā&ĭ|æl|^Á•^~`|Á,ão@Á&|[,åÁ,æ}æ\*^{ ^}oÁ{[¦Áæl\*^Á?ç^}o•Á@\|åÁ,}ÁÔ[&\æq[[Á@(æ);åÉÁ

Á V@Aj\[][•a‡Aj[`|åA&[}dāa`c^Ad[Aaj]\[ç^åA`•^\A^c]^\ā^}&^Aaj}&^Aaj}&Azaj\*Azaj\*Azaj\*Azaj}&Azaj}&Azaj} \[à`•oA^\\\^A\_@ed-Ajāo@edaj]\[]|ãæce^Ajaanaj\*Azaj\*Aza+2ae EAjae=•^}\*^\A^2aaaj\*EA;azaj\*Azaj\*Azaj\*Azaj\*Azaj\*Azaj aeµ[]]āj\*A{{\Ac@A`}b[^{ ^}oAjA^{T}[[åAj^2ace@\EA@eda]`\Acjāv]=•AzajåAzačaj\*EA A

Q ] [ ¦ cæ) dˆ Ás@ Á, ¦[ ] [ • æ Áša Áša^• ãt } ^ å Átj Ása^ ÁÖÖODE/sk[ { ] | ãæ) dĚ ⁄ @ Á, ¦[ ] [ • æ‡Á, [ ` | å Á, ¦ [ çãå ^ Átj ¦ ÁsaÁ &[ } cā) č [ ` • Á, æ @ Aj, Átjæç^ | Átj ¦ Á, ^ [ ] | ^ Á, ã @ Ásaásiā æ æ å ã â č Átj ¦ Át c@ ¦ Át [ à åjã ĉ Ása • ` ^ • ÉÅ [ { Ás@ Átj i } a c@ Á, [ } d[ ] Átj ¦ Â, €Á, ^ ¦ Ás^} oA, Ás@ Ásāt ^ ÈÁ ⁄ @ Át ¦ æst å } oA, Ás@ Átæ) \* , æ Á, [ ` | å Áşæ ^ Ása& & [ à åj \* Átj Ás@ Á çãa ^ • ÈÁ

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V@Á、ç^¦æļÁşãačæļÁųī]æstorÁį,Á@Ą @est-Ásta^Áį,^åã { Áų[Á[, ĚV@Áųī]æstorÁ, [č|åÁà^Á; ājāįãa^åá c@[č\*@Á@ã@ÁčæjáčÁå^•ã}}Áse)åÁs@Á^|^&@ąi}Áį,Áse]]{[]¦ãæetÁ;æet¦ãæt+ĚXãčætÁu]åÆjåÄá ]¦[][•^åÁ;æ}æt^{ ^}oÁ;^æeč¦^•Ásta^Ásiã&č••^åÁč¦œ?lÁsjÁÔ@esjc\*¦ÂiÈÈĂ Á

Xæ)忆aā { Á [č|åÁa∿Á^åč&^åÁ ão@ko@Á•^Á(Áæ]]¦[]¦ãæe^Á(æ?¦ã憕ÉAč¦-æ&∿•Áæ)åÁa^•ã})•ÈÁ Q ]¦[ç^åÁ^&č¦ãĉÁ [č|åÁ憕[Á^åč&^Á©A´}æčoQ'¦ãr^åÁæ)åÁajæ]]¦[]¦ãæe^Á`•^Á(Á@A´@æ+Áæ)åÁãr•Á ~æ&ājãæ?•ÈÁ/@•^Áæ&q[¦•Á,[č|åÁ&[}dãačc^Áq[ÁæAč¦^æ?\Á^}•^Á(Áæ^ĉ´Á)æc3&č|æ|^Á[¦Á,ã\*@Aæ]^Á č•^¦•ÈA

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Q ] æ&or Át} Át![]^¦æðr Ák[{ Átā @Ar ] āļļÁ [` |å Ásh^Át, āt [¦ÈÁOEI|Átā @or Át} Ás@ Á @etr-Á [` |å Át, ^^oA CE • dæplāna) ÁUæa) å ætå • Á @B&@Ats & At^|^çæ) of Atā @Ar ] āļļÁski ār ¦ānekka) å Á [` |å Áts & [` |å Áts & [` |å Áts & [ ^ |\* Ása) å Á cāt ^!• Át[ Ás@enafat @or Á [` |å Ash^Asiāt { ^å Aseror ¦Ás@ Ásar of Ati @ati @or Át] át As cāt ^!• Át[ Ás@enafat @or Á [` |å Ash^Asiāt { ^å Aseror ¦Ás@ Ásar of Ati @ati @or Át] át As æt] ![] ¦ãner \^ Ásh^• āt} ^å Átat @ati \* Á@ena Ásh^} Áts & at a faser Asar Aseror \* ætå Ásat ætat ætat } Át ^ær ` ¦^ Étá A A V@ Át ![][• ætafÁt [` |å Áh^å \* &^ Át @etr-Át æti or } æti @or Ás@[ \* @At & [} [{ at • Át -Á & æth Ásas@at ç^ å, Á

c@[`\*@k@Aicæ)åælåãiæaā[}Aí-Áj@eel-Asi^•ãt}Ê8[}•d`&aā[}Ai æe^läæte-Asi)åAacā]\*•As@[`\*@[`Aû)å}^A Pæla[`lÈA

## 6.8.3 Safeguards and management measures

Væà|^ÂİËFÎÁÜæ^\*ĭæ¦å∙Áæ)åÁ(ãããtæaã)}Á(^aæĭ¦^•Á

Impact	Environmental safeguard	Responsibility	Timing
Ù[&ãæ¢,≸æ)åÁ Ò&[}[{ã&Á	V@`Á/¦`•O\$ee)åÁ*`¦¦[`}åāj*Á{[&eee†A&[{{`}}ãaã*•Á d[A&a^Á^]O\$ej-{ {^âAeea}[`O\$ea=Aee]A[_Aeee†A&[{\`}ãaã*•Á &[}•d`&ea[}Á];[*¦^••ÊA@eee+A&[[•`¦^Ê&&@ee]*^•A d[Á]`à]ã2Adae)•][¦O\$ee)åÁ[c@:¦Áe[]æ8zo•Á c@[`*@[`O\$e@A&[}•d`&ea[}Á]^\ajaÁ	Tæláããą́∧Á	Ú¦^&[}∙d`&cā[} æ)åÁ &[}∙d`&cā[}Á
Ù[&ãad;Áæ),åÁ Ò&[}[{ã&Á	OEJÁSJ c^\}^oÁrãc^Áse) åÁ\^^Á&ceq Áj @2}^Á,`{à^\:Á -{:Á,:[][•a‡A}``ãã*•Á,ā Ásh^Á*•cæaà ã@ åÁ{:¦Á c@ Ás`¦æaā]}Á,~Ás@ Á [:\•EA Ô[}cæ&oÁs^cæā‡•Á,ā Ásh^Á& ^a± ^Ásã]]æ^^åÁseoÁs@ Á •ãc^Ás@[`*@2`oÁs@ Á&[}•d`&cā]}Á,^!ātå Öã^&cā]}•Á,ā Ásh^Á;[[çãa^àÅÁ;}Á@2, Át;Á;æ^Áse)Á ^}``ã^Á;!Á^*ã:c^!Áseó&[{] æāj;oÁ^*æååāj*Ás@ Á ,[:\•EA	Ü[æå∙Áæ)åÁ Tæ÷ããã[^Á	Ú¦^&{[}∙d`&cā[} æ)åÁ &[}∙d`&cā[}Á
Ù[&ãæ¢/¥æ)åÁ Ò&[}[{ã&Á	OB;Á*} ˘ã^Áse)åÁ&[{] æa3;oÁslæ&&ā,*Á*^•c*{Á,ā Á à^Á•oæaà ãr@*åÉXOB;^Á*} ˘ãã*•Á(¦Á&[{] æa3;•Á jā Ásu^Áse&\}[, ^å*^åÁ,ãc@3;ÁGIÁ@[覕Á(-Ásu^ā)*Á ¦^&^ãç^åÉĂ	Tæláããį∧Á	Ú¦^&{}}•d`&cā[} æ}åÁ &[}•d`&cā[}Á
Ù[&ãæ‡,Áæ),åÁ Ò&[}[{ã&Á	OE‡ Á;]^¦æaā;}æ‡Á,@eet-Á∄?@eā;*Áeo;åÁ*??}æ*^Á§rÁ{;Á &[{] ^Á;ão@oko@AÖÙOEÚVÁG€€GÁ	Ô[}dæ&q¦¦Á	Ô[}∙dँ&cã[}Á

FFÎ

Impact	Environmental safeguard	Responsibility	Timing
Ù[&ãæ¢,Áæ)åÁ Ò&[}[{ã&Á	V@^Á&[}•d`&ca‡}Á*a≊^Á,a∥Ás^Áa⊽ÁseeA,a*@eÁ,@e}Á }a*@eÁ,[¦\•Áseb^Á;&&`¦¦aj*Á{[¦Áræ>^c ÈÁŠä*@e-Á,a∥Á à^Aj,[•ãaa]}^åA*[As@eeeAa*@As*A,[o4saā^&c^åÁ q{,æ-å•Á,^æ-àà^Á^•aaa^}&^•ÈÁ	Ô[}dæ&q[¦Á	Ô[}∙d`&cąį}Á

## 6.9 Land transport and parking

#### 6.9.1 Existing environment

#### Land transport

Ô[&\æt[[Á@|æ)å/\$erÁ|lã[ædā]Á&exÁ[`lãro&s^•cā]ædā]}Áx@exA&ea)A[}|^Ás\^Áæ&&^••^åAs^Á~¦!^Á[lãr,æt%As[ædÁ ç^•••^|•ĚA/@`!^Áæ4^Á,[Áæ)å•ãa^Átaa)•][¦oA,^ç [¦\•A;}Áx@/Ásr|æ)åAserãa^Á+[{ Ájæt@,æ°•ÉÅ,@3&@Á ~æ&3ajãæet^Á,æq\āj\*Áse)å/&&`&|aj\*Átæç^|A;[å^•ĚÁ

Á

Yæ|\ā]\*Áæ)åÁ&`&|ā]\*Á{[å^•Á,@3&@4&[}}^&oók[Á@?Á,@eet-Áæt^Á\*]][¦c^åÁa^ÁæA,\*{ à^¦A[-Áæ&a]āãā\*•Á@eecÁ æt^Áa^•&¦ãa^åÁaJ,Á\*¦c@:¦Áa^cæaaJÁa^|[,ÈV@Ac;[Át]æç;^|A[[å^•A[]]Á@?/ár|æ)åÁæt^Á\*{{ætãr^åAa^|[,Ká

#### Walking

 $\begin{array}{l} \textbf{Ce} \acute{Ase} \acute{$ 

- Á
- •Á CEÁ, ãả^Á, æc@, æĉÁţ ÁT ˘• ơ\¦ÁÙ cæca‡, }Áà ˘ đå đ; \* ÉÁ, @3R @5a Ás@, Á; à|32.Á\}dæ) &^Áţ Ás@, ÁQ |æ) åÁse) åÁ, ~~^\•Á •@ |ơ\¦Áse) åÁ ^ æcd] \* ÉÁ
- •Á Ù@æh^åÁj.ææ@Áj.}Ás@Áj.[¦c@¦}Á^&caj.}Áj.Ás@Áša |æ)åÉÅj.@38.@48[}}^&or Ás@Áj.@æh-Áj.as@ás@Á&æet.]aj.\*Á \*¦[`}åÁæj.åÁse&&^••ãa|^Át[aj^o-ÈÁ
- Á

V@\^Áech^Áeche[Áech,`{ à^\;A, A, c@;A, æc@, æ̂•ÊÅ, @3&@4&]}}^&oA4[Ás@Áeæa][ç^Áea)åA, \[çãa^Áee&&^••Á[Á à`ā¦åā],\*•Á, Á@:\āze\*^Á;ā}ãa&a)&^A;}Ás@Á&A}dæAA;daAA;@A&;aa)å`ÈÅUç^\;æ|A&@A;aa;a\*āa^Á4[[d]æc@Á •^•c^{ /≨rA, Á@ā`@Á``æ†aĉ`Áea)åA;}|^Ása\*^}cãa?åÁ&[}•dæaj,orÁechA;@A;ae@, æ`A, ãa c@Áeeahze&A}oA4[AT`•c^\;Á Ùcæaā;}Áa`ā¦åā],\*Ás@aeaA, æ`A4[]æ&A,}Aæ\*^\;Á&\[, åA{[ç^{ ^}oAea}åAÖÖOD5&[{]]ãea}&^Æ\*\*`^•A æ•[&ãaee^àÁ;ão@Áe&&A\*\*\*;A[{ ^A, Ás@Aea}å\*ãa^Áa`ā}a\*Aa]\*\*Ás@eeA\*\*\]``}aÅs@A;@ee-ÈÅ

#### Cycling

#### **Operational vehicles**

Ù[{ ^ Át] ^ ¦ææāt} } ædÁç^@384/^•Áæ4^Át&&æ•āt} } ædî^Á • ^åÁæ4[`} åÁÔ[&\ ædt[ Á®(æ) åÁ\*`àb/&oA4t[Á\*] ^&ãæ8AÁ\*ãe^Á ¦^``ã^{ ^}o•Á@22EÈAt[¦Á\*ç^}oÁ\*^dË]Áæ) åÁ&`¦āj\*Á\*ç^}o•Á,¦[çãåāj\*Áæ&&^••Áæ&k[••Á∞@Áār[æ) åÁt[¦Á;^[]|^Á jãr@Áæ&&^••ãå|^Á,^^å•DÉÁ

## 6.9.2 Potential impacts

#### Construction

V@¦^Á, [`|åÁa^Ár{][¦æ†^Áaãi¦`]qāi}•Áti Á •^¦•Áæ•Á^¦¦^Áæ;åÁ, æe^¦Áææ;åÁ^¦çæk^•Á, [`|åÁi[qÁ []^¦æe^Á¦[{ ÁÔ[&\æeti[Á@|æ]åÁY @æ‡-Áti¦Á]Áti Áti Áti Áti Áti Áti Áti Áti Åæ;åÅ, æe^¦Áææ;åÅ, }•d`&qāi}Å, ^¦āi åÉtÖ`¦āi\*Á c@æ`Átāi ^Êtv+¦•Êtv¦¦æt•Áæ;åÁ æe^¦Áææ;ãÁ [`|åÁa^Á^åäi^&c^åÁti ÁÔæti à^¦ÁY @æ‡-Áti &æe\*åáti}Áto@Á •[`c@;¦}Átāa^áti Áto@Æti |æ]åÉtÁ Á

CE‡c^¦}ææãç^Á[čc^•Áæ‡[č}åÁÔ[&\æŧ[[Á@q|æ);åÁåč¦ā]\*Áo@A,@æe¦-Á&q[•č¦^Áæ±^Á;@q,}Å5jÁØäč`¦^Â;ËFÎÁà^|[,ÈÁÁ Á



Á

 $\mathcal{Q}\tilde{a}^{+} \wedge \hat{A} \stackrel{\text{d}}{=} i \stackrel{\text{d}}{A} \stackrel{\text{d}}{=} i \stackrel{\text{d}}{A} \stackrel{\text{d}}{=} i \stackrel{\text{d}}{A} \stackrel{\text{$ 

P[ælåā]\*Á,[`|åÁa^Á^¦^&c^åÁæl[`}åÁ@ Á&[}•d`&cāt]}Á ãc Áæ)åÁ&[{][`}åÁt[Á, ¦^ç^}oÁs@ Á,`à]a&Á æ&&^•ēā \*Ác@ Á&[}•d`&cāt]}Áæl^æe ĚÁ Tænj^ÁÔæ...Át}ÁÔ[&\ætti[[Á@:|æ)åÁ;ā‡|Á^{ ænjĂt]^}Áa`¦ā]\*Ás@ Á&[}•d`&cāt]}Á,^¦ātåÊán Áæjcā&a]æc^åÁ Ù[&&c ÁUç^¦à[ælåÁ&æ:..ÉA ãčæc^åÁ&[[•^Át[Ás@: Á¢ cã:cā]\*Á;@æl-ÉÅ;[`|åÁa^Á @ cÁt[¦Á:[{ ^Át-Ás@ Á &[}•d`&cāt]}Á,^¦ātåÉÁ&

CE||Á&[}•d`&cā[}Å,|æ] dÊA``ā] { ^}dÊĄ` æc^¦ãæp+Áæ) åAj^¦•[}}^|Á,[č||åAk!æç^|Ak[Áx@A`āx^Áx`Áx`Áxa#\*^Á;¦Áx[æcA -{[{Áx@:Á;~Eēāx^Á&[{][`}åÊÁU[c\*}cãæpHát]]æ&o•Á;}Á;æc\*¦&!æcdÊ4j^å~•dãæ) •Áæ) åÁxã& &|^•Á;[č||åÁx^Á {æ) æt^åÁşiÁx&&{[¦åæ) &^Á ãx@Áx@A(æ) æt^{{}}? {æ) æt^åÁşiÁx&&{[¦åæ] &^Á ãx@Áx@A(æ) æt^{{}}? Q/TÚDÁy[¦Áx@:Á;!]][•æEÊ4,@3&@Á,ā]|Áx^Á\*`à{ãxx°áA;}&^Áx@AÜÒZÁásÁx^c+{ā,^åEA

#### Operation

V@^Á,¦[][•a‡Á,[č|åÁ§[]¦[ç^Ás@As[a⇔åã]\*Á~a&a?}&`Á,AÔ[&\ae[[Á@(a);åÁY@a÷AŹ\*•]^&ãæ‡|^Ásč¦ã;\*Á ^ç^}oÁ@(¦åÁ;}Ás@Á@(a);åÉÁ

#### 6.9.3 Safeguards and management measures

Væà|^ÂÎËËÏÁÛæ^\* 迦å•Áæ)åÁ(ãããtæaã[}Á(^æeč¦^•Á

Impact	Environmental safeguard	Responsibility	Timing
Šæ)åÁtæ)•][¦cÁ æ)åÁjæ∖ā,*Áá	O Extace-a8xA&[}d[ Á, aa)Á,ā Áa^A,!^]ad^åA§A a&&&[¦åaa)&^Á,ão@oko@ Ak/ac-a8xA&[}d[ ÁeeA,[!\Á •ãe^•A,[aa) ăadon (QUVO EEC € = Eado Bab) á ù caa) åada á Fiil CEH ÁQT aa) ăada f. Á`}ã[!{ Ádac-a8xÁ &[}d[ Áe^ca8x^•D Aab) åÅ,ā A§ & `å^A`& & @óx@3) *•Áee &[]d[ Áe^ca8x^•D Aab) åÅ,ā A§ & `å^A`& & @óx@3) *•Áee A aa]]![]:ãeee^Á, æî-ājåā]*Á*ã }æ*^Áa[Áa^Áş]•caa /°åA æåçãaā]*Á; -Áeqec`!}ææãç^Ádaa)•][¦d4,]dā]}•Ágãe EÁ `•^Á,Ác Adace{}à^!Á? @ed-DEAA	Ô[}dæ&q[¦Á	Ú¦^Ë &[}∙d`&dā[}Á -{[  [, ā]*ÁÜÒ⊘A å^c^¦{ a],æda[}Á
Šæ)åÁtæ)•][¦ơÁ æ)åÁjæ∖āj*Á	V@^Á[  [, ā]*Á[ææc^¦•Á]ā /&a^&a^¢a^ç^ []^åA§JÁ &[}•` cææa]}Ájão@ko@^Á/¦`•oAj¦ā]¦Á[Á[Á][¦\Á &[{ { ^}&a]*hÁ •Á V¦æ-a&A(æ)æ*^{ ^}oAj æ)Á •Á Ú^å^•dãaa)Áse&&^••Á'[{ ÁÔæ{ à^¦ÁY @ee'-ÈĂ •Á U]^¦ææa]}Áç^@&& ^•Á]}Ás@~Á@[æ)åÈééé	Ô[}dæ&q[¦Á	Ú¦^Ë &[}∙d`&cā[}ÁÁ -{ ∥[,ā]*ÁÜÒ⊘Á å^c^¦{ā]æcā[}Á

## 6.10 Water transport

## 6.10.1 Existing environment

Ô[&\æq[[Á@|æ)åÁY @ed-ÆirÁ;æloÁ;~Ás@AÙ^å}^^ÁØ^\¦&i•oAÚæl¦æq;æccæAÜãç^\¦ÁQ2HDÁ:^¦ç&A^ÊÅ;@B&@A;l[çãå^•Á ~^\¦&i•Á&[}}^&æ3;\*Áçælāj`•Á;@ed-ç^•Ási^ç\_^^}ÁÚæl¦æq;æccæÉÖæl|ðj\*ÁPælà[`¦Áeg)åÁÔã&`|ælÁÛ`æÈĂ Á

Õ^}^\æ‡|^Á^\\'^Á\^``^}&&?`•ÁÇA;Á(āj`ơ.•DÁ(\AÔ[&\æt[[ÁQ|æ);åÁ&~Á(Q;)}Á§;Á/æà|^Á;ËFÌKÁ Á

Væà|^ÂİËFÌKÁQEJ]¦[¢ã[æe^Á^¦¦^Á¦^˘˘^}&&&•ÁĮÁÔ[&\æe[[Á@|æ)åÁY @ee¦-ÁÁÁ

Route	AM Peak Á	Off Peak	PM Peak	Saturday	Sunday
ØHÁÁÚæl¦æ{æcæÁÜãç^¦ÁţÁ Ôã&覿lÁÛčæÂÁ	HEÁ	F€ËH€Á	H€ÁÁ	G€ËH€Á	G€ËH€Á
ØHÁÁÔãå&ĭ¦æ⇒ÁÛĭæÂ4ĮÁ Úæ⊹¦æ{æccæ4Üãç∧¦Á	HEÁ	F€ËH€Á	H€Á	G€ËH€Á	G€ËH€Á

Á

Ô[&\æ[[Á@]æ]åÅY@d=Á#á Ászáå^•cajæzaj}Á,@ed=Áj¦[çãåā]\*Ász&&^••Á[¦Á^&¦^æzaj}}æÁ\*•/+éAj&[`áā]\*Á q[`'lãro ÈAOE ÁszÁ^•`|dÉ4,~Ė]^æiÁejåÁ,^^\}åÁ,^\ajåA,^lā[å•Ásd-Ás@Aj^æiÁ]^lā[å•Á[¦Ász&&^••Á[ g&@ászá]}•Á,ãz@ász@A,@ed=anA^\\:Á^\çã&^Á\^``^}&^A,[[-a]^ÈAQÁ#A`}å^\+q[[åAs@ezA@+•A(\çã&^A &æ)Áà^Á`]]['d^åAà^Ászååãa]}æAA^\çã&^+Áa`'lā]\*Á[ædu[!Á?ç^}oAG`&@ászAP^,Ä'^ædnA`\çã&^+Á &æe^\A{[!Ász=•[&ãszz^åA``!\*^+A],Aå^{a}a]åÁ;}A^\\:Á^\;çã&^+ÈA Á V@Á/¦˘•ơ&覦^}d^Áa^]|[^Áæååãāā]}æ¢ÁœæÁs@Á,@æċ-Á;}Ásæî•Á;Á@ã;@ke;a&a]æe^åÁs^{ æ}åÁs}åÁsè}åÁsé @æ⁄Ás^^}Æã^}çãa?åÅÁœæA;}Á\*[{^Á;&&æ;ã;}•Ê3,^||Áş;Á^¢&^••Á;~Á;}^Á\*,||Á^¦¦^Á[;æåÁ;Á,Á;æ•^}\*^¦•Á

ヾ`ヘ糸ᡂ๎ヘᡂ、ベ@eel-A,ananana)\*Át[Ási[æ-åaka-d&aĉ´Ási[´}åÁ^¦¦^Á^\çað^ĚÁ/@arA^``ā^•Ás@A´•Ăţ-A&vi[,åA {ae)æ\*^{ ^}of:æe^•Át[Á,æ-añat]}Æk[,å•Ásjq[Á^¦¦^Át[æå•Át]¦Á:æå•Át[¦Á:æe^ĉ´A,`'][•^•Êá,@a&@4sj-t]¦{•Ás@A´ ¦^{ ænajāj\*Á`•^¦•Ás@eenAs@^Á,āt|Á,^^åÁt[Á,ananát[ká:@Á,^¢o4\^¦ça&^ÈÁ

Á

V@Á[čœ]}ÁÔæ{ à^¦ÁY@ed-Á}¦[çãa^•ÁezÁ^&¦^æaā]}ækÁa[æezÁ[[æezÁ[[æezÁ[[ä]\*Áezd-ædÉA]ão@A[ç^¦}81@A6a^lo@3]\*Á[¦Á [}Ás@Áñai]æ3;åÁG[¦Á]¦ãçææ^Áç^••^|•DÁ]¦[çãa^åÅa`Ás@Áezabæ&A}oÁKÔ[&&æa[[ÁQe]æ3;åÁTæd3]^ÁÔA}d^bÉÁ Á

Yæe∿¦Áxæ¢ãÁ•^¦çã&∧•Áæþ•[Á;¦[çãa^A;jā&∖Á]Ðà¦[]Á;~-Á;[ð]o•Á¦[{Áa[c@Á;@eet-●Á;}Áo@Aás|æ)åĔÁÁ

## 6.10.2 Potential impacts

#### Construction

Ö`¦ā]\*Á&[}•d`&cā[}ÁÔ[&\æt[[Á@|æ]åÁY @et-Á[`|åÁà^Á&|[•^åÁ{¦Áæ]]¦[¢ā[æt^\^Áā¢A[]}@EĂV\*^¦•ÉA \_^\;a\*•Áæ]åÁ æt^¦Áætætā Á[`|åÁa^Á^åā^&c\*åÁt[ÁÔæt{à^\AY @et-ĔÔ`;!^}oKā]^aæt\^ÅāA^\;^ÁA^\çã&~At[Á c@Á@|æ]åÁ[`|åÁa^Á]åæt^åÁt[Á[c\*Á©Á&@et+At]A @At]ætč¦^Á]æt@At[¦Á^\;a\*+Á[č]åÅa^Áætc\!^åÉY æf-ājåā]\*Áā]}æt^Áæ]åÁU]ætA^æta^!•Á[č]åÁa^Á ā^]ætč¦^Á]æt@At[¦Á^\;a\*+Á[č]åÅa^Áætc\!^åÉY æf-ājåā]\*Áā]}æt^Áæ}åÁU]ætA^æta^!•Á[č]åÅa^Á ā]•æt|^åÁættÔæt{à^\AY @et-ÉA

Á

V@^Á•^Áį,~Ás@^ÁÔæ; à^¦ÁY @ee¦~Áåĭ¦āj\*Á&[}•dĭ&cāj}Á,[ĭ|å/Ás[]æ&sc4j}Ás@^ÁseçæanjææiajäĉÁj,~Á^&¦^æanj}}æµÁ à^¦c@aj\*ÁsecA@/≨i|ænjåÈbÁÁ

Á

V@Á\$dor¦æaāį}Aį́\_Ás@Á&`¦¦^}dÁ\*¦¦^Ájæa@Êži•^Áį́\_Á^\çã&^Ásiæb\*^•Ásiæb\*^•Ásiæb\*^•Ásiæd\*^\çã&^•Á`¦çã&^•Á`[`|åÁsi^Á •`àb∿&cÁt[ÁPæbà[`¦ÁTæ•c°¦ÁOE]]¦[çæbÉŽOE-^&c^åÁ&[{ { ^\&ãædÁş^••^\●Ási}åÁ{ ^\\*^}&ãð•Á^\çã&^A ]¦[çãå^\+Á,[`|åÁsi^Á&[}•`|c^åÁjão@ŽXX

## Operation

Ô[&\æt[[Á@[æ]åÁY @zet-Áni ÁxaÁni^•cā]ætā]}Á; @zet-Á]¦[çãnā]\*Áxa&&^••Á[¦Á^&¦^ætā]}ætÁ\*•^¦•Á5]&|`åā]\*Á q[`¦āro•ÉAU]^¦ætā]}ætÁ^``ā^{{ ^}o\*Áne•[&ãane\*åÁ;ãc@AÔ[&\æt[[Á@[æ]åÅ;@zet-Á^•][}åÁt[Á[¦^&æercÁ \*¦[,c@Á5]Á;æt:[}æt\*^Áni`¦ā]\*Á;~Áj^ætÁj^¦ā[å•Áxa)åÁxæA;^^\^}å•ÉAÁ Á

V@^Á,¦[][•æ‡/áārÁå^•ãā}^åÁq[Áà^ÁÖÖODEA&[{]|ãæ);dÉaæ);åÁaj&¦^æ=^Á;]^^å=ÁæeAá;]@a&@Ajæ=•^}\*^¦•Á\*{àæ}\Á æ);åÁåãa^{{àæ}\Áq[Áaq]}[ç^Áa;[æåä];\*Á~æ3&ã}&`Áæ);åÁtæç^/Áaq[^•EZ/@ãA,[`|åÁæe•ãroÁ,ão@A&[,åA {æ};æ\*^{ ^}oÁq[¦Áæd\*^Á?ç^}o•Á@·|åÁq]}ÁÔ[&\æq[[Áq0]æ);åEXÁ Á

## 6.10.3 Safeguards and management measures

Væà|^ÁÎËFJÁĴæ^\* čælå•Áæ)åÁ(ãããtæaã[}Á(^æeč¦^•Á

Impact	Environmental safeguard	Responsibility	Timing
Yæe∿¦Á dæ)•][¦oÁ	Ô[{ { ^\&ãæ¢EÁ^&\^ææã]}æ¢A[]^\æe[\•Áæ)åÁ ]\ãçæe^Á^\çã&^•ÁœeA`•^ÁœA`¢ã~cã]*Á`@ee\-Á ¸ã Áà^Áæåçã^åA`A`@eA`@ee\-Á& [•`\^ÁæeA^2@eoA ç[Á,^^\•Á\\á]\á[Á&[[•`\^ÈA	Ü[æå∙ <i>Á</i> æ)åÁ Tæłããą́^ÁÁ	Ú¦^Ë Ô[}∙d`&ca‡}Á

Impact	Environmental safeguard	Responsibility	Timing
Yæe^¦Á dæ}∙][¦oÁ	V@^Á,æe^¦Ëaæe^^åÁ&[}•d`&cā[}Á[]^Á,ā Áa^Á & ^æe ^Áa^ āj^æe^åÁæ9;åÁ(æe\^åÁv[Á,¦^ç^}oÁ }[}Ë&[}•d`&cā[}Áç^••^ •Á¦[{ Á^}c^'¦āj*Áo@^Á &[}•d`&cā[}Á;ãe^ĚÁ	Ô[}dæ&d[¦Á	Ô[}∙d`&cą́i}Á
Y æ¢\!Á (a)•][¦oÁ	<ul> <li>Á CÉT æðā ^ Á/!æ-ækáT æð æt ^{ ^} oÚ/æð Á älÁ à^ ^ J.^] æð å Åæj å Åæj ] / { ^} cå Åä` i ä * Å ; æð ! Åæ ð å Åæj } e č * &amp; di } Å [ ! \• Éki Å &amp; [ • `   ææi } Å ã œh ÙY ÁT æð ää í * Áæj å Å æj ] ! [ ç^ å Åa` Åæ Åæ Åæ å [ ] * Å æj å Å æj ] ! [ c^ å Åa` [ · \• Å Å] Å [ ofs c' ! ^ Å ; ã œh @ Å [ ] · ^ å Å [ ! \• Å Å æt [ ] * Å @] • Å ` } / • • Åæt ! ^ aå Åæ Åæå çæð &amp; Å ã œh @ Å Pæða [ ` ! { æ c' ! Å</li> <li>A Ú [ · • Å æj ] Å [ ofs ^ / aðs Åæ åæå çæð &amp; Å æå çæð &amp; Å ã œh Ø Æ æða [ ` ! { æ c' ! Å æå çæð &amp; Å ã œh Ø Æ æða [ ` ! { æ c' ! Å</li> <li>• Á CI [ Å · ^ j a] Å [ ofs ^ / aðs å á ã œh Ø Å eð j ] ä * Å æð j ^ ! • Å å æ å a æð æð Å ä æð æ Å æå çæð &amp; Å ã œh Ø Æ æða [ ` ! { æ c' ! Å</li> <li>• Á CI [ Å · • ^ j a] / s ^ Åā æ å a æð æ å [ ] ! • Æ æ Å</li> <li>• Á CI [ Å · • ^ j a] / s ^ Åā æ å a æð æ å j ä ! Å</li> <li>• Á CI [ Å · • ^ j a] / s ^ Åā æ å æ æð æ å j ä æ Å æð å Å ] ä ! • Å</li> <li>• A CI [ Å · • · / å æ Å æ æ í å ã æ æ å j ä æ Å æð å Å ] ä ! • Å</li> <li>• A CI [ Å æ cí ] ^ Å Å æ å Å æ æ í Å ä æ Å å æ Å å æ Å å æ Å å æ å Å æ å Å å æ å Å å æ å Å å æ å Å å æ å Å å æ å Å å æ å Å å æ å Å æ å Å å æ å Å æ å Å å æ å Å æ å Å å æ å Å å æ Å Å æ å Å æ Å æ</li></ul>		Ú!^Ë Ô[}•d`&đ]}Á -{II[, ð]*ÁÜÒØÁ å^ơ\{ ð]æđ]}Á

# 6.11 Aboriginal heritage

#### 6.11.1 Policy setting

Œa[¦āʾājæļ⁄&[{ { `}āĉ Á&[}•`|œaā]}Á(`•ơà\^Á}å^¦œa\^}Á§Áæ&&[¦åæ)&^Á,ão@ko@ ÁAboriginal Cultural Heritage Consultation Requirements for Proponents 2010 ÇÖÒÔÔY ÁG€F€àDÈ Á

V@ ÁÜ[æå•Áæ) å ÁT ælātā ^ qÁÚ¦[&^å` ¦^ÁĮ ¦ÁŒa[ ¦ātāj æļÁÔ` |č ¦æļÁP^¦ātæ\* ^ ÁÔ[ } •` |œætāj } Áæ) å ÁQ ç^• œti æetāj } Á ÇÜ[æå•Áæ) å ÁT ælātāj ^ ÉÅO€FFDÁQÚŒÔPÔŒA%j &[ ¦] [ ¦ææ\*•Áæ|Á^|^çæ) dÂÚCEÆæ) å ÁU ÒPÁŒa[ ¦ātāj æļÁ@ ¦ātæ\* ^ Á \*`ãa^|āj ^• Áæ) å Á^``ā^{ ^} œ Áşj ÁæÁ œet ^ å Áj ¦[ &^å` ¦^ÉÁV@ Áå` ^ Ásājāt ^} &^ Áj Ì ( A^• • Áj ` dāj ^ å Áşj Á ^ &œti } Á Ì Áj -Ás@ ÁDue Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales ÇÖOÔÔY Á €F€æDÁœe Ás^^} Ás] • ãå^¦^å Ásæ Áj æd Aj æd Áj ACE OÚÆ ÁJCEÔPÔŒÂuœt ^ ÁFÁæj å ÁÜ[ æå• Áæ] å Á T æbātāj ^ Áœe Á&[ } &] å^å Ás@ædÆj Áæ] ] J&ætāj } ÁI ¦Áæj ÁCE OÚÆ Áj [ dá ^ &\*• eæ] Á§j Ás@e Ásæ ^ ÉÅ

#### 6.11.2 Existing environment

Ô[&\æt[[Á@|æ)åÁæ]]^æ+Át[Á@æç^Áa^^}&@A(æåäat]}æA(æ)å+Át,Á@A/æ)å+æA(æ)å EV@ä1A(\*)¦ät[¦^Á;æA c@A[`c@|}A(@|^+A(A)^å}^Á?æ)ä[`|Á[{ ÁÖæ|ä]\*Á?æà[`|Á, +okát[ÁÜ[+^Á?ä]A(Ú)æ}æ;æææDáæ)åA ]æka(Á,Áx@AÖæ\*\*Áæ)\*`æ\*^Á\*¦[`]A(ÜUÚÉAGEFÎDEA Á

V@ Á,æ{^ÁYæ}\*æ‡ÁÇF[{Á,æ}}^DÁ(^æ)oÁ;^•ooakæ}å&o@^&e^^kæ^A&@^\*@Ak[A@æç^A&aç^å&sk&@AU^å}^A æA^æÁ[¦&kæ]]¦[¢aĩ[ææ^|^ÆEEEEEÁ^æ•DÉQ)AFïJFAÕ[ç^\}[¦ÁU@4]āA^&[¦å^å&o@ek@AYæ)\*æ‡Á,æ{^A[¦Á Ô[&\æa[[Á@|æ}åA;æA'æ\*A'æ\*Aæ{æ®EAQ%asA[],}A@\_,Å@^&a[æ}åA;æA'•^å&a^AœA'æ}\*æ#É4,c@¦Á co@æ}Á{¦Åæi@3\*&æ}åAj[••aa|^Á{¦Á •a]\*&o@At^^•Á[¦Å&æ}[^A(;æà]\*ÁQÜÚÙDÉGEEFÎDEA Á

CE;cq2 \* @ÁÚ[¦ÓARæa&\•[}Á, æ•Á;}&^Áq2 { ^Á4[Á@]}å¦^å•Á;ÁOEā[¦ā\*ājæ4Á;^[]|^ÉA; &@4;Áx@A\*çãa^}&^Á4[¦Á cq2 \* eæ)å•Á; Á^æe•Á;Á;á&&`]æaā;}Á@æe•Áa^^}&å^•d[^^å&a\*Á`làæ)&á^ç^|[]{ ^}óæejåá&@ dæ)•-{¦{ æaā;}Á;Áx@^Á;æe\*¦Áa[å^Áajq[Áæá4;æ4a]¦Á@æeàà[`'İÈÁÔ[&\æa[[Áq2]æ9åÅ@æe Á@æåA;æ)^Á\*•^•Á;āj&^Á áã•Áā•oA;[•dĒ\*^cq^{ ^}oÁ\*•^ÁæeÁæá;¦ã;[}ÁajÁrĨHUÁ4[FÌÍ€ÁQÜÚÙÉAGEFÎDĚÁ

Á

CEÁ ^ æð &@Á, æð Á } å^¦æð ^} Á, Áv@ ÁQEa[¦ātājæÁP?^¦ãæat ^ ÁQ,-{¦{ æatāl} } ÁTæ)æt ^{ } oÁÛ^ • c^{ AQEP OT ÙDÁ, } Á HFÁCE \* ĭ • oÁO€FÎ Á^ç^æh å ÁGI Á, ¦^çāl ĭ • | ˆ Á^&[¦å^å ÁQEa[¦ātājæh Á ãt^• Á, ão@a, Ás@ Á ^ æð &@Á \* æð ⁄ @ Á • ^ æð &@Áseh ^ æð að ÁÔ[&\ æt [ Á@|æ)å É & að å Á @ ¦^|ä ð æh Á ãt • Á @ ¦^|ä ð • Á á ⁄ [ [ |, ã&@ÉÓã&@ ¦[ç^Á æ)å ÁÕ¦^^}, ã&@É / @ Á ^ æð &@Á ^ • ĭ | or Ástp [ Á @ , ^å Ás@æn Á, [ } ^ Á, Ás@ • ^ Á ã x • Á á v ~ Á á x • Á @ |æ)å É Á

#### 6.11.3 Potential impacts

#### Construction

V@^Á^¢c^}•ãç^Áţ[åãã&ææāţ}ÁţÁœ?Á,æč¦æ¢Á@{¦^|ãj^Ásî^Ás@A&[}•d`&æāţ}ÁţÁ^aæÅ,ædjÁsejåÁ;@eel-æ\*^Á {æ}^•ÁsoÁv¢d^{{^|^Á}}[ã^|^Áso@eenÁsej^ÁşiÁ;ãčÁOEa[¦ãtājædÁ;æe^¦ãædÁş[č|åAsi^Ásiãa&[ç^¦^åAsi^Ás@A ]¦[][•^åÁş[¦\•ÈEÁ Á

V@^Á;æa)å•ãå^Á&[{][}^}oÁ(-Á,['\•Á,[`|åÁå^Á(ā)ā[æa†Éæa)åÁãrÁ'}|ã^|^Á([Á'}&[ç^¦Áæa)^ÁOEa[¦ã\*ā]æ‡Á {æe^¦ãæ‡=Áå`^Á4[Á][•dë=^dd^{ ^}oÁ•^Á(AÔ[&\æ{[[Á@]æa)åĚÁ

#### Operation

Þ[Á]^¦æað[}æk4ða[]æ&orÁ@æç;^Áa\^}Ába^}cãa?\åÁæerÁjæ}oA[x-Áo@orÁ]¦[][•æ¢HŽA Á Á Á Á Á Á Á

#### Á Á

#### 6.11.4 Safeguards and management measures

Væà |^ ˌÂÙæ^\* 迦å• Áæ) åÁ(ãcã æaã) }Á(^æ•č¦^• Á

Impact	Environmental safeguard	Responsibility	Timing
Œa[¦ãtājaa∳Á @°¦ãuæt*^ÁÁ	QÁOEa[¦ātāja¢ Á@;¦ãæ ± ^ Ášer { • Áse + Á`} & [ç^; + å Á å`¦āj * Ás@ Á, [¦\ • Ése¢   Á, [¦\ • Ásj Ás@ Áşāsājāc Á; - Ás@ Á -āj å Á, ` • cÁs - æ + Áse) å Ás@ ÁÜ[æ te • Áse) å ÁT æ sãa [ ^ cÁ OEa[¦ātājæ f Ás:   č ¦æ f Á@; lãæ te ^ Áseta çã [¦Áse) å Á G@ Á • ^ } ā i { A * āt} æ f Ás} çã [} { ^} cæ A * as * i As a { { ^ å ãse *   č H & Y } cā [} { ^} cæ A * as * i As a { { ^ å ãse *   č H & Y } cā [} { ^} cæ A * as * i As a { } a & A * a } æ A * A * a	Ô[}dæ&q[¦Á	Ô[}∙d`&cąį}ÁÁ

# 6.12 Non-Aboriginal heritage

ŒÁÙœæ∿{^}ơ∱, Á₽^¦ãæ≛^ÁQ;]æ&óAQÙUPODÁœæÁà^^}Á,¦^]æ\^åÁ{{¦Ác@Á¦¦[][•æ‡ÁQÜÚÙÊÁGEFÍDĚÁ/@Á -∄å∄\*•Áį,ÁÙUPOÉ#Á\*{{æ+ã\*^åÁå^|[, Áæ)åÁs@Á\*||Á^][¦ó%#Á,¦[çãå^åÁeæ∕OE]]^}åã¢AÕÈÁ

#### 6.12.1 Existing environment

Ô[&\æq[[Á@|æ)åÁ@æeÁ@æåÁ(æ)^Á•^•Á∄&^Áár ÁðaróÁ[•dē\*od/{^}oÁ\*•AæeÁæá/¦ãr[}Á§JÁFÌHUÈA/@•^Á \*•^•Áæh^Áa¦[æå|^Áa¦[\^}Á§]d[Á{[`¦Á[æð]Å]@æe^\*Ka@A&[}çã&oA]@æe^Ê&@A^-{[¦{æd]¦^Á]@æe^ÁœA •@3]à`ååå]\*Áæ)åÁ§Jå`•dãædA]@æe^Áæ)åÁs@Á^&¦^ææå[}ædA]@æe^ÈA/æà|^ÂËOFOFA]¦[çãå^•Áæã[^|å]^Á.^Á ]^¦ã[å•Á]-Á&[}•d`&aã]}Áæ)åÁ\*•^•KA Á

Væà |^Â Ë EFKÁVã[ ^|ð] ^ A[ , Á&[ } • d` & cã] } Áse) å Á • ^ • ÁsezÁÔ[ & kæ[ [ Á@ |æ) å Á, [ • cÁ ^ cd^{ { ^} o/A

Years	Construction and use
FÌ HƯËÈÌ Í €ÁÁ Á	$ \frac{\dot{\cup}[\ddot{a}[]}{\dot{A}} \dot{A} $ $ Q \dot{A} \dot{F} \dot{H} \dot{E} \dot{A} \dot{C} \dot{C} \dot{A} \dot{A} \dot{a} \dot{A} \dot{A} \dot{A} \dot{A} \dot{A} \dot{A} \dot{A} A$
FÌ Í €ËÈÌ Ï €Á	<u>Øāc ¦[^ÁÖ[&amp;\Áa}åÁY [¦\•@] ÉA @]Áa`ā¦åā;*</u> Á Òæl¦^ÁB Ás@Árìl € ÁnóA@anáAà^&[{^Áar]]æh^}oks@anako@AÕ[ç^¦}{^}oh @3]^ælå•Á,^\^Át[Á {[ç^Á+[{ÂÙ^å}^^AÔ[ç^ÊAÔ[&\æt[A@]æ]åÅ;æ A`**^•o*åÁæe Áez4şãæai ^Áædo*]}æaãç^ĚA Y[¦\Áa^*æ]Á]}Ása4Øãc ¦[^ÁÔ[&\Æ]ÁFÌIIÁæ]åÅ;æ As@Aã•oÆ}å^!cæ\ā]*Á[Aãr Áā]åÆ]Á&@A &[∥[}^ÊAØãc ¦[^ÁÔ[&\Á]æA¢&æçæe*åÁ4[{ Á[ ããA[&\Áæ]åA4[[\Á]ā]^Á^æe Á æ]åÆ\*æ]Á^\çã&A @Aai•oAj;[b&soA[¦Á@Aõãc ¦[^ÁÔ[&\Á]æA?] V@Áã•oAj;[b&soA[¦Á@Aõãc ¦[^ÁÔ[&\Á]æA?] P^¦æåÁa^A§A[}çã&oĚAA*`à•^``^}d^Á^]æãA?aáAæ]åÁ*A;çã&^åÁşããā]*ÁÜ[^æAApæçæAA@]•ĚA

Years	Construction and use	
FÌÏ€ËÈÌÌ€Á	$ \begin{array}{l} & \left(\frac{\partial a}{\partial a} + \frac{\partial FÌ Ì €ËÈ J€Á	<u>Ù@a]à`ā¦åā]*Áæ)åÁ^]æaiÁæ&amp;cā;āa?•LÁÙ`c@;¦æ)åÁÖ[&amp;\</u> Á OE[[c@;¦Ás¦^Ás[&\Á,æAs~*`}Áæ)åÁ&[{] ^c∿åÁ5jÁr`ÌJ€EĂW} ã^Ác@ÁOãc:¦[^ÁÖ[&\É&@A Ù`c@;¦æ)åÁÖ[&\Á,æÁæà ^Á&[Áæ&&[{ {[åæe^Ác@,Áæå*^¦Áç^••^ •Á,[, Á&[{ā}*Á5jd[Á Ù°å}^^A?æàà[`¦EÁ
FÌ J€ËJH€Á	<u>Ô[{ { [}_^adro@Áz-æaçad4ÁÖ[&amp;\^ætå</u> Á Q\ÁFJFHEÁ,}}\'•@3]A{-Áx@/Áar aa)åÁ, ærÁtaa)•^¦¦^åÁ'{[{ Áz^, ÁÙ[čo@Áy æd^•Át[áko@ Á Ô[{ { [}, ^ædro@Áxa)åÁa^&æt{ ^Áx@ Áa[&\^ætåÁt[\Áx@ ÁÜ[^æd4ÁCE•dætaaa)Áz-æçî ÈÁ	
FJH€ËFJIÍÁ	Ù@a]àčājåāj*ÁsejåÁsi[&\^ælåÁ[¦ÁÙ[čo@ÁY^•oÁÚæ&ãã&Ásič¦āj*ÁY[¦ åÁYælÁGÁ[  [];āj*Áæe Á [-ÁÙāj*æ][¦^ÈÁ	
FJI Í ËFJÎ Í Á	OBååããā[}æ‡Án@3]à`ā†åā]*Áæ)åÁ^]æaãLÁ^-ã0Á;-Á/Ë& æe●Á`à{æ4ā]^●Áæ)åÁ¤æçîÁå^●d[^^¦●Á ÇÈÈÉRTOÈÙÁX[îæt^¦Áæ)åÁ?TOÈÙÁXæ{]ãî^DÁ	
FJÎ Í ËFJJGÁ	Ù^¦ça&^Áæ)åÁ^-ãaÁ,-Áuà^¦[}Á& æ••Á,-Á*`à{æ+ā]^•Áæ)åÁ&[}•d`&aā,}Á,-ÁPTOÈÙÁÙ`&&^••. Ö[&\^æåÅ& [•^•Áş)ÁFJJGÉA,æ&@3,^¦^Á-[ åÁ,~-Áæ)åÁæà[ĭoÁ,€Ás`ā¦åā]*•Áæ)åÁ*^ç^¦æ4Á ,@e¢ç^•Áæ^^&^{{[ ã:@*åÈÁ	
G€€FË ]¦^∙^}ơÁ	Ù^å}^^ÁPælà[`¦Á20^å^¦æaāį}Á/¦`•o%ae•`{ ^•Á&[}d[ Áţ-Ás@/Áai æa}åÁţ  [¸āj*ÁszAsű^&æaå^Á [-Áşjæa&ozāçãĉ ÈÁQe æ)åÁ^[]^}^åÁξ[Ás@/Áj`à a&AşjÁG€€ÏÁξ[  [¸āj*Á^¢c^}•ãç^Á^{ ^åãæaāį}}Á æ)åÁ^@ænàājãazæaāį}ÈÁ	

# 6.12.2 Heritage listings

Ô[&\æq[[Á\$ā;Ájā;c^å,Á[}Áx@^Á[[][], ā]\*Á^\*ã;c^\+KÁ

#### World Heritage

 $\hat{O}[ \& aet [ Ae|a] aA ae A^* \tilde{a} c^{A} above Aed above Aed A above Above OÙ OÙ A' [ || aAP^{aet A} ae A ae A ae A above Aed A above A abo$ 

Item	Address	Description of protected area
OE•dæ‡ææ)Á Ô[}çã&cÁÚãe∿∙Á	Ô[&\æt[[Á@()æ))åÁ	Œa[ĭơÆTÌÁ@eeb∰ájÁÙ^å}^^ÁPæebà[ĭ¦É∰a^ç,^^}ÁÓã&@d¦[ç^Á Ú[ājơÁeep)åÁY[[ļ,3&@ÁÚ[ājdÉ&&[{]¦ãrāj*Ás@?Á,@tļ ^Aj,~Ás@?Á Qe æe)åÁ&[Á[,Á,æer\¦ÈĂ

#### National and Commonwealth Heritage

 $\begin{aligned} & OEA^{A} & a & OAE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} & a & AE^{A} &$ Á

 $Vaaa|^{\hat{A}}$   $\dot{E}$   $H_{\hat{A}} = a_{\hat{A}} a_{\hat$ 

Item	Address	Description of protected area	Significance	Approximate distance from Cockatoo Island Wharf
Ô[&∖æ[[Á@(aa)åÁ	. Ü[∶^  ^Ê£pÙYÁ	Œa[čo/frìÁ@æ£255, ÁÙ°å}^^Á Pæ÷à[č¦/šå^ç,^^}Á Óã&@`¦[ç^ÁÚ[ā]o/sæ)åÁ Y[[ , 3&@AÚ[ā]oÆA &[{]¦ã:ā]*Á@Á, @[]^Á [-Ác@ Á@[æ)åÁ§[Á][, Á , æe∿¦ÈĂ	∖Þæaāį}a¢Á	Yão@3)ÁÙčå^Á ŒL^æÁ Á
Óæ⊹¦æ&∖•ÁÓ∥ &∖Á	Ô[&\æq[[Á@q æ);åÁ	Úælon[,~Áx@∘ÁÚ¦ã;[}Á Óæl¦æ&\∙ÁÚ¦^&3]&6ÉÁ Ô[&\æ[[Á@ æ);åÉÁ Ù^å}^ÁPælà[č¦Á	Ô[{{[},^æ¢@4	\ <b>HH€∕(</b> ^d <b>^•Á[</b> čœÁ ,^•ơÁ
Óậ^[  æớÖ¦[ ` ] Á	Ô[&∖æt[[ÁQ æ)åÁ	Ô[{]¦ã^•ÁÓặ[^ æÉÁ -{!{^\A Ù`]^!ā,c^}å^}cqÁ ``æc^!•Á9;åA ^¢c^}•ã;•ÊAq}^A ôā[^ æÉÂU^{ æ3;3,*Á `}å^!*![`}åA`ä[•Á! A ôā[^ æÉÂU^{ æ3;3,*Á `}å^!*![`}åA`ä]•Á! A [`c@Ê^æof;AÓā[^ æÁ æ3;åA']!c@Ê^æof;æ64;A •{`æ} Áæ;å°q}^A &[cæt^A[`c@æof;A ôā[^ æÆQ •AQO ^!\Á [_ÁU/ccÂU/••ã]}•Á &[cæt^DÉÔ[&\æt[[Á @]æ;åÊU^å}^A	Ô[{ { [ } , ^梜́	, FI €Ά[ ^d^• Á[ č α@Á , ^• αΆ
Ô[&\æq[[Á@()æ);åÁ Q\å`•dãæ‡Á Ô[}•^¦çææā[}Á OE!^æA	. Ô[&∖æq[[Á⊋ æ);åÁ	CEa[čo/FÌÁ@eeE355,ÁÙ^å}^^ Pælà[člÉ3a^ç,^^}Á Óã&@l[ç^ÁÚ[ājo/se)åÁ Y[[ ,ã&@ÁÚ[ājdÊ4 &[{]lã:āj*Á@@Á;@2]^Á [-Ác@A581 æ)åÁ5[Á[,Á ,æe^lÁ	Ô[{{[}, ^æ¢o@⁄	∖Yão@3)ÁÙčå^Á OET^æÁ

Item	Address	Description of protected area	Significance	Approximate distance from Cockatoo Island Wharf
Øãc¦[^ÁÖ[&∖Á	Ô[&\æt[[Á@( æ);åÁ	Ù[` < <li>Ù[` &lt; </li> <li>(40)[ &amp; ( ast = [ A ( ast = as</li>	x	. H <b>F€</b> Ą́ ^d^• Á[čo@Á
T^•• <i>Á</i> ₽æ‡Á	Ô[&\æt[[Á@ æ]åÁ	Úæ¦dá(-ÁÚ¦ã[}ÁÓæ¦æ&∖•Á Ú¦^&ã)&dÃÔ[&∖æa[[Á @ a);åÁ	Ô[{{[}, ^æ¢@⁄	∖ <b>Η+€Ά</b> (^d^•Á•[čo@Á ,^•αÁ
Ta‡aãæa÷ÁÕčæsåÁ Ü[[{Á	Ô[&\æt[[Á@ æ]åÁ	Úæ¦o4(, -ÁÚ¦ã[}ÁÓæ¦æ&∖•Á Ú¦^&3), &dÃÔ[&∖æq[[Á @ a)), åÁ	Ô[{{[}, ^æ¢@⁄	、Η+1€Ά(^d^•Á[čo@Á _^•σÁ
Ú[ ^ \Á P[ ` • ^Đǔ ` { ] Á P[ ` • ^Á	Ô[&∖æŧ[[Á⊋ æ)åÁ	Y^•ơΆ\}åÁį́-ÁÔ[&\æe[[Á Q aa)åÊAÙ^å}^^Á Paaàa[ĭ¦Á	Ô[{{[},^æ¢@4	.l€ÍÁ(^d^•Á[čo@Á ,^•oÁ
Ú¦ã{[} <i>Á</i> Óæ¦æ&∖∙Á Ú¦^&3j&oÁ	Ô[&\æt[[Á@ æ}åÁ	Ô[{] ¦ã ā * Ásæ!æ& A & []  ^¢, Á, Á] iã [] Ásj åÁ @ •] ãzzt Á æå E& [] \ Á @ • ^ Ásj åÁ ^• A @ åÁ æj åÁs Á} & [] ^ åá @ åÁ æj åÁs Á} & [] • ^ åÁ& [] \ Á aj åÁs Á} & [] • ^ åÁ& [] \ A - [] { \ A [ - 3x \ c A & a A ] [ { \ A [ - 3x \ c A & A A ] [ [ { \ L [ { ^ !, Á ] a a z & A A ] [ [ { \ L [ { ^ !, Á ] a a z & A A ] ] [ [ { \ L [ { ^ !, Á ] a a z & A A ] ] [ [ { \ L [ { ^ !, Á ] a a z & A A ] ] [ [ { \ L [ { ^ !, Á ] A ] ] ] ] A A ] Å A [ [ { \ L [ [ A ] A ] ] ] ] A A ] Å A [ [ ] [ A ] A ] ] ] ] A A ] Å A [ [ ] [ A ] ] ] A ] [ ] A ] ] A A ] Å ] A ] A ] A ] ] A ] ] ] ] ] ] ] A ]		、 <b>Η₩€Ά</b> ͺ^d^•Á[čơ@Á , ^∙ơÁ

Item	Address	Description of protected area	Significance	Approximate distance from Cockatoo Island Wharf
Ùĭ c@⊹ æ) åÁ Ö[ & ∙Á	Ô[&∖æ[[ÁQ æ)åÁ	Ö¦^Á;¦Á;¦æçā;*Áš[&\Á;}Á •[čo@Ë;^•oc';}Á;ãô^Á;-Á Ô[&\æti[Á@;læ)åÊÅ @!^ÁñoÁarÁ¢&æçæe*åÁ ā]d[Á©;Áar]æ;å°¢Å •æ)å•d[}^ÈV@;Ás[&\ÁarÁ GF€A;^d^•A[}*Áæ}åA c@;Áa]ÁæcA@at@ásã^AárÁ JĚIÁ;^d^•ÈÅ		、HG€Á(^d^•Á[čα@Á ,^•αÁ
W}å^¦*¦[`}åÁ Õ¦æajÂÛa∦[∙Á	Ô[&\æ[[Á@ æ];åÁ	CEa[čoÂí Á, ^d^•Á[čo@Á ^æ•oÁ, ÁÓã[ ^ æ&e) åÁ ã[{ ^åãæe^  Âa^ç, ^^} Á c@ Á&[cœe*^Á, æ\^åA Ü[ààÁQÔ ^\\ Á, ÁÚ^cc Á Ù^••ã] * ÁÔ[cœe* ∩Dée) åÁ c@ Á&[ã-ÊZÔ[&\æe[[Á @ æ) åÊÙ^å}^^ Á		، Fl €Áį ^d^•Á [čo@Á ٍ^•oÁ

Á ,281\*`¦^ÂLËFJÁ,¦[çãå^•Áæá{[&ææá]}}Á(æ}Á(~ás@^Á^]æ}ææ^ÁÔ[{{[}}\_^Aqc@ÁR^¦ãæ\*^Ááz^{•Ááz^{•Aáz}A/æà|^Á \_ ÎËCHEXÁ





Øãt č¦∧Á ËFJKKŠ[&ææāį}Á(æ}Á(æ}Á(~å@A^]æbæe∿ÁÔ[{{[}, ^æþo@AP^¦ãæet^Ááev{•ÁÁA

 $P[c^{A}) = \frac{1}{2} \left[ c^{A} =$ 

#### **State Heritage**

#### Section 170 Registers

Ù^&qāt}ÁFÏ€Át, Ás@ ÁHeritage Act 1977¦^``ã^•ÁÙcæe^ÁÕ[ç^¦}{ ^}ớOE\*^}&& •Át[Á^^]Á^&[¦å•Át, Á @¦ãæ\*^Áãc^{ •Át, }^aáAt¦Át]^¦æe^åAsi ÁstÉA/@•^Á^\*ãrc^¦•Á&æa}Ási^Át[`}áAt}Ás@ Áp ÙY ÁP^¦ãæ\*^Á Q;ç^}q[¦^ÈÓDEA ^æ&@At, Ás@ar/ábjç^}q[¦^Á;æe Á&æd¦ã^åAt`oAt}AGAT`[^ÁGEFÍÁæa}åÁ;[Áãe^{ •Át}AÔ[&\æt[[Á Q|æ)åÁ;^¦^Ása^}çãa³åÁse Ási^ā;\*Át[&æe\*åÁ;ãc@at, ás@Atčå^åEA

#### Local Heritage

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#### 6.12.3 Heritage significance assessment

#### Assessment of Cockatoo Island

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Ô[&\æt[[Á@|æ]å/&i Á,æło4, ÁæÁNÞÒÙÔUÁY[¦|å/R^¦ãæť^Á&r{ÉABÈÈCE•dæjān}/Ô[}çã&oÁUãc•ÉAQ, ^ç^¦ÁtaÁ ã Á&[}•ãt^\\*a/Åæ Áæj,ætā]}ætļ^Á ∄ }ãã&æjóA@¦ãæť ^Ásc{ Æj Ásr { Æj Æst Å @ÉAQÉ •dæjān} ÁÔ[}çã&oÁUãc•ÉAQ, ^ç^¦ÁtaÁ æt]]¦[]¦ãæc^Át[Áæ••^••Á@Á ඞੈ}ãã&æj&^Á; Ás@Á@|æ)å/Åæťætj, •óK@Ápætā]}ætÁ@¦ãæť ^Á ඞੈ}ãã&æj&^Á &¦ãæ\šæÆs Á^oA, čÁš ÁGuidelines for the Assessment of Places for the National Heritage ListĚÁ Á

V@Aār|æ)åÁ@æeAà^^}Aæe•^••^åAæeAæA,@[|^Aæ)åAānAārAā(As[}&|`å^åAb@æeAÔ[&\æt[[A@|æ)åAA{ à[åāt•A [`orcæ)åā]\*A@¦ãæe\*^Açæ†`^•A;}A@AàæeãaA;A®e@ac[¦3&æ4A;ç^}orEAætã:EA^•^æ&@4,[or}æt&BEA;j&a]æ4A &@eebæ&cc\'ärca&eEAc^&@j&az#As&@a;ç^{ ^}oAejåAæeo[&ãæeta]}•Ájã@As@A&[}ç&acAejåA;A?}æ4A\ætAe@A {^~{{}}{} { ^^cKs}at;}eat[\^A\'ædeA\_EA\_EA\_EA\_EA\_EA\_A@ja`äåa]\*A`\ætAv@o+Açæt`^•AæA^A`\ætA^A`&&AeA { ^^cKs}at^\at}occea}åa]\*A&a

#### Assessment of individual components on Cockatoo Island

Væà|^ ËCHÁã o Ás@ Á§j åãçãå ǎæ∱&[{][}^} o Á[} ÁÔ[&\æt[[Á@|æ] åĚV@ ÁÙUP CÁCE]]^} åãcDÁ@æe Á •^å Ás@ Á \*¦æå∄ \*Á^•o t{ Aŝ^¦ãç^å Á¦[{ Ás@ ÁAssessing heritage significance ÁÇÞÙY ÁP^¦ãæ\* ^ÁJ ~ãt^ÁG[¦{ ^¦DÉA GEEFDÁt[Áŝ^ct\{ ∄ ^Á§j åãçãa ǎæ¦Áã cÁ ã }ããtæ) &^ÈÁÁ

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Q;][¦cæ);q^Áx@/Áxee•^••{ ^}o%&[}~ã{ • Áx@æcÁx@/Áj¦[][•æ4Á,[`|å Á,[o%a[]æ&oA[}Åxe);^Áaj;åãçãã`æ4Á;ãc^Á •ã\*}ãã&æ);&^ÈÁÁÁ

### 6.12.4 Potential impacts

#### Construction

#### Impact on physical fabric, attributes and setting

V@~Áj¦[][•æ‡Áşiç[|ç^•Á,[¦\Á,ão@ajÁY[¦|åÁse)åÁpæaāj}}æ‡ÁP^¦ãaæ\*^ÁŠãró&x`¦daþæ\*^•Áse)åÁse‡•[Á,[¦\Á à^^[}åÁo@[•^Á&x`¦daþæ\*^•EÁ

Á

Ú¦[][•^åÁ,[¦\•Aa^^[}åAs@Á@\äazet^Á&`¦dajaet^•Aaj&|`å^Ás@Aa^{[|ãaa]}ÁsenjåÁ^{ [çæaA[-Ás@A\*¢ã+daj\*Á \*ænj\*, æîÁsenjåAj[}d[[}ÁseeAÔ[&\æa[[Á@|ænjåÁY @est-É5enjåAs@A&[}•d`&da]}Áj.AseAj^, As\äa\*^É\*tænj\*, æîÁ ænjåAj[}d[[}ÈA

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QÁ^|æaā] } Át Ác@ Ác^{ ] [ |æ^ Á^||^ Áæsājātā\*• Á, | [ ] [ •^å Ásækó@ ÁÔæ; à^|ÁY @æ-Æsávás Á, [ c^å Ás@æxásæ Ác@ Á @æ-Æsí Áse¦^æa\* Á; ] ^ |æaā] } æļÁ[ |Á, |^æe\* |^ ÁslædÆse) å Á, [ Ár¢ārcā] \* Áæà | ãs Á, ^ Ác@ Á, @æ-Á, [ \* |å Á, ^^å ka [ Áso Á ætc'!^å ÈÉV@ Ásæå å ãtā] } Á; -Ár¢ārcā] \* ÁU] æļÁÜ/æå^!• Áse) å ÁU/|-ÁU/!çã& ÁT æse@3, ^Á+[ { ÁÔ[ & aæi [ Á@|æ) å Á Y @æ-Æsí Ás@ ÁÔæ; à^!AY @æ-Á, [ \* |å Á^\* ă a\*Ase) & @ ! ā] \* Ási a |ā] ā \* Ásj a [ År¢ārcā] \* Ás[ } & a\*Ase ( A ãrÁ] [ óka) cāsājæc^å Ás@æxás@árÁ, | Áse} ^ Á; -Ás@ Á; c@ !Ár{ } [ |æ\* Á; [ |\•ÊA\* & @ásæ Ás@ Áse[ { ] [ \* } å Á; | Á æê-āj å āj \* Á ã } • Á+[ { Ás@ ÁÔæ; à^!ÁY @æ+Ási [ Åsæ; æ\* ^ Á\*ãc@ !Ásœ Ásœ Ás@ Áse; { ] [ \* } å Á; | Á æê-āj å āj \* Á ã } • Á+[ { Ás@ ÁÔæ; à^!ÁY @æ+Ási [ Åsæ; æ\* ^ A\*ãc@ !Ásœ Ásœ Ás@ Áse; 8 & A; -Æsi a ã; ãa\* æ}

ẫơ {• Á, } ÁÔ[& áæ[[Ăq)a; å Á, ¦Ác@ Áq)a; å Á, Å Á

FGJ

OZÆSÔXODZÁC^^^¦ÁÔ@aajc^¦ÁìÈËDÁ@aae,Áà^^}Á`}á^¦caat^}Á{[¦Ás@^Áj¦[][•aa†ÉÁ/@aacÁae••^••{ ^}oK&[}&|`á^åÁ c@aacÁc@¦^Á [`|åAà^Áācd^Áçãr`aa∱&[]æ&oÁ¦[{ ÁscÁ@¦ãaæ\*^Áj^¦•]^&cãç^Áj}ÁÔ[&\æt[[Á@|aa)åÁj¦Áão•Á ājåãçãã`aahÁ\|^{ ^}o•ÉÁ

#### Impact of proposal on potential archaeological resources

Þ[}^Áį-Ás@Á;¦[][•^åÁ,[¦\•Á,[`|åÁ^``ã^Á; æbş¦Á?æb;@[¦\•Á; Áæ}^Á]ā à ĚkūA%a; Á@;¦^-{¦^Á&]}•ãå^¦^åÁ c@æcKs@;¦^Æa;Á;[Ás@^æc4; Æsäā^&c4%a;]æ&c4%a; Áæ;^Á;[c^}cãæd,Áæb&@æ^[|[\*ã&æd,Á^•[`¦&^•ÈÁ Á

CEJ]^}åãrÁÁÁ, Ác@ÁÔ[&\æt[[ÁQ|æ)åÁTæ)æt^{^}oÁÚ|æ)ÁŒF€Á&[}cæāj•Áæá, æ]Á, Áæ&&@ev[|[\*ã&æ‡Á •^}•ããçãĉÊÁ, @3&@Áão Áa[coAs@AÔ[&\æt[[ÁQ|æ)åÁTæ)æt^{^}@d-ÁæjåÁ©EF€Á&[}cæāj•Áæá, æ]Á, Áæ&&@ev[|[\*ã&æ‡Á æ&@ev[|[\*ã&æ‡Á][c^}cãæ‡Áå`^ÁtjÁc@Á`¦çãçāj\*Áæ&@ev[|[\*ã&æ‡Á\*|^{^}oÁ;A]\_Åå^{[]}Åå^{{[]} a & &`!^åAd`&c`!^•Á, Ác@Áå[&\^æ±Áæ]åáÈV@•^Á`¦çãçāj\*Á\*|^{{ ^} o Áœç^Aj[c^}caæ†Át] [à &`!^åAd`&c`!^•Á, Ác@Áå[&\^æ±Áæ]åáÈV@•^Á`¦çãçāj\*Á\*|^{{ ^} o Aœç^Aj[c^}caæ†Át] [à &`!^åAd`&c`!^•Á, Ác@Áå[&\^æ±Áæ]åÁ [à &`!^åAd`&c`!^•Á, Ác@Áå[&\^æ±Áæ]åÁ [à &`!~åAd`&c`!^•Á, Ac@Áå[&\^æ±Áæ]åÁ [à &`!~åAd`&c`!^•Á, Ac@Áå][&\^æ±Áæ]åÁ [à &`!~åAd`&c`!^•Á, Ac@Áå][&\^æ±Áæ] [à &`!~åAd`&c`!^•A, Ac@Áå][&\^æ±Áæ] [à & atá aj [a à aj ]\* (a & atá aj ]\*

#### Operation

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#### 6.12.5 Safeguards and management measures

Impact	Environmental safeguard	Responsibility	Timing
Þ[}ËÁ Œa[¦ãtājæ¢Á @°¦ãaæ*^Á	Q المحكى ا محكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى ال محكم المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى المحكى ال محكم ا	.Tæ¦ãũą́(^Á	Ú¦āį¦Á &[}∙d`&cāj}Á
Þ[}ËÁ Œa[¦ãtājæ¢Á @°¦ãuæ*^Á	OЩÁ [ ඎa • Á&[} œa, ^å/& Á@ÁSydney Harbour Federation Trust Management Plan - Cockatoo Island of 2010Á @` å/à^Á[  [, ^åÁ å`¦ā]*Áæ Á, œe^^•Á[Á@A, œa, Á]*¦æå^ÈA	Ô[}dæ&q[¦Á	Öĭ¦aj*Á &[}∙dĭ&caą̃}Á

Impact	Environmental safeguard	Responsibility	Timing
Þ[}ËÁ Œa[¦ātājæ‡Á @°¦ãaæ≛^Á	OE[ Á^ ^çæ) of cæ-EXS[} dæ&q[ ¦• Áæ) åÁ • `à&[} dæ&q[ ¦• Á, ā] Ás^A(: æå^Áæ; æ^A (a, -Á@) ā Á • cæč q[ ¦^ Á[ à] ā æā]; }• Á[ ¦Á@ ¦ãæð ^Á } å^¦Á@ Á Environment Protection and Biodiversity Conservation Act 1999, Á@[ `* @A@ Á ã& Á ā] å` & cā]; } Áæ) å Á§[ [  à[ ¢ Áæ4], • ÉÁ	Ô[}dæ&q[¦Á	Ú¦āį¦Á &[}∙d`&cāį}Á
Þ[}ËÁ OEa[¦ãtājæ¢Á @°¦ãaæ*^Á	OĦÁ&[}•d`&aā[}Ácæ-Á āļÁa^Á§jå`&c^àÁ§jÁ@A Ü[æå•Áæ)åATælātā[^ÂU^¦çã&^•ÁStandard Management Procedure - Unexpected Heritage Items Procedure ÇG€FÍDÁæ)åÁjā Á ã[] ^{ ^}c‰@áÁj¦[&^å`¦^Áj@\¦^Áj^&^••æ^ÈÁ	Ô[}dæ&q[¦Á	Ú¦ā[¦Áæ);åÁ å`¦ā]*Á &[}∙d`&cā[}ÁÁ
Þ[}Ë Œa[¦ātājæ‡Á @°¦ãaæ*^Á	OZÁ^&[}}æãa•æ)&^Ásiãç^Á,ã Ási^Á}å^¦œah^}Ási^ÁsoÁ •`ãææà ^Á`æ¢ãã?åÁ;æ3ããã;^Áse&@æê[ [*ãroÁ;¦ã;¦Á d[Ás@Á&[{{^}&^{ ^}}oA; ^}oA;Á;[¦\•Át;Á&[}-ã{ Á;[Á {æ3ããã; ^Áse&@æ6[ [*ã&æ¢Á^{ æã;)•Å;ã /Asi^Á ã[]æ&c^åÁ	Ú¦[b∿&cÁ Tæ}æ*^¦Á	Ú¦^Ë Ô[}∙d`&cą́[}ÁÁ

## 6.13 Hazards

#### 6.13.1 Existing environment

V@:Ár¢ārcāj\*Ár}çā[}{ ^}déarÁ&|^æk4(,-Á&[}•d`&cāj}Á@eeæbå•ÈÁ

#### 6.13.2 Potential impacts

#### Construction

V@^Á{[||[, ā]\*Á@ee æ¦å•Áæ);åÁã\*\•Á;[`|åÁa^Áæ••[&ãæer^åÁ;ão@Áo@^Á;¦[][•æ‡Áå`¦ā]\*Á&[}•d`&aā[}KÁ Á

- Á Ô[] d` &a‡ Å; هو الأهلية في الأهلية ( الأهلية الأهلية في الأهلية في الأهلية في الأهلية في الأهلية في الأهلية في الأهلية في الأهلية في الأهلية في الأهلية الأهلية المعلمة الم معلمة المعلمة ا معلمة ال
- •Á Ô[}•d`&cāt}Å, æc^¦ãaq+ÊÅ, æe c'•Áag) åÐtþ¦Át àb/8co-Á@æç;^Ás@Aj[c^} cãaqÁt[ÁæqlÁt[{Á&t]}•d`&cāt}Å àæ\* ^•Át[Af, c@¦Á&t]}•d`&cāt}Åç^••^|•Ásj ct Ás@AÚæ;!æt æccæAÜãç^¦Áæg) åÐtþ¦ÁÙ^å}^APæàa[`¦Á&æč•ã]\*Á , æc^¦Át[||`cāt}Åæg) åÁã+\Át[Á@{ æ}Á@æqc@Á
- •Á OZÁ ] āļļÁ, Á@ 妿č jābÁjčābá Á; Áč ^ Å Á ^ å Æj Ás@ Á&[} dč & Cāt } Á, jæj oÁ; lÁč č ā { ^} oÁ@æe Ás@ Á; [ dč \* čāt Áš ^} cč lÁc@ Á, æcč i • Á; Ás@ ÁUæelæ; æcæa£Üãç^ lÁsej å Đ lÁU å } ^ ÁPæbà [č lÁ
- •Á Ô[}•dč&áī}Á,[¦\`\+ Á@æç^Áxô@Á[c^} áīæk/át[ÁæļÅ+][{Ás@Á, @æb-Ăt¦Áş, Ás@Á)æ}¦æ; æcæaÆÜãç^¦Á ][c^}aĩæļ^Á^•č|a3;\*Á\$jÁ,@\*38æk/4\$jb`¦^Át¦Ás¦[;}3];\*ÉÁ

#### Operation

V@Á,\[][•æ‡Á,[`|åÁā,]\[ç^Ác@Áæ•^Á,Á,æ)[^`çlā)\*Á[¦Á^\!a∿-Áa]|'[æ&@3)\*Áa)å&n]æ;dā)\*Á{[{Á Ô[&\æa[[Á@]æ)åÁY@ed-ÈV@Á,[}d[]}á[[}Á,[`|åÁ@eç^Áç,[Áa^\c@Á`ãææ)|^Á[¦ÁPæàà]`¦ÁÔãĉÁơ\¦a∿-Á ÇPÔØDÁC}}^Á,}Á PÔØÈV@Á[`c@\}Á:aa^Á,[`|åÁa^Á[¦Án&\~æāa]}æ‡Á\*^Áa,c@\Áç^\*\*\*^|eÈAQÁ,[`|åÁa+[Æa‡A]] PÔØÈV@Á[`c@\}Á:a^Á,[`|åÁa^Á[¦Án&\~æāa]}æ‡Á\*\*^Áa} à^Á\*^å^åÁ\*ÔØÆÁ^``ā^åĄ,}Á;&&æ=ā]}ÈÁ

V@A\$a^¦c@3}\*Áæ&A•Á,[`|åA\$a^Á[&æeA\*åÁ,ãc@3;A\$a^]^¦Á,æeA¦ĚÁV@ã+Á,[`|åA\$a^Á\*¢]^&cA\*áA{[Á;ājā[ã\*A\$a@A ][••ãaājācÂ,Á;A\$j,&ãa^}@A\*`&@AzeA\$ •æA\*cÂ,A?æ\*`|^•ÊÅ,@3&@4\$,[`|åÁ^å`&^Ác@A\$[c^}caeA[['A\$j,&ãaA\*}@A\$[']æ&cāj\*Á;}A\$@A\*}çã[]{ { ^}oAze}A @{ æ}Á@\*æc@Ă

Šã^Á,¦^•^¦çā)\*Á``ā]{^}ơÁ.[`|åÁa^Á,'[çãa^åÁ,@38.@45]&|`å^•Á([`¦Áā^Áa`[^•Á;ãčæe^åA;]}Ás@A ][}d[[}Eben)åÁsaA æ^ĉÁæaå^¦Áse&&^••^åÁçãæak@Á5]•ãa^Áæ&^EbA

#### 6.13.3 Safeguards and management measures

Væà|^ÂİËGÍKÁÜæ^\*ĭæ¦å●Áæ)åÁ(æ)æ\*^{ ^}oÁ(^æ\*`¦^•Á[¦Á@ææ¦å●Á

Impact	Environmental safeguard	Responsibility	Timing
Pææå∙ÁÅ	OEÁã^Á,¦^•^¦çāj*Áāj*ÁsejåÁse]]¦[]¦ãæec^Áãi•oÁsaãaÁ ]¦[çãrā[}•Á,ā Ása^Á[&æec^åÁ,ãc@3jÁs@ Á&[{][ັ}åÁ æ)åÁ[}Ásee Ásiæe'*^•Ásič¦āj*Ás@ Á&[}•dč&cā[}Á ]^¦ājåÉÁ	Ô[}dæ&q[¦Á	Ô[}•d`&cā[}ÁÁ

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Uc@\!Á;æ^\*`æ¦å•Áæ)åA(æ)æ\*^{ ^}oA(^æ`\^•Ác@æA,[`|åÁæåå|^••Á@ææå•Áą[]æ&orÁæh^Á&a^}cãæ\*åŧA Ô@æjc^\¦Ä:EA

# 6.14 Climate change

#### 6.14.1 Strategic framework

V@ ÁQ c<sup>·</sup>¦\*[ç<sup>^</sup>}{ ^} cæļÁÚæ) ^ |Á;} ÁÔ|āj æc^ÁÔ@e) \* ^ Á@ee Á;¦[å`&^å Á&lāj æc<sup>^</sup>Á&@e) \* ^ Á;¦[b &cāj} • ĚQ Á CE • dæjāæÉas[co@k@ ÁÔ[{ { [}, ^æjco@U&&a}; cäā&Áas] äÁQ å` • dãæļÁÜ^• ^æ&&@ÁU¦\*æ) ār æcāj} ÁÇÔUOU DÁas] åÁ c@ ÁÔ`¦^æč Á; ~ÁT ^c^[¦[[\*^ÁÇÓUT DÁ@eç^Á;¦[å`&^åÁ^\*āj}æļÁs[;} • &&et^å á, ½[b &cāj} • Á{¦ÁCE • dæjāæÁ ~{[{ Ác@ • ^ Á; ![b &cāj} • ĚQ ÁO€€Ì Á;@ Áb ÙY ÁÕ[ç^!}{ ^} cÅ;`à lãr @ åÁ^~aj ^ å Á&lāj æc^Á&@e) \* ^ Á; ![b &cāj} • Á ~{[ { Ác@ • ^ Á; ![b &cāj} • ĚQ ÁO€€Ì Á;@ Áb ÙY ÁÕ[ç^!}{ ^} cÅ;`à lãr @ åÁ^~aj ^ å Á&lāj æc^Á&@e) \* ^ Á; ![b &cāj} • Á ~[{ Å æ&@Á^\*āj} Á§ Áb ÙY Éá§ &]` å äj \* Á;@ ÁÙ^ å} ^ Á^\* cáj ≧ ÉQ Á\*`{ { æf É&laj æc^Á&@e) \* ^ Á; !^ å ä&cāj} • Á{ ~[ Å æ&@Á^\* áj } Á§ Áb ÙY Éá§ &]` å äj \* Á;@ ÁÙ^ å} ^ Á/\* cáj ≧ ÉQ Á\*`{ { æf É&laj æc^Á&@e} \* ^ Á; !^ å ä&cāj} • Á{ `L \* `U` å} ^ Éá§ &]` å äj \* Á;@ Á[ &æcāj } Á; ~Á;@ Á; ![][ • æ†É&c<sup>4</sup> KÁ

•Á T[¦^Á\$jc^}•^Á^¢d^{ ^Áæāj ~æaaļÁ^ç^}œÁ

•Á Pā @\'Áœç^\æ\*^Ác^{]^\æč \^•Á

•Á T [ ¦^Á;^~~^} ớį && `;!^} &^Á; Á\*¢d^{ ^Á¢d^{ ^A}}}}}}}

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V@ ÁNSW Coastal Planning Guideline: Adapting to Sea Level RiseÁÇÖ[ÚÉAGEFEDÁse]]|ã•Áξ Ás@Á ]¦[][•æ†ÉV@áÁ\*`ãå^|ā}^Á^``ã^•Ás@æak@Á{[||[¸ā]\*Á\*ã\*@Á&¦ãæás^Á&[}•ãa^\^åÁ,@}}Ás^+?j\*Á å^ç^|[]{ ^}ơ∱¦[][•憕KÁ

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- 1. Development avoids or minimises exposure to immediate coastal risks (seaward of the immediate hazard line)
- 2. Development provides for the safety of residents, workers or other occupants on-site from risks associated with coastal processes
- 3. Development does not adversely affect the safety of the public off-site from a change in coastal risks as a result of the development
- 4. Development does not increase coastal risks to properties adjoining or within the locality of the site
- 5. Infrastructure, services and utilities on-site maintain their function and achieve their intended design performance
- 6. Development accommodates natural coastal processes
- 7. Coastal ecosystems are protected from development impacts
- 8. Existing public beach, foreshore or waterfront access and amenity is maintained.

Q ÁU & q[à^¦ÁQEEJ Ás@ Á¤ÙY Á\*[ç^¦} { ^} cÁ^|^æ•^å Áãe•ÁNSW Sea Level Rise Policy ÇÖÒÔÔY ÉAGEEJ & DÉÁ V@ Áj[|a&^Á;¦[çãa^å Á^æ4Á^œ4Á^ç^|Áã^Á;|æ)}}āj\*Áà^} &@{e&\•Áse•Á{[||[, •KÁ Á

•Á I€Á&^}cā[^d^^.4à^ÂaÊ €Á
 •Á J€Á&^}cã[^d^^.4Å
 •Á J€Á&^}cã[^d^^.4Å
 •Á SI€Á&

U}ÂIÂÛ^]ơ{ à^¦ÁGEFGÊ&x@AÛcæe^Á\*[ç^¦}{ ^}ơĂ,ão@à!^,Áx@••A&a^}&@; æ\•Á§JÁ;lå^¦Á;[çãa^Á;[¦^Á -{^¢ãa;ãjãc Á§JÁ&[}•ãa^¦āj\*Á[&æ¢Á&[}åãa‡}•Á,@}Å&^c';{ ājāj\*Á\*č;!^Á@æeæåa•È&U^•][}•ãa;ãjãc Á[¦Á æå[]cāj\*Á^^æÁ^ç^|Áā\*Aj;|[b\*&ca‡}+Á[¦Á\*•A§JÁ]@a}}āj\*Á;æaÁ;læj•~^;!^^åAsæ&ká[Aj[&æ‡A\*[ç^;}{ ^}dč

Q Ác@ Ásaà•^} &^Át, -Ása) Ásaå[] c°å Ár^ænÁrç^|Áã ^Ásà^} &@tæk Át[¦Ás@ Át[ &ætaĉ Át, -Ás@ Át¦[][•ætÉkestå^•\d[] Á æ)ætî •ã Á •ã \* ÁsanÁæ) \*^Át, -ÆO[[àætAO]ãt]æer Át[å^]•Ása)å ÁsanAa^•o A\*•oãt[æer dát, ^åãæb, Ár•`]oA@ee Asa^} Á `}å^¦ææt^} EEV@ Ár•`|or Ásjå å 88æer Ása) Ár•oãt[æer å Át €Ár æshÁr ætÁr ætÁr ? \*/ætÁr ç^|Áãt ^ Ásat|[, æ) &^ Á@ee Asa^} Ásati] c°å Át[¦Ás@ Át¦[][•ætEA

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V@ Áæ]]¦[¢ã[æe^ÁT^æ)ÁPā"@ÁYæe^¦ÁTæ\ÁŢPYTDÁ[¦Ás@ Áãe^ÁāeÁæe[`}åÁFÈÌÁ[^d^•Áæa][ç^Ás@ Á :^¦[Á[ÁØ[¦ơÄÔ^}ã[]}Á/ãa^ÁÕæ`\*^ÁQZØÖVÕDÈA/@/Áæa][]d^åÁi€Á^æ>Á^æAf^ç^|Áāa^Áæe|[,æ)&^Áæaa[]d^åÁ -{¦Ás@ Áj¦[b^&oÆaá@e¦^-{¦^ÁÜŠFÈÌÌÉÁ

#### 6.14.2 Potential impacts

#### Construction

Ô|ã[æa£3kÁæ&q[¦•Á,[č|åÁ,[ơ&k[}•dæa£jÁ&[}•dč&aā]}Ák[A;dčaā]}Á;Áxá@A;l[][•æ4A\*¢&^]ơ&sč¦å\*áæåç^\•^Á,^ææ@¦Á &[}åãaā]}•Á\*č&@&æ•Á,l[|[}\*^åÁ@eæçîÁæa£jÁ;lÁ@ãt@A;3jå•Á;@3k@4;æâÁ;&&č¦Ásč¦3j\*Áx@Á&[}•dč&aã]}Á ]^lā[åÉA/@•^Á;æâÁs^|æâÁx@A&[{]|^cā]}Á;A&[}•dč&aã]}ÉA

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Ô[}•d`&aāl}Ą́[`|å/&[}dāa`c'Á([Á&|ā] æc'Á&@ee)\*^Áv@[`\*@kv@A`A}^!æeāl}Ą́(-Á`!^^}@`•^•Á`æe^•Á ~{[{ Á&[}•d`&aāl}Áæ&aã;ãað•ÈÆÕ!^^}@`•^Á\*æe^•Ą́[`|å/&a^A`^}^!æe\*åAv@[`\*@kv@A`(\*^A`!^^}@`\*^#A`\*)\* à^Á&[}•d`&aāl}Á,|æe\*¦ãed=A``ā]{ ^}cÆd:æe+9][!cæeāl}Á,'A'.\*[}}^\A&e aA( æe\*¦ãed=A&e)åAv@A`{ à[å&aA` &&eaà[}Á&A@A`, æe\*¦ãed=A`\*&@kee A&[}&''.\*

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Ô@æ)\*^•Á{[Á^¦¦^Á;]^¦ææ]} •ÁæeÁv@Á`ãe^Á;[`|åÁ;&&`¦Áæ•Áv@Á\*¢ã;c3)\*Á;@ed-Á;[`|åÁa^A@oÁ[¦Á æ]]¦[¢ã]æe^|^Á;ãeÁ;[}o@ÈÉÞ[Á;c@¦Áç^••^|•Á;[`|åÁœeç^Áæ&&^••Á{[Áv@A\*ãe^Á;i]}\*ás;[}•d`&ca]}ÈÁ

#### Operation

V@^Á,¦[][•æ‡Á@ee-Á, ājā[ā\*^å/\$er-Á\*¢][•`¦^Át[Á&|ā[æe^Á&@ee)\*^Áā`\•Ásī^ÁsJ&|`åāj\*Áæ4ã¢^å/Å\*æj\*,æîÁæ)åÁ -{[ææāj\*Á,[]}d[[}ÁæjåÁ,@&@@@eç~ÁsA^}Ås^•ð"}^åÁt[Á,¦[çãå^Áæ]]¦[]¦ãæe^Á&|^ætæ}&\•Á;A\*¢ãrā]\*ÁsāA•EA •d[¦{Á`¦\*^EA^æ&æjåÅ,æç^Áse3cāt]}Á,@at+ofset[Á&[}+ãå^¦ð]\*Á,¦[b^&c^åÁ^æA/ç^|Áã^A(ç^¦Áœ)A,^¢oÁ,€Á ^^æ+EA Á

V@:Á{[æa∄\*Á,[}d[[}Á,[`|åÁa\^Áaæa|^Ád[Áã\*^Áaa)åÁæ4|Á,ão@ko@:Áaãa^Áaj&{`å∄\*Áa}^Á&@ea)\*^ÁajÁ<^æ4(^ç^|ÈÁ V@:Á^,Á,ã^•A,[`|åÁ,¦[çãa^Áæ4\^^à[æå4(,Á[¦^Áo@ea)Á,}^A, ^d<^da^Áaa[ç^Áo@:Áaa[]o^åAí€Á^æ4A^æ4 |^ç^|ÁÇÜŠFÈDÌDaa)åAárÁa@:¦^{¦^Á`ãæaa]^Áa^•ã}}^åÁa[Áa&&A[{ { [åæe^Ao@:Áaaa[]o^àAí>æ4(^ç^|Áã\*^Á à^}&@[æa\•Á{¦Áo@:Á,¦]][•æ4ÈÁ

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\*¦^^}@[``•^^Atæ=Á\*{ã•ā[}•Á\$``|ā]\*Á\´æājc^}æj&^A(Ă`Á©A,@ed-Æbbqc@[`\*@A(Ťæjc^}æjc^}æ)&^Á^``ā^{^``ā^{^``ā^ ,[`|åÁ\$\^Á\^••Á\@ed-Á\d`&cã;cāj\*Á,@ed-Á\d`&c`|^ÁedjåÅed^Á&[}•ãå^\^åA(ā][|ÈÁ Á

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#### 6.14.3 Safeguards and management measures

Væà|^ÂİËĞÎKÁÜæ≏^\*ĭæ¦å●Áæ)åÁ(æ)æ\*^{ ^}oÁ(^æ\*`¦^●Á(;¦Á&|ã[æe\*Á&@ee)\*^Á

Impact	Environmental safeguard	Responsibility	Timing
Ô ãįæe∿Á &@æ);*^Á	QA\$#A\${[}●ãå^¦^åÁs@Aj[c^}c⿇Á{[¦Áæåç^¦•^Á ã[]æ\$korÁt[Áæ}åÅåˆÁ&{ã[æc^Á&@æ}*^Áæ4^Á ^~^&&cãç^ îÁæåå¦^••^åÁåˆÁs@Áå^•ãt}Aj Átj ]¦[][•æ‡Á	Ô[}œæ&q[¦Áæ)åÁ Ü[æå•Áæ)åÁ Tæ¦ããã[^ÁÁ	Ú¦^Ë &[}∙d`&cā[}ÁÄ

# 6.15 Cumulative impacts

### 6.15.1 Broader program of work

V@ Á, ¦[][• æ‡Á{; ¦{• Á, æ±ơá, ~ÁÜ[æå• Áæ) å ÁT æ±ããã; ^ Áơ^ ¦!^ Ár @æ± ÁV] \* ¦æå^ ÁÚ¦[\* ¦æ‡ ÁÇOY WÚDÁ, @ã&@Á , [` |å Á&¦^æ≿^Á, ¦æ&cã&æ‡ÉA`} & cãi} æ‡Áæ) å Á[à`• oÁ^ ¦!^ Á, @æ± ç^• Á, ãc@), ÁÙ^ å} ^^ ÁP æ±à[` ¦ Áæ) å Ác@ Á Úæ±¦æ‡ æzcæÁÜãç^ ¦ÉA/æà|^ Â, ÁJÁ, ¦[çãå^• Ác@ Á cæčੱ• Á, Á&č ¦!^} oÁ, ¦[b^ &or Á`} å^ ¦ Ác@ ÁOY WÚHÁ Á

Væà|^ ËËI KÁÔ` ¦ | ^} ơ Á∂Y WÚÁ; | [b^ &o- Áæ) å Á cæč • ÁÁ

FWUP – individual project	Status
Ô@&r, &&\ÁY@ee+-Á]*¦æå^Á	Ô[{{`}}ãĉÁ&[}•` cæea‡[}Áà^ā]*Á`}å^¦cæà^}/ÁÁ Ô[}•d`&ca‡[}Áæ)cã&ā]æevåÁRæa)ÁÁRč}AÁCEFÏÁ
Tậ•[}•ÁÚ[ậ;cÁY @eet-ÁA¢]æ;)•á[}Á	Ô[{{`}}ãĉÁ&[}•` cæea];}Áà^āj*Á`}å^¦cæà^}Á&A Ô[}•d`&ca];}Áàæe^Á{[Áà^Á&[}~ā{ ^åĚÁÁ

Á

U}\*[ā]\*Áç^••^|Á[[ç^{ ^} œÁ,ãc@a,Ác@AÚæ}¦æ;æcæAÜãç^¦Á';[{Ás@AØYWÚÁ;æÂ@æç^Ás@A;[c^}cãæ‡Á(Á &[}dãa`c^Á;Áx`{`|æeãç^Ási[]æ&cAs`¦ā]\*Á8[}•d`&cãi]A(Ás@A;'[][•æ‡ÄP[, ^ç^¦A\*ãç^}Ás@Ási[|æeãi]A(Á ^æ&@Á^¦¦^Á,@ed-Áse}åA8[}•d`&cãi]Aácæ\*ā]\*És@A(ç^¦æ‡|Á&č{`|æeãç^Ási[]æ&cA(Ás@AØYWÚÁsiÁ &j}•ãa^\^åA(jÁs^A)[] ĚA

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V@^Á,¦[][•æ‡Á@æ•Ás@-Á,[c^}cãæ‡Á{[Á&[}dãa`c^Á{[Á,c@¦Á&`{`|ææãç^Á\$[]æ&c•Áæ•Á{[||[, •kÁ

#### Air quality

V@`¦^Á;[`|åÁà^ÁæÁ,[ơ^}œãa‡Á;ā][¦Á;@Q;¦ơÁv`¦{Á&č{`|æeãç^Á5,83,4%;æe^Á5,4%;¢@eĕ•óÁ{{ã••ã;}•Á';[{Á &[}•dč&cã;}Á,1'[b^&orÁ;ão@3,Ás@:Á^\*ã;}ÈÁ

#### **Climate change**

- •Á V@^Á, `àla&%a[{ ænā, Áse) å Á `æhāĉ Á, -Á ^ ¦Á ¢] ^ ¦ā } &^ Á
- •Á Ùæ^¦Áslæç^||ã]\*Á&[}åããa[}•Á
- •Á Q ] ¦[ c^åÁslæc^|Ásãi ^• Á
- •Á Õ^}^¦æļļ^Á§[]¦[ç^åÁ&č•d[{ ^¦Á\¢]^¦ã\}&^Ásč^ÁsťÁ]\*¦æå^åÁæ&ãããã)•Á
- •Á W}ã÷ã;\*Áæ)åÁæa^}cã÷ã;\*Ác@Á^!!^Á;@eelc^•Áæ)åÁc@Á^!!^Á•^!Á^•c^{ÈA

#### 6.15.2 Past, present and future projects

CEÁ ^æ&@á, Áð@ ÁÖ^]ælq(^}oá, ÁÚ|æ)}āj\* Áæ)åÁÒ}çã[}{ ^}on, ÁT æb, ¦ÁÚ|[b^&or ÁÜ^\*ãr cº¦Áæ)åÁÙ^å}^^Á  $O_{ab} \circ A_{R} [\bar{a}] \circ A_{U}^{*} [\bar{a}] + A_{U}^$ āå^}cāā?åÁ;}^Á, ae?\¦•ãå^Áå^c^|[]{{^}c^{+}c^{+}]]a&aeaai};kA Á •Á GÁT æ}ānā ^ÁÔ[č¦dÊÜ[:^||^ÁOT ÚÆJ´€FÎÍÁT UÖÁHDAÁT [åãa8æænā]}Á5IÁ^|[&ææ^Áæ]]¦[c^åÁ•^•Á.Á Ù^å}^^ĂÛĭ]^¦ÄŸæ&@oÁTæġāædĂŒ[]¦[ç^åÅJÂÛ^]c^{à^¦ÁO€FÎÈĂ А Òç^}Áx@{\*\*@ÁÔ[&\æt[[Á@]æ}å/ਙrÁ[0Á[&æe^åÁão@}Áæ}^ŚÕOEÉæe4^æ&@A{\*/``|ca]|^ÁÖ^ç^|[]{^}oÁ  $\mathcal{S}_{\mathrm{A}}^{\mathrm{A}}$ Á V@^Á^~æb&@Á@{\_\_^c^\¦Á\$uãaÁ^cc^æbÁ(`|cāj|^Áæb)a\*•ãa^Á\$u^c^|[]{ ^}o/sebj]|&Bæeāj}+Á\$jÁ^|æeāj}A\$t[Ás@A 8[}•d`8cā[}Exa¢c^¦æaā[}Á[-Áů, ^||ã]\*•Áæ);åÁ^•ãå^}cãæ (^}ce E4QA5;A,[cAs);ca8a];æe^åAs@eeAa);å•ãå^Á å^ç^|[]{^}o4se]]&3zæaa]}•Á[`|åÁ@æç^Áse4`at}ã3zæ}o4s[]æ&o4]}Á`\\[`}å3]\*Á æc^\; æ•EA Á

Ô[}•`|cæeā[}Á,[`|åÁà^Á`}å^¦cæ\^}Á,ãc@ko@Á?ædà[`¦ÁTæec^¦Át[Áå^c^¦{ā]^Á,@c@¦Á&[}•d`&cā[}Á;Á c@Aj¦[][•ædÁ,[`|åÁ;ç^¦|ædjÁ,ãc@ko@Á&[}•d`&cā[}Á;Áæ)^Á;c@¦Á,æe^¦•ãå^Áj¦[b% co¢Å,ãcā3;ÁÙ^å}^^Á Pædà[`¦ÁQ;`&@kæeÁædj]¦[ç^åÁ;[åãã&æaā[}Át[Ác@AÙ^å}^^AÙ`]^¦Å?æ&@ATæd3;æ453;AÜ[:^||^DBAA Á

 $(\dot{A} = \dot{A} = \dot{A} + \dot{A}$  $c(2eet/S_{i}) = (ceetai) A ac(A^{A})/ceet c(A ceet ^ Q_{i}) = Aet a(A active a(A activ$ ã[]|^{^}c^åbÄÁ

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# 7 Environmental management

# 7.1 Environmental management plans

CEÁ, `{à^¦Á, -Á, æ^\*`æ¦å•Áæ) å Á, æ) æ\*^{ ^} (^} ó Á, ^æ `¦^•Á@æç^Áà^^} Áãa^} cãa∿å Á§, Ác@ ÁÜÒ⊘Á§, Á, ¦å^¦Áų Á {āā, ã ^Áæåç^!•^Á?;cā[}{ ^} cæhát] æ&o ɧ, &] \*Á[&ãæhát] æ&o ÉÅ, @ã&@&&[``åÅ, [c\*} cãæháte A æÁ^•` ¦ó Á, -Ác@ Á, ¦[][•æ†ÀÜ@` ¦å Ác@ Á, ¦[][•æ†Á, ¦[&^^å É&@ •^Á æ^\*`æ¦å•Áæ} å Á; æ) æ\* ^{ ^} ó { ^æ `¦^• Á, [` |å Áà^Á§, &[ ¦][¦æc^å Á§, q[Ác@ Áå^cæat^å/å Áå^• ã] Áæ} å Áæ}] |ð å Áå` ¦ā] \* Ác@ Á&[} • d`&cāt} Áæ} å Á []^¦æætt] Å, -Ác@ Á, ¦[][•æ†Á

OZÁÔ[}•d`&cā[}ÁÔ}çā[]{ ^}cælÁTæ)æ\*^{ ^}oÁÚ|æ)ÁQÔÒTÚDÁ,[č|åÁà^Á,!^]æ\*^åÁ{[Áå^•&¦āâ^Áœ)Á •æ^\*čælå•Áæ)åÁ(æ)æ\*^{ ^}oÁ(^æč'¦^•Áãa^}cãa?åĚŹV@ÁÔÒTÚÁ,[č|åÁà/Á{[çãa^ÁæÁ¦æ{(^,[¦\Á[¦Á ^•cæà]ā®@}\*ÁQ ِÁ@•^Á(^æč'¦^•Á,[č|åÁà^Áą[]|^{ ^}c^åÁæ)åÁ,@{Á,[č|åÁà^Á^•][}•ãa|^Á[[Ác@:ðIÁ ā[]|^{ ^}cæaā[}ĚÁ

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# 7.2 Summary of safeguards and management measures

Ò}çã[}{ ^}œ4Áæ^\*`æ¦å•Áæ)åÁ(æ)æ\*^{{ ^}o4(^æ\*'|^•Á(`dā)^åÁ§Áv@áÁÜÒØÁ āļÁå^Á§&['][¦æe^åÁ§d(ÁœAå^œā)^åÅå^•ã}}Á;@æ•^Á;ÁœAá'|[][•æ‡Áæ)åÁ å`¦ā]\*Á&[}•d`&cã]}Áæ)åÁ[]^!ææā]}Á;Á©Aá'[][•æ‡ÉA@`|åÁæÁ;![&<^^åÉV@•^Áæ^\*`æ¦å•Áæ)åÁ(æ)æ\*^{{ ^}o4(^æ\*`|^•Á,ā]Á;ājā[ã^^Áæ)^Â;[][•æ‡Áæ)^Á æåç^!•^Áã[]æ&orÁæiãj\*Á¦[{Áv@Á;![][•^åÁ;[!\•Á;}Áv@Á`:![`}åj\*Á?çã[]{{ ^}dĚV@Áæ^\*`æ¦å•Áæ)åÁ;æ}æ\*^{{ ^}o4(^æ\*`|^•Áæ^A`{ { æia^â/âjÁ Væi|^Á;ËEÉA

<i>n</i> //\		,	,	,	,		,	,
	n n	~^^/	<u>ہ</u> ک	<u>~ ^ 1</u>	∧ 0 ≈ ≈0 / N 1	ຸລະເງເ	$\wedge$ $\rightarrow$ $\wedge$ $\wedge$ $\wedge$ $\wedge$ $\wedge$	× ∽då• ∧
Væà ^AľÉFKAÚĭ{	1	ær	\~/~\dt	ጉጽተ	· Octob/A		^ { Cat/4 aer	a⊕a∙A

No	Impact	Environmental safeguards	Responsibility	Timing
ÕÒÞFÁ	Õ^}^¦æ¢ÁËĂ(ājā[ă*^Á ^}çã[{{ ^}cæ¢Á ã[]æ∨Ásĭ¦āj*Á &[]•dĭ&cā]}Á	O ĐÍO TÚ Á ặl Áa ∧ Á !^] æ ^ à Áæ à Á ` à { ãư à Á [ ! Á^çā , Áæ à Á ^} å [ ! • ^{ ^} o Á - Á@ ÁU [ æ • Åæ à å A æ a ã ā , ÁO } çã [ } { ^} o A æ æ * ^! Á ] !ā ! Á [ Ás [ { ^ } & ^ { ^ } o ∱ - Á@ Á æ ĉa ĵa ĉ Ĕ Á Å Á O E Áæ Á ] ā ā ` { Ê & @ Á O T Ú Á ā A æ ĉa ĵa ĉ E Á & A • Á æ ^ ` ă ^ { ^} o A e • [ & ã e * à Ă ã @ A cee č [ ' Åe] ] ![ çæ + Á • Á æ ^ ` ă ^ { ^} o A e • [ & ã e * à Ă ã @ A cee č [ ' Åe] ] ![ çæ + Á • Á å ^ cea + Á · ^ Q , Á @ Á ![ b & A ā Q A cee č [ ' Åe] ] ![ çæ + Á • Á å ^ cea + Á · ^ [ ] ^ & ã a Å A & A a cee č [ ' Åe] ] ![ çæ + Á • Á å ^ cea + Á · dā , Å @ Á ![ b & A ā J A & A & A & A & A & A & A & A & A & A	Ô[}dæ&q[¦Á&ÄÜ[æå•Á æ}åÁTæ}ããã[^Á Ú¦[b*&oÁTæ}æ*^¦Á	Ú¦^Ë&[}∙d`&cā[}Á≂Á å^cæā‡^åAå^•ã†}Á

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No	Impact	Environmental safeguards	Responsibility	Timing
ÕÒÞGÁ	Õ^}^¦æ¢ÆÄj,[œãa&ææaa[}Á	OE‡ Áa≚•āj∧••∧•ÊÁ∧•ãa^}cãæ⇔Á,¦[]^¦cã∿•Áæ)åÁ,c@º¦Á∧^Á;cæ\^@Į å^¦•Á Ç*Á&@Q[ •ÊÁ[&æ⇔Á&[`}&㇕DÁæe⊷&c^å/áa^Ác@Áæ&cãçãĉÁ,ã  Áa^Á,[cãã?åÁææÁ  ^æ•cÁãç^Áaaê•Á,¦ã‡¦Á&[Á&[{{^}&^{<}}&^{{}}cA;~Á@Áæ&cãçãĉĚÁÁ	Ô[}dæ&d[¦ÁÐÁÜ[æå•Á æ)åÁTæ}ããā[^Á Ú¦[b%&oÁTæ)æ*^¦Á	Ú¦^Ë&(}∙d`&cā(}Á
ÕÒÞHÁ	Õ^}^¦æ‡ÁËÁ ^}çã[}{ ^}œ‡Á æ;æ*^}^∙∙Á	CE   Á, ^ !• [ } } ^   Á [ ! \ 3] * Á; } Á ãr Á, aļ   Á ^ & ar Á aj   á ^ & ar Á = ai a a a a a a a a a a a a a a a a a	Ô[}dæ&q[¦ÁÐÁÜ[æå•Á æ}åÁTæàããą ^Á Ú¦[b%&oÁTæ}æ*^¦Á	Ú¦^Ë&[}∙d`&cā[}ÁbÁ å^cæaä[^å/åÅå^∙ã}}Á
ΙÁ	Šæ)åÁæ)åÁ æe∿¦Áaæe∧åÁ ∣æ)åÁrĭ¦-æ&∿Á	O EÁU[ā)Ása) å ÁY æ ≊^¦ÁT æ) æ *^{ ^} oÁÚ æ) ÁQÙY TÚDÁ,ā Ása^Á,¦^] æ h^å Ása) å Á ā[] ^{ ^} chả Ásee Á, æ dá, -Ás@ ÁÔÒTÚÈÁ/@ ÁÙY TÚÁ,ā Ásā^} cã ~ Ása‡ Á ¦^æ e [}æà ^Á[¦^•^^æà ^Áã \•Á^ æa3 * Á{ Á[āµÁs¦[•ā]} Ása) å Á, æ e^\¦Á ][  ĭ cā]} Ása) å Ása^•& ¦ãa ^ ÁQ?, Ás@ • ^ Áã \•Á,ā] Ása^ Ásæåå¦^•• ^ å Ása`¦ā) * Á &[} • dĭ& & cā]} ÈÁ	Ô[}dæ&d[¦Á	Ö^cæaậ^åÅå^∙ā*}ÁbÁ Ú¦^Ë&[}∙d`&cāį}Á
ÍÁ	Šæ)åÁæ)åÁ,æe∿¦Áaæe∧åÁ ∣æ)åÁrĭ¦-æ&∿Á	O EÁ ãơ Á ] ^ &ã ã & Á Ù ¦ • ấ } Áo) å Â Ù ^ åã (^} ơÔ [} d [ Á Ú aa) Á, ã   Áa ^ Á ã [] ^{{ ^} & } ơ å Áoe Á aco Á - Ácoe Á Ù Y T Ú EÁ VO Á  aa) Á, ã   Áa & Á æ ¦aa) * ^{{ ^} o Á [ ¦ Á aco Á - Ácoe Á Û Y T Ú EÁ VO Á  aa) Á, ã   Áa & X æ ¦aa) * ^{{ ^} o Á [ ¦ Á aco Á - Ácoe Á Û Y T Ú EÁ VO Á ^ acoo l Ác ç ^ } o Éãa & X acoe Á & A & A & A & A & A & A & A & A & A &	Ô[}dæ&d[¦Á	Ö^cæaậ^åÅå^∙ā*}ÁbÁ Ú¦^Ë&[}∙d`&cā[}Á
ÎÁ	Šæ), åÁæ), åÁ , æe∧¦Áàæe∧åÁ ∣æ), åÁ`¦~æ&∧Á	Ùã¦cÁæ) å Á^^åã[^} cÁ&[} d[ •Á,ã  Áa^Á^•cæaà ãe@ å Áj,¦ã[¦Át[Áæ)^Á åãe č¦àæ) &^•Á[-Ás@ Áæ) å Á`¦-æ&^ÈÉÔ[} d[ •Á,ã  Áa^Á5] Áæ&&[¦åæ) &^Á ,ãc@Á*åãaā[} ÁiÁ[-ÁET æ) æ*ä] *ÁV¦àæ) ÁÙd[¦{,æes'¦ÉÂÙ[ã=Áæ) å Á Ô[}•d`&cãa[}cÁ\$] cÁ\$P ÙY ÁÕ[ç^¦}{ ^} dÉG€€I DÁ\$Ç@ Áa]`^Áa[[\DÁ	Ô[}dæ&d[¦Á	Ú¦^ËÁ Ô[}∙d`&cą́į}Á

No	Impact	Environmental safeguards	Responsibility	Timing
ΪÁ	Yaæ^¦Aàæe-^åÁ  æ)åÁ*ĭ¦-æ&∿Á	OZÁ āloÁ&`¦cæaji ĒÁv¢or}åāji*Á¦[{ÁseÁ\ājāti`{Á¦-ÁF€€Á\ā lāti^dr•Áseà[ç^Á c@A,æer\Áāj^ÁsejåÁv¢or}åāji*Á{[Ár••Ás@enjÁOEŤ{Át[Ás^ [, Ár^æAr¢r]A jāļļÁs^Áāj•œaļ ^åÁset[`}åÁs@Ar}cā^Árå^ç^ []{^}oAj[¦\Áse*AæAjãr@ajÁ c@Ajæer\jæÂjilāti¦Át[Á&[{{^}&r{ *}oAj[¦\•Ás@eneAsarči¦àÁs@A •^æe{[[¦Á Á	Ô[}dæ&d[¦Á	Ô[}∙dĭ&cājį}Á
ÌÁ	Yæe∿¦Áàæe-^åÁ  æ)åÁĭ`¦-æ&∿Á Á	Q.•]^&a] {A, -A, Q, A, A, A, A, A, A, A, A, A, A, A, A, A,		Ô[}∙d`&aą́i}Á
JÁ	Yæe∿¦Æaæe^åÁ	CE; Á ¢ & æçæ & å Á ^ å ã; ^ } o Á @ æ Á ^ ` ã ^ Å ã ã ] [•æ Á ã   Á A & æ; ]  ^å É Á	Ô[}dæ&d[¦Á	Ô[}∙dĭ&cāji}Á

Νο	Impact	Environmental safeguards	Responsibility	Timing
F€Á	Šæ)åÂÙĭ¦-æ&∿ÁÄ	Öã##ÁÓ^-[¦^ÁŸ[`ÁÖðt ÁÇÖÓŸÖDÁ§jç^•cðt æceti[}•Á,[` åÁà^Á&æ+¦ðt àÁi`óÁ å`¦ðj*Áx@Aå^cænai/^å/å^•ðt }Aj@æ=^ÈKQÁæ)^Á^ [&æceti[}Aj~Ái^¦ç&&^•ÁsiÁ ¦^``āl^åÁ`¦c@:¦Áæe•^••{ ^}oÁ,[` åÁà^Á&æ+¦ðt àÅái Ásceti[åæ]&^Á , ão@ÁÜ[æå•Áæ)åÁT æ+ánai ^ÁÖ}çã[]{ ^}oÁO¦æ}&@Á/``ãl^{ ^}o∱a Áæ)åÁ c@:Áæ]]¦[]¦ãæez^Á capac Áj¦[çãå^¦•Á,[` å/Áa^Á&[}•` c^åÈÁ	Ô[}dæ&d[¦Á	Ú¦^Ë&[}∙d`&ca[}ÁÁ
FFÁ	Šæ),åÁrĭ¦-æ&∧Á	Ø[   [ ֻ ā] * Á&[ { ]  ^ cā[ } Á[ -Áæ] å•ãå^Áæ&cãçãa∄v•Áæ) åÁs@Á^{ [ çæ‡Á[ -Ás@Á c^{ ] [ ¦æ5^Á&[ { ] [ ` } åÉa@Áæ? æá,ā] Ás^Á^•q[ ¦^å,á ão@Áæ‡ Áæ) åÁ • ` ¦-æ&^•Á^@æàãjãææ^åÉÁ	Ô[}dæ&o[¦Á	Ô[}∙d`&aąį}Á
FGÁ	Šæ)åÂÙĭ¦≁æ&∿Á	O5;^Á,[¦∖•Á,¦[][•^åÁq[Áà^Á*}å^¦cæà^}Á,^æłÁ,@`¦^Á&æa]]ā]*Á@æe-Á [&&`¦¦^åÁae^Áq[Áà^Á&[{ { `}}ã&æer^åÁ,ãc@ác@Áv¦`•o4,¦ā[¦Áq[Á*¦[`}åÁ åãicč¦àæ)&^Á	Ô[}dæ&d[¦Á	Ô[}∙dĭ&cāį}Á
FHÁ	₽^å¦[  [ *^Á	Y ^æe@ ¦ÁĮ ¦^&æe or Á, āļlÁs ^Á&@ &\ ^åÁ^* ĭ  æ  ^Ásĭ ¦āj * Á&[} • d ĭ &cāį} Á æ) å Á, @ ¦^ÁĮ[[åāj * Ásr Á[¦^&æe dÉsee Á`ĭāj { ^} oÁse) å Á(;æe \lãeter A, āļlÁs ^Á ¦^{ [ç^åÁ-[[{Ás@ Á&[{][ĭ} å Å ão Áse) å Á, @est -Á&[} • d ĭ &cāį} Áset ^æA[¦Á æ]j ] [] ¦ãæe*  ^Á ^& ĭ ¦^åÉÅ	Ô[}dæ&d[¦Á	Ô[}∙dĭ&cā[}ÁÁ
FI Á	Yæe∿¦Áĭæ¢ãĉÁ	Ò¦[•ā]}Áæ)åÁ∢^åã[^}ơá(^æ•č¦^•Á,[č åÁa^Á&@?&\^åÁ,¦ā[¦Áa[Á -{¦^&æ•c^åÁæanj-æ‡ Áæ)åÁ{[  [, ā]*Á],^¦ā[å•Á[Áæanj-æ‡ ÈÁ	Ô[}dæ&d[¦Á	Ô[}•d゙&cāį}ÁÁ
FÍ Á	Yæer∿¦Ářa¢aã£Á	Ò{ ^!*^} & Â] āļÁār Á āļ/& ^Á^] of{} •āc Áœ Áœ Áœ Áœ Áœ Áœ Áœ Áœ Áœ Áœ Áœ Áœ Áœ	Ô[}dæ&d[¦Á	Ô[}∙d`&cāţ}ÁÁ

No	Impact	Environmental safeguards	Responsibility	Timing
FÎ Á	Yæer∿¦Áĭæ¢ãĉÁ	Ò˘˘ā]{^}ơ≦aæ*^•Á&æe¦^ā]*Á¦æa)ơ4,¦Á;æ&&@a]^¦^Á,ā∥Áa^Áãaơ∿åÁ,ão@Á à`}åā]*Áæe[`}åÁ~``ā]{^}ơÁ @a&@A&[}ææä}Á&@{{a&æa≉A{[Á,¦^ç^}ơA &@{a&æa4Á]ā] •Á,¦Á^æàæ*^•Á¦[{Á}}ơ^¦ā]*Ás@^Á,æe^¦ÈÁ	Ô[}dæ&q¦¦Á	Ô[}•d`&cāį}ÁÁ
FΪ Á	Yæe∿¦Áĭæ¢ãĉÁ	OE[ Á*`čā]{^}dÉ4(æc*¦ãæd+Áæ)åÁ,æ•d*+Átæ)•][¦d*åÁa^ç^^}áAæ)Á æ]]¦[]¦ãæd* ^Áæ]]¦[ç^åÁæ)åÁa&*)åÁa&*}aÅa&a ,[¦\Á+ãd^Á,ā]Aá^A&*¦^åÁa[Áæç[ãâÁ]ā]+Áa*¦ā]*Átæ)•][¦cædā]}ĚÁ	Ô[}dæ&d[¦Á	Ô[}•dǐ&aāį}ÁÁ
FÌ Á	Yæe∿¦Áĭæ¢ãĉÁ	X^@384/^●Êáç^^●●^ ●Áæ) åÁj  æ) cÁ āļlÁa^Áj ¦[]^¦ ^Á( æāj cæāj ^åÁæ) åÁ ¦^*č æ ^Áāj●]^&cvåÁ{[¦Á¦čãāÁ(^æ)●ÈÁ	Ô[}dæ&q[¦Á	Ô[}•d`&cāį}Á
FJÁ	Yæe∿¦Áča¢ãĉÁ	Ò{^¦*^}&î Á&[} cæ∨ Á, āļlÁbà^Á^] cÁB Ába) Á*ær āî Ábæ&&^••āb. ^Á[&ææā]} Á,}Á c@:Á&[}•d`&cā]}Á,[¦\Á*ãc^Ába) åÁ[}Ába Á&[}•d`&cā]}Áç^•••^ •ÈÁOE[Á &[}•d`&cā]}Á,[¦\^¦•Á, ā]lÁba^Ábæåçãr^åÁ,Ab@•^Á&[}cæ&ofbå^cæā]•Ába) åÁ ]¦[&^å`¦^•ÈÁ	Ô[}dæ&q[¦Á	Ô[}•d`&cāj}ÁÁ
G€Á	Yæe∧¦ÁĭækjãĉÁ	O5;^Á&@@{ã&æ‡+Á;¦Á;^ +Á;q'¦^åÁæeA¢@?Áe^{][¦æ}^Á&[{][`}åÁ;ā  Áà∧Á ,ãc@3;Áå[`à ^Áà`}å^åÁæd^æ+ÈÁ	Ô[}dæ&d[¦Á Á	Ô[}•d`&cą́[}Á
GFÁ	Yæe∿¦Áĭæ¢ãĉÁ	Þ[Áç^@384^Á;¦Áç^••^ Á;ā Áà^Á;æ•@°åÁå[;}Á;¦Á^~~^  ^åÁ;@ah^Á;}Ë•ãe^ÈÁ	Ô[}dæ&q[¦Á Á	Ô[}•d`&cą́[}Á
GGÁ	Yæe∿¦Áĭæ¢ãĉÁ	Öænäfi Á& ^æ);Ë]Á[,-Á:ñe^Án[,Ás\^Á],å^¦cæ:^}Á[,Á?}•`¦^Á,[Á[,æe^¦ñæ);Å&[` åÁ ^}c^¦Áo@Á,æe^¦ÈÁ	\Ô[}dæ&q[¦Á	Ô[}•dǐ&cāį}Á
GHÁ	Yæer∿¦Á迢ãĉÁÁ	OE;^Ás\^à¦ãrÁo@æeeÁ\}c^¦∙Áo@(Á, æe^\¦Á(, ັ∙óAs\^Á^dātç^åÁsee Á+[[}Ásee Á ][••āà ^ĚÁKO [æeā}*Ást^à¦ãrÁq[Ást^Á^dātç^åÁst^ÁA&[[]ÈÁÚā]\āj*Ást^à¦ãrÁ q[Ást^Á^{{ [ç^åÁst^Ástãç^¦ĚÁÁ	Ô[}dæ&q¦¦Á	Ô[}•d`&cāį}Á
GÁ	Yæe∿¦Áĭæ¢ãĉÁ	Q Áa) Á\;c^} oÁ, ÁaÁ, ]āļ Áa`¦āj * Á;] ^¦æaā;} É&@ Áa; &ãa^} oÁ\{ ^¦*^} & `Á,  æ) Á ,āļ Áa^Áa; ]  ^{{ ^} c^a Áa; Áa& & [ åæ] & ^A ão@ Ú`å} ^ ÁU[ ¦o ÁÔ[ ¦] [ ¦æaā; }or Á ¦^•] [ }•^Áa; Á @3] ]āj * Áa; &ãa^} o Áa) åÅ { ^¦*^} & aa • Á; `dāj ^a Áa; Áo@ Á ±NSW State Waters Marine Oil and Chemical Spill Contingency Plano ÁQT æiāā; ^ÊAO€€Ì DĂ	U] ^¦æ[[¦Á	U]^¦æaaįį́}Á

Νο	Impact	Environmental safeguards	Responsibility	Timing
G Á	Yæ∙c^Á Tæ}æ*^{^}ơÁ	YærcrÁsāā][•^åA[,-Á[,~ËācrÁ@eep Ash^Ásk]ær•ãāðaÁ5jÁæs&S[¦åæ)&^Á,ão@Ás@Á YærcrÁÔ ær•ããBææā[}ÁÕ ँãa^ ā]^•kÁúæko/FÁÔ ær•ã-ã]*ÁYærcrÁÇÖÒÔÔYÁ G€€JDÁ]¦ā[¦Á[[Ásāā][•æqAse)åÁ@eep Ash^Asãā][•^åA[[-^ÅæaAse)Ase]]¦[]¦ãæer\ ^Á  ã&r}&råÁæsāðjãc Á[¦Ás@eenA ærcrÉAr@:¦^Á]^&r•ræ?Êsc@árÁr@eep A5j&]*á^Á •æ{] ā]*Áse)åÁse)æf°•ãeÉÁ	Ô[}dæ&q¦¦Á	Ô[}∙d`&cāį}Á₩Á
GÎ Á	OEālÁĭ æ¢ãĉ ÁÁ	<ul> <li>T^æ` ¦^• Áţ Áœââ!/•• ÁœâÁ` æţã Áţ ] æ&amp;o Á ặļ/ễ ^Áş 8[ !] [ !æ¢âÁş d Á œ ÁÔÒT ÚÁæ åÁş ]  ^{ { ^} } d Åá@[ `* @ ` ÓÂ@ÁS[ } ed ` &amp;æã } Á,^i ‡i å ÈÁOE Á æÁ ā ā ī ` { Êb@ Áţ   [, ā * Á ^æ ' !^• Á ā]Aê ^Áş 8[ ` å ° å!A • Á Ô[ ç^!ā * Á -Áœ]A[ æå ° å Å * &amp; • Áæ à Å ^• • ^ • Á</li> <li>A Ô[ ç^!ā * Á -Áœ]A[ æå ° å Å * &amp; • Áæ à Å * • Aæ ê Å Å * • ^!• Á</li> <li>A T æŝ @ ^! A át Áa ^ Å † ? * Å * Åæ Å Å * Aæ @ ! Á @ # Å * • ^! • Á</li> <li>A T æŝ @ ^! a) &amp; ^ A á -Áœ] Å * ^ å Å * - Aæ @ ! Á @ # Å * • ^! • Á</li> <li>A T æŝ @ ^! a) &amp; ^ A á -Áœ] Å * ^ å Å * - Aæ @ ! Å @ # Å * • ^! • Å</li> <li>A T æŝ @ ^! a) &amp; ^ A á - Áœ] Å * @ A ã * Å Aæ &amp; ] å å * Å * &amp; • Åæ å Å * • ^! • Å</li> <li>A T æŝ o ?! a) &amp; ^ A á - Áœ] Å * @ A ã * Å Aæ Aæ Aæ Å å ææ &amp; A ã @ Aœ A á * ^ A å &amp; • Aæ ^ * ^ A</li> <li>A T æŝ o ?! a) &amp; ^ A á - Áœ] Å a @ A ã * Å Aæ &amp; &amp; ] å a Å * * &amp; • Åæ å å Å * • * ^ A</li> <li>A T æŝ o ?! a) &amp; ^ A á - Áœ] Å @ A ã * Å Aæ Aæ &amp; [ !a æ &amp; * A ã @ A á * ^ A ^ ? o ! a * Åæ à å A æ æ a Å * @ A ã * Å Aæ &amp; &amp; [ ! a æ &amp; * A ã @ A á @ A á / * ã !ææā } Å</li> <li>A T æŝ o ?! a) &amp; ^ A á - Áœ! Å a @ A ã * &amp; A æ Aæ &amp; [ !a æ &amp; * A ã @ A á @ A á / * ã !ææā } Å </li> <li>A T æŝ o æ &amp; ^ A á - Áœ! Å a o &amp; a a * o &amp; a &amp; * ` a a } . * A</li></ul>	Ô[}dæ&q¦¦Á	Ú¦^Ë&[}∙d`&cā[}Á æ)åÁ&[}∙d`&cā[}Á

No	Impact	Environmental safeguards	Responsibility	Timing
Ġ Á	Þ[ã⊧^Áæ)åÁxãa¦æaā[}Á	<ul> <li>Á Þ[ cäá8æzā] } Á, -ÁzeļÁ, [ c^ } cázeļ ^ Áze-^ &amp; c^ å Á^ • ãa^ } o Á, āļ / Áz ^ Á</li> <li>* à^ ! cæ ^ } Ázer / Åzer / Åzer / Åze o Ázç ^ / Åzæ • Å, !ā ! / Át Á ó @ Á, ![ ] [ • ^ å Å, ä @ Ázī ^ Á</li> <li>. [ ! \ • Á</li> <li>. [ ! \ • Á</li> <li>. [ ! \ • Á</li> <li>. [ ] ^ ! cā • Á, @ ! ^ Á [ ã ^ Á, æ) æ * ^ { ^ } o (^ o (^ ) • Á, æ Áz ^ Á ¢ &amp; ^ å ^ å Å</li> <li>. Q • ^ Á, ![ ] ^ ! cā • Á ã @ a æ ^ { ^ } a æ A ^ A ^ A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp;</li></ul>		Ú¦^Ë&(}∙d`&cāį}Á
Ġ Á	Þ[ãr∧Áæ), å ÁXãa¦æaã[} ÁÁ	<ul> <li>Á Otáp [ã ^ Áæj å ÁK ãà   ææi] } ÁT æj æt ^{ ^} oÁÚ æj Á aj kå ^ Á, !^] æb ^ å Åæj å Á aj &amp; [ ] [   æt ^ åÅ, ãu@j Å@ ÁDÒT ÚEV@ Á, æj æt ^{ ^} of,   æj Å, aj   Á aj &amp; [ ] [   æt ^ åÅ, ãu@j Å@ ÁDÒT ÚEV@ Á, æj æt ^{ ^} of,   æj Å, aj   Á aj &amp; [ å ^ Åa` of, [ ofa ^ Åa] át &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp; A &amp;</li></ul>	Ô[}dæ&d[¦Á	Ú¦^Ë&[}∙d`&cāį}Á

No	Impact	Environmental safeguards	Responsibility	Timing
GJÁ	Þ[ãr^Áxe)åÁXãa¦æaa[}ÁÁ	Y[¦\Á;āļ Áà^Á&æd-¦āðàÁ[`ÓÁà`¦ā]*Áo@Á^&[{{ ^}å^åÁ*œa)}åædåÁ &[}•d`&cā[}Á@[`¦●Áãa^}cãaðàÁ§JÁc@ÁQ);c^¦ã[ÁÔ[}•d`&cā[}Á⊅[ã*^Á Õ`ãa^ ā]^ÁÇÖÒÔÔÉÆCEEJæDÁ`} ^•●ÁÜTÙÁa∄]¦[çædÁ@æÁà^^}Á;¦[çãa^åÈÆ	Ú¦[b%&oÁTæ)æ*∧¦ÁÁ	Ú¦^Ë&[}∙d`&cā[}ÁÁ
H€Á	Þ[ãr^Áæ)åÁXãa¦æaa[}ÁÁ	Ú¦^]ælææaa[}Áæl)åÁ([ç^{ ^}œn/i, Á(æer^¦ãæd-Á,ā Áa)^Á(æerā[ãer^åA);la[¦Ád[Á }[ãer^Á,[¦\•Á&[{ { ^}&ä]*Á[[Áo@æer%ao/&æi>Åa^A/aā[ãeråA&`¦a]*Áo@Á ^¢er}å^åA@[`¦•Á),^la[äÉAÁ	Ú¦[b%&oÁTæ)æ*^¦ÁÁ	Ú¦^Ë&[}∙d`&cā[}ÁÁ
HFÁ	Þ[ãr^Áæ)åÁXãa¦æaā[}ÁÁ	V^{][¦æ‡^Á@[æ‡åā];*Ájā] Ása^Án`¦^&&c^å/Áæ‡[ĭ}å/Ás@?Á&[{][ĭ}å/Áã&PĚÁ	Ú¦[b^&oÁTæ)æ*^¦ÁÁ	Ô[}•dǐ&cāį}ÁÁ
HGÁ	Þ[ãr^Áæ)åÁXãa¦æaa[}ÁÁ	Ô[}•d`&cā]}Á;^¦•[}}^ Á,ā Áä;^Á5j-{¦{ ^åA; Á6@A[&ææā]}Á;Á*^}•ãaã;^Á ¦^&^ãç^¦•ÊaæjåÁc@Á;^^åÅ[Á;ã]ā[ã*^Á5]åÁ;ãa¦ææā]}Á+[{Ác@Á ,[¦\•Êác@[`*@Ác@Áãc^Á5]å`&cā]}Áa9}åÁ^*` æA4[[ à[¢Áæ4]\•ĚÁ	Ú¦[b%&oÁTæ)æ*^¦ÁÁ	Ô[}∙d`&cąĩ}ÁÁ
HHÁ	Þ[ãr^Áæ)åÁXãa¦æaa[}ÁÁ	V@:Á`•^Áţ-Á[¦cæà ^Áæåąt•Ê≴ţ`à a&k&æåå¦^••Á^`•c^{ •Á;¦Áţc@:¦Á {^c@2;å•Áţ-Á;ãe^Á&[{{`}}3&ææa‡t}Áx@æeAţaêÁ\$[]æ&o4ţ}Á^•ãå^}o•Á `}}^&^••æåaîʿÁ;a‡ Áà^Áæç[ãå^åĚÁ	Ú¦[b%&oÁTæ);æ*^¦ÁÁ	Ô[}∙d`&cą[}ÁÁ
НÁ	Þ[ãr^Áæ)åÁXãa¦æaā[}ÁÁ	Þ[}Ё[]æļÁæ‡æ;{•Á;[Áaà^Á•^åÁææAj,ãt@dÁ	Ú¦[b∿&oÁTæ);æ*^¦ÁÁ	Ô[}•dǐ&cāį}ÁÁ
HÍÁ	Þ[ãr^Áæ)åÁxãa¦æaā[}ÁÁ	Ú æ); cÁæ); åÁ*``ā]; { ^} cÁ; ā Á‰^Á5;•] ^&c^åÁ; ld; ā*@c^Á¢; Á*}•`¦^Ác@^^Áæd^Á ā]:Á*[[åÁ;[¦\ā]*Á;¦å^¦Áæ); åÁ;[cÁ*{ãucā}*Á*¢&^••ãç^Á;[ã*^Á*\ç^ •ÈÁ	Ú¦[b∿&oÁTæ);æ*^¦ÁÁ	Ô[}•dǐ&aąī}ÁÁ
HÎÁ	Þ[ãi^Áæ)åÁXãa¦æaa[}ÁÁ	Û`ā∿c^¦Áj æ)o&e)åÁ~``āj{ ^}oÁ,ā Aà^Á^/^&c^àAàæ•^åÁ;}Ás@A;]cā;æ‡Á ][,^¦Áe)åÁã^Á§[Á;[•oÁ~-a8a?}q^Á,^¦-{¦{ Ás@Á^``ā^åAæ•\ÈÁ	Ú¦[b^&oAT æ}æ*^¦ÁÄ	Ô[}•dǐ&aāį}ÁÁ
НÏÁ	Þ[ãr^Áxa)åÁXãa¦æaa[}ÁÁ	•ÁÞ[ã*^Á,[}ãt] ¦ā] *Á•ā] *Á∞á@ea) åÁ@  åÁ, ^c^\lā] *Áå^çã&^Á, āļÁà^Á `}å^\cæ\^}ÁæeA@ Á ãc^Á\[{Ásā] ^Át[Ásā] ^Át[Ásā] ^Áta` ¦ā] *Ás@ Á@a*@A,[ã*^Á ]^\lā[å•Ás]& `åā] *Ájājā] * ĚÁ V@Á^•` o•Áj-Á,[}ãt[ ¦ā] *Á, āļÁà^Á •^åÁt[Áså^çã*^Á`\c@\lÁ&[}d[  Á { ^c@lå•Á,@~\^Á^``ā^åEA	Ú¦[b%&oÁTæ}æ*^¦ÁÁ	Ô[}∙d`&aąį}Á

No	Impact	Environmental safeguards	Responsibility	Timing
HÌ Á	Þ[ãr^Áæ)åÁxãa¦æaa[}Á	●Á CEÁ,@[d[*¦æa]@38AÁ^&[¦åÁ,ā Áà^Á,[;çãå^åÁ[¦ÁA¢ãarcā]*Á×^æa;æa ●ÉÁ &[}&\^cvÁæa]:[}●ÁæajåÁ]ā?¦●ÉAT`●cv¦ÁÚcææā[}ÁæajåÁOEå{ājārdææā[}Á Ó`ājåā]*Áq[Á*●cæaà]ãa@&&[}åãaā[}ĚÁÁ	Ô[}dæ&d[¦Á	Ú¦^ËÔ[}∙d`&aąį}Á
ЫÁ	Šæ)å∙&æ}^Á &@eelæ&c∿¦Áæ)åÁ çãrčæl,Á§[]æ&cÁ	Wiàæ}Áså^∙ãt}Á;¦āj&aj ^•Á,ā Ásà^Áajc^*¦æe^åÁs@[`*@[`*@[`&@[`&@[`&@[`&@[` å^•ãt}Áæ)åÁ&[}•d`&aāį}Á;Ao@Aj¦[][•æ†EA	Ô[}dæ&d[¦Á	Ú¦^&[}∙d`&cā[}Á æ)åÁ&[}∙d`&cā[}Á
I€Á	Šæ)å∙&æ]^Á &@eelæ&c∿¦Áæ)åÁ çãrĭælÁ¶[]æ&cÁ	V@A&a^cæaa‡^åA&a^●ã*}A&a~A&a*A&a&a&a&a*A&a&A&a*A&a*A&a*A&a*A&a*A&	.Ô[}dæ&d[¦Á	Ú¦^&[}∙d`&cāį}Á æ)åÁ &[}∙d`&cāį}Á
I FÁ	Šæ)å∙&æ]^Á &@æ+æ&c∿¦Æe)åÁ çãrĭæ/Æ[]æ&cÁ	V@?Á&[{][ĭ}åÁnãe^Áæ);åÁ;[¦∖∙Áæc!^æ4,[ĭ åÆa^Á.^]c≪& ^æ);Áæ);åÆa);åÆa);åÆa] [-Áĭààãa@Á	Ô[}dæ&d[¦Á	Ô[}∙d`&aąį}Á
I GÁ	Óąį̃åą̃ç^¦∙ãĉ Á	ŒÁ]]ā Á(æ);æ*^{ ^}oÁ, æ);Á,ā Ása^Ása^ç^ []^åÁse);åÁsa[{ { `}}ã&æevåÁs[Á æ Ácæ-Á,[¦∖ā]*Á[}Á;ãvÉÁ	Ô[}dæ&d[¦Á	Ú¦^Ë&[}∙d`&ca]i}Á
ΙΗΆ	Óąįtåą̃ç∧¦∙ãĉÁ	V@ Á&[}•d`&aāi}Å [!\Á;āc^Áse^æÁ*•^åÅ;āļlÁs^Ás@ Á;ājāi `{Á;ã^Á >&^•e=ab^Á{i A;æ^ ^Á}å^læe*^Ás@ Á;![][•aabÁ `Òc&l`•āi}Å[}^•Å;ālÁs^Á*•cæaà]ã@ @ åÁi Ása^} cã*Ás@ Á[!\Áse^æása) åÁ ]'^ç^}o&saa*A[A]*^c*ada ^A@eaa`ataæe*A[`@ saa*As@A[!\Áse*^æása) åÁ ]'^ç^}o&saa*As@ As[]*^d[A]**A[A]******************************	ÜTÙÁæ)åÁ Ô[}dæ&q[¦Á	Ú¦^Ë&[}∙d`&cā[}Á æ)åÁÔ[}∙d`&cā[}Á

No	Impact	Environmental safeguards	Responsibility	Timing
ΙΙÁ	Óąį åą̃ç^¦∙ãĉ Á	V[Á; ājā; ãe^Á; æe @ kæjåA; l^ç^} o kaj[oc[{Á; &[` ā]*Á; ~ ka@A; ædā]^Á •^åã; ^}o E kç^•••^ •Á; āļA; [o K •^A k o & e ãç^Á; [`^\4, @ }Á {æ}[^`çlā]*Áaæk*^•A; of A; læ&^A; of A; læ&^A; of A; [`^\4, @} Å {``àà ^Á@ e a ă * A; ā] Ásote [Á] / æ&^A; of A; of	Ô[}dæ&c[¦Á	Ô[}∙d`&cāį}Á
ΙÍÁ	Óą́į åą̃ç^¦∙ãĉ Á	CE   Á cæ-Á [ ! \ ā * Á } Á @ Á ã ^ Á ā / Á ā / Á æ á á Á á á / Á @ A [ & æā] } Á - Á [ & A  `àà ^Á@ eàãæ e É Å Þ[ Áç^••^  Ázz & @ ! • Á ā   / & ^ Å   æ & ^ å / § Æ Å Å & ¢ ^ * ^ cæzā] } Á @ eàã a æ É Å CE; & @ ! / & æai / • Á ` • o & ^ Á ` ã æ à   ^ / & ` [ ^ å / Å ! & [ Å [ Å @ â ] * É b a ] å Á ^ ] o Á à` [ ^ ^ å / § & ^ / æ ä E k [ / ^ & o & ^ A ` ã æ à   ^ / & ` [ ^ å / Å ! & ] Å [ Å [ Å @ â ] * É b a ] å Á ^ ] o Á à` [ ^ ^ å / § & ^ / æ ä E k [ / ^ & o & ^ A ` ã æ à   ^ / & ` [ ^ & ^ å / & ] Å [ Å [ Å @ a ] * É b a ] å Á ^ ] o Á à` [ ^ ^ å / § & ^ / æ ä E k [ / A ! ^ o & A ^ ` @ & a ] / / & ] * / & a = A ^ G & a ] ā * D k [ / [ & a = ā ^ / A ^ / ~ cæzā] } / & a ] / / & a ] / / @ a a ] / / @ a a ] / / @ a a ] / / & a a ] / / @ a a ] / / & a a ] / / @ a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / / & a a ] / & a a ] / & a a ] / / & a a ] / / & a a ]	Ô[}dæ&d[¦Á	Ô[}∙d`&cāį}Á
ΙÎÁ	Óą̃i åãç^¦∙ãĉ Á	CE[ Á&[] • d č & cāt] } Á ^  æe^ å Á č č a] { ^} of so @æe/&[ { ^• Ás] Á&[ } cæso Á ão @ k @ A • ^æa ^å Áaj & [ ` å ā] * Á [ [   ā] * Ázes \  ^ É& eæa   ^• ÉA[ ] ^• Áæj å Áæj & @ !• DÉA { č o As ^ Ásj • ] ^ & c à Á [ ¦ Áæecæa @ å Á ¦ æt { ^} o Á [ ^ As @ As & a As ] ^• o As * a A ] ^ & a * A Caulerpa taxifolia æj å Áæj ^ Á ¦ æt { ^} o Á [ č } å Á { č o As ^ Ás [   ^ & d * A Caulerpa taxifolia æj å Áæj ^ Á ¦ æt { ^} o Á [ č } å Á { č o As ^ As [    ^ & c ^ å Áæj å Å ã a ] [ • ^ å Á [ Æs d & f ]   æ d & f a & f ] ^ o Á [ č } å Á { č o As ^ As [    ^ & c ^ å Áæj å Å a a ] [ • ^ å Á [ Æs d & f ]   æ d & f a & f ] as ^ á As { č o As ^ As [    ^ & c ^ å Áæj å Å & a ] [ • ^ å Á [ Æs d & f ]   æ d & f a &	Ô[}dæ&d[¦Á	Ô[}∙dĭ&cāj}Á

No	Impact	Environmental safeguards	Responsibility	Timing
ΙΪÁ	Óą̃ åãç^¦∙ãĉ Á	$\begin{array}{c} Oz{}\dot{A} ] & 8 & \tilde{a} \\ \dot{A} \\$	Ô[}dæ&d[¦Á	Ú¦^Ë&{}∙d`&cāį}Á
IÌÁ	Óąį åą̃ç^¦∙ãĉ Á	Q Áv@ Á&æe ^ Áv@æexÁæ) ^ Á`} ^ ¢] ^ &c^å Áv@ ^ æe^} ^ å Á*] ^ &æi • Áæi ^ Á‡ à • ^ ¦ ç^å Á āj Áv@ Á&j } • d` &cāi } Áæi ^ æêxí [ ¦ \ • Á āļ Á& æe ^ Áæi å ÁÜ[ æå • Áæi å ÁT æl ãaāi ^ Á ¸āļ Áa ^ Ábj -{ ¦ { ^ å Át[ Á* ãa ^ Å* ¦ c@ ¦ Áæ&cāj } ÈÁ	Ô[}dæ&d[¦Á	Ô[}∙d`&cā[}Á
IJÁ	Ù[&ãæ¢,Áæ),åÁ Ò&[}[{ã&Á	V@Á/¦`•o%aa)åÁi`¦¦[`}åäj*Á¦[&æa‡Á&[{{`}ããð\•Á{[Áa\^Á^]o%aj-{¦{ ^åÁ æà[`o%a^cæa‡i•Á{-Áa@Á[¦\•É&{]}•d`&ca‡]}Áj¦[*¦^••ÉÅ &@æa)*^•Á{[Á]`à]ã&Ás'æa)•][¦o%aa)åÁ{.c@¦Áa[]æ∨Ás@[`*@[`dv@A &[}•d`&ca‡]}Áj^¦ajåÉÅ	ÜT ÙÁ	Ú¦^&([}∙d`&ca[[}Á æ)}åÁ &[[}∙d`&ca[[}Á
Í€Á	Ù[&ãæd,Áæ),åÁ Ò&[}[{ ã&Á	CE; ÁB; c^\;}^oA; ãc^Áæ); å Á\'^^ Á&æ4 Á; @[}^Á,`{ à^\:ÁL; \Á, \[][•æ4Á}``ā â*•Á , āļ/Áu^Á*•cæai)ā: @ å ÁL; \Ás@ Áu`; \æeā]; } ÁL; Á&@ Á, [:\•ÈÁ Ô[}cæ&oÁu^cæai•Á; āļ/Áu^Á& ^æ4 ^Á8ă?]]æ^^åÁæéA@ Á ãc^Ác@[`*@[`óAc@ Á &[}•d`&cā]; } Á,^;ā[å ĚÜÖā^&cā]; •Á; āļ/Áu^Á; [cãa^åÁ]; Á@]; ÁU; ÁL; æ^Áæ); Á ^}``ā^ÁL; Á^*ã: c^\:ÁæÁ&[{]]æai; oÁ^*æa'åā; *Ác@ Á; [:\•ĚĂ		Ú¦^&[}∙d`&cāį}Á æ)åÁ &[}∙d`&cāį}Á

No	Impact	Environmental safeguards	Responsibility	Timing
Í FÁ	Ù[&ãæ¢,Áæ)åÁ Ò&[}[{ã&Á	OB;Á^}˘ă^Áaa)åÁ&[{] æaājoÁs!æa&\āj*Á^•c^{{ Å,ā  Áaa^Ár•cæaà]ā≉@°åÈĂOB;^Á ^}čăa?t•Aî¦Á&[{] æaāj•Ájā  Áaa^Áaæ&\}[, ^å*^åÁjão@3jÁGIÁ@[覕Aîj~Á à^āj*Á^&^āç^åÈÁ	ÜT ÙÁ	Ú¦^&{]}∙d`&cā[}Á æ)åÁ &[}∙d`&cā[}Á
í gá	Ù[&ãæ¢,Áæ);åÁ Ò&[}[{ã&Á	CEĘIĄ́I]^¦æeāį}æ¢Á, @eel-Ájā*@eāj*Áeeljå Árā*}æ*^ÁsērÁk[Á&Z[{] ^Á, ão@abo@?Á ÖUOEÚVÁG€€€GÉÁ	Ô[}dæ&d[¦Á	Ô[}•dǐ&cāį}Á
ÍHÁ	Ù[&ãæd,Ásæ)åÁ Ò&[}[{ã&Á	V@^Á&[}•d`&cāį}Á*ãc^Á,āļ Áa^ÁãoÁæcÁ,ã*@Aý@}Á,ã*@Aý[¦\•ÁæchÁ [&&`¦¦āj*Á{¦Áæ^c`ÈKŠâ*@•Á,ā Áa^Áj[•ãaāį}^åÁ{[Áo@æcÁð*@A%eAý[cÁ åã^&c^åÁ{j,æå•Á,^æà`Á^•ãa^}&^•ĚA	Ô[}dæ&q¦Á	Ô[}∙dĭ&cāį}Á
ÍIÁ	Šæ), åÁtæ), •][¦oÁæ), åÁ ]æ∖āj*ÁÁ	OZÁdaz–a&Á&[}d[ Á] aa)Á állÁa^Á]¦^]ad^åÁ§JÁaz&&[¦åaa)&^Á,áro@ko@Ábu/¦az–a&Á &[}d[ ÁazzÁ][¦\Ááz^•Á;aa)`ada(kÜUVOEEZGEF€aeDÁaa)åÁCE•dadaaa)ÁUcaa)åadåA FÏIGEHÁQTaa)`adaÁ,-Á}ã[¦{ Ádaz–a&A&[]d[ Áa^ça&^•DÁaa)åÁ,állÁs]& `å^Á •`&@ko@aj*•Áaza]]¦[]¦ãazz^Á;aa)aj*Áa3}*Áa3}æ*A kat}ad azáçãa 3*Á[Áadadou]}azaç^Ádaa)•][¦dá]]aa]*Áa3}*Áa3	Á	Ú¦^Ë&[}∙d`&ca]i}ÁÁ
ÍÍÁ	Šæ)åÁtæ)•][¦oÁ æ)åÁjæk∖āj*Á	V@:ÁĮ  [, ā]*Á;æec:\!•Á,ā  Ás:^Ás:^ç^ []^å/áşi,Ás:[}•č cæeā]}Á,ão@ko@:Á V¦č•oá,\!ā[:\Ás[Á,[!\Ás:[{ { ^}8ā]*kA •Á V¦æ-a3:Á;æ)æ*^{ ^}oá, æ)Á •Á Ú^å^•dāæ)Áse3:&^••Á¦[{ ÁÔæ;à^!Á?@ed-dĂ •Á U]^¦æeā]}Áç^@a3: ^•Á;}Ás@A@; æ)åd5%%	Ô[}dæ&d[¦Á	Ú¦^Ë&[}∙d`&ca]i}ÁÁ
ÍÎÁ	Yæe∿¦Átæ}•][¦oÁ	Ô[{ { ^\&ãæ¢EÁ^&\^æaā;} æ¢Á;]^\æɛ[\•Áæ)åÁj\ãçææ^Á^\çã&^•Áx@æeÁ•^Á c@Á^¢ãcāj*Á; @æb-Á;ājlÁa^Áæåçã^åÁ;Áx@A; @æb-Á& [•`\^ÁæeÁ^æ•oAç [Á , ^^\•Áj\ā;\Á{A&[&`\^ÈÁ	ÜT ÙÁ	Ú¦^ËÄ
ÍÏÁ	Yæe^¦Átæ}•][¦oÁ	V@^Á,æe^\lËaæe^^åÁ&[}•d`&aāt}Á[}^A,ā Á\$a^Á& ^æ ^Á\$a^ ā,^æe^åÁæ}åÁ { æ\^åÁ&[Á,l^ç^}a∱[}Ë&[}•d`&aāt}Åç^••^ •Á{[{ Á\}c^\läj*Áç@A &[}•d`&aāt}ÅãcÆÅ	Ô[}dæ&d[¦Á	Ô[}∙d`&cąį}Á

No	Impact	Environmental safeguards	Responsibility	Timing
Π Á	Y æe^\[Át]æ}•][ loÁ	<ul> <li>A OET æig A/iæ-æt ag æt { A} (a) (Jiga Á jilán Á i ] ag a å keg à Á</li> <li>a ji A (A) co à ha i ja * Á æc i ha æ a å keg ) e c &amp; e a ja A [] · · E a ja A</li> <li>a ji A (A) co à ha i ja * Á æc i ha æ a à keg ) e c * &amp; e a ja A [] · · E a ja A</li> <li>b · * (ace i ja * A @ ) e D Y A æ a a a a a a a a a a a a a a a a a a</li></ul>		Ú¦^ËÔ[}•d`&cậi}Á æ)åÂÔ[}•d`&cậi}Á

No	Impact	Environmental safeguards	Responsibility	Timing
ÍJÁ	OEa[¦ãtājæ‡Á@°¦ãaætt∧ÁÁ	QÁOEa[¦ātā] æ‡Á@¦ãææt^Ááz^{{ • Ásch^Á}}&[ç^¦^åÁå`¦ā] * Ás@,Á;[¦\•Éáse‡ Á , [¦\•Á\$J, Ás@,Áşä&ā] ãc Á; -Ás@,ÁāJ åÁ{` * o K&^æe^Áse} å Ás@,ÁÜ[ætå*Áse) å Á Tælãtā[^qÁDEa[¦ātā] æ‡Á&` c`¦æ‡Á@¦ãæet^Áseåçãa[¦Áse) å Ás@,Áv}ā[¦Á ¦^*ā[}æ‡Á}çã[]{ ^}cæ‡Á[,~-3&^¦Á&]}cæs&c^åÁ\$[{ ^åãæec^ ^ÈAUcc]•Á\$J, Ás@,Á Ü[ætå*Áse) å ÁT ælãtā[^ÁUcæ) å ælåÁT æ)æt^{{ ^}sáAcU[[&^à`¦^kA W]^c]^&c^åÁOE&@eec[ [*ã&æ‡Ác26] å*Á{` * o Ka^Á{[ [, ^åÈÁ	Ô[}dæ&ql¦Á	Ô[}∙dĭ&cā[}#Á
΀Á	Þ[}ËÁ OEa[¦ãtājæ¢Á @∿¦ãuæ≛^Á	Q Ázzes & [ ¦ åæ) & Á, ão@ ÂU & @ å`   ^ ÁFÉÁU ^ & cāt } ÁHÈ Á & Dát, Ás@ ÁÓ aðær \ ﷺ OE \^^{ ^} oft, ﷺ ^ Å \ ÅU^ & cāt } Å Í Á, Ás@ ÁEnvironment Protection and Diversity Conservation Act 1999 AU / اعتقاً * Át ÁÖ} çãt [ } { ^} cæ Á OE • ^ • • { ^} oft, ﷺ ^ Åa ^ ç ^^} Ás@ ÁÔ [ { { [ } , ^ æ c@ át ÁCE • dæðarstæ) å Á c@ ÁU cæ ^ Át ÁP ^ ÁU [ č c@ Ý æ ^ Ástás [ ] ^ Át Ás@ Á&e • • • { ^} oft, @ č   å Ást ^ Á ] \[ çãa ^ à Át Á@ ÁT āj ã cº \ Át Ás@ ÁØ ^ å ^ \ æ ÁÖ ^] æ ( ^ } oft, ÁO } çãt [ } { ^ } cĔát ^ à Át ] \]	Ü[æå∙Áæ)åÁ Tæłããą̃^Á	Ú¦āį¦Á&[}∙d`&cāį}Á
Î FÁ	Þ[}ËÁ 02ā[¦ātājæ¢Á @∿¦ãaæ≛^Á	CĘ Á,[ &&&) • Á&[} œo åŧ Á© ÁSydney Harbour Federation Trust Management Plan - Cockatoo Island of 2010Á @, ` åÁa^Á[  [, ^åÁ å`¦ā,*Áæ Á, œo ^• Á, Áœ Á, œo Á] *¦æå^ÈÁ	Ô[}dæ&q¦lÁ	Öč¦āj*Á &[}∙dč&cāj}Á
Î GÁ	Þ[}ËÁ OEa[¦ātājæ¢Á @°¦ãuæ≛^Á	Ct[ Á^ ^çæ) cÁ cæ-É&[] dæ&c[  • Áæ) å Á` à &[ ] dæ&c[  • Á ặ  Áæ^Á[ æå^Á         æ æ^Á[ Áœ] ā Á cæč č[  ^ Á] à lãt ææậ ] • Á[ ¦Á@ ¦ãæč ^ Á } å^\ Áœ Á         Environment Protection and Biodiversity Conservation Act 1999, Á         c@[ `* @Áœ Á ã         c@[ `* @Áœ Á ã	Ô[}dæ&q[¦Á	Ú¦āį¦Á&[}∙d`&cāj}Á
ÎHÁ	Þ[}ËÁ OEa[¦ātājæ‡Á @°¦ãuæ≛^Á	CE  Á&[}•dč&aā[}Á:aœ-Á,ā Áa^Áājåč&c^å/ājÁ@AÜ[æå•ÁæjåÁTæiãaā[^Á Ù^¦çã&∿•ÁStandard Management Procedure - Unexpected Heritage Items Procedure ÇG€FÍDÁæjåÁjā Áā[] ^{{ ^}o%c@áÁj¦[&^åč¦^Áj@¦^Á }^&^••æ^ÉÁ	Ô[}dæ&q¦lÁ	Ú¦āţ¦Áæ)åÁ&ĭ¦āj*Á &[}∙dĭ&cāţ}ÁÁ
ÎIÁ	Þ[}ËDā[¦ðfðjæ‡Á @\¦ãuæ*^Á	OZÁ∧&[}}æãa•æ)&^Ásãç^Á,āļÁsa^Á}å^¦œe\^}ÁsîÁsæÁ`ãææè ^Á`æ‡ãæ?åÁ {æ3ããį ^Áse&@æ^[ [*ã•ơŦāį¦Áq[Ác@∕Á&[{{^}&^{ ^}}ơ¼ ~Á,[¦\●Áq[Á &[}-ā{Á,[Á,æ3ããį ^Áse&@æ^[ [*ã&æ‡Á^{ æij)●Á,ā]Ása^Ásį]æ&c^åÁ	Ú¦[b∿&oÁTæ)æ*^¦Á	Ú¦^ËÔ[}∙d`&cā[}ÁÁ

Νο	Impact	Environmental safeguards	Responsibility	Timing
ÎÍÁ	Pææå∙ Á	OEÁjã^Á,¦^•^¦çā) * Áaj * Áaj à Áad) à Áad]]¦[]¦ãææ∿Áai•oÁsañaúÁ,¦[çãra[}•Á,a] Áa∖Á  [&ææ∿åÁ,ão@3) Áo@Á&[{][ັ}åÁad) å Áad) å Áa] Áad Áaæd*^•Áa`¦aj * Áo@Á &[}•d`&ca[}Á,^¦a[åÉÁ	Ô[}dæ&q¦Á	Ô[}∙d`&ca[})ÁÁ
ÎÎÁ	Ô ã;æc^Á&@æ)*^Á	QÁšarÁ&[}•ãå^¦^åÁs@A∱[c^}cãæqÁ{[¦Ásæåç^¦•^Ášą[]æ∨Át[Ásæ}åÁså^Á& ã[æerÁ &@æ}*^Áse^Á ^~^&cãç^ ^Ásæåå¦^••^åÁså^Ás@Áså^•ã*}Áţ~Ás@Á ]¦[][•æqÁ	Ô[} dæ&q[¦Áæ) åÁ ÜT ÙÁ	Ú¦^Ë&[}∙d`&ca[i}Á¥

Á Á Á

# 7.3 Licensing and approvals

Væà|^ÁiË⊖HÁÙ`{ { æ¦^Áį.-Ájā&^}•āj.\*Áæ)åÁæ]]¦[çæ‡•Á^č ĭā^åÁ

Instrument	Requirement	Timing
Ô æੱ•^Â Í Œæ) å ï Á [ -Á@ ÁManagement of Waters and Waterside Lands Regulations – NSWÁ	OE[]¦[çæ‡Á¥[{Áx@/ÁÖ^]čĆÁPæsà[č¦ÁTæsec∿¦Á[¦Á æ}^Á,[¦\●Áx@æen%åãeč¦àÁx@/Ái^æ+[[¦Á	Ú¦āţ¦Áq[Ás@Á &[{{^}&^{}} [¦\∙Ás@æc%säarč¦àÁs@Á •^æ+[[¦Á
Sydney Harbour Federation Trust Act 2001	V@~ÁÙ^å}^^ÁPæsà`[`¦Á20^å^¦æsā[}Á/¦`•oÁQc@OÁ V¦`•oDÁse Áo@Á&[}•^}oÁsečc@[¦ãc`Á{[¦Áo@Aj; [][•^åÁ æs3cā[}•Aj}Áse ÁæajåĚÁ Á OBj^Á&[}åãaā[}•Aj,-Ásej]![çæaþÊAj,ãaātæsā[}Áj,^æe`¦^•Á [¦Á^&[{ { ^}åæsā[}•Aj; [çãa^åAsî^Ás@Á/¦`•oÁse'^Á d[Ása^Á&[] ^{ ^}c^åĚÁ	Ú¦āj¦ÁqiÁ cæsloAj, Ás@OÁ æ&cāgā ĉĚÁ Á Á Öč¦āj*Á&[}•dč&cāj,}ĚÁ

Á

# 8 Justification and conclusion

# 8.1 Justification

V@A,¦[][•æ‡Ási Ási •cāði å Ási∧&æč •^ÁsióA, [č|å Ási,]¦[ç^Áse&& A••Á[¦Á,^[]|^Á, što@Áse&si ájáčí Átj Ás@A, @ed-Á æ) å Á •^¦Ár¢]^¦á?}&^Áse} å Á æ^č ÈÁv@A,'[][•æ‡Ási Ást‡•[Asi •cāði å Ásee ÁsióA, [č|å Át, ^^ók@A,'[][•æ‡Á [à bh &caš,^•ÈÁv@A,'[][•æ‡Ási[^•Ás@árÁsi ÁsteA, æ}}^¦Ás@æsÁ, [č|å Á@æç^Át, ð] át č{Ási[]æ&oA,'}Ás@A [à bh &caš,^•ÈÁv@A,'[][•æ‡Ási[^•Ás@árÁsi ÁsteA, æ}}^¦Ás@æsÁ, [č|å Á@æç^Át, ð] át č{Ási[]æ&oA,'}Ás@A [à bh &caš,^•ÈÁv@A,'[][•æ‡Ási[^\*As@árÁsi ÁsteA, æ}}^'¦ás@æsÁ, [č|å Á@æç^Át, ð] át č{Ási[]æ&oA,'}Ás@A [à bh &caš,^•ÈÁv@A,'[][•æ‡Ási[^\*As@árÁsi ÁsteA, æ}]^'k&@æsÁ, [č]å Á@æç^Át, ð] át č{Ási[]æ&oA,'}Ås@A ^}çái[}{ ^}oÁse} å Ás@Ási[{ { č} š áč ÈÁv@Át[||[, ð]\*Ás@æd; c+'•Ási[}•ãsA'sAs@Asi •cäði æstaj Åt, Ås@Ási !^]æsta]}Át Ás@Át[&äst4Áse} å Á & {] [{ & &Aæsta[} b£si át]]@•&stat4áseta[!•Áse} å Ás@A,``a ]&Asi o`c}^+o dE

# 8.1.1 Social factors

Ù[&ãæ‡Áæ&q[¦•Á&[}dâačq]\*Á§[Ác@Aš•cãa&ææā]}Á[-Ác@Aj¦[][•æ‡Á§]&|čå^K

- •Á Ó} @æ) &^åÁ æe^¦Ádæ)•][¦ơ与 ÁÚæ¦æ; æcæÁÜãç^¦Áæ) åÂÛ^å}^^ÁPælà[`¦Áa^Áą[]¦[çā]\*Áæ&&^••Á[Á ~^¦¦^Á;çã&•Á
- •ÁÜ^å`&^åÁ;]][¦č}ãćÁ;[¦Áçæ)忢ã;{Á;ãc@k@A`•^Á;Áæ;]]¦[]¦ãæe^Á;æe^¦ãæ+ÊA`¦~æ&^•Áæ;åÅ\*•ã;}•Á
- •Á Ü^å`&cāt}}Á\$JÁ©?Á`}æčc@[¦ã^åAse}åÁ\$Jæt]|[]¦ãæe?Á•^Át.-Át/{{ ājæte^Áse}åAse}åÁse}åÁse}Å āj•cæt|æsāt}Át.-Ásu[[•^åÁsaa&`ãoÁc>|^çãat]}•Á
- •Á V@A\$jc^¦i^|æe‡i}•@ajAįA; A; æe^l; æîA\$e; åA{ji^•@i}^A`+^•Qi^A`+^•A; [`|åA\$a^A\$ti] ¦[ç^åA\$u@[`\*@4([¦^A ^~^&&a;^^A\$u\$a&^••Ati] A; æe^l;Eaæ•^åAj`à|&aA\$u@][!cA
- •Á Ú[ơ]; (ﷺ) &\^æ•^Á§; Á•ð]; \*Á@; Á; @æ-Áæ; åÁ^¦!́Á^\çð&\•Á§; ^Áţ; Ás@; Á]; \*¦æå^åÁæ&djðða•Áæ; åÁ æ&&\••ÈA
- •Á Ú¦[çãå^ÁæÁæ&ájãĉ Ás@æeÁ,[č|åÁ,^^oÁs@Aå^{ æ}åÁ,Áj &¦^æ•^åÁčč¦^Á,æ•^}\*^¦Á,č{à^!•Á

## 8.1.2 Biophysical factors

Óā[]@•a8æ4Áæ8d[¦•Á8[}d´aa`cā]\*Át[Ás@Ásੱ•cãa8ææā[}Á;Ás@Ás'[][•æ4Ás]8\]`å^Ás@Á]\*¦æå^Á;Ás@Á;@æ5-Á •[Ás@æx%ax%a:Á^•ā}a?}oAt[Ás@Á;![b\*8c^å/As[]æ8c•Á;Á^^æ4/^æ4/^ç/|Áã^ĚÁ

# 8.1.3 Economic factors

V@Á,![][•æ‡Áşiç[|ç^•Áx@A´]\*¦æå^ÁţÁx@A`¢ãrcāj\*ÁÔ[&\æq[[Á@|æ)åÁY@e±Áq[Á]![çãa^Áq[]![ç^åÁ à[æåå]\*Á~æ3&ð}& ÊÉt•^¦Á&[{ -{¦oÁæ)åÁxæ^c ĚV@áA,[`|åÁær•ãroÁsjÁsj&¦^æra]\*Á@Á,[c'}œá#Á ]æd[}æ\*^ÁţÁx@A^¦!^Á^¦çã&^Ás`Áţæà]\*ÁsuÁæçæa‡æà|^Áq[Á,[¦^ÁţÁx@A&[{ { `}}ãcÁæ)åÁs^Ás[]![çā]\*Á ç@Á^¦çã&^ÈÁ

Á V@Aj¦[][•æþÁ,[č|åA\*}@eð;&<As@A[|^A,f.-As@A@edà[č¦Ase=As[c@kseA,[¦\ā;\*A@edà[č¦Ase)åAse)A\*~~&&aç^A dæ)•][¦oAs[¦¦ãa[|Asi^As[]|[çā;\*Ase&&<>•As[Á,æes\¦Eaæe\_^åAj`ča]3&Astæ)•][¦oAæ&ajãaa\*•EA/@Aj¦[][•æ¢A ,[č|åA^åč&^A,@ed-A,æed;A;æes}&<>eAs[•@Aseq^\*Aae

## 8.1.4 Public interest

# 8.2 Objects of the EP&A Act

# Væà |^ÂËFÁJàb⁄&orÁį.-Ás@ÁÒÚBOEÁOE&oÁ

Object	Comment
Í ÇæÐQÐÁ/[Á\}&[`¦æt^Ás@A,![]^!Á(æ)æt^{^}dÃ å^ç^ []{^}ofæ)åÁ&[}•^!çæaā}}Å(A,æč'¦æ4Áæ)åÁ æträä&ãæ4Á^•[`'¦&^•E&J&'äā}*Áæt'¦ã&` c`¦æ4Áæ)åÊA }æč'¦æ4Áæ^æ ÊA{!^^•o EA ä}*Áæt'¦ã&` c`¦æ4Áæ)åÊA }æč'¦æ4Áæ^æ ÊA{!^^•o EA ä}*Áæt'jã&` c`¦æ4Áæ)åÊA d; }•Áæ)åÁçã æt^•A{!Å@A,`'][•^A;A,'[{[cā}*Á c@A[&ãæ4Áæ)åÁsa][{{ ã&A}^ ~æ^A;A~á@A &[{ { `}ãc Áæ)åÁsa%^cc^!Á}çã[}{ ^}d`	V@^Á;\[][•æ‡Á,[` åÁ&[}dãa`c^Áq[Áā;]\[ç^åÁ {æ};æ*^{^}d5å^ç^ []{^}dáa`c^Áq[Áā;]\[ç^åÁ Ô[&\æq[[Á@- æ;åÁY@eet-ÈÁV@A;\[][•æ‡Á,[` åÁ ]\[{[c^Ac@-Á[&ãæ‡Áæ;åÅA&[}[{ã&A ^ ~æ*^A;Ac@-Á &[{{`}ãc Áa^Áā;]\[çā;*Á∞A´+^\Á^¢]^\ä}}&^ÈÁ Ù^^Á&@ea]c^\Â Áq[\Á`\c@\Áa^cæa‡+ÈÁ
ÍÇæÐQÆDÁV[Á^}&[覿≛^Ás@∘Áj¦[{[cā[}Áæ)åÁ&[Ë [¦åā]ææā[}Á[-Ás@∘Á[¦å^\ ^Á^&[}[{ā&Á•^Áæ)åÁ å^ç^ []{^}oA[-Áæ)åĚÁ	V@^Á,¦[][•æ‡Á@æ•Áa^^}Á&[[¦åājææ∿åÁæ•Á,æ÷o4,-Á c@∙Á∙dææ^*3&ÁØYWÚÁĢ•^AÔ@æ‡]c^¦ÁGÈÈDÁ
ÍÇæÐQ2550Á√[Á^}&[覿≛^Áo@^Áj¦[c^&cāj}ÊÁj¦[çãraj}Á æ)åÁ&[Ё;¦åājææaj}Áj-Á&[{{č}388æaaj}Áæ)åÁcaplaôcÁ ●^¦çã&^●ĚÁ	V@^Á,¦[][•æ‡Á,[č åÅ,[ơấų]]æ&o4,{}Áœ^Á,¦[çãraţ}Á [¦Á&[[¦åajææ‡i}Ă,-A&[{ { `}}&&ææ‡i}Åæ)å±D¦Á cajačÁ •^¦çã&^•EÄÜ^ ^çæ)ơK cajačÁ,¦[çãå^\•Áœæç^Áa^^}Á &[}•` c^åAå`¦aj*Ás@Aå^ç^ []{ ^}ơ4,-Ás@Á ]¦[][•æ‡EÅ
ÍÇæÐQā;DÁ√[Á*}&[覿≛^Ás@∘Á;¦[çãrā[}Aí,~Áæ)åÁ[¦Á ]čà ã&Ájč¦][∙^∙ÈÁ	V@^Á¦[][•æþÁ,[č åÁ]*¦æå^Ác@ Á∿¢ãrcāj*Á,@æb-Á æ)åÁsoÁ[č åÁ&[}cājč^Á[Ás\^Á•^åÁ[¦Ás[coQÁ Ù°å}^^Á20^¦¦^Á<\çã&A•Ása)åÁ,æe^¦Ásæ¢ãÈÁ
ÍÇæÐQçDÁV[Á^}&[覿≛^Ás@^Áj¦[çãrā[}Áæ)åÁ&[Ë [¦åājæeaā[}Á∱-Á&[{{`}}ãcÂ^^¦çã&^∙Áæ)åÁæ&ā†ãaã∿•ÈÁ	V@^Á^,Á@eet-Á[č åÁ^•č ó45jÁeeÁ@eet-Ás@eeeÁ &[{] ðr•Åä@Á©áÖÖOEA*œe)åæeå•Á[¦Â€Aj^¦Á &^}óAj-ÁseplÁsãa^•ÈA
Í Çæb0ç aDÁ/[Á\}&[`¦æt ^Áx@A,'![c^&ca[}A, Áx@Á ^}çā[}{ ^}cÉaj&[`ä]*Áx@A,'![c^&ca[}A, Áx) åA &[}•^¦çæa[}A, A; æaāç^Áx+jã[æ+Áx+jåA,' æ)orÉA 3]&[`a]*Áx@^æe^}^åA]^&a?•ÉA[]` æaā[}•Áx+jåA ^&[[[* a&æ4A&[{ {`}aa?•Éx+jåAx@aA@ex+ax	OE; Áseč čæsa&Ár&8[ [* ^ Áse• ^•• { ^} oÁ@æe Ás^^} Á č}å^!cæ}^} Á; @a&@Æsi å a&æær^• Ás@æeÁs@!^ A; [č å Ási^A }[Á[] * Ás^!{ Á@ed{ Ás[ Á; æd ð] ^ Ár&8[ [* ^ Áse ÁseA^•č   oÁ [~Ás@^Á] ![] [•ædEÆQ] æser Á; } Ási^} c@a&A{; !*æ} ãa{ • Á , [č] å Ási^ Ásr{ ] [ !æd Áse} å Á{ ð] ð] ða ð] að að á Á að] ] ![] !äser^Á ær* čæbå• Áse} å Á{ æð ð] * { ^} oÁ { ^æ č !^• ÈAÜ^~^! Ás[ ÁO@æd] c^! Å È Ás[ !Áč ! c@! Á ð] -{ !{ æsð] } ĚÁ
ÍÇæÐQçããDÁ/[Á^}&[覿≛^Á^&[[*ã&æ‡ ^Á`•cæājæà ^Á å^ç^ []{^}dÈÁ	Ò&[[[*a&æa ^Á* •cæa∄)æà ^Áå^ç^ []{ ^}ơ/≨rÁ &[}•ãå^¦^å/Á§/ÁÔ@æa]o∿¦• ÈDÈFÁ{[ ÈDÈ Áà^ [, ÈÁ
ÍÇæÐQçããaÐÁ/[Á^}&{[覿‡*^Ás@eAj¦[çãrāţ}Áse)åÁ {æãjc^}æa)&^Aj <sub>t</sub> -Áse-{¦åæà ^Á@2`•āj*ÈÁ	Þ[ơÁ^ ^çæ)ơk[Ác@Aj: [b%&dĚÁ
ÍÇaDÁV[Á,¦[{[c^kó@A;@eeta]*Á;Áo@Á^•][}•ãaājãcÁ -{¦Á^}çã[}{ ^}œetAj æej}ā]*Áa^ç ^^}Áaã-∞¦^}oÁ  ^ç^ •Á;A*[ç^¦}{ ^}oÁsjÁo@Áùceee^ÈÁ	Ô[}•` cæaā]}Á@æe,Áà^^}Á'}å^¦cæà^}Á ão@Áo@Á V¦`•cÊÁQ[¦^•@l;¦^•Áæ}åÁY æc^!, æê•ÁÔ^ç^ []{^}oÁ OEåçãa[¦^ÁÔ[{ {ãoc^^ÊZÔãc Á;-ÁÔæ}æåæÁOæâ Á Ô[`}&ãÊÁQ}^\ÁY ^•oAÔ[`}&ãÊÉA`}c^!•ÁPā]Á Ô[`}&ãÊÉŠæ}^ÁÔ[ç^ÁÔ[`}&ãAÁB}åÁJÒPÁæ Á å^cæãA^åÆJÁÔ@æ];c^!Á ĚÁ

Object	Comment
ÍÇ&DÁV[Á)¦[çãå^Ás)&¦^æ•^åA(]][¦č}ãĉÁ{[¦Á)`à a&Á ā]ç[ ç^{ ^}oÁse)åÁ)ædcā&ā]æaaa[}Ás)Ás)Á*}çãa[}{ ^}cæaþÁ ] æ}}āj*Áse)åÁse•^•∙{ ^}oČÁ	V@^Á&[{{`}ãî^Á&[}•` cæeā[}Áe)åÁ][cãa38æeā[}Á ]![*¦æ{{Á&ea}!ã^àáA[`cÁ§A@e4]e^¦A[Á;A]A{[A]=A c@āAÜÒØÆ#A\$^cæaA^å/§JÁ&@e4]e^!A[A[A]=A Q@i^Á[` åA\$^A[}*[ā]*Á&[}•` cæeā[}A]A[A[A]=A V@!^Á[` åA\$A^Á]}[ā]*Á&[}•d`&cā[}Ae)åA@[`*@[`d] &[{{ ^}&A{[}-Cae]}A]=A &[{ { ^}&A^{(}}A]A[]=A c@A&[}•d`&cā[}A]

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#### 8.2.1 The precautionary principle

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#### 8.2.2 Intergenerational equity

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V@^Á,\[][•æ¢Á,[č|å/&sh^}^~ão%a[c@%k¢ã;cā)\*Áæ)åÁčč'\^Á\*^}^¦ææã[}•Á\$JÁs@A{[||[, ā]\*Á,æê•kÁ •Á Q,]¦[ç^åÁ&č•d[{ ^\Á\*¢]^\ä}}&^Áæ•Áæ4^^•`|cA(~Á\*]\*¦æåā)\*ÁÔ[&\æq[[ÁQe|æ)åÁY@æ÷Á

- •Á Q&:\^æ=ā;\*Á; @zd-Á&ad; æ&ãô; Áse ÁsaÁ,^•`|o4[, -Á];\*; zæåā;\*ÁÔ[&:\æti[[Á@:|ad; åÁY @zd-Ásad; åÁj; [çãåā; \*ÁsaÁ, •^&[]; àÁà;^; o@d; \*Ásad; àÁa;
- •Á Tænj ænj ð \*Ás@ Á[&æ‡Á}çã[}{ ^} œbà åÁā[]|^{ ^} @j \*Áæ^\* ĕbå •Áæ}åÁ[æ]æt A æ\* ^^ ^ Á ]![ c^&cóc@ Á}çã[]{ ^} œd¢çæt ^• Á[-ÁÚæt]æt æt ætæÆŰãç^¦Áæ)åÁÛ^å}^ÁPæta[č ¦Á
- •Á Ú¦[çããã] \* Á<del>szÁzc8</del>ájãĉ Á, ão@ÁszÁ^¦çã&^Ájã^Áj ~Ái €Á^æ'• ÈÁ

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V@:Á, \[] [• æ¢Á@æ•Á§; c^\* \æe^åÁ:@, \oke^\ { Áæ}åA[] \* Ëc^\ { Á[8ææ¢ÉA;3; æ}8æ¢Áæ}åA`}çã[] { ^} æ¢Á 8[} • ãå^\æeã] • Á[Ás@æeÁæ}^Á[ \^^^æe]^A[] = æ8ce ÁæA^Á;[oÁ^-oÁţÁå^Aæåå\^••^åÅâ^Áčč \^Á\*^}\æeã] • ÉA @•`^•Á;ãc@á;[c^} ææ¢Á[] \* Ác^\ { Áξ] ] æ8ææãį } • Á` & @éæ Ás@ Á&[} •` { ] cã; } Á; -Á;[} Ë^}, æà\^Á^•[` \&^• ÉA ; æ c^Áåã] [• æ¢Áæ}åÅ;æc^\ Á` æ¢ã` Á@æç^Áà^^} Áæç[ãå^åÁæ}åÐ!Á(ā) äÐ!Á(ā) äĨ; å, ^áA@[`\* @Á&[} • d` & cã; } Á ] æ} å \* Áæ}åÅs@ Áæ] ] æ8ææã; } Á; -Á æo^\*` æå • Áæ}åÁ; æ) æ\* { ^} oÁ; ^æe` \^• Áå^• & a\*a^åÁæÆÔ@æ; c^\ Â`EA

# 8.2.3 Conservation of biological diversity and ecological integrity

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V@ Á&[}•d`&aā[}Á,|aa)}āj\*Á,`c&[{ ^•Áaa}åÁ aæ^\*`adåÅaa)åÁ,`aa)æ\*^{{ ^}c}^A; ^aæ`¦^•Áa^a,\*a & adåÅaa)åÁ Ô@aaj c^¦Ä,ÈEA,[`|å¼,ājā[ãr^Ác@ Áã[] æ&orÁ,~Ác@ Á,'[][•aahá]}Áæč`æaā&Áaa)åÁc^¦¦^•dãæhábáā[åãç^¦•ãĉÁaa)åÁ c@ Á%&[|[\*ã&aahÁ5j c^\*¦ãĉÁ,-ÁJad:¦aa{ æacæaAJãç^¦ÉÂJ^å}^ APadà[`¦Áaa)åÁãorÁ`¦¦[`}ååj\*Áaa)å•&aa}^•ÈÁ

# 8.2.4 Improved valuation, pricing and incentive mechanisms

 $V @ s \dot{A} | \ddot{a} & \ddot{a} |^{\dot{A}} ] @ | a \bullet \dot{A} @ e a \dot{A} & \dot$ 

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- •Á Ò}çã[}{ ^} œdAt[æ] É@eeçã] \* Á§^^} Ás ^^} Ás œaàlã @ åÊAt @ ` |åÁ§^Á; '+` ^ åÁ§ Ás@At [• cÁ&\_ & & aã^^ Á ç æ ÊBs`Á\*• œaàlã @3; \* Á§ &^} œã^Á; dč &c` ¦^• ÊB§ &|` åã \* Át æ\ ^ cÁ{ ^&@ed ã; { • Ás@eeA}} æàl^Ás@ • ^ Ás^• cÁ ] |æ&^ åÁt[Á;æ;çã] ã ^ Ás^} ^ ær Á; lÁ; ãj ã] ã ^ Á&[• c• Át[Ás^ ç^|[] Ás@ ãÁ; } Á:[|` cã]} • Ásg åÁ^•][} • ^• Át[Á ^} çã[]{ ^} œdÁ; l[à|^{ • ÈÁ Á

Ò}çã[}{ ^} cæk/ás• \* ^• Á@æç^Ási^^} Ás[}•ãá^¦^å/ásjÁs@Ádæz^\*ã&Á,|æ}}āj\*Ák[¦Ás@Á,![][•æk/ÉV@Á ]¦^•^¦çææāt}ÁsejåED;lÆat]![ç^{ ^}oAt,-Á[&ãæk/ÉA\*&[}[{ ã&/sejå/ktæ}•][¦ókşæk\* ^•Á,-ÁÔ[&\æet[A@|æ)åÁ Y @ed-Ásed^Ás@Á,!ätæ\*Á^æe[]•Ás@æek/s\*oā\*Ás@Á,^^å/kt@Á,![][•æk/ÉV@Á\*}çã[]{ ^}cæk/At c@Á,![][•æk/Áæçç^Ási^^}Á,\*i•\* ^å/ásjÁs@Á,[•óKs[•óK\*--^&cãç^Á,æÂks@[\*\*@ks@[&\*@ks[}•d\*&cãt}At]æ}}āj\*Á ],![&^••EÁ

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Ùæ^\*ૻæ¦å∙Áæ)åÁ(æ)æ‡^{^}ơA(^æ•`¦^•Á®å^}cãa?håÁeceÁÔ@æajơ:¦Â\ÈHÁ(¦Áece;[ããā]\*ÉÄ^`•ā]\*ÉÄ^&î&|ā]\*ÉÄ {æ}ætā]\*Á,æ•c'Ási`¦ā]\*Á&[}•d`&cā[}Áæ)åÁ[]^¦æeā[}Á;[`|åÁsA^Áã[]|^{{ ^}c^åÉĂ

# 8.3 Conclusion

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V@AÜÒØÁ@ee Á∿¢æ; āj^åÁæ)åÁæà^}Á§jq[Áæ&&[`}óÁ;[Ás@Á¥||^∙óÁ∿¢c^}o/\$,[••āa|^Áæ‡|Á;æcc^\⊧Áæ⊸^&aā;\*Á;¦Á |ã^|^Á;[Áæ-^&o∕ko@Á\*}çā[]}{ ^}óÁî^Á^æ•[}Á;~Ás@Á;¦[][•^åÁæ&aã;ãĉÈÁ Á

C2Á, `{à^¦Á, -Á, [c^}@aa¢Á\*}çã, [}{ ^}ca‡Áã(] æ&co Á+[{ Ás@ Á, ![][•æ¢Á@æç^Áå^^} Áse, [ãâ^åÁ, ¦Á^å`&^åÁ å`¦ā) \* Ás@ Á&[}&^]oás^•ã } Ás^ç^|[]{ ^}oáæ) åÁ;]cā;}•Áæ•^••{ ^}cĚ/@ Á, ![][•æ¢Áæ•Ás^•&¦ãa^åÁş, Ás@ Á ÜÒØÆs^•o4; ^^o Ás@ Á, ![b% so4; àb% scãç^•Æs`o4; [č|åÁ cāļÁ^•č|oÆs Ás[{ ^Æi[] æ&co 4;} Å&[}•d`&cā;} Á }[ã^É4; æc^¦Á čæášÉ4;čà]æÁtæ)•][¦oÁsč¦3) \* Á&[}•d`&cā;} Éběč čæãsÁ@æàãææ•É4æ)å \* &æ3; ^Á

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Úæ^\* čælå•Áæ) å Á(æ)æt^{ ^} oÁ(^æ č ¦^•Áæe Á&^cæaā/å Á§) Ás@ár ÁÜÒØÁ [č |å Áæe(^|ā[ ¦æe^A( ¦á[ ā;ā[ ã ^ Á c@•^Á\*¢] ^&c^å Áā[ ] æ&or ĚV@ Á; ![] [•ælÁ [č |å Áæt+[ Á; ![çãa^Áā[ ] ![ç^å Á~æ&ā] & Â( ! Á,æe ^}\*^!Á à[ælåā] \* É&æká\^cc^!Á •^!Á\*¢] ^!ā\*} & A( ! Ás@) •^Á •ā] \* Ás@ Á ] \* !æå^å Áæ&ājãč É Aæ^!Á&[ ælåā] \* Á&[ } åãā[ } •ÉÅ æ) å Áā[ ] ![ç^å Á,æe^!Á æ^c Áæe Á, ^||Áæe Á&[ } dãač æ] \* Á&[ Á] \* æå^å á Áæðaj å Ásæaj å á Æ æ) å Áā[ ] ![ç^å Á,æe^!Á æ^c Áæe Á, ^||Áæe Á&[ } dãač æ] \* Á&[ Á] ã ~ãj \* Áæj å Á æða åæ ða \* á, @ed-ç^• Á§ ÁÛ^ å} ^ Á Pælà[č !ÉÅU} Ábæaþæ) & Ás@ Á, ![] [•ælÁār Á&[ } •ãa^!^å Ás`•ãæða å Áæj å Ás@ Á{[ ||[] ā] \* Á&[ } & {a] } •áa ^ Á Á

#### 8.3.1 Significance of impact under Australian legislation

#### 8.3.2 Significance of impact under NSW legislation

V@Á,\[][•æ4Á [č|å/&a^Á}|ã^|^ÁţÁ&zĕ•^Áæáä}ã&ze;ó&t] ze&o4(}&@A\*}çā[}{ ^}dÉV@\^-{\^Áz/&e\*A}[óA }^&^••æ^Á{[¦Åze;A\*}çã[}{ ^}cæ4&t] ze&o4cæe^{ ^}o4t[Åa^Á,\^]ze^åAze;å&ze]i[{ ^>dÉV@\^-{\^Áz/&e\*A}[č c@ATā;ãc%\A{[Åze;A\*]];[cæ4&t] ze&o4cæe^{ ^}o4t[Åa^A;A]] c@ATā;ãc%\A{[\ÁU]ze;}jä\*Á}å^\AúzeAtEA i^č ã^åEV@A,\[][•æ4&tA`àb%&At[Áze•^••{ ^}o4`}å^\AúzeAtA A O[č]&&a4&tA,[o4^~~ă^åEA A

### 9 Certification

This review of environmental factors provides a true and fair review of the proposal in relation to its potential 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 proposal.

Katie Allchurch Planner RPS Date: 16 November 2016

I have examined this review of environmental factors and accept it on behalf of Roads and Maritime Services. Bob Rimac Senior Project Manager Roads and Maritime Services, Greater Sydney Program Office Date: 17 November 2016

### 10 References

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Óã[•]@¦^ÁÒ}cã[}{ ^}œŧÁÔ[}•ĭ|œŧ]o ÁÚĉ ÁŠcåÁŒFÍ É∠Bat SurveyÊÀĴ å}^`ÈÁ Ó`¦^æ`Áį́-ÁT^¢`[¦[∥\*^ÁG€FÍÊÉ@d] \⊞\_\_\_ Èa[{È`[çÈzĕ Bb]Đ; ædBæäj-æddÐ{^Èb]ÊÁã°Áæ&&^●●^åÁGJÁ Ù^] c^{ à^¦ÁG€FÎ ĔÁ Ô[ --^^ ÁÔ^[ c^&@ & ÁÚc ÁŠcáÁGEFÎ ÉStage 2 Contamination Assessment – Cockatoo Island Ferry Wharf. Ù^ å} ^^ É Á the Protection of Aboriginal Objects in New South Wales, U^ a} ^ A Ö^] æld ^} ó fi - ÁÒ} çã[ } { ^} ó Ô |ã; æ^ ÁÔ @e) \* ^ Áe) å ÁY æ^\ Á GEF€à ÉA boriginal Cultural Heritage Consultation Requirements for Proponents 2010. U<sup>\*</sup> å} ^\* Å Á Ö^] ælq(^} of{\\_AO} çã[} { ^} of2O|ã; æc^AO@ed; \*^Áed; åAY æc^¦ ÁG€€J&, NSW Sea Level Rise Policy Statement, Ù^ å} ^^ È Ö^] æd ^} d Á√a Ja \* Á EF€ÉNSW Coastal Planning Guideline: Adapting to Sea Level RiseÉA Ù^å}^^Ė Ö^]æld(^}of(A)/dí(A)/a)}ā;\*Áa) åÁÒ}çã[}{ ^}óG€FIÉA Plan for Growing SydneyÉA)^å}^ÈA Ö^]æld ^} dí ÁÚ¦^{ a∿¦ Áæ) å ÁÔæàa] ^dG€FFÊNSW 2021 – A Plan to Make NSW Number OneÊA Ù^å}^^ĖĂ Á Ö^] æld ^} of ANaæ) AE-æle Aa a ÁJæ) a A Jæ) a \* AFJJÍ Éks an EIS required? Best practice guidelines for Part 5 of the Environmental Planning and Assessment Act 1979 EP^, AU CON at A Α Ò}çã[ } { ^} ớÚ¦[ ơ & đi } ÁŒ ơ@ ¦ãĉ ÁŒFI ÉWaste Classification GuidelinesÊÙ å} ^ Á Á Q +æ d` &č ¦^∕Æ ÙY ÁŒFŒŹThe State Infrastructure Strategy 2012-2032. Ù^ å} ^^ ÈÁÁ Ra) ^ÁQ ã ÁŠæ) å• &æ) ^ÁŒ &@ & &č \^ÁGEFÎ ÊCockatoo Island Wharf Interchange Landscape Character and Visual Impact Assessment (A) \* A Α T ælā ^ ÁÚ || ) čā } ÁÜ^•^æ&@ÁÚc ÁŠcáÁGEFÎ ÉCockatoo Island Wharf Interchange Construction – Review of Environmental Factors: Aquatic Ecology Assessment (A) \* A \* Á U~-ã&^ Á(-ÁÔ)çã[]{ ^} oÁse)åÁP^¦ãce≛^ÁΘ€FÎæÉÁ  $\dot{E}$   $\dot{c}$   $\dot{a}$   $\dot{c}$  @d 1490 G€FÎĔÁ  $U \rightarrow a \& A / A \rightarrow b ; ca[ ] { ^} o' set a / P ^ ; a cet a / A = f a E / A = f$ •ã¢Áæ&&^••^åÁGJÁÙ^] c^{{à^}}ÁG€FÎÈÁ Á ÜÜÜÁCE • dæladoæ old c Ásca AGEFÎ ÉEFerry Wharves Upgrade Program – Statement of Heritage ImpactÊÂU^ å} ^^ ÈÁ А Ù^å}^^Ææà[`\ÁØ^å^¦æaj} Á/¦`•oÆF€ÉCockatoo Island Management Plan-2010ÊÛ^å}^`ÈÁ V-ÞÙY ÁG€FÍ ÉÁ@nd K∰D È ca) •][¦dÈ •, È [cÈzĕ Đ;|[b/80° Ĕca) É a^Ása88^••^å/GJÂU^] c^{ à^¦AO∈FÎ ÈÁ Α V-ÞÙY ÁŒFŒÉENSW Long Term Transport Master PlanÊAU^å}^ ÈA Á

## Terms and acronyms

Term / Acronym	Description
ŒÙÁ	Œ∙dæ <del>þãe)</del> ÁÚcæ) åælåÁ
ŒÙÙÁ	OBSãã ÂÛ≚  -æe^ÂÛ[㇕Á
Ó^¦c@aj*Á	OEÁ,  æ&∧ÁĮ, ¦Áæáç∧••∧ Áξ, Áå[, &∖ Á
ÔÔVXÁ	Ô [•^Á&ã& ãxÁv\ ^çã ā[}Á
ÔÒT ÚÁ	Ô[}•d ઁ&cąį}Á^}çai[}{ ^}caaļÁ(aa)æ≛^{ ^}oÁj aa)Á
ÖÖŒÁ	Disability Discrimination Act 1992ÁÔc@Á
ÒQDEÁ	Ò}çã[}{ ^}œ≱∕ã[]æ\$o⁄‱•^••{ ^}oÁ
ÒÚBOZÁDE¢Á	Environmental Planning and Assessment Act 1979 (DÙY DĂÚ¦[çãa^•Á@^Á  ^*ã æãç^Á¦æ{ ^, [ ¦\Á{ ¦Áæ} åᠱ •^Á,  æ} }ð] *Áæ} åÆsç^ [ ] { ^} ⁄Æ••••{ ^} ⁄§ ÞÙY Á
ÒÚÓÔÁŒA	Environment Protection and Biodiversity Conservation Act 1999Á ÇĈ[{ { [}, ^æ¢@DĂÚ [çãå^•Á[¦Ás@Á]![c^&cã[}Á[ Ás@Á'}çã[]{ ^}dŹ*•]^&ãæ4 ^Á { æc^\•Á[, Á]æã]}æÁ'}çã[]{ ^}cæ4Á'ã }ãã&æ) &^Êæ9 åÁ]![çãå^•Áæ4, æã] }æÁ æ •^••{ ^}dæ9 åÁæ9]![çæ†A]![&^••Á
ÒÙÖÁ	Ò&[ [*33æ  ^Á\*•cæaa]æà ^Á\å^ç^ []{ ^}cĚÖ^ç^ []{ ^}cÁ@ææÁ*•^•É&[}•^¦ç^•Á æ)åÁ*}@æ)&^•Á@Á^•[*¦&^•Á;ÁœØÁ&[{{ *}ãî Á[Ác@æeÁ*&[ [*38æa4Á;¦[&^••^•Á [}Á,@38@Áā^Á\a^]^}å•Ê&eA*Á;æaajcæaaj^åÁ\æ)åÁs@Á\[œa4Á*æaaîčÁ;Áã^Êà[, Áæ)åÁsjÁ c@Á*č'¦^Ê&eæ)Á\a^Ásj&\*æ^åÁ
ØT ÁDBOÁ	Fisheries Management Act 1994 AprùY DÁ
ØY WÚÁ	Ø^¦¦^ÁY @æţ-ÁW]*¦æå^ÁÚ¦[*¦æŧ Á
Õæ))*,æÂ	OZÁ æ) åðj*Á •^åÁà^Á, æ••^}*^¦•Á{[Áà[æ¦åÁ[æ¦åA[æ¦åÁ[æ¦åÁ]@j]•Ðç^••^∣•Á
P^¦ãæ≛^ÁQBoÁ	Heritage Act 1977ÁÇÞÙY DÁ
ŴÒÚÚÁ	Ùcæe∿ÁÒ}çã[}{ ^}cæ∮ÁÚ æ}}ãj*ÁÚ[ ã&ˆÁÇQ,⊹æ•d゙&č¦^DÁG∈∈ΪÁ
R^cc Á	O ĐÁ dੱ& č¦^ Á*¢ ơ^} å ậ, * Á§; qi Á c@: Á@ e à a i `¦Áse: Á; æ dá; æ só á; ∞áse Á; @ e só A
ŠÒÚÁ	Š[&æ‡ÁÔ}çã[}{ ^}œ‡ÁÚ æ)ÈÃŒ&c`]^Á;~Á; æ)}ð;*Á§;•d`{ ^}ơá;æå^Á}å^¦ÁÚæłoÁHÁ [~Ás@AÔÚBŒÆÆA
TPYTÁ	T^æ),Á@at@Aj,æe∿¦Áj,æl∖Á
T ÞÒÙÁ	T ஊc^¦• Á ِ Á ﷺ } ﷺ } ﷺ çā[ } { ^} ﷺ f } ﷺ T ﷺ / } Å ﷺ } ¢A Å } çā[ } { ^} ﷺ T ﷺ A Å } Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å Å
ÞÚY Á CEBOÁ	National Parks and Wildlife Act 1974 Ap ÙY DÁ
Ú <b>ậ</b> ^∙Á	Ø[`}åæaā]}•Á•^åÁ[Á`]][¦ơÁ;æb]ð;^Ád`&č¦^•Áæ)åÁ;~•@2;¦^Á; æe;[¦{•Á
Ú[ } d[ [ } Á	OEÁ√[æa∄]*Á×d`&c`¦^Á×^¦çãj*ÁæerÁadáå[&\Á

Term / Acronym	Description
ÜÚÙÁ	ÜÚÙÁCE•dæjænáÓæ•náÚcî ÁŠcåÁ
ÙÒÚÚÁ	Ùcæe^ÁÒ}çã[}{ ^}cæ‡ÁÚ æ}}ð];ð]*ÁÚ[ &&`ÈÁMCE&`]^Á;Á, æ}}ð]*Á§j•d`{ ^}o^(; æå^Á `}å^¦ÁÚæ¦oÁHÁ;Ác@ÁÓÚBOEÆMEoÁ
V@Á/¦`∙cÁ	Ù^å}^^ÁPælà[č¦Á20^å^¦æaāį}Á/¦č∙oÁ
VÙÔÁŒBOÁ	Threatened Species Conservation Act 1995 April DA
Y @##-Á	02∯æ)åð]*Á, æ&∧Á,¦Á,ð∾¦Á,@~¦^Á,@3]•Á,æîÁo2∿Á]Áæ)åÁ,[æåÁ,¦Á}∥[æåÁ
ZØÖVÕÁ	Z^¦[Á[,-Á2[,¦cÁÖ^}ã[]}Á/ãå^ÁÕæĕ*^Á



# Cockatoo Island Wharf Upgrade Ü^çã ِ Ấ Ấ} çã[ } { ^} œÁæ&( ¦• Á

November 2016



ÓŠŒÞSÁÚŒÕÒÁ

# Cockatoo Island Wharf Upgrade Ü^çã, Á Á}çã[}{ ^}œA

November 2016

Ú¦^] æh å Áa Á ÜÚÚÁæ) å ÁÜ[ æð • Áæ) å ÁT æl ãtāt ^ÁÙ^¦çã& • Á Á Ô[]^¦āt @hÁv@ Á&[}&^] œ Áæ) å Á§j -{ ¦{ æetā}} Á&[} œæij ^å Á§j Ác@ár Á&[ & `{ ^} o Áæ ^Ác@ Á, ![]^¦c Á; -Áp ÙY Á Ü[ æð • Áæ) å ÁT æl ãtāt ^ÁÙ^¦çã& • ÉÁW • ^Á; ¦Á&[]^āj \* Á; -Ác@ár Á&[ & `{ ^} o Á§j Á, @ |^Á; !Á§j Á; æd ý, ãt@? `ok@ Á , lãtc^} Á, ^!{ ã • āt} Á; -Áp ÙY ÁÜ[ æð • Áæ) å ÁT æl ãtāt ^ÁÙ^¦çã& • Á&[ } • cãt c<sup>\*</sup> • Áæ) Á§j +áj \* ^{ ^} o Á; -Á&[]^ lāt @ÉÁ Á

## **Document controls**

### Approval and authorisation

Title	Cockatoo Island Wharf Upgrade Review of Environmental Factors
Accepted on behalf of NSW Roads and Maritime Services by:	Bob Rimac Senior Project Manager
Signed:	Afra
Dated:	17/11/2016

### Document status

Document status	Date	Prepared by	Reviewed by
Draft 1	August 2016	Katie Allchurch	
Draft 2	September 2016	Sofia Romic	Katie Allchurch
Final	November 2016	Sofia Romic	Katie Allchurch

#### The proposal

Á

Ü[æå•Áæ)åÁTæláãā[^ÁÛ^¦çã&^•ÁÇÜ[æå•Áæ)åÁTæláãā[^DÁj¦[][•^•Á§[Á^å^ç^|[]ÁÔ[&\æe[[Á@|æ)åÁY@eel-Á Ç^-^¦Áā\*`¦^Á<del>FÜ+DĎ</del>Á^-^¦¦^åÁtĮÁc@[`\*@;`oÁc@ãÁÜ^çā?、Áţ-AÔ}çā[}{ ^}ca‡ÁZee&q[¦•ÁÇÜÒZDÁse Ác@:Á ]¦[][•æ¢ËÅ Á V@:Ái æāiÁ\*|^{ ^} o•Ái Ás@•Ái¦[][•æ‡Áāi&lĭå^kÁ А •Á Ö^{ [|ãaậ[}A[,-Ás@:Á¢ã;cā)\*Á;æ)\*,æîÁæ)åA[]d[]Á •ÁÔ[}•d`&aā[}Á[, ÁæÁ,^, Á}&[ç^\^åÁa|äå\*^Ê4;æ)\*, æÂæ)åÁ&[ç^\^åÁ,[}d[]}d[]}Á •Á Ü^~; ¦àã @; ^} œ Á; Ás@; Á ¢ã cã \* ÁÓ` } å ÂU~38^Ás ăåã \* É548 &! `åã \* Á^c^/||ā \* Á; ~Á ¢ã cã \* Á![ [ ¦Ás9; åÁ ¦^|[8æaā]}Ă(-Á ¢ã cā) \* Á@ee) 妿ai• Á  $\bullet \dot{A} \ OE_{J} \& a_{J} = \dot{A} \& a_{J} \& a_{J} & \dot{A} \& a_{J} & \dot{A} \& A \& a_{J} & \dot{A} \& A & \dot{A}$ ^``ā] { ^} cÁg Ása) Ásapc^l} æsaāc^ Á, @æb - Ása` ¦ā] \* ÁS[ } • d` &cāj } Á А V@Á,^, Á, @eel-Á, [`|åÁa^Á&]}•d`&c^åÁa,Áæel\*^|^Ás@Á;æel^Á,[•ãaā]}ÁeelÁs@Á;¢ã;cā]\*Á;d`&č¦^ÉÄ,ãt@Ás@Á ] ¦[] [•^å Ási¦ãå\*^Éxtæ)\*, æî Áse) å Á; [ } d; [ } Á;[ &æev^å Á¥ ¦c@;| Ási; d; Ás@; Áúæl;æ;[ æecæakÜãç^; ÉÁWWÁ Α Ô[}•d`&cāj}Á;Ác@^Á;[][•æ‡/5a Ár¢]^&c^åÁtjÁs[{{^}&^ÁtjÁs[{{^}}&^A@A^&]}åÁ`æ÷c^¦Á;ÁGEFïÁse}å/5a ÁtšAtä^A d[Ázæà^Ásæà[˘ơÁĮ˘¦Á,[}ơ@)ÉĂ,^æc@;¦Á,^¦{ãcāj\*ÉĂP[,^ç^¦ÉÁĮ¦Ás@;Á,˘¦][•^Á,Ás@)Á?;çã[}{^}cæþÁ æ••^••{^}dÉÜ[zæå•Áæ)åÁTzelänā;^Á@æ•Á&]}•ãå^¦^åÁã[]æ&o•Á{¦Á]Á[Á ãcÁ;[}o@;Á,Á&[}•d`&cāj}ÈÁÁ Á V@Á @ed⇒Á [ĭ|åÁsà∧Á&[•^åÁs[Á^¦¦ã•Áse}åÁtc@¦Á[}Ë8[}•d`&cā]}Á^|æe^åÁ æe^¦&¦æeó%a`¦ã\*Á &{}•d`&aā;}ÈAP[\_^c^\ÉA^\\^Á^\ca&^•Á(AÔ[&\ae[AQ]aa)åÁ[`\åÁa^Á(aaā;aaā;^åÁo@[`\*@Áo@A 

### Need for the proposal

V@Á¦[][•æk/ás Á•••^}cãæk/átÁ¦[çãå^Ásæ&&^••Át¦Á^[]|^Á ão@kozásã æsiðiãč ÁtÁ ^^oás@Á^˘˘ði^{ ^}œÁ Á Á V@^Á&覦^}cÁ,[}d[]}d[]}Á§arÁ§,Á,[[¦Á&[}åãaã]}Áea}åÁ&[^•Á,[cÁ;aecã]ãr^Ac@Áeaàājãc^Á{[¦Á&č•d[{^¦•Áq[Á^{}àae\Á æ)åÅåãr^{àæ\Ás@Á^¦¦^ÉÄ/@Á&`¦¦^}cÁæ{]Á{[Ás@Á,[}q[[}Á,[ç^∙Á,ãc@ÁsãaæA&[]åããā[}•Áæ)åÁ&æ)Ás^Á • c^^] Ásǐ ¦ā \* Á[ Ázāá^ÉA, ão@ko@ Á` ¦~æs^Á ǎa‡ãĉ Á Áx@ Á @ee Á d` &c` ¦^É\*æ) \* , æ Áæ) å Á[ } d[ ] Á ] ¦^•^} cā] \* Áscál [´c^} cāsta Ástā] Á@ce asta ÈĚ/@ Ásč ¦¦^} cÁl [ } cf [ ] Ást]• [ Ást] ^• Á [ cÁl [ cásta^Áscál @ [c^] Át [ Á & • d { ^ ! • Á aña \* Á ¦ Á · ! ^ A · ! ç a · • È Á Á Ô[&\æn][Á@()æ)å/&i Áæé&^•cājæeaji}}Á;@ed-Ac@eeA,![çãa^•Áæ&&^••Á;¦Á^&\^æeaji}æA(\*^!•Áe)åA(\*`¦ã;o•ÉADEÁ  $a\dot{A} = (\dot{A} = \dot{A})^{-1}$ āļ Á, æd [}æ\*^Ásǐ¦ā; \*Á, ~Á, ^æ; Á, ^¦ā; å•Áæ; å, Áæ; Á, ^\^} å•ĔÁ Á Òç^} œ Áset^Áset• [Á@] • c^å Á; } Ás@ Á@] æj å Éset å Ás@^ Ásæt Æschæt \* ^ Ás¦ [, å • Ás` ^ Ás; Ás@ Ásāt, ] [ā; œ Á { æ}æ\*^{ ^} œ^{ ^ • c^{ ^ \* ā^à ĔĂ Á Ô¦[、åÁ(æ);æ\*^{^} ó%a Áæ);Áa[][¦œa);óA[]^¦ææa[}æakÁ&[}●ãå^¦ææa[}ÊÉeerÁ(}Áåæê•Á(-Á@ã@Áå^{ æ);åÁo@;!^Á @38.@Á^``ǎ^•Á;@^Á•^Á;~Á&¦[,åÁ;æ);æ\*^{ ^}oÁ;æe^•Á;Á;æ;œãa;}Á&;[,å•ÈÁ Å Ô[&\æq[[Á@|æ]åÁ^|æ)•Á[|^|^Á;}Á^\;^Á^\;çæ?v•Á[¦Áæ&&^••Á[ÁœA@|æ]åĚ4/@A[^æA@A@]\*  $\hat{O}[8] \approx [\hat{A} \otimes \hat{A$ ]¦^∙^}dÉk;ãrãt[¦Á,ĭ{ à^¦•Át[Ác@/ÁQ|aa);åÁ&aa);Á¦ĭ&cřaac^Áa,^ç^^}Áaaà[ĭdÁGÌ€ÉEEEÁt[ÁHI€ÉEEEA[^¦Á^¦Á^aa;bÉÁ Á

#### Proposal objectives and development criteria

V@~Áįàb^&cãç^•Áį~Ác@~Á;¦[][•æ‡Áşi&|čå^Á;¦[çãã∄]\*Ászábà^cc^¦Ár¢]^¦ãr}&^Á[¦Ájčà|ã&Ádæ)•][¦cÁsi•d[{^¦•Á c@[č\*@Ác@^Á;¦[çãā]}Áj~Ász&&^••ãa|^Éã([å^¦}Êá^&č;\^Ása)åÅşic^\*¦æc^åÁdæ)•][¦cÁsj-¦æe`dč&cč;\^ÉÁ

#### **Options considered**

Q[`|Á]] cā] › Á ^!^Áša^} cāð åÁ[ !Á@ Á] [] [ • æþĚ/@ • ^Á ^!^hÁ Á •Á U] cā] › ÁFÁ Á/@ Áš[ Á[ cœ] \* ÁÇaæ ^Á&æ ^ DÁ] cā] › Á •Á U] cā] › ÁGÁ ÁÜ^` • ^Á] [ › d[ ] Áš Á ¢ā cā] \* Á] [ • ãá] › Á •Á U] cā] › ÁHÁ ÁÞ^, Á[ › d[ ] Á<sup>\*</sup> ! cœ ! Á [ ! cœ́A ~Áœ Á ¢ā cā] \* Á @ !^ Ás ! ãa \* ^Á •Á U] cā] › Á Á Á Þ^, Á[ › d[ ] Á<sup>\*</sup> ! cœ ! Á [ ! cœ́A ~Áœ Á ¢ā cā] \* Á @ !^ Ás ! ãa \* ^Á •Á U] cā] › Á Á Á Þ^, Á[ › d[ ] Á<sup>\*</sup> ! cœ ! Á [ ! cœ́A ~Áœ Á ¢ā cā] \* Á •Á U] cā] › Á Á Á Þ^, Á[ › d[ ] Ásæ & • • ^ å Áœ [ ` \* @ Áœ Á{ ! { ^ ! ÁO` } å^ ÁU ~ æ^ È Á U] cā] › Á ÁÉÁ ç [ ` | åÆ] ç[ |ç^ Á] [ Ásæ å ãa] › æÁ [ !\ Á cœ ! Ácœ) Ácœ Á&` !!^ › óÁ æa] ¢ } æ) & ^ Á^\* á a ^ Á ~Áœ Á @ U] cā] › ÁÉÉ Hág ç[ |ç^ Á] [ Ásæ å ãa] › æÁ [ !\ Á cœ ! Ácœ) Ácœ Á&` !!^ › óÁ æa] ¢ } æ) & ^ Á^\* á ^ Á @ EDÉa à á Á ab & câç • Á! ! Áœ Á [ ] [ • æÁÇ ^ ~ ! ÁÔ@ e c !ÁÉEDĚP] [ \_ ^ c^ !ÉÉU] cā] À Á Æ ÁS[ › ãa^! ^! a åÁ Æ Aœ Á @ CÉDÉa à á Á ab & câç • Á! ! Áœ Á! [] [ • æÁÇ ^ ~ ! ÁÔ@ e c ! Á

#### Statutory and planning framework

V@ Á(æb)¦ãĉ Á(Á@ Á)¦[][•æk/≨rÁ[&æævåÅ,ãc@3)Áæ)åÁ(æ)æ\*^åAs^á&@ ÁÙ^å}^A?æb)a`{A?æb}a`\ææa[}Á V¦`•cÁç@ Á/¦`•dDÈÁ/@ãrÁÜÒØA&[}•ãa^¦•Ás@ Á)¦[çãrã]}•Á(Á^/°çæ)cÁPÙYÁæ)åÁÔ[{ { [},^æb@Á |^\*ãr|ææa[}ÊÂÜcæævÁA}çã[]{ ^}cæb/A,|æ}}ð]\*Á[[ã&&\*•ÉA[&æb4A}çã[]{ ^}cæb/A,|æ)•Áæ)åÁ(c@ ¦Á/\*ãr|ææa[}ÈÁ

#### **Commonwealth legislation**

Yão@Á^\*æ¦å•Át[Áto@Áze]]|a8æaà|^ÁÔ[{ { [}, ^æ¢o@Á\\*ã\*|ææā]}Étko@Á\¦[][•æ‡Ásæa}Ása^Ásæa¦ā\*åÁt`óÄ}å^\Á c@ÁSydney Harbour Federation Trust Act 2001ÈÁV@Á/¦`•óÆsÁc@Ást[}•^}oÁsečo@;¦ãĉÁt[¦Áto@Á ]¦[][•^åÁæstcā]}•Át}ÁserÁæ}åÈÁ Á

Ü[æå•Áæ)åÁTæáãā[^Áœe•Á&[}&|`å^åÁvœevÁv@Á;¦[][•æk/ਓa:Á;[ơÁã^|^Áy[Áœeç^ÁæóA:āt}ã&Bæ)ó4ā[]æ&o4;}A c@Á\*}çã[]{ ^}dŽÁÙ@``|åÁv@Á/`•ó4å^c^¦{ā}^ÁæóA:āt}ã&Bæ)ó4ā[]æ&o4; æâÅa^Áã^|^Êbv@Á;¦[][•æk4;æâÁ à^Á^~¦!^åÁy[Áx@ÁÖ^]æ:d{^}o4;~ÁÖ}çã[]{ {^}ó4æ)åÁÖ}^!\*^ÈÁ

#### **NSW legislation**

Ü[æå•Áæ)åÁTælātā[^ÁælÁ@lÁæ]]¦[çælÁæelc@l¦ācÂ}å^lÁs@AEnvironmental Planning and Assessment Act 1979 ÇDÚBOÆD&DÁ[¦Ás@A][¦cā[}A[-Ás@A]¦[][•ælÁ[&æevåA[čorāå^A[-ÁÔ[{ { [}, ^ælc@A], }^åAæ)åĔA Á

State Environmental Planning Policy (Infrastructure) 2007]^¦{ ão Aŝ^c^|[]{ ^} ớĄ} Áæ) ^ Áæ) å Á[¦Ás@ Á ]`'][•^Á, Á, @eb-Á[¦Ás[ææ] \* Áæ&ãjãã \* Á[Ás^Á&æ] & åÁ[ǎ ^ás Á['Ás^A @eb-Á[ -ÁsA] ``à]ã&Ásĕ o@ ¦ãĉ Á ão@ `oÁ &[}•^} dĚOE Á@ Á]'[][•æ‡Æ Á[¦ÁsA, @eb-Ása) å Ás[ææ] \* Áæ&ãjãĉ Áæ) å Æ Á[ Ás^Á&æ] & áÁ` ``á) å Å ÁÜ[æå • Ása) å Á Tæbãã[ ^Ébáo&æ] Ás^Áse • ^ • • ^ å Á } å ^¦ÁUæ oÁ Á[ Ás @ ÁOÚBOEdÆEČ^c ^ []{ ^} oKs[} • ^} oKs[] • ^}

#### **Community and stakeholder consultation**

S^^ Á\*[ç^\}{ ^} ơ4\cæ\^@[|å^\+\Á\$j&|`åðj\*Ás@A'\`•o4@æç^Áà^^}Á&[}•`|c^åÁ{[Áåæe^Áæ);åÁæ|/Á\*\*•`^•Á ¦æ#\*^åÁ@æç^Áà^^}ÁæA^}Á\$jd[Áæ&&[`}ơ4å`¦ðj\*Ás@Aå^ç^|[]{ ^}ơ4\`~Ás@Aj\[][•æ‡É&@•`^•Áæ#\*^åÁ@æç^Á à^^}Áscaia¦^••^a/áşiÁs@arÁÜÒ⊘12ÉÔ[}•ĭ|cæaaā[}Á;[ĭ|å/ás[}cā)ĭ^Aj;¦ã;¦Ás[Áse)å/ásĭ¦ā)\*Ás[}•dĭ8caā[}Á;As@A ]¦[][•æ‡125Á

#### **Environmental impacts**

V@\Á(æaā)Á^}çā[}{ ^}œa‡Áa[]æ&orÁ(~Ás@(Á)¦[][•æ‡Áæ)åÁ(æ)æ\*^{ ^}oÁ(^æ•`¦^•Áa[Áæåå¦^••Áo@(•^Á ã[]æ&orÁæ†^Á`{ { æ÷ã\*^åÁa^|[,ÈÁ

#### **Noise and vibration**

CEAP[ār/ÁæjåÁXāalæaā]}ÁT æjæt^{ ^}oÁU|æjÁ[ ` |å Áa∿Á, !^]æt^åÁ, !ā ! Át [Åt [Åt]}•d`&aā]}ÅæjåÁā[ ] |^{ ^}oá ( c@[`\*@]`ó Áx@Á&[}•d`&aā]}Á, ^!ā là ĚÁÕ^}^!ætÁ, [ār/ÁæjåÅçāalæaā]}Áā]]æto Át [Åt@A][&æ‡Á&[ { `}āĉÁ [` |å Áa∿Átāāt æz\*å Áa`Á^•dātaā]\*Á&[}•d`&aā]}Á, [!\•Át[Áaæāt]}Áā]]ætaā]}Áā]]æto Át [#oāa]^ĚÁR[ , ^ç^!Á å`^Át[Áx@Á^``ā^{ ^}oÁt[!Ásæt{ Á. æz\*!Á&[}\*d`&aāt]}Á, [!\•Át[Áaæāt]\*Áā]\*Áā]\*áA] åč Át [Áx@Á^``ā^{ ^}oÁt]!Ásæt{ Á. æz\*!Á&[}\*d`&aāt] åč Át [Áx@Á^``ā^{ ^}oÁt]!Ásæt{ Á. æz\*!Á&[}\*d`&aāt] ætaātātatatā]\*Á ætaātātātatā ætaātātātatā ætaātātatā ætaātātātatā a Akatatā ætaātātatā a Akatā a Akatatā a Akatatā a Akatatā a Akatā a Akatat

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#### Landscape character and visual impact

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#### **Non-Aboriginal Heritage**

Ô[&\æq[[Á@|æ)åÆáA&|æ^åÁæÁNÞÒÙÔUÁY[¦|åÆP^¦ãæ\*^ÁÚ¦[]^¦ċÁQE•dæpäæ)ÁÔ[}çã&oAÙãv•ÁEÁ Ô[&\æq[[Á@|æ)åDæyåÁãc\*åÁæe ÁæAÞæaā[}æAÆP^¦ãæ\*^ÁÚ¦[]^¦ċÈÀÛ^]æ¦æe\*Æv{•A[}ÁœA@|æ)åÆd\*Æv |ãc\*åA[}Áx@AÔ[{{[}, ^æqc@ÆP^¦ãæ\*^ÁŠã:dĚÅ Á

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#### Socio-economic

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Ô|[•`¦^Áξi ] æ&oÁ, āļlÁa^Á, ājāţ ãi ^å^åÁa`Á^|[&ææāj \* Á^¦¦^Ái^¦çã&^•Át[ÁæáV¦`•dĘ', }^åÁ, @ed-ÁÇÔæξ à^¦Á Y @ed-10Ê4[&ææ^åÅ;}Ás@ Á[`coeë ãå^Á; ÁÔ[&\æɛt[[Á@;]æjåÊ5eejåA∱;[çãåāj \* Ác^{][¦æd^Å, æĉ-ājåāj \* Áā]}æt^Á q[Á&[{ {`}}ã&ææ^Ás@•^Áedec';}ææīç^Áse;!æj \*^{ ^} or DÉÁU}\*[ā] \* Á&[{ {`}}ã&ææ‡;}Á,ā]lÁæà^Á;Jæ&A ái@ás@Á &[{ {`}ãc Ás@[`\*@;`cÁs@ Á;][][•æ‡ÉA, @a&@á@æe Áa^}}Á;][\*¦æξ { ^åÁ{¦Ás@ Á,ā]c';Á;`a\*a ]^¦āt åÁ{[¦Áçãāt[;•Át[Ás@ Á@;]æ)åÅ, @a&@Á`;c@;Á^åč &^•A\$i[] æ&DÉÁÁ

#### **Flora and Fauna**

V@ ÁOE čææ3k ÁÖ&[|[\*^Á^][¦ơÁ&[}&|`å^åÁæÁ{[, Á;[ơ}œá¢Á{¦¦Á^|[&ææāį}}A, Ás@>h&A>}ơ@38k Áse••^{ à|æ\*\*•/ás`¦āj\*Á &[}•d č&cāį}EÁ/@ärkáį]æ&oÁ,[č|å/ás^Á(ā][¦Áse}å/ásrá[~~•^ơásˆÁs@ Á&L^ææāį}A, Ás^, Á@æàãææká[Árč]][¦ơÁ { [||č•&•Ase}åA¦āj\*āj\*Áse†\*æ\*Áse=ÁseA/^•č|ơÁ(-Á,[]q[]/ásj•cæa‡|ææāį}EÁXA

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#### Water Quality

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#### Water Transport

V@Á•∧Á, ÁÔæ; à^¦Áv @ed-Á[¦Á@/Ásĭ¦æeā]}Á, Áv@/Ás[}•d`&cā]}Á,^¦ā[åÁ, [ĭ|åÁ@æç^Áæév{]['æd^Á ā[]æ&o4[}Áv@Áæçæá]æeàā†ãô Á,-Á^&¦^æeā]}æ4Ás^¦c@3]\*ÁæeAv@Á@|æ3)åEAP[,^ç^¦Ás@ãÁ,[ĭ|åÁs^Á; ā]ā[æ4ÁæeÁ c@Á&[}•d`&cā]}Á,^¦ā[åÁ@æeÁs^^}Á,'[\*¦æ{{ ^åÁ[Áæç[ãåÁÔ[&\æ[[Á@|æ3)åq+Ásĭ•^Á,^¦ā[åĚbÁÁ Á

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#### **Justification and conclusion**

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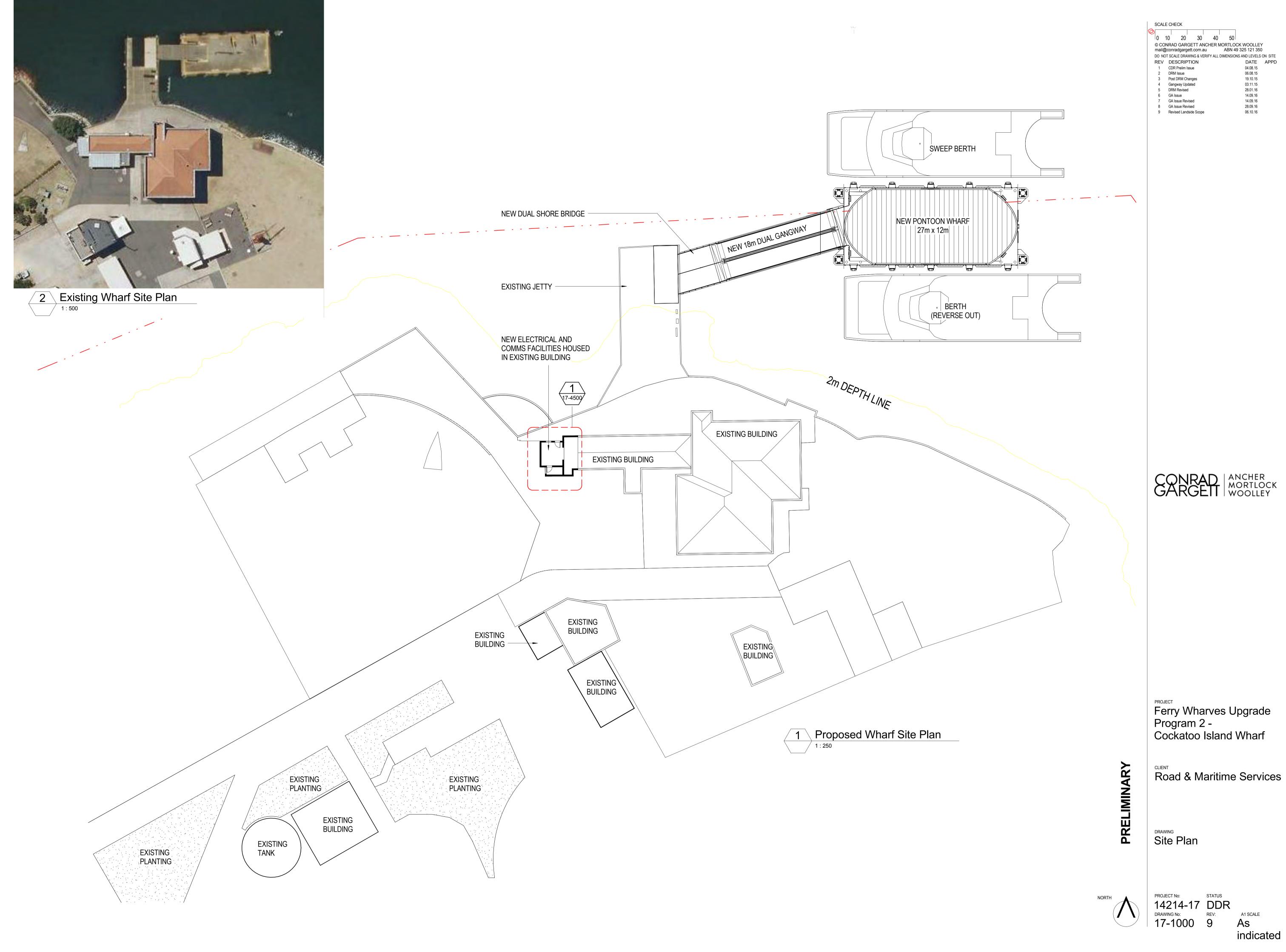
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8Á Justification and conclusion153Á
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9Á Certification
10ÁReferences
Terms and acronyms
Á Appendices
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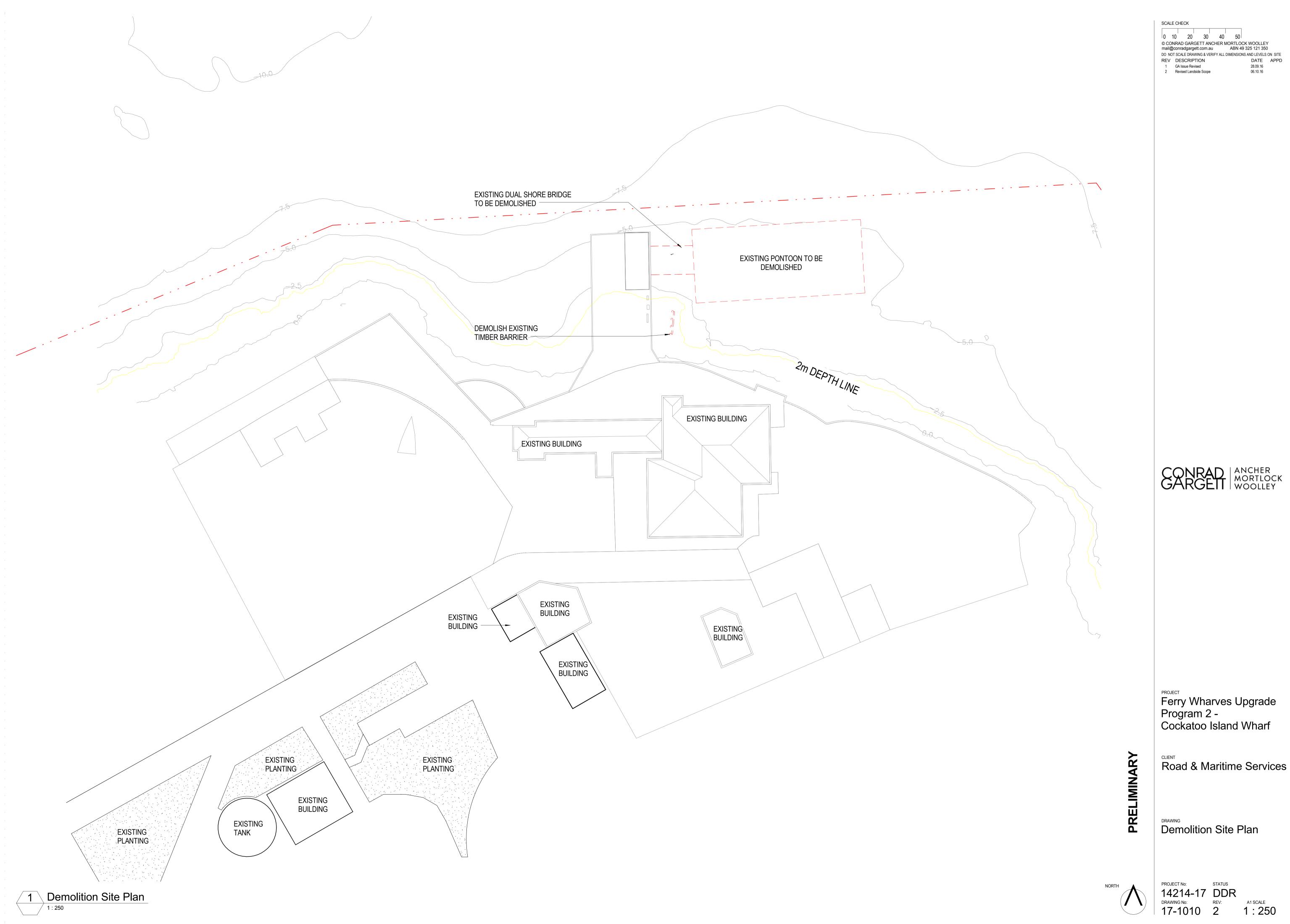
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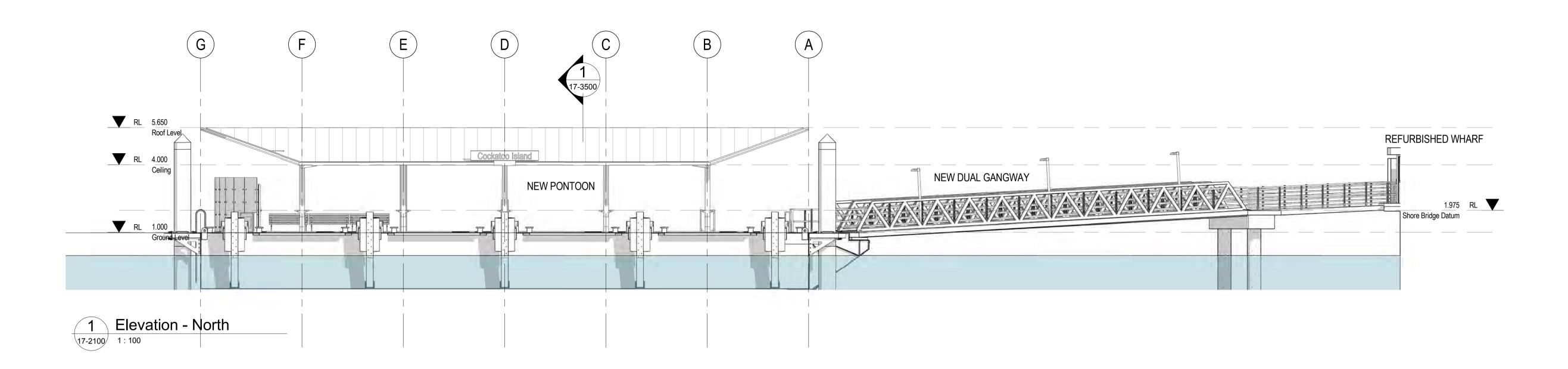
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# Appendix A

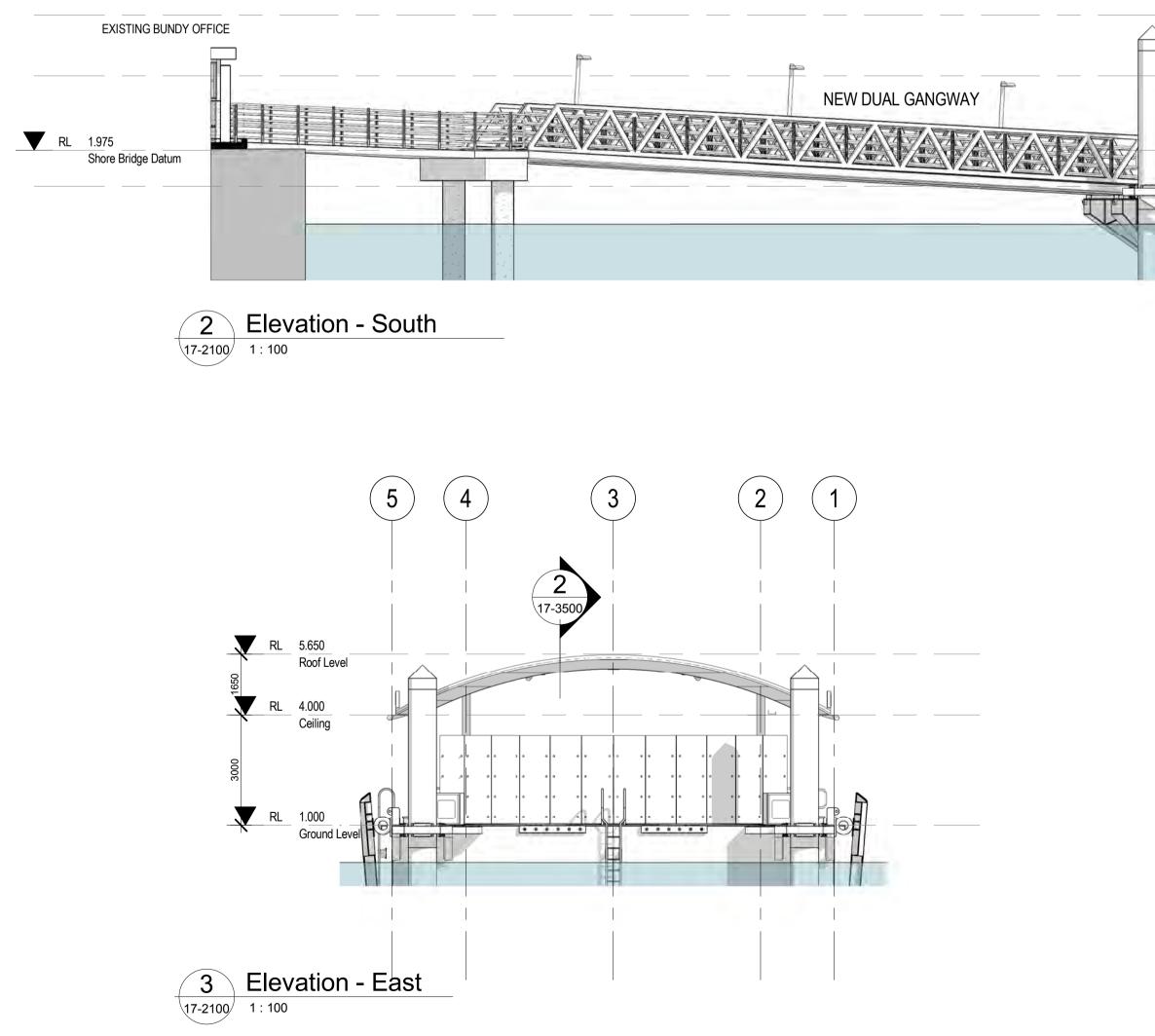
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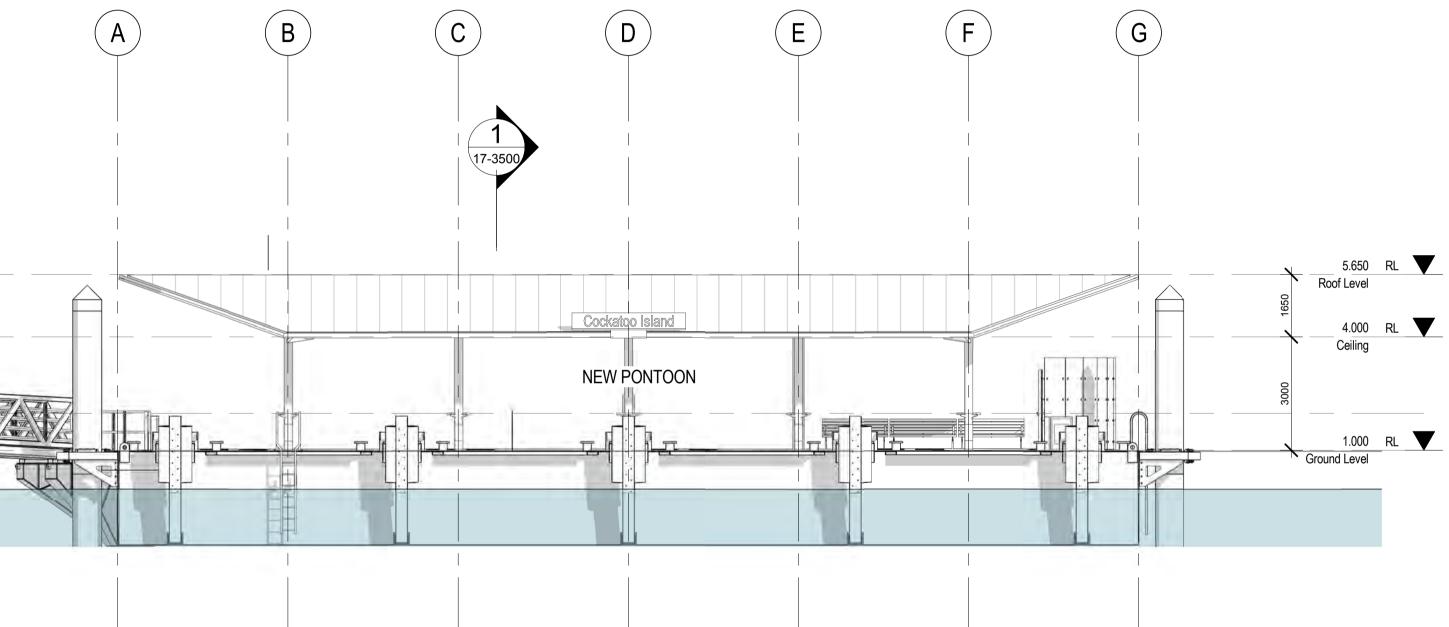


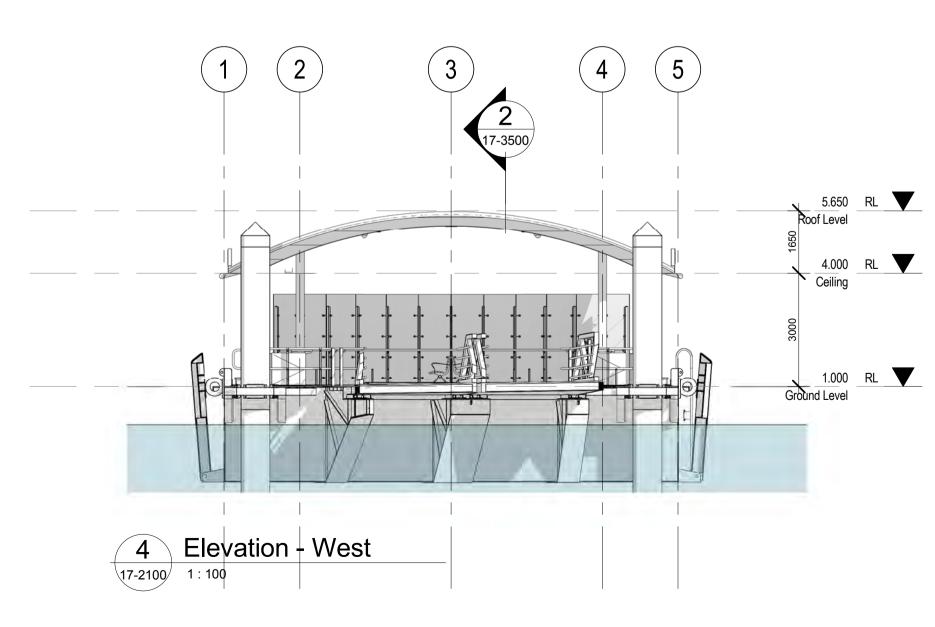




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	3	Gai	ngway Upo	lated			03.11.15	
	4	DR	M Revised				28.01.16	
	5	GA	Issue				14.09.16	
	6	GA	Issue Rev	ised			14.09.16	
	7	GA	Issue Rev	ised			28.09.16	



PROJECT Ferry Wharves Upgrade Program 2 -Cockatoo Island Wharf

Road & Maritime Services

drawing Elevations

PRELIMINARY



## **Appendix B**

Ô[}•ãå^¦ææāį}Åį́~Áįæœ?\¦•Áį́~Ájæœāj}}æ¢Á\}çãi[}{ ^}œ¢Á •ãt}ãã&æa)&^

### Clause 228(2) checklist

Q Ásea åãa j } Át Ás@ Á^ č ā^{ ^} @ Át Ás@ Áts an EIS required?Át COUDÉJÁFJJÍ EFJJÍ DÁ č ãa^ jā ^ Ásej å Ás@ Á Marinas and Related Facilities EIS Guideline Át COUDÉJÁFJJÍ DÁse Ás^caa j^ å Ásj Ás@ ÁU Ò Ø És@ Át II[, ]] \* Á ~284 [ + Éd ás c^ å Ásj Ás a e ^ Á O CO CO At A & CO At A & CO At A & CO A

#### a. Any environmental impact on a community?

Impact	Level of impact
Ù@;¦dĒc^\;{Áā;]æ∨Áå`¦āj*Á&[}•d`&dā;}Áæd^Áæ)dã&ājæer^åÊÁjæddã&` æd ^Á§jÁ ¦^ ææāj;}Á{iÁ,[ãr^Ê5æ&&&^••Áæ)åÁçãr`æd-Áæ{; ^}ãc ĚÁÁ Tãa∄ææāj;}Á{i^ær`¦^•Áj`djā,^åÁ§jÁÔ@æa]:cr¦ÁiÈEA;[č åÁa^Áāj] ^{{ ^}c^åÁq[Á { æa):æ*rÁæa)åÁ{iājājār^ár^Áæa)^Áæâ;ç^¦•^Áāj]æ∨ĔÁQAÁ@AÁ[}*Áæ?Aáj] ^{{ ^}c^åÁq[Á `]*¦æå^Á;[č åÁāj]¦[ç^Áæ&&&^••ãaājãc´Á;ão@3jÁs@A;@ed-Aád^æEÁ	⊤ą́[¦ <i>₩</i> ́

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#### b. Any transformation of a locality?

Impact	Level of impact
V@Á[&æ‡āĉÁ[` åÁ[ơÁs^Ástæ)•-[¦{^åÁ¦[{ÁœAs`  ^}ơÁ};çã[}{^}dấse ÁstÁ , [` åÁs[}dā,`^Át[Ás^Á*-^åÁse ÁstÁ+!!^Á;@æ+-ÉĂ Tā][¦Á@[dĒc^\{ Ás@æ)*^•/ás` ā]*Ás[}•d`&aā[}Á;@æ*^Á[` åÁ;&&`¦Ás`^Át[Ás@A ]¦^•^}&^Át[æ5@3]^!^É∄]æ]ơása)åÁ``ā]{^}dčÁ Q,Ác@Á[}*Ác`\{É5c@!^Á[` äÁs^Ás@Ásta*a3tā]}Á;Ásaása]ää*^É4tæ)*,æáÁsa)åÁ •@ d^!^åÁ;[}d[[}Át[Ás@Áşã`æ‡Áæ]å*&a3ta]}Á;Ásaása]ää*^É4tæ)*,æáÁsa)åÁ æ*^**^åÁ;[}d[[}Át[Ás@Áşã`æ‡Áæ]å*&a3ta]}Á;Ásaása] æ*^**^åÁ;ç^¦æ‡lÁseÁ;[å^¦æz^Át[Á],ÁçE¦Á; [¢ã]æz^Á^}*ātás^A^&^ãç^!*DĚA	Tāj[¦Áq[ÁT[å^¦æe∿Á

Á

#### c. Any environmental impact on the ecosystems of the locality?

Impact	Level of impact
OE;Áseč ǎzea38xÁ4&[ [*^Ásee•^••{ ^}o^Gozee Ás^^}Á`}Á`}á^¦cae\^}Á, @38&@45;å38ææ¢•Ás@eæÁ c@`¦^Á;[č åÁs\^Á;[Á[}*Ás^¦{Á@es{{Át;Át;æ}āj^^A*&[ [*^Ásee ÁseÁ^•č oAt;Ás@÷Á ]¦[][•æ‡ÈAQ:]æ∨Át;}Ás^}c@38xÁt;!*æ}ãr{•Á;[č åÁs\^Ác^{{][¦æ}^Áse}áká;ã;ã;ã*^åÁ à^Áse]]¦[]¦ãæe¢Átæ^*čæså•Áse)åÁt;æ}æ*^{{ ^}o4t;^æ*`¦^•ĚA	, <u>,</u>

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## d. Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?

Impact	Level of impact
V@;!^Á;[` åÁà^ÁæÁ;āj[¦Á^å`&aāi}Á\$JÁ\$JÁ\$QÁæ?•o@;a8kÁçæ?`^•Á;~Á@;Á[&æ‡ãĉÁå`^Á d[Á@;Áæ];a8dā]æe*åÁ;[ãr^É&æãiÁ`za‡ãĉÉ&s[}•d`&aāi}Åç^••^ •Áæ];åÁçãr`æ‡Á§i]æ∨Á ¦^•` dā]*Áå`¦āj*Á&[}•d`&dāi}ÈĂ QuÁc@;Á[}*Áe^!{Ê&@;!^Á;[` åÁà^Ás@;Áæååãaāi}}Á;-Á,^,Á§;-¦æe;d`&c`!^Á{E,Ác@;Á çã`æ‡Áæ);å•&æ3;^ÉXãr`æ‡Á§[]æ∨Á@æç;^Áà^^}}Áæ•^•••^åA[ç^¦æ‡ Áæ•A[[å^¦æe*Á d[Á[,ÁÇE;!Á];[¢ãi;æe*Ái^}=ñaã;^Á^&^ã;^¦•DĚĂ	Tāj[¦Áq[ÁT[å^¦æe∿ÁÁ

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e. Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?

Impact	Level of impact
V@^Á,\[][•^åÁ,[\\•Á,[` åÁa^Á }å^\cæa^}A, A)	Tậ[¦ÁÁ
Q (æ) å Áār KÁÁ ●Á ¦^* ãr cº ¦^å Åæ• Áæ∮, æ o∱, ⋌ázÁVÞ ÒÙÔU ÁY [ ¦ å Á₽^¦ãæ* ^ ÁÙãt^LÁÁ	
●Á  ãrc^å/ų} Ás@ ÁÞæađu} } æ¢Æ^¦ãæ≛^ÁŠãrd.Áse}åÁÁ ●Á ●^] ælæe^Á? ^{_^} or Á\} Ás@ ÁQ æ) å Áse^Áãrc^åá\} Ás@ ÁÔ[{ { [}, ^æ¢o@Á	
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OEAÛcæe^{^}of{\_Á₽^¦ãæe*^ÁQ;]æ&oÁ@e•Á\a^}Á,\^]æ\^å/\$e})å/\$&[}& `å^å/\$o@eehÁ ●Á ãoÁ\$i Á,[o/\$e})ca&a]æe^å/\$o@eeh&@^Á,\[][•^åÅ,[]\•/ÅÇ3,&\`å3,*Ke^{][\æ^^A	
-æ&ajānān • Ásen ÁÔæ; à^¦ÁY @eet-ĐÁ, [ઁ åÅsaæ; ĺæt ^Á∿ãní@¦Ás@!Áæa; ĺãbÁ, ¦Á •ãt}ãa&eet &^Á; -Ásjåãçãa čæl/ser{ •Á;}ÁÔ[&\æn;[ Á@ æet à Ás: ÁseAse ÁseA	
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## f. Any impact on the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974)?

Impact	Level of impact
V@^Áj¦[][•æ‡ÁšērÁ`} ãi^ ^Áq[Á@æç;^Áæ})^Ás[]æ&o4j}}Ás@Á@æàãææAj,-Áj¦[c^&c^åÁ -æč}æbŽÁ	ÞąłÁ

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## g. Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?

Impact	Level of impact
Uç^¦æ Ás@Aj.¦[][•æ‡/ásÁ} ã^ ^Át[Á@æçç^Áæ)^Áat[]æ&o4(;}Á*}åæ)*^¦aj*Áæ)^Á •]^&a∿•Áj~Áæ)at[æ‡É4j, æ)o4(;lÁ(c@;lÁt[;{Áj~Áã^Ê4j@c@;lÁãçāj*Át;}Áæ)åÉ4ajÁjæe^¦Á [¦ÁajÁc@ÁæaiE4Ô@æ];c^¦AîÈiÁj~Ás@ÁÜÒØA%a[}~at{^åÁs@At[  [];aj*ká Á	Tậ[¦ÁÁ
Aquatic Yão@Á^*ælåÁt[Áo@Á][••ãaāãc Á] Áo@^æe^}^åÁvē`æaã&Á]^&&* Áo@Áa c^åÁ `}å^¦Áo@Á>ÙYÁØTOE£ea åÁ/ÙÔÁOE&o Á[¦Á'}å^¦Áo@ÁÔ[{{[], ^ædo@ÓÚÓÔÁOE8oÁ ¦^•ãaā]*Á5JÁ[¦Á,^ælÁo@Á[&æe‡ãc ÊA][Áo@^æe^}^åÁseč`æaã&Á]^&&* Á[¦Á*&[ [*ã&ædÁ &[{{`}}ãæ*•Á,^!^Á,[c^åAs`i]; *Áo@Áa* åÁ,[¦\Áse)åÊ*ãç^}Áo@Á,æč ¦^Á;Áo@Á  [&ædaãc Áse)åÁs@Áseč`æaãA@æàãææ•ÈA A	
Terrestrial Òærc'¦}ÁÓ^}ç,ā]*ÁÓæerÁ,^¦^Áå^c^&c^åáÅ;}ÁÔ[&\æt[[Á@e æ];åÁå`óÁ;[oÁ,^æłÁs@A ,@ed-EÁOEÁ^æ&@át,-Ás@A`å*^•Á;-Ás@Áa`ãåā]*•ÁsejåÁ,^ædà`Á\d`&c`¦^•ÁæaÅs@A ,[[&æt^Áse]^c@3]*Ás@ec4&[` åÁ^¦ç^ÁserÁseák[[•cā]*Á`ãt^Át[¦Ás@•^ÁsiæerE4QA5sA ][••āa ^Ás@ec4s@a`Ásiæc4@ecaA{[,}}Át[ÁÔ[&\æt[[Á@e]æ];åÁsec^¦Ási`•\Áse]åÁ,ærÁ;[oÁ ¦[[•cā]*Á;}Ás@Á5sejæ]	

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#### h. Any long-term effects on the environment?

Impact	Level of impact
V@^Á,\[][•aqhÁ,[č å_Á,\[çãa^Át\^aze^\&aqt_^}ãc´A[¦Át•^\+o,Á,~Áo@A,@ad-ÁajAo@A  [}*Ae^\{ Ao@[č*@Ac@A,\[çãrā[}A[,~Áad)Á]*\aza^âAad)åAdat@A čadat©A @ad-AajAo@A V@^Á,\[][•aqhÁ,[č å_Áa[]\[ç^A,Á_aze^\A`az^c`Aa`A[&aaza]*Ao@Aa^\coad}*Áaa&A ,ão@ajAa^^]^\A,aze^\Ao@\^à`AA*&3,*A&@ad}&^A[,~Áç^++^ +Á@aica]*Áo@Aa^aaA[[¦HŽ	⊤ą̃[¦ÁÁ

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#### i. Any degradation of the quality of the environment?

Impact	Level of impact
Ô[} cæŧ ājæaāj}Á, æʿÁ^•č  cÁ+[{Áaz8&8ãâ^} cæ‡Á*]āļ •Ê4 ^ æb •Ê4A^åāj ^} cÁč}A, `AjA-Áaz)åÁ  ãac^¦Áač'¦āj*Á&[}•dč&cāj}ÈÁ/@^Á,[c^}cãad+Áaj]æ&cAzi AZB @ÁQ], ^ç^¦Ájão@Az@A āj] ^{ ^} cæaāj}Áj-Áaze^*čæbå•ÁajÁÔQeajc^¦•ÂiÈFÁaz)åÂiÈHÁa@AjãQ[åAj-Á jæac^¦Á &[}cæŧjājæaāj}Áj&&&č ¦¦āj*Áj[č  åÁas^Á^åč&^åĚÁ	Тậ[¦Ж́

#### j. Any risk to the safety of the environment?

Impact	Level of impact
Ô[}•dǐ&aā[}Á,[¦\ÁseeÁc@Ác^{][¦æc^Á&[{][`}åÊā(}}Ác@Ásæt*^Áse)åÁ(}Ác@Á  æ)åÁ`¦æs&^Á(æĉÁ]ā[ Ás&@{ã&æt+Êá(āt+Á;à]ã&æ)orÁ¦[{Ás[}•d`&aā(}Á ^`ĭā]{^}oásjo[Ác@Á;æc^¦Ásj&¦^æeā]*Á[&ætai^åÁsč¦àãaãcÊÉ&s@ee)*^•Át[Ác@Á;PÁ æ)åÁ&[}æa(ā)æaā(}ÉÅ	⊤ą̃[¦ÁÁ

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#### k. Any reduction in the range of beneficial uses of the environment?

Impact	Level of impact
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#### I. Any pollution of the environment?

Impact	Level of impact
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#### m. Any environmental problems associated with the disposal of waste?

Impact	Level of impact
OĘ Á,æ•c∿•Á,[č å/aà^Aåã•][•^å/ą Á∞aźa)/ą ~—Ëac^Áæ&ajãcîÈA/@o.¦^Á,[č å/aà^Á,[Á •ãt}ãa3&æ)o/A}çã[]{{^}cæ¢A,¦[à ^{{•A∞e•[&ã∞e°åÁ,ão@4,æ•c^Aåãa][•æ†ÈÁ	Tậ[¦ÁÁ

## n. Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?

Impact	Level of impact
V@~ÁÚ¦[][•æ‡Á¥arÁ'} ã:^ ^Á{[Á@eæç:^Á\$j&\'^æ=^åÁ&^{ æ}å=Á[}Áā[ãc^åÁ^•[`¦&^•ÈĂ Ô[}•d`&aā[}Á[æc^¦ãæ‡=Áse!^Á^æåā[^Áseçæā‡aæà ^Áse}åÅ[` åÁ&^Á*[`¦&^åÁ\[{ Á  [&æ‡Á&[}dæsad[¦•Á]@'!^Á][••ãa ^ÈÁ	⊤ą̃[¦ÁÁ

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#### o. Any cumulative environmental effect with other existing or likely future activities?

Impact	Level of impact
Ô`{` æaã;^Á?~~^∨Á;-Áx@?ÁÚ¦[][•æ‡Áæc'^&a^•&¦ãa^åA§jÁÔ@æ‡jc^¦AîÈÁY@?¦^Á ~^æerãa ^ÊÁ}çã[]{{^}cæ‡Á;æ}æt"^{^}oA;^ær`¦^•Á,[` åAa^A&[[¦å∄jæz*åA{[Á ¦^å`&^Á&`{` æaã;^Á&[}•d`&cã;}Æ{[]æ∨ÈÁ/@?Á,¦[][•æ‡ÁærÁ} ã^ ^Át[Á@æç;^Á æ}^Árãt}ãã&æ)oA[]*Áz^¦{Áã[]æ∨ÈA	Тą́[¦Á

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## p. Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?

Impact	Level of impact
V@^Á,\[][•æ‡Á,[č åÁ,[o%a[]æ&o4,}A&[敜‡Á,\[&^••4,\A&[敜‡Á@æææ‡å•EĂ V@•^Aar•č^•Åæ^A&[}•aa^\^åAş/A'\^åAş/A'\^ææ*\As^œa‡Aş/AÔ@æ‡;c\AîÈEIA,A@AÜÒ⊘EĂ Ù^æ4/\ç^ Áār^Á,\^åa&ca‡}•Á@æç^Aa\^}Aæè^}Aşiq[Aæ&&[č}o4şiAœAs^•ã}Af_AœA ,@æ+È	ÞąÁ

## Matters of national environmental significance

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#### a. Any impact on a World Heritage property?

Impact	Level of impact
<ul> <li>Ô[&amp;\aetatin att</li></ul>	

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#### b. Any impact on a National Heritage place?

Impact	Level of impact
<ul> <li>Ô[&amp;\æti[ Á@ æ) å Áði c*å Á] Á@ Á&gt;ætā] } æ ÁP^\'ãæt ^ ÁŠā dĚ OE (\æta*{ ^} of, -Á</li> <li>P^\'ãæt ^ ÁQ] a scó@e /á*^} Á] !^] æ * å Åæj å Á&amp;[ } &amp;\` å * å Å@ætA</li> <li>A @A a A @A a A @ a A A @ a A A @ a A A A A</li></ul>	Tậ[¦Áã[]æ&oÁÁ
A Á	

AÁÁÁÁÁÁÁÁÁÁÁÁÁÁÁ

#### c. Any impact on a wetland of international importance?

Impact	Level of impact
<ul> <li>V@!^Áæ'^Á.[ÁÜæţ •æ'Á, ^qæ) å•Á\$, Á@ Áşã&amp;j ãć Á, Áv@ Áæ'^ætÁV@!^Æi Áæájã c°åÁ</li> <li>Y ^qæ) åÅ ![ c°&amp;āţ } Áæ'^æ'A å ^iA@ ÁSydney Regional Environmental Plan</li> <li>(Sydney Harbour Catchment) 2005ÁÇÜÜÓÚDÁ[ č@A Á@ A @ @ A ÅÇÔæţ à^!Á</li> <li>Y @ed-DEAO'!!ā•Áe) åÅ, ær'!Áææ'ã Á [ č  åÅà^Á^~ ã^åAţ Á •^AÔæţ à^!ÁY @ed-Á</li> <li>a'iā *Á\$[ } ed š@aţ } Á, Á@ Á ]![ ][ •ætÁ'@ A č šæãAæ •^••{ { } o'A f @ ed A</li> <li>a'iā *Á\$[ } ed š@aţ } Á, Á@ Á ]![ ][ •ætÁ'@ A č šæãAæ •^••{ } o'A f @ ed A</li> <li>a'iā *Á\$[ } ed š@aţ } Á, Á@ Á ]![ ][ •ætÁ'@ A č šæãAæ •^••{ } o'A f @ ed A</li> <li>a'iā *Á\$[ } ed š@aţ } Á, Á@ A [!] [ •ætÁ'@ A č šæãAæ •^••{ } o'A f A @ ed A</li> <li>a'iā *Á\$[ } ed š@at } A f A f @ A f [ ] [ •ætÁ'@ A č šæãAæ •^••{ } o'A f A @ ed A</li> <li>a'iā *Á\$[ } ed š@at } A f A f @ A f [ ] [ •ætÁ'@ A f A @ ed A f A @ ed A f A @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f @ ed A f A f A f A f A f A f A f A f A f A</li></ul>	Tāj[¦Áā[]æ88oÁÁ

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#### d. Any impact on a listed threatened species or ecological communities?

Impact	Level of impact
Q#\$#Á} ã^ ^Áx@eenko@Áå^ç^ []{^}ơAţÁ@ÁÚ¦[][•æ‡Á[č åÁ?ðf}ã&Bæa)d^Á æ~^&oAa)^Á;ac∿åÁ]^&&?•Á[¦Á?&[ [*38æ‡Á&[{{`}38æ?•ĚAP[Á]^&8∂*•Á;ac∿åÁ æ4x@^æe^}^åÁ;¦Á?}åæ)*^¦^åÁ}å^¦Áx@Á?ÙÔÁOB&oA¦ÁÔŬÓÔÁOB&oÁ;^\^Á [à•^¦ç^åÁæeAx@Á?ácA	Þ[Á\$[]æ&oÁÅ

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#### e. Any impacts on listed migratory species?

Impact	Level of impact
Q45arÁ} ãi^ ^Ás@eenÁs@A8a^ç^ []{ ^}ơA(-Ás@AÚ¦[][•æ‡Á,[č åÁrãt}ãa38æa)d^Á æ⊶^&oAsa)^Ápãrc^åÁ(ãt¦æet[¦^Á]^&a3•bĂ	Þ[Á§[]æ80Á

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#### d. Any impact on a Commonwealth marine area?

Impact	Level of impact
V@^Á,[¦\•Áeeh^Á,[ơÁ§,Ác@,Áçã&ã;ãc´Á,ÁeehÔ[{{[},^aeo@Á,æið,^áeehaeÁ	Þ[Áð[]æ\$æÁ
Á	

#### g. Does the proposal involve a nuclear action (including uranium mining)?

Impact	Level of impact
V@~ÁÚ¦[][•æ‡Áå[^•Á,[cá\$jç[ ç^ÁæÁ,č& ^ækÁæ&cāį}ÈÁ	Þ[Á§[]æ&oÁÁ

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Impact	Level of impact
V@ ÁÜÒØÁ@ee Á×¢æţāj^å/هاي å/kæb ^}/≴jd[Áæ&&[`}ơkξ[Á@ Áč  ^•óA×¢ơ}ơÁ ][••ãa ^Áqa Á;æơذا•Áæ-^&aj*Á;!Áä^ ^Áξ[Áæ-^&oAœ/Á}çã[]{ ^}ơás^Á !^æe[}Á;Á@ Á;![][•^åÁæ&añ;ãĉĚÁ V@ ÁÜÒØÁ@ee Á&[}&]`å^åÁœæA⁄a@ Á;![][•æþ/ឆrÁ[ơÁā^ ^Áξ[Á@æç^ÁæÁ •ã }ãã&æ}ơáξi] æ&oA}A;æơذ!•Á;Á ææậi}æAA}çã[]{ ^}œ¢Á ã}ã&æ}&^Á;!Á c@ Á}çã[]{ ^}ơ£;AÔ[{ { [}, ^æơ@Åæ}åÁ,ãœ∄,Áœ Á; ^æ);i, *Á;Æ@ A c@ Á}çã[]{ ^}ơ£;AÔ[{ { [}, ^æơ@Åæ}åÁ,ãœ∄,Áœ Á; ^æ);i, *Á;Æ C conservation Act 1999EÁDEÁ !^~¦!æ¢A(Áœ ÁOE•dæñæ) ÁÖ^]æd{ ^}ơ£;A6@AÔ}çã[]{ ^}ơ&æ}åÁÒ}^!*^Á ã Á;[ơÁ^č ă^åEÁ	Tāj[¦Áā[]æ&oÁ

#### Additionally, any impact (direct or indirect) on Commonwealth land?

# **Appendix C**

Ù cæč ({ ¦^ Á&[ } • ` | cæđi[ } Á&@ &\ |ã o

### **ISEPP** consultation

#### Council related infrastructure or services

A Issue	Potential impact	Yes / No	lf 'yes' consult with	ISEPP clause
Ùq[¦{ ,aæ^¦Á	OE™Ás@`Á,[¦\●Ájã^ ^Át[Á@æçç^ÁæÁ substantialÁt[]æ&o4[}Át@Árd[¦{,æe∿¦Á {æ})æ*^{^}o4^¦çã&∿●Á,@ã&@Áæ4^Á ]¦[çãa^åÁsî^Á&[č]}&ð]ŇÁ	ÞÐÐÆÁ	Þ₩Æ	ŴŎÚÚÁ & ÈHŢFŪÇæDÁ
V¦æ- <b>ã8</b> Á	OE!^Áx@^Á_[¦\●Ájă^ ^ÁţĹÁ*^}^¦ææ?Ás!ææ-æ3&Á q[Áæ)Á^¢c^}oÁs@ææÁ,āj ÁstrainÁs@Á^¢ã-cā}*Á ¦[æåáÁ^●c^{Á\$jÁæá∦[&æa‡*[ç^\}{^}oÁ æ}^æ®VÁ	ÞÐÐÆÁ	ÞÐÐÁ	ŴĊÚÚÁ & ÈHÇFŪŞaDÁ
Ù^, ^¦æ*^Á ∙^∙ơ{ Á	Y āļļÁs@ Á. [¦\•Ás, ç[ ļç^Á&[}}^&aāţ} Át ÁzÁ &[`}&āļÁ,`}^aÁ^^, ^¦æ*^Á^•c^{ ÑÁQÁ •[ĒÅ, āļļÁ@ā Á&[}}^&aāţ}Á@æç^ÁzÁ substantialÆt[]æ&o4,}Å@Á&æ}æ&āc 4,~Á æ}^Á,æto4,~Ás@Á^•c^{ ÑÁ	ÞÐÐÁ	ÞÐÆ	ŴŎÚÚÁ & Èhţfuşdá
Yæe^¦Á∙æ*^Á	YāļļÁc@Á,[¦\•Á5jç[ ç^Á8v[}}^&cāt]}Á8(ākaéA &[`}&āþÁi,}^aÁ,æer\Á`]] ^Ár`•c^{ÑÁ QÁ:[Ê5,āļļÁc@a:Á^~`ā^Ác@Á•^A,ÁcaéA substantialÁç[]`{ ^Átj-Á,æer\ŇÁ	ÞÐÐÆÁ	Þ₩Æ	ŴĊÚÚÁ & ÈHŒŢŒĴDÁ
V^{ ][¦æ∱Á ∙dĭ&c'¦^∙Á	Y āļļÁs@ Á [¦\•Ás]ç[ļç^Ás@ Ás] • cæļļæcā] } Á [-Áscác^{][¦æ^ Ád`&c` \^Á;}Êf, ¦Ás@ Á ^}&{[•ā] * Á; -Éscá, `à ā3A;  æ&^Á, @a&@ás Á `}å^¦Á[&æ‡/&] `}&ājÁ; æ}æ*^{ ^}of, 'Å &[]ŇGA [Êş, āļÁ@á; Ásæ •^Á; [¦^Á c@e), Áscáminor or inconsequential åā; ']cā] } Ás[Á,^å^•dãæ), Á; ¦Áç^@a&`  æA -{[, ŇÁ	Þ₩ÐÆ	ÞÐÆÁ	Ũ ŎÚÚÁ & Èhţfuşdá
Ü[æåÁBÁ -{[d]æc@Á ^¢&æçæa‡}}Á	YāļļÁs@ Á. [¦\•Ásjç[ļç^Át, [¦^Ás@aa) Á minororinconsequentialÁ\¢&aaçæaāt}}Á [~ÁæÁt[æåtÁt¦Áæåbæ&A}oÁt[[d]ææ@Át[¦Á ¸@3&@Ást[`}&ātÁs Ás@ Át[æå•Ásĕ c@;lãĉÁ æa)åÁ^•][}•ãal/At[¦Át,æāt]c^}æa)&^ÑÁ	ÞÐÐÁ	ÞÐÐÁ	ŴŎÚÚÁ & Èhţfuşdá

#### Local heritage items

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Issue	Potential impact	Yes / No	lf 'yes' consult with	ISEPP clause
Š[&æ¢Á @∿¦ãæe*^Á	QÁs@ ¦^ Áā Ásá [ & & Å@ ¦ãzet ^ Áār { Áç @ ex Áa Áa A A A A A A A A A A A A A A A A A		ÞÐÐEÁ Á Ô[&\æe[[Á@ æ)åÁ ã ÁÔ[{{[}, ^梜¢ [, }^åAæ)åL\$av\$a Á [`o•ãå^Ác@A [`o•ãå^Ác@A b`¦ā*å3&cā[}Á[¦Á Ùcæe^Áæ;•ÈA	ŴÒÚÚÁ &IÈI Á

Á

#### Flood liable land

Issue	Potential impact	Yes / No	lf 'yes' consult with	ISEPP clause
Ø[[åÁjãæà ^Á  æ);åÁ	OE^Ás@^Á, [¦\●Á[&ææ°åÁ;}Á[[[åÁãæà ^Á  æ)åÑÁQÁ[ÊÁ, älÁs@Á, [¦\●Á&@æ)*^Á -{[[åÅ,ææc^¦}●Á[Á, [¦^Ásœæ)Á∞ÁminorÁ ^¢c^}dÑÁ	ÞÐÐÁ	ÞÐÐÐÁ Á V@Á¦[][•æ¢Á@æÁ à^^}Á\$^•ã*}^åA{ξ Æ&&[{{[åæe∿Á •^æ¥{∧ç^ Áã~ÁÅ	ŴÒÚÚÁ &¦Ĕŧŗí Á

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#### Public authorities other than councils

Issue	Potential impact	Yes / No	If 'yes' consult with	ISEPP clause
Þæaa[}æ¢Á ]æ¦∖∙Áæ}åÁ ¦^∙^¦ç^∙Á	O∄^Áx@Á [¦\●Áæåbæ&^}ơkų[Áæ4}æaā]}æ¢Á ]æ¦Aį́¦Ájæč¦^ÁA^●^¦ç^É4i¦Aį@@¦Áe4^æA ¦^●^¦ç^åÁ}}å^¦Á©ÁNational Parks and Wildlife Act 1974ÑÁ	Þ[	U~a&∿Á(ÁÁ Ò}çã[}{^}oÁse)åÁ P^¦ãazet^Á	ŴĊÚÚÁ & ÈÎ ŒŒ
Tælậ^Ájæl∖∙Á	Œ^Ás@Á [¦∖∙Áæåbæ&^}ơ4ξ Áæåå^& æ!^åÁ {æi∄,^Ájæ¦\Á`}å^¦Ás@ÁMarine Parks Act 1997ÑÁ	Þ[ Á	Ö^]æld(^}ơ∱Á Ú æ)}∄,*áæ)åÁ Ò}çã[]{ ^}ơÁ	Qùùúá &ÌÈî çeişadá
Œ ઁææA ¦^∙^¦ç^∙Á	Œ^Á@Á [¦\∙Áœålæ&^}ó&[Áœå^& æ'^åÁ æੱ`ææ&Á^•^¦ç^Á}å^¦Á@AFisheries Management Act 1994ÑÁ	Þ[	U~-3&^Á(-Á Ò}çã[}{ ^}o%ee)åÁ P^¦ãæe≛^Á	àùùúá &àtì cairdá
Ù^å}^^Á Pæà[˘¦Á -{¦^∙@¦^Á	Œ^Á@Á [¦∖∙Á§Á@ÁÙ^å}^^ÁPæà[`¦Á Ø ¦^•@ ¦^ÁŒ^æ&&^A^a}^å&î&@Á Sydney Harbour Foreshore Authority Act 1998ÑÁ	Þ[ Á	Ö^]æld(^}ơ∱,-Á Ú æ)}∄,*áæ)åÁ Ò}çã[]{ ^}ơÁ	ŴĊÚÚÁ & ÈÎ ŒŒ
Tæläaã;^Á CEcq⊉¦ãã Áj,Á ÞÙYÊÃ	Ö^ç^∥[]{^}ơ&s[{]¦ãrā]*Á∞áã¢^åA(;¦Á ⊣[æaā]*Árdĭ&cč¦^ÁşiA(;¦Á(ç^¦Á)æçātæà ^Á ,æe∿¦∙Á	Ÿ <b>^</b> ∙ Á	ÞÙY Á, æiãa ́^Á	ŴÒÚÚÁ & ÈÎ ÇEUÇ DÁ

Issue	Potential impact	Yes / No	If 'yes' consult with	ISEPP clause
Óٽ•@Áaā^Á ]¦[}^Áaa)åÁ	OE^Ás@^Á,[¦\•Áţ¦Ás@^Á,`¦][•^Áţ-Á ¦^•ãå^}cãady/ŝå^ç^ []{^}cÉady)Á ^å`&æadi}}addÁ*•cæadiai@{^}cÉadd@adqc@á •^¦çã&^•Áæ&adiac Ébada%{ ¦^&&di}}addA [¦Át¦[`]ÁqQ{^/&sj,Áa`•@Ada^Áj¦[}^Á  æ)åÑÁ	Þ[ Á	Ü覿µÁ26ā^Á Ù^¦ça&∆ÁÁ	ŴÒÚÚÁ & ŧî çeişđá

## Sydney Harbour SREP consultation

Issue	Potential impact	Yes / No	If 'yes' consult with	SREP clause
Ú¦[çãã[}Á[-Á ∙^¦çã&^∙Á	Ö[Ás@A,[¦\●Á^˘ăā^Ás@A,¦[çãa[}A,Á ●^¦ça&^●ÁG3,& ĭåäj*Á,æe^\¦ÉA^,^¦æ*^Á [¦Ánd[¦{,æe^\¦Á^●c^{•DÑÁ	Þ[ Á	Ü^ ^çæ);cA,`à &&Á æčc@;!ãĉÁ ¦^•][}•ãa)^Áp;!Á ]![çãa3,*Ac@:Á •^¦ç&&A	ùùòúá & Èfgegægædá
Œaç∧¦cãrāj*Á	Ö[Ás@?Á,[¦\∙Á53,& ĭå^Ásæåç^¦cãr^{ ^}orÁ [¦Ásæåç^¦cãrāj*Árdĭ&cĭ¦^•ÑÁ	Þ[ Á	Ø[¦^•@[¦^•Áæ)åÁ Yæe^¦, æê•Á Ö^ç^ []{^}ơÁ OEâçã:[¦^Á Ô[{{ãec^^Á	ÙÜÒÚÁ & ÈFÇEIQæQQDÁ BÁÙ&@°å` ^Á GÁ
OĒçãæcāļ}Á	Ö[Ás@∘Á,[¦\∙Á5)& ĭå^Ásæçãæcā(}}Á ~æ&åjãa2№ ÑÁ	Þ[ Á	Ø[¦^∙@[¦^∙Áæg)åÁ Yææ^¦, æê∙Á Ö^ç^ []{^}oÁ OEâçã[['Â Ô[{{ãœ^^A	ÙÜÒÚÁ & ÈFÇEIQƏEQƏDÁ BÁÙ&@°åč ^Á GÁ
Ó[æcÁ  æ`}&@}*Á	Ö[Áo@∘Á,[¦∖∙Á5),& ĭå^Áà[æaAjæč}&@3),*Á -æ&3jäãa?•ÑÁ	Þ[ Á	Ø[¦^•@[¦^•Áæ)åÁ Yæz^¦, æê•Á Ö^ç^ []{^}ơÁ OEåçã:[¦^Á Ô[{{ãoc^^Á	ÙÜÒÚÁ & ÈFÇEIÇÆQZDÁ BÁÙ&@åč ^Á GÁ
Ó[æ¢ÁãœÁ	Ö[Áo@? Á, [¦∖∙Á§,& ĭå^Áà[æaÁão•ÑÁ	Þ[	Ø[¦^•@[¦^•Áæ);åÁ Yææ^¦, æê•Á Ö^ç^ []{^}oÁ OEâçã:[¦^Á Ô[{{ãæ^^A	ÙÜÒÚÁ & ÈFÇEIQæQQDÁ BÁÙ&@°å` ^Á GÁ
Ó[ædÁ^]æálÁ	Ö[Ás@:Á, [¦∖•Á§;& ĭå^Áà[æcÁ^]æáiÁ ~æ&ájãa∄•ÑÁ	Þ[	Ø[¦^•@[¦^•Áæ);åÁ Yæz^\; æô•Á Ö^ç^ []{^}oÁ O2åçã:[¦^Á Ô[{{ãoc^^Á	ÙÜÒÚÁ & ÈFÇEIŞƏQƏTÁ BÂÙ&@å` ^Á GÁ
Ó[æ¢4@°å∙Á	Ö[Ás@Á[¦∖∙Á§j& ĭå^ÁsaAà[æaAi@åAj¦Á ∙@å•ÑÁ	Þ[	Ø[¦^•@[¦^•Áæ);åÁ Yææ^¦;æê•Á Ö^ç^ []{^}ơÁ O2åçã:[¦^Á Ô[{{ãœ^^A	ÙÜÒÚÁ & ÈFÇEIQƏQQDÁ BÂÙ&@å` ^Á GÁ
Ô@eetc^¦Áee)åÁ q[`¦ãe{Á à[æee]*Á ~æe6ajãe?•Á	Ö[Áo@:Á [¦∖∙Á5)& ĭå^Á&@ee¦c∿¦Áæ)åÁ q[ĭ¦ãr{Áå[æan3)*Áæ&4jãan3°•ÑÁ	Þ[ Á	Ø[¦^•@[¦^•Áæ)åÁ Yæe^¦, æê•Á Ö^ç^ []{^}ơÁ O£åçã[¦^Á Ô[{{ãc^^A	ÙÜÒÚÁ & ÈFÇEIQæQDÁ BÁÙ&@°å` ^Á GÁ

Issue	Potential impact	Yes / No	If 'yes' consult with	SREP clause
TælājærÁ	Ö[Áo@∿Á,[¦∖∙Ásj& ĭå^ÁeæÁ&[{{^¦&ãæ¢Á [¦Áj¦ãçæe∿Á(æ÷ðjæðÑÁ	Þ[	Ø[¦^∙@[¦^∙Áæd)åÁ Yæe^\;æê•Á Ö^ç^ []{^}ơÁ O5åçã=[¦^Á Ô[{{ãac^^A	ÙÜÒÚÁ & ÈFÇEIÇÆQIÁ BÂÙ&@å` ^Á GÁ
Ô[{{ ^¦&ãæ¢Á ][¦ơÁæ&ãããã∿∙Á	Ö[Ás@A,[¦∖∙Ás⊌& ĭå^Á&[{{^¦&ãæ‡Á ][¦oÁæ&ä†ããã∿∙ÑÁ	Þ[ Á	Ø[¦^∙@[¦^∙Áæ)åÁ Yæe^¦, æê∙Á Ö^ç^ []{^}ơÁ OEåçã[¦^Á Ô[{{ãœ^^A	ÙÜÒÚÁ & ÈFÇEIÇƏQƏQƏÁ BÁÙ&@°å` ^Á GÁ
Ô[{{^\&ãæq-Á;¦Á ¦^cæã‡Á́∙^Áį,∽Á  æ);åÁ	Ö[Ás@Á,[¦∖∙Áşi& ĭå^Ás@Á&[{{^¦&ãæ‡Á [¦Á^œaậlÁ•^A(a)åAa)åAs^ [, A[¦A]ædqîÁ à^ [, A[^a)Á@ãi@Á,æe^¦A[æd∖ÑÁ	.Þ[ Á	Ø[¦^∙@[¦^∙Áæ)åÁ Yæe^¦, æê∙Á Ö^ç^ []{^}ơÁ OEåçã[¦^Á Ô[{{ãac^^A	ÙÜÒÚÁ & ÈFÇCIQƏQQDÁ BÁÙ&@°å` ^Á GÁ
Ö¦^å* <b>ā</b> *Á	Ö[Áo@A,[¦∖∙Áaşç[ ç^Áæ),^Áas¦^å*a),*ÑÁ	Þ[ Á	Ø[¦^∙@[¦^∙Áæ)åÁ Yæe^¦, æê∙Á Ö^ç^ []{^}ơÁ O5åçã[¦^Á Ô[{{ãœ^^A	ÙÜÒÚÁ & ÈFÇEIÇƏQƏQDÁ BÁÙ&@°å` ^Á GÁ
Ø∥[¦æ&\$æ)åÁ -æ`}æÁ ^}&∦[•`¦^∙Á	Ö[Áo@A,[¦∖∙Ásj& ĭå^Áse}^Á4[¦æá æ}åtЦÁæĕ}æáA}&4[•ĭ¦^•ÑÁ	Þ[ Á	Ø[¦^∙@[¦^∙Áæ)åÁ Yæe^\;æê•Á Ö^ç^ []{^}ơÁ Œåçã=[¦^Á Ô[{{ãœ^^A	ÙÜÒÚÁ & ÈFÇEIÇæQZDÁ BÁÙ&@åč ^Á GÁ
P[˘∙^à[æ₽Á	Ö[Ás@?Á,[¦∖∙Ásj& ĭå^ÁsaÁqQ;ĭ•^à[æaÁ(¦Á @Q;ĭ•^à[æa9•ÑÁ	Þ[ Á	Ø[¦^∙@[¦^∙Áæ)åÁ Yæe^\;æê•Á Ö^ç^ []{^}ơÁ Œåçã=[¦^Á Ô[{{ãœ^^A	ÙÜÒÚÁ & ÈFÇEIÇæQZDÁ BÁÙ&@åč ^Á GÁ
Qu& ậjaæ[¦•Á	Ö[Áo@?Á,[¦∖∙Á53,& ĭå^Áæ3)Á53,& ã);æq[¦ÑÁ	Þ[	Ø[¦^∙@[¦^∙Áæ)åÁ Yæe^\;æê•Á Ö^ç^ []{^}ơÁ Œåçã=[¦^Á Ô[{{ãœ^^A	ÙÜÒÚÁ & ÈFÇEIÇƏQƏQƏÁ BÂÙ&@åč ^Á GÁ
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Issue	Potential impact	Yes / No	If 'yes' consult with	SREP clause
Ú`à a&Á, æe^¦Á ¦^&¦^æaāį}æ¢Á ~æ&ajãaã∿∙Á	Ö[Ác@∘Á,[¦∖∙Ásj& ĭå^Áæ);^Á,ĭà a&Á ,aec^¦Á^&¦^aeaa[}}aa†Áæ&a‡ãa3*•ÑÁ	Ÿ^∙ <i>Ă</i>	Ø[¦^•@[¦^•Áæ);åÁ Yæe^\;æ`•Á Ö^ç^ []{^}oÁ OTåçãr[¦^Á Ô[{{ãac^^A	ÙÜÒÚÁ & ÈFÇEIŞÆÇIA BÂÙ&@å` ^Á GÁ
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Issue	Potential impact	Yes / No	If 'yes' consult with	SREP clause
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# Appendix D

Þ[ã~Áæ)åÁçãa¦æeãį}Áæ•^••{ ^}ơÁ ₄ Á **MANAGING DIRECTORS** MATTHEW PALAVIDIS VICTOR FATTORETTO



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# **1 INTRODUCTION**

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- HĚÁ Ø[¦{ `|æet^ Áœch dæet^\* ^ Á[¦Á&[} d`&cā]} Áœskcāçãaā^ Áq[Á&][{ ]|^ Á, ão @Ác@ Ál^|çæa) óA;[ã\* Á æa) å Áçãa ¦æeā] À Árcæa) å ælå • Ábj &|` å āj \* Áœch `ãææa |^ Á[[} ã[¦ā] \* Ál^ \* ã[ ^ Áq[Áa ^ Áā] | /{ ^} c^ à @} Á][c^} œaeh ^ Á@at @A;[ã\* ^ Áœa) å Áçãa ¦æeā] } Á\* ^} ^¦æeā] \* Áœskcāçãaā • Áœb ^ Áa ^ āj \* Á • ^ å Áœa) å Á |^ &[ { { ^} å • Á][ã\* ^ Áœa) å Áçãa ¦æeā] } Á&[} d[|• Á[¦Ác@ Ál^|^çæa) oÁ] |æa) oÁæa) å Ár `š a] { ^} oÁq[Á à ^ Á • ^ å Á] [ã\* ^ Áœa) å Áçãa ¦æeā] } Á&[} d[|• Á[¦Ác@ Ál^|^çæa) oÁ]|æa) oÁæa) å Ár `š a] { ^} oÁq[Á à ^ Á • ^ å Á] } Ác@ Á ãc^ÈÁ
- IÈÁÔ[}åč&orÁæ)Áæ••^••{^}o´Ą.-Á][ơ^}cãæ‡Á][ã\*^Áξi]a&soÁ⊹[{Áo@A[]^¦ææ‡i}}Á[-Áo@Áčč¦^Á \_@æ÷-ÈÁ

# 2 PROPOSAL DESCRIPTION AND POTENTIALLY AFFECTED PROPERTIES

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٣َ'اعَةَ\* ٨ُكَو ٨َلا[}•d`&caīt) Aj´@ee´^Ébúoe Ar¢arca) \* AÓæét à^!ÁY´@ee+Átt Aíoe Aft[`coAft -Áde Afar|ae) å Aj ant AfarAí `•^å Átt Át عظه معظه Aíoe Ar¢arca) \* A^!!^Ár^!ça&^ÉAV@erÁ, @ee+Á, ant A/``an Aío{][¦ae'Ai^|[&aeaat}}Aft-Á •[{ ^ Ár``a] { ^} cóae) å Áxo{][¦ae'Á, aê -ā) å ā) \* Ábj•cae|aeaatt} Áj¦att¦Átt Á • ^ÉA Á

Á/@^Á;¦[][•æ‡Á;[č|åÁ&[{]¦ãr^Áo@^Á{[||[¸ã]\*Á\*|^{^}o•kÁ Á

#### Demolition and removal of the existing gangway and pontoon

•ÁV@^Á^¢ãrcāj\*Á\*æ)\*,æÂæ)åÁj[}d[[}Á,[`|åÁà^Á^{ [ç^åÁ`•āj\*Áæáàæ\*^Á,ão@Áæá/[`}c^åÁ &¦æ)^ÈÁ

#### Construction of a new bridge, gangway and pontoon

- •Á OEÁ, ^ Á } & [ç^!^å/kæ‡ { 引ā { Ásů ǎæþ/tǎæ} \* æ Á Çæà[č óÆ Ì Á, ^d^•Á] } & [Åæ) å Ái Á, ^d^•Á, ãå^DÁ , [č]å/k&[} ^ & Aó@ Á æţ ^ Á; ]] [ ¦c^å/kaî Ê kô@ Ási ãå \* ^ Áæ) å Ál[æā] \* Áj [ } d[ ] } È Áv @ Á æj \* , æ Á , [č]å/k&[} ĉāj \* Ás@ Á æţ ^ Á; ¦āt} cææā] } Ásæ Ás@ Ási ãå \* ^ È Á @ Á\* æså āt} oÆ, Ás@ Á\* æ) \* , æ Á, äl Á çæ ŕ Ásæ&&[ ¦å a] \* Át Ás@ Á æá ^ È Á
- •Á CEÁ, ^, Á^&cæa)\* \* |æláÁ cº^|Á|[ænzā]\*Á,[} q[] Ásbæà[` ơÁCI Á, ^d^• Á,[}\*Ásea)åÁFGÁ, ^d^• Á, ããb^A á, , [`|å/Ásh^Á&[}•d`&cvåásea Ásbæa Ásbæð (Aræe cvl} Ár}å á, Ásbæð \*, æl ÉÁ/@A,[} q[]} á, äl/Ásh^Á&[ç^l^åA à ^Ásbæ&`lç^å Á ā, &A[[-Á`]][l'c'å/Ásî^Ácv^l/&S[|`{}•Ásea}å Á, äl/Ásbæa, ^ka^lc@a)\*Ása& A& }[lc@l}ásba)å Á[[`-A`]][l'c'å/Ásî^Ácv^l/&S[|`{}•Ásea}å Á, äl/Ásbæa, ^ka^lc@a)\*Ása& A& }[lc@l}ásba)å Á[[`-Q@l}Á ããh^• ÉÁ/@A[[`c@l}Á ãāh^Á Acv^l/&S[]`{} al/Ásh^Ásball al/ásh^Ásball al/ásh^Ásball al/ásh^Ásball al/ásh Ásball alíásh Asball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh Ásball alíásh As
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- •Á Ô[}}^&cā;}Â; Á; Á?|^&cd a8æd,Á[, ^¦Áq Áæ) Á\*¢ã; cā; \*Á`]]|^Áq[Á;|[çãa^A,Á][, ^¦Áq Ás@e,Á@e,a4;lÁ |ã\*@a3; \*Ás9; å:Á\*^&`¦ã; ÈÉWda7ãa?•Áse,^Á,[cá^~`ã^àÅq Ás/Á^|[&æe,\*àÈÁ
- •ÁÜ^|[&ææā]}Á[×ÁU]æ‡Á^æå^¦•Áæ}åÁ2UÔQÙÁ{&¦^^}•Áæ}åÁ^|ææ^åÁ^`ča]{ ^}dĚÁ

#### **Construction of landside infrastructure**

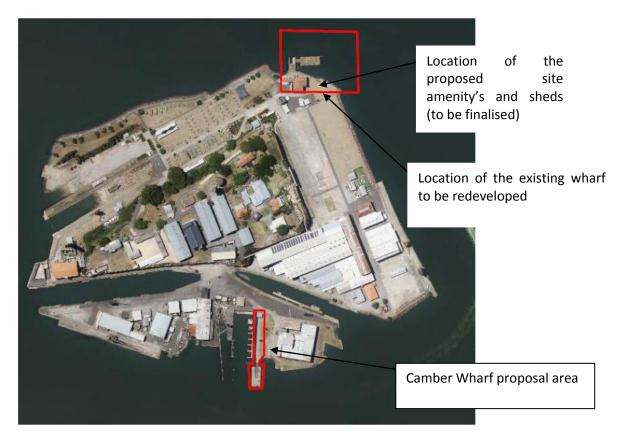
 $\bullet \dot{A} \models \uparrow_{,} \dot{A} = A \Rightarrow \dot{A} \Rightarrow \dot{A} = A \Rightarrow \dot{A} \Rightarrow \dot{A} = A \Rightarrow \dot{A} \Rightarrow \dot{A} = A \Rightarrow \dot{A}$ 

- •ÁÓ`}å^ÁU~a&^Á^~`¦àã\*@{^}o\*Á§`àb^&oÁ{[Áæ]]¦[çæ‡Á¦[{ÁÙ^å}^^ÁPædà[`¦ÁØ^å^¦ææ1]}Á V¦`•oDÁsj&{`å3j\*KÁ
  - •Á Ú¦[çã ā[}Á[, Ázdá/\ç^|Áza) åā] \* Á¦[{ ÁÔ`}å ÂU~-38\^Á[Á[]Á[, Á\*za) \*, zê ÁÁ
  - •ÁÚ[ơ\ʾáæ‡Á^|[&ææ\$4]}Á, Ávæ³;cā)\*Á懕Ð][•ơÁ[Á'}æà|^Áæ‡|^Á;ææ&@\*æ}\*,æÂ´ ]æ@A,ʿÁtæç^|ĔÁ

#### **Ancillary Facilities**

- •Á \/ { ] [ \achie A \achie A \action B \action B \actio A \actie A \actie A \attie A \actie A \actie A \attio A \actio A \ac

•Á V^{ ][¦æh^Áy æê~ājåāj\*Áq[Ð+[{ ÁÔæq(à^¦Áy @æb-Á+]{ Ás@ ÁÔ[&\æq[[Á@q|æbjåÁxãrãq[¦•ÁÔ^}d^ÈÁ ÁQE;Á[ç^¦çãh, Á[-Áo@ Á];[][•æþÁāj&]čåāj\*Áo@ Áæa]]¦[¢ã[æen Á|[&æeaāj}}Á[-Áo@ Á+ãe^ÁācÁ+@q,}ÁājÁ Øātč¦^ÁFÉÁÁÁ



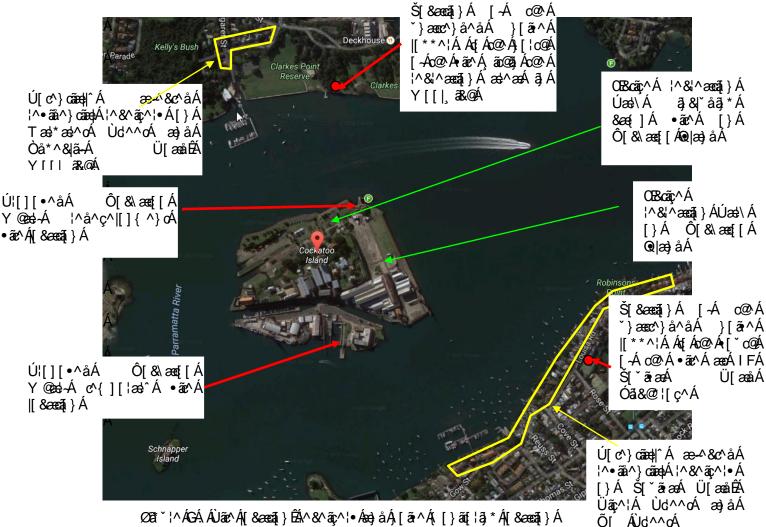
Øãtč¦^ÁFËÄUç^¦çãt`, Á; Ás@∘Á;¦[][•^åÁãe^Á

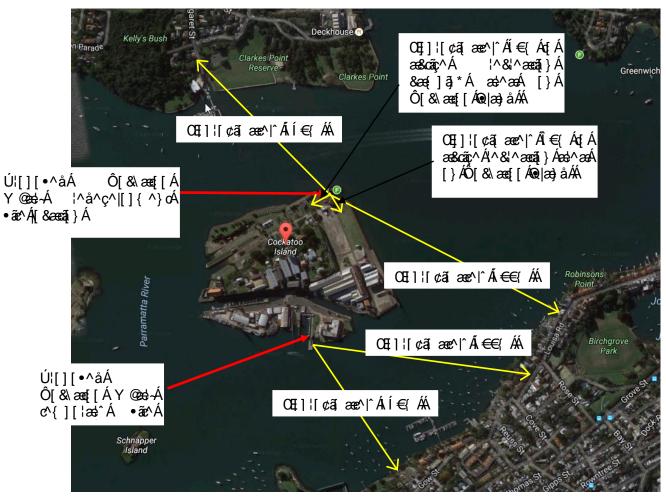
Óæ•^åÁ[}Áo@\Á•ãc^Á[&ææā]}Á[~Áo@\Á3];c\*¦&@æ);\*^Á]¦[b\*&dÉ⁄o@'Á][c\*}cãæ‡|^Áæ-^&c\*åÁ'^&^ãç^¦•Á 3]&|\*å^kÁ

- •Á Ü^•ãå^} cãædÁ^&^ãç^¦•Á[&ææ^åÁ[Ác@Á[čc@Á;Ác@Áã&A;Ác@Áã&A;Åc@Áã&A;Åc@Áã&A;Åc@Åáã\*Á; ] {[]^\cãv•Á;}ÁĴ[, ÁĴd^^o&æ)åÅĴãç^¦ÁĴd^^dÊðã&@ {[ç^ÈÁ
- •Á Ü^•ãa^} شَعْطِهُمْ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ اللَّهُ الْمُعْمَمُ الْمُعْمَمُ الْمُعْمَمُ الْمُعْمَمُ الْمُعْمَمُ الْمُعْمَمُ اللَّهُ إِنَّا اللَّعْظَمَ اللَّهُ الْمُعْمَمُ اللَّهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْمَ عَلَيْمَ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْ عَلَيْ الْحَقَاعَ عَلَيْهُ عَلَيْ عَلَيْ اللَّهُ اللَّهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْهُ عَلَيْ عَ وَعَلَيْ عَلَيْعَا عَلَيْ مُعَلَيْ ع
- •Á V@^Áæ&cãç^Á^&'^æãų}}æjÁæb^æ Á[&æe^åÁu}}ÁÔ[&\æe[[Á@|æ)åÈÁ
- $\bullet \dot{A} \vee @ \dot{A} = \dot{A} \wedge \dot{A} \wedge \dot{A} \wedge \dot{A} \wedge \dot{A} + \dot{A} = \dot{A} + \dot{A$

Øãi č¦^ÁGÁæ) å ÁrHáa^|[, Áá^cæa‡+Á∞ Á[&ææa‡i}Á; Áá@ÁÔ[&\æe[[ÁQe]æ) å ÁY @eel-Á]\*¦æå^Á ã&ÊÁ |[&ææa‡i}Á; Á; Á][ơ}; ãæe|^Áæ-^&c^åÁ^&^ã;^¦+Áæ) å Áo@ Á[&ææa‡i}Á; Ás@ Á,[ã\*^Á;[}ãt;¦Át;Áæ+^+A ^¢ã:caj\*Á,[ã\*^Á^ç^|+Á;ãc@a;Ás@ Áçã&a]ãc Á; Ás@ Áãc^ĚÁ

Á





 $\ensuremath{ \mathcal{A} = \ens$ 

### **3 SITE WORKS**

 $\begin{aligned} & \mathsf{CFAcv} \{ \ ] \left[ \ | a d^{A} \ A d^{A}$ 

V@:Áj¦[][•^åÁ&[}•d`&cāţ}Á,[¦\•Áæ¦^Á;&@\*å`|^åÁξÁæ;oÁ`]ÁξÁæà[čA{[`cA{[`¦Á{[}}c@:Á,ãc@éc@:Á ]ājā;\*Áæ&cāçãa3\*•Á\*¢]^&c^åÁţÁæ;oÁ]Áξ[Á;}^Á;[}c@ěXÁ

#### **4** CONSTRUCTION NOISE CRITERIA

V[Aå^ơ\{ 3}^Á&[}•d`&aā[}Á,[ã^A&;ãv\ãæáāA;[][•^åÁ;[Á •^Á@ÁUÒPÁnterim Construction Noise GuidelineÁ, @3&@Åa^cæá‡Á^č ã^{ ^}oÁ;[Å&[}•d`&aā[}Á;[ã^ÈA/@•^Á^č ã^{ ^}oÁæ^Á ]¦^•^}♂åÁ§jÁs@Á[||[, 3]\*Á^&aā]}•Áa^|[, ÈĂ

#### 4.1 OEH CONSTRUCTION NOISE GUIDELINE

V@:ÁUÒPÁ@æç:^Á\$\^ç^|[]^åÁæ4i]^&ãã&Á&[}•d`&aāt}Á,[ã:^Á\*`ãå^|ā;^Á§;Á@:ÁæãáA,[`A^å`&ā;\*Á@:Á ãt]æ&aA, Á&[}•d`&aāt}Áæ••[&ãæe\*åÁ,[ã:^ĚÁ

V@:Á\*`ãā^|ā]^Á¦^-∤^&o=Á[}Á-2æ=ãâ|^Áæ)åÁ¦^æ=[}æà|^Á{ ãuātæaā]}Á•dæe\*\*āt•ÉA{ æ)æt\*^{^}oÁ &[}d[|•Áæ)åÁ&[{ { `}}ãc`Á&[}•`|œæā]}ÁājÁc@:Á^--[¦cÁt[Á/>æ&@Á!^æ‡ā:cã&Á&[{ ]¦[{ ãr^•Áa^c, ^}Á &[}•d`&cā]}Á:ãc^•Áæ)åÁ;[c^}cãæ4Á;[ãr^Áæ-^&c^åÁ^&^ãç^!•ÉÁ

#### 4.1.1 Interim Construction Noise Guideline – Quantitative Assessment Method

 $V @ \acute{A}^* \tilde{a}_{\bar{a}} | \tilde{a}_{A} A_{A} | \bullet \acute{A}_{\bar{a}} | \acute{A}_{\bar{a}} (\tilde{a}_{A} \tilde$ 

Q).Áæååãnā[}ÉÁc@\Á\*`ãå^|ā]^Á•]^&ãa?\•Á\*[憕Ád[Á{ā]ā[ā\*^Á}[ā\*^Á}[[\*Á&[]+d`&dā[}Á¦^|æe\*åÁ æ&dāçãnā?•EÁ\@•^Á,[ā\*^Á\*[æ†+Áse\*^Á,¦^+\*}c\*åÅ;ãn@3,Ás@:Ásæà|^Ás^|[;EÁ

Governing Body	Receiver Type	External sound level Goal, L <sub>Aeq 15 min</sub> dB(A)		
		ÖæÂÄÄÓæ&\*¦[`}寯F€ÆåÓÇEÐÁ		
	Ü^∙ãã^}cãa‡ÁÁ	Òç^}∄,*ÄË4Óæ&\*¦[`}åÁÉÁÍÁsóQCEÐÁ		
		Þat @AÄZÓæ&∖*¦[č}åÁÉÁÁ ÁåÓÇCEÐÁ		
UÒPÁ		Ϊ Í ÅåÓÇEEÐÁ		
	Ô[{{ ^\&ã#dÁ Ú¦^{ ã^•Á	V@A^¢c^\}æA,[ār^A/^ç^ •A:@[` åAà^Áæe•^•^åAæeÁ c@A,[o@A,[odæe-^&c^åA,&&`]āråA,[ājA,ÁœA,'{á@A,'{{ã^•^bk E;~a&^•ÊA^œaA,`d^okA¢c?\}æA ŠOP-`ÁÇFÍA,ʿājDÂ,€AåÓÇCEDÁ		

#### Table 1 – OEH Recommended Construction Noise Goals

FKÁY@\^Ác@AJ\^å&Bcc\*åA[\Á{^æ\*`\^åAŠce~ĂçríA{ajckārÁ\*\^æer\Ác@ea)Ac@A}[ār^Áæ~&cc\*åA|^ç<)EÂc@A ]\[][}^}cÁr@[`|åAea]]|^Áea|A^æraa|^Áea)åA'^ær[}æa)|^Á\_[\\Á]\æ&ca&~•Át[A{ aja[ār^A}[ār^ÁçÖÒÔÔYEÂA GEEJDEÁA

GAÝ @¦^Á;[ã ^ Áā; Áæà][ç^Áv@á; Á/\ç^|Ébú@ Á; ![][}^} ơÁ @ [`|å/Á8[}•ãā^¦Áç^!^ Á&æ4^~"||^ Áā; Á@}^A Áā; A@; Á ~æ āā|^Áæ) åÁ'^æe[}æà|^Á æĉ Á¢[Á'^åč & Aý][ã ^ Á¢[Áà^|[, Á@á; Á|^ç^|ÈÁQÁ}[Áč \* ã\*c\*¦Á, [¦\Á( ^@ låÁā; Á ~æ āā|^Áæ) åÁ'^æe[}æà|^Éæà) åÁc@ Á, [¦\•Á] ![ & ^ å Ébc@ Á] ![][}^} ó é @ [`|åÁ&[{ { `}} & ææ\*A, ã@Ác@ Á ā[]æ&c\*åÁ!^•ãa^} or Áà^ Á&|^æ|^Á/¢]|æajā] \* Ác@ Áåč ¦ææaj} ÅæjåÅ{[ã\*A|/ç^|Á[-Ác@ Á, [¦\•ÉÅæ)åÁà^ Á å^•& & aāā]\*Áæj^Á/•]ã\*Á;^iājå•Áv@æçÅ, ä|Áà^Á; ![çãa\*åÁ¢ÇÖÓÔŶÉAG€€JDĚÁ Á

 $V @ \bullet \land A\& ac \ add \$ 

#### 4.1.2 Sleep Disturbance

V@ÁQuơ\lãį ÁÔ[}•d`&dāį}ÁÞ[ã~ÁÕ ˘ãå^lāj^Á•cæær\•Ác@æeA,@\^Á&[}•d`&dāį}Á,[\\•Áæb^Á ]|æ}}^åÁtįÁr¢ơ}åÁtֻç^¦Át[¦^Ác@æa)Ác;[Á&[}•^&čaãç^Á}iāt@e Éac@Áāţ]æ&cÁæe•^••{ ^}ơ4\*@[č|åÁ &[ç^¦Ác@At[æztā] č{Át[ã~Át^c^|Á+[{Ác@At}!]][•^åÁş[¦\•Ě4V@At^•č|dāj\*Á+|^^]Áåã\*cč¦àæa)&^Á &Jãx-Jãædásá\*á\*{ { æztā] ^åAjÁc@ÁÛ^&dāţ}ÁtĚÁsh^[[,ĚÅ

#### 4.2 ACOUSTIC SURVEY

 $\begin{array}{c} O \bullet \dot{A}_{1} \approx \circ \dot{A}_{2} & \dot{A}_{2} \approx \circ \bullet \circ \circ \circ \left\{ \begin{array}{c} \bullet \right\} \circ \dot{A}_{2} & \dot{A}_{2} \approx \dot{A}_{2} & \dot{A}_{2} \approx \dot{A}_{2} & \dot{A}_{2} \approx \dot{A}_{2} & \dot{A}_{2} \approx \dot{A}_{2} & \dot{A}_{2} \approx \dot{A}_{2} & \dot{A}_{2} \approx \dot{A}_{2} & \dot{A}_{2} \approx \dot{A}_{2} & \dot{A}_{2} \approx \dot{A}_{2} & \dot{A}_$ 

V@ Áæ&[`•c&&A\*`¦ç^^Áāj&|`å^åÁæ&[`•c&&Á{[} at [] ãt[¦āj\*ÁæeAç [[Á[&ææāt]}•Áāj&|`åāj\*Át[Ác@eÁ;[¦c@Á , ãr@3)ÁY [[|, ã&@Áæ)åÁc@ Ád[Ác@ Á\*[`c@Á, ãr@3)ÁÓā&@ ¦[ç^ÈĂŠ[\*\*āj\*ÁæeAà[c@Á|[&ææāt]}•Á, æe Á `}å^¦cæa^}Á`•āj\*Áæ)Á`}ææc}å^åAj[ã^Af[\*\*^¦Á, @ã&@Áña Áå^cæatA^åA5jÁc@árÁ\*^&cāt]}Af, Ác@ Á^][¦cÁ æ)åÁs@ ÁåæææáfarÁ5j&[`å^åÁsjÁQE]]^}åã¢ÁÓÈÁ

#### **4.3 ENVIRONMENTAL NOISE LEVELS**

Ò}çā[}{ ^} œaḥÁ}[ãr^Á&[}•œə)d^Âçædâ∿AðjÁ/ç^|ÉÅå`^Át[Á¦šč æaāt]•ÁðjÁ/[&ædÁ][ãr^Á+[`¦&^•Á ðj&|`åðj\*Á[æåÁtæ-æ32ÈŹOB&&[¦åðj\*|^ÉÁœÁFÍÁ(ðj`crÁ{^æ\*`¦^{ ^} oððjcr¦çædÁārÁ}[¦{æ||^Á`caþār^åÈÁ Uç^¦Ác@ārÁ]^¦ðta ÉÅ}[ãr^Á/^ç^|•Áæt^Á([}ãt[¦^åÁ[}ÁœvÁk]]cðj`[`•ÁàæeārÁæa)åÁ+eææārca8ædÁæa)åÁ ðjcr\*¦ææðj\*Ác&@pã`^•Áæt^Á.•^åÁt[Áå^cr¦{ðj^A,[ãr^Áå^•&k]ðjcðt]}Á,ætæt{^cr¦•ÈÁ

Q Ác@ Á&æ ^ Á[ -Á^} çã[ } { ^} cæ‡Á} [ã ^ Ác@^^ Á] ¦ã; &ã] |^ Á{ ^æ č¦^{ ^} óÅ] ælæ{ ^c^¦• Áæ^ Áč • ^ åÉA } æ{ ^|^ ÁŠ⊨∈ÉŠj⊾{æ}} å ÁŠ∽ÈĂ

V@ÁŠ<sub>F€</sub>Áæ)åÁŠ<sub>J€</sub>Á{ ^ær`¦^{ ^}ớ}ælæ{ ^ơ'¦•Áæl^ÁrœæaãœãæláA/∿ç^|•ÁœeeÁ\^]¦^•^}ớ\@Áœeç^¦æ!^Á { æ¢ã[ `{ Áæ)åÁæç^¦æ!^Á{ ã)ã[ `{ Á}[ãr^Á|^ç^|•Á¦^•]^&cãç^|îÊA[ç^¦Ác@Á{ ^ær`¦^{ ^}ớA ã)ơ'¦ç懕ÈĂ

V@AŠ<sub>F€</sub>Ajælæe[^d^\AñaA&[{ { [}|^A´•^åA{[A(^æ\*`¦^Aj[ã\*^Aj¦[å`&^åAa`ÁæAjæda&`|ælAbjd`•ãç^Á }[ã^AA\*[`\&^A\*āj&^AñaA'^]¦^•^}orAc@Aæç^¦æ\*^A{~Ac@A[[`å^•dAj[ã^A{^c^|•Aj¦[å`&^åAa`Ac@A •[`\&^EÁ

Ô[}ç^\+•/|Ê&@AŠjeA/^ç^|AÇ@3&@A#A&[{{[}|^A/^~|!^åA4[AæA@A@A&a&&\*'|[`}åA}[ã~A/^c^|DA |^]|^•^}@A@A[[ã^A/^c^|A@a#aA#A@A`ä?d'|A]^!ā[å\*A#A[^æA@A`i]\*A#A[^æA`I]\*A#A[^&=A@Aa&&&\*'|[`}åA][ã~A/^c/|DA ŠjeA]a#a#\_^d\A#AA[A~^d@A#A[[];a#a|^A][ã~A/^c/|A[[]/], `EA][d\*a#a]^ABd`\*aţoA][ã~AA •[`|&^+A\*ā]&^A@A\*aāc`|aa)&^A&&&\*-aA\*a^Ac@A}, `A\*[`|&^A\*]^}a\*A[]^}a\*A[]^A@]^A#AA ama[c^A@A]|^E?¢ācā]\*A,[ã~A\*}çã[]{ ^}dEA} a\*A@AŠjeA/~c^|EA

V@AŠ~Á]ækæ{^c\*¦A'^]¦^•^}orAc@Aæç^¦æ\*^Á}[ã^A^}^!\*^Áå`¦āj\*AæA{^æ\*`¦^{^}o^j^iātă V@āAjækæ{^c\*¦AãAå^iãç^åAâ^Á5jc\*\*¦ææ3j\*Ác@Aj[ã^A^;o^j•A{^æ\*`|^åAj;o^!Aœ\*`|^{^}o^j ]^¦ājåÈČ~ÁãAáj]['cæ)Á5jÁc@Áæ•^••{^}o4[Afcæ-33Aj[ã^Aáj]æ&Aát]]æ&Aát[•^|^A&['!^•][}å•A jãoÁ@{æ)Áj^!&^]cāj}AjAá&@e)\*3j\*Aj[ã^Aát]&a&A};cã[}{^}dA\*&@áaAa@Ak@ebæ&c\*!AjA5jå\*odãeA }[ã^EA

#### 4.3.1 Unattended Monitoring Period

#### 4.3.2 Monitoring Equipment

W}ææc^}å^åÅj[ã^^Á(^æc`¦^{ ^} ce Á, ^!^Á, à ceađ}^åÁ`•ð, \*Ád¥•ð, \*Ád¥) Úc ÁŠcåÁj[ã^^Á[\*\*^¦ÉÁV@Å][\*\*^¦Á æ Á] ¦[\*¦æ{ { ^åÁq Á•q ¦^ÁFí Ë; ð, `cæAŰ^• eæã cæãæáÅ}[ã^^Á |^ç^|•Áo@[`\*@[`\*@[`\*@[`\*@[`\*@]\*Á]^¦ð, åť a ĚÉV@Åj[ã^A[[ă\*Á, []ãt]¦Á æ Á&æáða læe^åákæc A@Åa^\*ð]}ð, \* æ) åÁc@Á^}aÁ[ Ác@Á( ^æč ¦^{ ^} eð, 'ÅaÅ' eð, \*ÁæŰð, [ã ^Á, []ãt]¦Á æ Á&æáða læe! i ÉÞ[ Á\*ð }ãæ að aá ác@Á^} æ Á a^ cr & cr à ÈĐCE[|Á( ^æč ¦^{ ^} eÅ, 'ÅaÅ eð, 'ÅaÅ eð, 'ÅaÅ eð, 'ÅaÅ eð, 'ÅaÅ eæ ch'^e] [} •^Á( [å^ÉÚ/\å] å A æåç^!•^Á, ^æc@¦Á&[} åãað] • Áå` ¦ð, \*Ác@Á( ^æč ¦^{ ^} ch' A) ch' af að AœãçA, 'A ^ æe^^e { ^} ch' A

#### 4.3.3 Existing Noise Levels

Óæ&\\*¦[`}åÁ}[ãr^Á|^ç^|•Áå`¦āj\*ÁåæôÁcā[^Áæ+^Áå[{ājæevåÁà^Á\*^}\akebrik] {[ç^{ ^}orÁ[}Á•`¦¦[`}åāj\*Á'[æå, æô•ÉAdæāj•Á[}Áà¦ãå\*^ÉÁ@|a&[]ov\•Áæ)åÁà[æærÁ[}Áo@A @eda[`¦ÉÁ/æà|^ÁGÁ\*`{{ ætãr^•Á∞Á^&[¦å^åÁàæ&\\*¦[`}åÁ,[ãr^Á/ç^|•Á,[}ãt[¦^åÁæeAv@A\*ãxÈÉÁ

Location	Description	Day Noise Level 7am to 6pm (dB(A))	Evening Noise Level 6pm to 10pm (dB(A))	Level 10pm to
Y[[ , 3&@#Á	Óæ&∖*¦[`}åÁ ŠJe≘tí{∄,Á	ПÁ	ΗΪÁ	Ġ Á
Óã&@¦[ç^Á	Óæ&∖*¦[`}åÁ ŠJe≘tí{∄,Á	I HÁ	HÌ Á	НÏÁ

Table 2 – Measured Background Noise Levels

#### 4.4 CONSTRUCTION NOISE GOALS

Óæ•^åÁ;}Áv@Á&[}•d`&a‡}Á;[ã\*^Á`ãå^|ã;^•Áå^aæāj^åÁ§iÁv@ā\*Á^][¦oÁæ);åÁv@A;[ã\*^Á;[}ãť;¦ã;\*Á ,ãv@3;Áv@Áçã&ã;ãčÁ;~Áv@Á:ãvÁc@Á[||[,ã;\*Áæài|^Áå^cæā]•Áv@Á&[}•d`&aā;}Á;[ã\*^Á\*[æ]•Á[¦Áv@Á ]¦[][•^åÁ:ã\*ÈÁ

Location	Time Period	Description	Noise Level (dB(A))
Ù`¦¦[`}åậ,*Á,^∙ãå^}cãæ)Á^&∧ãç^¦•,	Öæ̂ Á	Š^˘ ₤í { ậ Á	ÍIÁSÓÇDEÐÁ ÏÍÁSÓÇDEÐÁ
ą Á [[ , &@Á	Òç^}∄,*Á	Š^ĭ <sub>Ēfi{ĝ</sub> Á	I GÁSÓÇCEÐ Á
	Þði @A	Š^ĭ ₤í { ậ Á	HGÁ&ÓÇŒD <sup>I</sup> Á
Ù`¦¦[`}åãj*Á^∙ãå^}cãæ∳Á^&^ãç^¦∙,	Öæ Á	Š^˘ ₤í { ậ Á	Í I ÁSÓÇDEÐÁ Ï Í ÁSÓÇDEÐÁ
ā ÁÓā&@¦[ ç^Á	Òç^}∄,*Á	Š^˘ <sub>ÊÉÍ{ ậ</sub> Á	I GÁŁÓÇŒDÁ
	Þã @Á	Š^ĭ ₤í { ậ Á	HGÁ&ÓÇŒD <sup>I</sup> Á
Ù`¦¦[`}åãj*Á^∙ãå^}cãæ∳Á^&^ãç^¦∙,	Öæ̂ Á	Š^˘ <sub>Ē</sub> tí { ặ Á	í hásóçeð á ïí ásóçeð á
₫ AÕ¦^^}, ॠ@Á	Òç^}∄,*Á	Š^ĭ ₤í { ậ Á	I HÁ§ÓÇŒÐÍÁ
	Þã @Á	Š^ĭ ₤í { ậ Á	I GÁŁÓÇŒDÁ
Œcãç^ÁÜ^∙^¦ç^Á	O≣ ÁÚ^¦ā[å•Á[Á:ÓØ/ ÖæêÁæ)åÁjāt@eÁ	Š^˘ÊEÍ{∄Á	Î Í ÁBÓÇCEÐÁ
Ô[{{ ^¦&ãæ¢Á^&^ãç^¦•Á	Y@2}Á5jÁ U]^¦æaaį́}Á	Š^˘Ê⋿Í{ặÁ	Ï <b>€∕åÓÇ⊞</b> Á

#### Table 3 – Construction Noise Goals

1: Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to minimise noise. (DECCW / ICNG, 2009).

2: Where noise is above this level, the proponent should consider very carefully if there is any other feasible and reasonable way to reduce noise to below this level. If no quieter work method is feasible and reasonable, and the works proceed, the proponent should communicate with the impacted residents by clearly explaining the duration and noise level of the works, and by describing any respite periods that will be provided. (DECCW / ICNG, 2009).

#### 4.5 SLEEP DISTURBANCE

V@ÁQuơ\lãį ÁÔ[}•d`&dā]}ÁÞ[ã^ÁÔ´ãå^|āj^Á•cææt•ÁœæeÁ,@\¦^Á&[}•d`&dāj}Á,[\\•Áæb^Á ]|æ}}^åÁt[Á^¢ơ}åÁt[ç^\lÁt[|'^Áœæb)Áç [Á&[}•^&`cãç^Át]ā\*@•Éxc@Áāt]]æ&oAæe•^••{ ^}oÁr@[`|åÁ &[ç^\lÁc@Át[æztā]`{ Át[ã^Át^ç^|Á+[{ Ác@At]\[][•^åÅj[|\•ÉAV@Át^•`|cāj\*Ár|^^]Átaācčlaæb}&^Á &lãơ\lãædãa Át`{ { æztā^åAbjÁc@Áææb|^Ába^|[,ĚÅ

Q[¦Ác@ Á]`¦][•^Á[-Ác@ā Áæ••^••{ ^}cÁæ)åÁàæ•^åÁ[}Áājå`•d^Ár¢]^&cææā[}•Áæ)åÁ]¦^çā[`•Á ^¢]^¦ã?}&^Á[}Á&[}•d`&cā]}Á]¦[b%&o- ÁåÓÇCEDÁ&[`|åÁà^Áæåå^åÁt[Ác@ Á]¦^åã&c\*åÁŠce>çrí{aj\*odá }[ã^ÁÅ/ç^|•ÁājÁ[¦å^¦Át[Á\*ãç^ÁæÁ&[}•^¦çæãç^Á?•cã[æe\*Á[Ác@ ÁŠce=çrá(aj\*odá][ã\*ÁA^{ & eā]}Å |^ç^|•ÈÚ|^^]Áåãcč¦àæ)&^Á]¦^åã&cã[}•Á@æç^Áà^^}Á]¦[çãå^åÁàæe^åÁ[}Á]¦[][•^åÁ[`cÁ[~ÁQ2`¦•Á ,[¦\Áæ&cãçããã•Áåč¦ā]\*Ájã@Áæ[^ÁQ2`¦•ÈĂ

V@ÁUÒP ၛÁ&`¦¦^} ơÁæj] ¦[æ&@Áqī Áæ•^••āj \* Áj[ơ) تَقطَبُطُ إ^^] Áåãč ¦àæ) & ÁÇApplication Notes to Industrial Noise Policy) ã Ágī Áæj] | ُهُع) Áj ããæ Ák & k^^}āj \* Á&iãc\¦āj } Áj - Áaæ&\ \* ¦[`} åÁ,[ã^ Á; ç^|Á ] | ̆•ÁFÍ ÁåÓOZÁæ) åÁqī Á`} å^¦ææ\ ^Á~; c@¦Áæ) æ¦`•ã ÁãÁc@ Á•&¦^^} āj \* Á&iãc\¦āj } Á&æ) } [ ơÁà^Á æ&@âç^åÈÁV@ Á• |^^] Áåãc ¦àæ) & Á• & k^^} āj \* Á&iãc\¦āj } Áæj] | āt•Á[`o-ãá^Áà^å¦[[{ Á, ājå[, •Á å`¦āj \* Á@Á,ã @Écāj ^Á, ^¦āj åÁæ Áso-œáj^åÁşī Á/æàj^AáAşi Á/æà]^[, EÁ

Location	Time Period	Description	Noise Level (dB(A))
Ù`¦¦[`}åāj*Á^∙ãå^}œãe∳Á^&^ãç^¦•, ājÁY[[,],ã&@Á	Þāt@óÁ/āţ^Á Ú^¦āţå∙Á	Šfiŧŗá ą`ơdÁ	I GÁLÓÇEÐ
Ù`¦¦[`}åäj*Á^∙ãå^}œã¢Á^&^ãç^¦•/ ajÁÓã&@'¦[ç^Á	Þāt@2Á/āţ^Á Ú^¦āţå∙Á	Šfitjfá, ą` ơ dÁ	í GÁSÓÇEÐÁ
Ù`¦¦[`}åāj*Á^∙ãå^}cãæ‡Á^&^ãç^¦∙/ ājAÕ¦^^},ã&@Á	Þāt@óÁ/āţ^Á Ú^¦āţå∙Á	Šfiŧŗţi, ą̃~ơdÁ	I GÁLÓÇEDÓ

#### Table 4 – Construction Noise Goals for Sleep Disturbance

Á

Y @ ¦^Ác@ Á & ¦^^}āj\*Á& ¦ãt}Á&æ)}[cÁà^Á( ^dÉxc@ Áœååããa[}æ)Áæ)憕ã Á @ `|åÁ&[}•ãa^¦Ác@ Á }`{à^¦Á(Á][c^}cãæ)Á{|^^] Ásãcč¦àæ)&^Á?ç^}orÁs`¦āj\*Ác@ Á;ã @Éxc@ Á^ç^|Á(Á?¢&^^åæ)&^Áæ)åÁ c@ Á[ã^Á?ç^|•Á¦[{Á;c@ ¦Á?ç^}orÉA

# **5 CONSTRUCTION VIBRATION CRITERIA**

- •Á Õ^¦{ æ} ÁÙæ} åæå ÁÖΦ Á FÍ €ËHÁÇFJJJË€ŒMÁ"Structural Vibration Effects of Vibration on Structures"Læ} åÁ
- Á Ólãã @Ûca) åæåÁÓÙÂII ï GÆJJGÆGuide to Evaluation of Human Exposure to Vibration in Buildings (1Hz to 80Hz)ÈÁ

V@:Á&¦ãox¦ãoxáa)åÁc@:Áaa]]|ãBaaaaã]}Á[-Ác@:•^ÁÙcaa)åæå•Áaa\*Aáã&`••^åÁãjÁ•^]æ}aæ^Á•^&caā]}•Á à^|[\_\_ÈÁ

#### 5.1 GERMAN STANDARD DIN 4150-3 (1999-02)

Õ^¦{ aa) ÁÙ caa) å ada ÁÖ ODP ÁIFÍ €ËHÁÇFJJJË EGDÁ,¦[çãa ^• Áçãa ¦aæa‡i} Áç^|[&ãcî Á\*ãa ^|āj ^ Ár ç^ |• Át¦Á\*•^ Á āj Ár çaa\*aæa3) \* Ác@ Ár -- ^ &or Át, - Áçãa ¦aæa‡i} Át]} Ár d\*&ci ¦^• ÈAV @ Á&¦ãcr ¦ãæa4j ¦^• ^} chà Á5j ÁÖ OD ÁIFÍ€ËHÁ QFJJJË ECDÁ ad ^ Át¦^• ^} chà Á5j Ác@ Á/aæà |^Áa ^|[ `ÈÁ

QÁ#AÁ [c^åÁc@eeaÁc@Aj^æiÁç^|[&ãčÁ#Ac@Áeæi•[|čc^Áçæič^Á; Ác@Á;æetã;č{A; Áeej^Á; Ác@Ác@^^Á [¦cqu\*[}æ4Á&[{][}^}ofjæica&|^Áç^|[&ãčði•ÁæiÁ; ^æč¦^åÁæeák@Á{; }ªætã];Ě&ejåÅc@Á{;æetã;č{A} |^ç^|•Á{ ^æč¦^åÁðjÁc@Á¢EŹæijåÁî;Equ¦ã[}cæ4Áåã^&cã]}•ÁðjÁc@Á]|æj^Á[-Ác@Á+[[¦Á[-Ác@Á `]]^¦{[•c4×d[¦^^ÁæiÅcæáAåAðjÁ/æè|^Á.Ási/[、ÈÁ

	ÚÒŒSÁÚŒÜVÔDŠÒÁXÒŠUÔQVŸÁÇ;{● <sup>♯</sup> DÁ			
VŸÚÒ <b>Á</b> JØÂÙVÜWÔVWÜÒÁ	At Foundation at a Frequency of			Plane of Floor of Uppermost Storey
	< 10Hz	10Hz to 50Hz	50Hz to 100Hz	All Frequencie s
FÁÓČiā¦åāji*●Á `●^åÁ āj, &[{{^\&ãadaÁ ]`¦][●^●É ajå`●clãadaÁà`ā¦åāji*●Á æ)å, à`ā¦åāji*●Áj,~ÁrājājædÁ\$a^●ãt}Á	G€Á	G€ÁĮÁ €Á	I€Á[Á.€Á	I€Á
GÁÖ, ^  ā),*•Áæ),åÁà`ā¦åā,*•Á[~ •ā,āæiÁå^•ā?}Áæ),å₽D,¦Á•^Á	ÍÁ	ÍÁS[ÁFÍÁ	FÍÁ{[ÁG€Á	FÍ Á
HÁ Ù d`& č ¦^• Á c@ ee Áà^& ĕ • ^ Á[ ~ c@ ãl Á] æ cã&  æ Á• ^} • ã aã; ã: Á[ , çãa !æ aã] } Étà [ Á] [ cÁ&[ ¦!^•] [ } å, q Ác@[ • ^ Á]ã c å ÁB; ÁŠā] ^• ÁFÁ[ ¦, GÁæ) å Á @ eç ^ Á3; dā] • ã& Áçæ† ^, Ç* Áà`ājå 3; • Ác@ ee Áæ/Åf } å^¦, æ Á; !^• ^ ¦çæ aã] \$ Á; ¦å^ ¦DÁ	HÁ	HÁĘ Â Á	ÌÁĘÁ∓€Á	ÌÁ

#### Table 5 – DIN 4150-3 (1999-02) Safe Limits for Building Vibration

#### Á

#### 5.2 BRITISH STANDARD BS 6472:1992

Ó¦ãoã @ÂÙca) 忦åÁÓÙÂilï CHFJJGÁå^ç^|[]•Á&¦ãoÁ¦aæjð \*ÁţiÁ^ç^|•Á; Áàčiđåjð \*Áçãa¦æajā} ÅQ@æcÁ {æ Áà^Á^¢]^&c^åÁqiÁ\*ãç^Á¦ãe^ÁqiÁ\*ãç^Ád; Á*"adverse comment"*ÉÁjiÁc@ Á¦A<sup>~</sup> č^}&ĉá¦aæjå \*Á{[•cÁ æ]]|ã&æaa|^ÁqiÁaj]æ&ce Áæe•[&ãæec^åÁ;ãc@Á&[}•dči&caaj}EÁ;@ã&@Á®iÁFÁqiÁi€P:ÈÁv@e^Ác@^•@[åá çæpi´^•Áæd^Á •^åÁæe Á&¦ãe^¦ãæÁqi¦Áæe•^••aji \*Ác@ Á[[••Á][4-Áæqi^}ãô Áæd^Á]¦^••^}c^åÁa^|[,ÁajiÁ Væaa|^ÂiÉÁ

		Ú^æ\ÁÚæ¦cã& ^ÁX^ [&ãĉÁÇ { ● <sup>≞</sup> D&a^ç ^^} ÁFP:Á[Â.€P:Á Šã^ ^Á[ÁÔæ`●^Á"Adverse Comment"Á			
V^]^A[∖-Á U&&`]æ)&î	Vąi^Ąi,⊸Á ÖæÎÁ	Ô[}cājǐ[ǐ•Áxíāa ¦æcaāį}Á		(Q)] ` •´ãç^ Ò¢&ãææãį} Á	(âa¦æeaa[}Áæ)åÅ Áxâa¦æeaa[}Å ãc@AÙ^ç^¦æ4Á ∧∙Áj^¦AsaæâÁ
		X^¦cã&æ¢Á	P[¦ã[}cæ¢Á	X^¦ca‰aa∳Á	P[¦ã[}cæ¢Á
المحتقم ومعار	Öæ̂ Á	€ÈHÁ{ Á€È Á	€ÈÈÁ{{Á€ÈÈÁ	ÌÈLÁ{E/ÁFGÈLÁ	GIÁ&[ÁHÎÁ
Ü^∙ãâ^}cãæ‡Á	Þã @Á	€ÌCÁ	À∄€	GÌLÁ	ÌÁ
11 ær a Á	Öæ̂ Á	AÊ	FÊÁ	FÌ Á	Í FÁ
U~a&∧∙Á	Þð @Á	AÊ	FÊÁ	FÌ Á	Í FÁ
Y[¦\∙@]•Á	Öæ̂ Á	FÌÈÁ	HÈGÁ	FÌ Á	Í FÁ
	Þð @Á	FÈGÁ	HÈGÁ	FÌ Á	Í FÁ

Table 6 – BS 6472:1992 Criteria to Avoid "Adverse Comment"

 $\begin{array}{c} V @ \dot{A} & \ddot{a} & \ddot{a} & \dot{a} & \ddot{a} & \ddot{a} & \dot{a} & \ddot{a} & \ddot{a} & \ddot{a} & \ddot{a} & \ddot{a} & \ddot{a} & \dot{a} & \dot{a} & \dot{a} & \dot{a} & \dot{a}$ 

#### 5.3 PROJECT CRITERIA

Óæ•^å/{{}}Áv@/Á&¦ãơ\¦ãæ/å^cæā/^å/{,ãv@3}Áv@/Á\*cæ);忦å•Áæà[ç^Áx@/j]¦[b%&/áçãà¦æaā[}/á\*[æ‡Á[¦Áv@/Á •`¦¦[`}å];\*Á^&^ãç^¦•/54]&|`å^•Áx@Á[||[、]];\*Á&¦ãơ\¦ãæ/4[i/k&[•{^cã&/ásæ{e;æ\*^Á&¦ãơ\}ãæ#Á

FĚÁ Ü^•ãå^} cãæ‡ÁÜ^&^ãç^¦•ÁËÚ^æ Á, æ cã&|^Áç^|[&ãĉ Á, ÁF€{ { ĐĚÁ

QÁārÁ}[c^åÁc@eecÁc@:¦^ÁārÁ}[Á+^}•ãuãç^Á@:¦ãuzet^Á'^&^ãç^¦•Á;ãu@3;Á]:[¢ã;ãc`Á{Ác@Aj:[][•^åÁ ;@ec-Ás@eecÁ[č|åAà^Áxe-^&c^åAà^Áx@Aj:[][•aa†EĂ

#### 5.4 GROUND BORNE VIBRATION

V@Á^˘˘ã^åA\*æ^Á,[¦\ā)\*Áta≊cæ)&^•Á{[¦Áœ4}; {à^¦Á;A][c^}cāde|^Á@at@óçãa¦æaa]}Á\*^}^!æaa}\*Á æ&caçãaã\*•Áæ••[&ãæez^åÁ,ão@á@Aý,@eel-Á\*]\*¦æå^Áed^ÁaJ&|`å^åÁaJÁ©Aæaa|^Áa\^|[, ÈAV@Á&ãacæaa}&^•Á å^cæaap^åAà^|[, Áed^Ác@Áta≊cæ}&^•ÁeezÁ,@a&@A&[{]|ãea}&^Á,ão@ác@Áçãa¦æaaa]}Á&iãe^¦ãæ4aå^cæaap^åÁaJÁ •^&caa}}áAÈHÁ;ÁœaaA^][¦cÁ,a]Áa^Áæ&@a\*c^åÈZÁ

V@ Áræ^Á [¦\ā]\* Átaārce)&^•Á āļlÁçæt^ ÁeerÁc@ Árār Áta^]^}åāj\* Át }Áecé}`{ à^¦Át - Árār^Á&[}åādāt }•Á Çāj&[`åāj\* Á\*^[c^&@) ä&eetÁ&[}åādāt }•DÉA] |æ) cÁc`]^•Áee)åÁ[]^¦æedj\* Á&ee]æ&adāt•EAV@ Á\*aārce)&^•Á å^cæaā/^åÁà^[[, Áeet^Ác@]•^Á'^`ă^åÁq Á^}•`'^Á&[{]|ãee)&^Á, ãc@Áa[cœÁc@ A@ { æ) Á'^•][}•^Á æ)åÁ&[•{ ^ca&Á\*aæ{ æ\*^Á&¦ãer}¦ãeetĚW@ Á\*]^&ãaãa&Á\*ār^Á&[}åãdāt }•Áee)åÁçãa ¦æeat }Áāt ]æ&cA&ee) A^A å^cr:{āj^åAt}Ac@ Árār^Át}&^A; [¦\•Á&[{ { ^}&rAee} å Á\*ær^Á, [¦\Á&ārce)&^•At æ`Át æ`Át å^cr:{āj^åAt}Ac@ Árār^Át}&^A [¦\•Á&[{ { ^}&rAee} å Á\*ær^Á, [¦\Á&ārce)&^•At æ`Át æ`Át ¦^çãr^åÉA

EQUIPMENT /PROCESS	SAFE WORKING DISTANCE FOR COSMETIC DAMAGE	SAFE WORKING DISTANCE FOR HUMAN COMFORT
Úậa]*ÊÁ]Á4[Á)€€\*Á4[]æ&oÁ @æ{{^\•Á	Í{Á	FΪ { Á
Xãa¦æaāj}}ÁÚājāj*Á~ččāj{^}oÁ	Í{Á	FÍ { Á
CE*∧¦ÁÚą̃ą́*Á	Q Á	F€{ Á
Pæ)åÁP^ åÁRæ{{ ^¦āj*Á	Þ[Á&[}cæ&cÁ,ãc@&æ⊷^&c^åÁ ∙c' &c'¦^∙Á	Þ[Á&[}cæ&cÁ,ãc@áæe⊸^&c^åÁ ∙c`&c`¦^∙Á

Table 7 – Recommende	ed Safe Working	n Distances for	r vibration
		y Distances io	VIDIATION

Á

Þ[c^hÁXāà¦æaāį}Á&æa)Áà^Á&[}å`&c^åÅjão@a)Ác@^Áåãrcæa)&^•Áå^cæāj^åÁœà[ç^Á];¦[çããā]\*Áœec^}å^åÁ { ^æ•`¦^{ ^}o•Áœh^Á&[}å`&c^åÅ[-Ác@A][c^}cãæd|^Á@ã@éçãa;¦æaā]}Á\*^}^!æaā]\*Áœ&cãçãaã\*•Áœà[ç^Á æa)åÁ`ãææà|^Ájæa}æ\*^{ ^}o4sdæc^\*ã\*•Áœh^Áj`cAágÁ;|æ&c^Áaæ^^åÁ;}ÁjãæA&[}åãæa]}•ÉÁ

Óæ•^åÆ;}Áv@A\*¢]^&c^åÁçãa ¦æeā;}A\*ç~|•A\*^}^¦æe^åAà^Â, [¦\•Æ;}Áx@A\*aē^Áee}åAô@A;![¢ã;ãĉA&;Á ¦^&^ãç^!•Áçãa ¦æeā;}A&;lãe~¦ãe&#æ&Aa\*cæaä\*^åÆ;A©@Aœaà]^Áæaà;[ç^ÁñeA%a\*Á;[oA\*¢]^&c\*åAq;Aà\*A\*¢&^^å^åA æ}åAœeAœA\*^•`|oÁ;ã|A;[oA;^\*æaãç^|^A\$q;]æ&Ax@A\*`;![`}åã;\*Á^&^ãç^!•EA

# **6 CONSTRUCTION HOURS AND DURATION**

Ô[}•dǐ&cāį}Á,āļ|Áà^Á&cek¦ātåÁ[ĭ cÁ[ç^¦ÁæÁ]^¦āįåÁ[-Áĭ]ÁdįÁæà[ĭ cÁ•ã¢Á{[}c@iÁÇ^æc@iÁ ]^¦{ãcāj\*DÉAceekcāj\*Á§JÁc@A(āåå|^Á(ÁGEFÏÈÁ

Ô[}•dǐ&cāį}Á,[ǐ|åÁ,[¦{æ||^Áà^Áqĩ,ãc^åÁqĩ,ãc^^}Åó@Áq[/|[,引\*Á;cæ),åæbåÁ,[¦\Ásã[^•kÁ

•Á Ïæ{ Á{[ÁÎ] { ÁT[} åæî Á{[ ÁØ] ãã æî ÈĂ

•Á Ìæ{Á{ÁF]{ÂÛæč¦åæêÈĂ

P[,^ç^¦ÉÅ, [¦\Á[`oraâ^Á[, Á cæ) åæååÁ@, `¦•Á[ æ Áæ]+ [Áa^ÁA, ``ā^åÁb], Á[ ¦å^¦Á[ Á&æ¦^Á[` c4], äð] \*Á æ&cāçāāð • Áæ) åÁðj da&æe^Á[ãorÁ+[{ Ác@ Áàæ \* ^Á( [`}c\*åÁ&!æ) ^ÉÅa` ^Ád Á'^``ā^{ ^}orÁ[ ¦Á cāļlÁ ; æe^¦ÉÁOB:cāçāað • Ác@æeÁæ ^Á|ã ^|^Ád[ Áà^Á`}å^!cæ ^}Á[`oraâ^Á[ ~Á • cæ) åæ åÁ, [¦\Á@, `|•Áæ ^Á [`dð] ^åÁa^|[; ÉÁ

 $\tilde{O}^{A} = \tilde{A} + \tilde{A$ 

o Á FÁEÁ ^ o Á ] Áa^c, ^^} Á∓Gæ∉ Áæ) å Á∓æ∉ Á

oÁ GÁEÖ¦á∥ð),\*Ás∧ç^^}Ár≂æ{ Áæ),åÁiæ{ Á

oÁ HÁÄÁÚæ&∖Á′]Ás∧c,^^}Áiæ{ Áæ)åÁiæ{ ÈÁ

ÁÁ

# 7 NOISE AND VIBRATION ASSESSMENT

CB; Áæ••^••{ ^} œ́[-Áœ@ Á] ¦āj &aja¢á•[č¦& ^• Á[-Á}[ār ^ Áæ)åÁçãa ¦ææāį} Á^{ ār•āį} Á@æ• Áà^^} Á č}å^¦ææ\^} Á⊈ Áãa^} œã ÁœØ Áæ&aãçãa ð • Ác@ææÁ{ æâ Áj¦[åč & ^ Áj][ãr ^ Áæ)åED; Áçãa ¦ææāį} Áãį] æ&or Á•[Á c@ææÁæj] ¦[]¦ãæe^ Áæ{ ^|āj¦ææãç^ Á{ ^æ č¦^• Á&æ} Áa À{ ¦{ č]ær^å ÈĂ

V^] a8catÁcas[`•ca8cDçãa:læcati] } Á8[ } d[ |•Á[ ¦Á•] ^&ãa8cÁ^``ā] { ^} cóbcó^Áaãe &`••^åÁaj Áco2e Á\*^&cati] } Á[ -Á co2 Á!^] [ ¦cÁcaj å Áaj &|`å^•Ácaj &aa]ach´Á\*ãc^Á} [ ã\*^Á@ee Áà^^} Á8[ }•ãa^!^åÁaj Áco2 Áze•^••{ ^} cóbcaj å Á } [ ã\*^Á/^ç^|•Á+[ { Áco2•^Á] [ ¦\•Áccb^Áaj &|`å^åÁaj Áco2 Áze•^••{ ^} ce Áå^cæat/åÁaj Áco2e Á\*^&cati] } Á[ -Á co2 Á/] [ ¦dÉÅ

# 7.1 AUSTRALIAN STANDARD AS2436:1981 "GUIDE TO NOISE CONTROL ON CONSTRUCTION, MAINTENANCE AND DEMOLITION SITES

V@ ÁOE • dæaaay ÁUæay åædå ÁOEÙGI HÎ Á cææ ( ) Áœæ ( ) Áædy Á Aædy Aædy Å Aædy ædy Å Aædy ædy Å Aædy Å Aædy ædy Å Aædy ædy Å Aædy Å Aædy ædy Å Aædy Å Aædy ædy Å Aædy Å Aædy ædy A

æÐÁV@ædÁ^æe[}æà|^Á\*ãæà|^Á,[ã~Á&¦ãơ\¦ãį}ÁārÁ•œà|ã@åÊÁ

- à DÁ V@necÁæl|Á] ¦æ&ca&æà|AÁ{ ^æ \* \+ Áà^Ácæ+ ^} Á[ } Ác@ Áà\*āţåāj \* Á•ãr^Át[ Á',\*\* |ær\*Á} [ã ^ Á ^{ ã • ã] } • ÉA∃ &| \* Ác@ Á•ããj \* Ác@ Á•ããj \* Á[ ~Á} [ã ^ Á•cææã&Á] ¦[ &^••^• Át[ Á|[ &ææã] } • Á[ ~Ác@ Á•ãr^Á @ \+ Ác@ ^ Á&æ) Áà^Á•@ \a\*ba\* á\* A' [ ã ^ Á+cæã] \* Á|^•• Á} [ã ^ Á] ![ &^••^• ÉAæ) å ÁãÁ \^ \* ã^ åÁ ! ^ \* [ææ3] \* Á&] } ed \* &cã] } Á@ ` \+ É&æ3 åÁÁ

#### 7.2 DETERMINATION OF CONSTRUCTION NOISE AND VIBRATION IMPACT

Wéāj \* Ác@ Á} [ãr^Á|^ç^|•Á] ¦^•^} c^åÁāj Ác@ ÁVæà|^Áì Áà^|[ jÊéc@ Á'^•`|æa) ó4} [ãr^Á] [c^} œaa|^Á ã[ ]æ&cāj \* Á`¦¦[ `} åāj \* Á^&^ãç^¦•Á&a) Áà^ćà<br/>c^¦{ãj ^åÈĂ

Óæ=^åÁ[}Ác@:Á+[`¦&^Á[~Ác@:Á&[}+d`&cā[}Á+ãc^Ác@:Á^¢]^&cråÅ}[[ã~^Á|^ç^|+ÁæcÁ+`¦![`}åā]\*Á ¦^&^ãç^!+Á&a) Áà^Á¦ |^åã&cråÁàæ=^åÁ[}Ååãrcaa}&^Éàaa+lãr¦Áaa}åÁ,[¦\ā]\*Á&[}åãaā]}+ÁÇāPÈÉj^¦a[ā]\*Á ;@38.@Áx@:Áæ&cãçãc ÁáiÁ&[}cā]`[`+|^Áà^ā]\*Á&[}å`&cråDÉÁ

#### 7.3 SOUND POWER AND VIBRATION LEVELS

Þ[ã=^Áā;]æ&oÁ;āļlÁa>Áå>o<\{ā;^aÅ4;[{Áæ+lÁ;![&>++++ Áæ+jåÁ\*`čā;{^}o&&@Aæ+>Áa;c[|c^\*aÁa;Á  $c@\dot{A}$   $\dot{A}$ 

V@ÁŒË, ^ãt@^åÁ•[`}åÁ][, ^¦Á/^ç^|•Á[¦Áæa]Ác@Á&[{][}^}oÁ]ætorÁ[-Ác@Áæà[ç^Ëå^•&¦ãa^åÁ 

EQUIPMENT /PROCESS	SOUND POWER LEVEL - dB(A)	POTENTIAL VIBRATION LEVELS
Ò¢&æçæe[¦ÁÇãc@,≚oÁ@æ{{^¦DÁ	JÌ Á	W]Á{[ÁH{{Ð-ÁÔĂ{{Á
Xãa ¦æcajį}ÁÚajaj*Á~ččaj{^}oÁ	F€Í Á	W]Á{[ÁĨ{{ÐÁOÁĨ{Á
Ö¦ãç^}ÁÚã¦ã;*Á∿čĭā]{^}oÁ	FFÍ <del>E</del> Á	W]Á{[ÁĨ{{ÐÁOÁ≂€{Á
Úąĩą) * ÁÓ[¦ā], * Á*˘ă], {^} ơÁ	F€€Á	W]Á{[ÁH{{Ð-ÁOÁi{Á
Ô¦æ)^Á	F€Í Á	Tậlā[æ‡Áçãa¦æeā[}Á§[]æ&oÁ
V¦ĭ&∖Á	JÎ Á	Tậląĩa⇔Áçãã¦æaãį}Áãį]æ&oÁ
Óæł*^Á	JÍ Á	Tậląĩa⇔Áçãã¦æaãį}Áãį]æ&oÁ
Ázes JÓ	F€€Á	Tậląĩa⇔Áçãã¦æaãį}Áãį]æ&oÁ
C∄;* ^ÁÕ¦ã;å^¦∙Á	FFI Á	Tậląĩa⇔Áçãã¦æaãį}Áãį]æ&oÁ
Ò ^&da&ÁÙæ;Á	FFFÁ	Tậląĩa⇔Áçãã¦æaãį}Áãį]æ&oÁ
Pæ);åÁ₽^ åÁÖ¦ã∥ðj,*Á	JI Á	Tậląĩa⇔Áçãã¦æaãį}Áãį]æ&oÁ
Pæ)åÁ?P^ åÁ?Pæ{{^¦ậj*Á	FF€Á	Tậląĩa⇔Áçãã¦æaãį}Áãį]æ&oÁ
Ô[}&¦^ơ^ÁXãa¦æq[¦Á	F€€Á	Tậiąĩæ¢Áşãa¦æaąĩį}Á§ų ]æ&oÁ
Ô^{ ^} oÁTã¢ãj*Á/¦ĭ&\Á	F€ÍÁ	Tậląĩa⇔Áçãa¦æaąĩ}Á§ų ]æ&oÁ
Ô[}&¦^ơ^ẤÚ˘{]•Á	F€ÏÁ	Tājāį æ¢Aģāa¦æaāį}Aáj]æ&oÁ

**Table 8 - Sound Power Levels and Potential Vibration Impacts** 

V@Á}[ã^Á/^ç^|•Á]¦^•^}c^åÁąĨÁc@Áæà[ç^Áœà|^Áæà^łãç^åÁ+][{ Ác@Á+[||[ , ā] \* Á•[ \* k&• ÉÁ }æ{^|^KÁ

FÈÁU} Ëáz^Á, ^æ\*`¦^{ ^} @ Á

GĚÁVæà|^ÁÖGÁ∱ÁQE•dæjãæ)ÁÛæa)忦åÁG HÎËFJÌFÁ

HĚĂŎæææÝ@|åÅaˆÂœġĂ,~æX^Á![{ Ă,cœ!Ă,ąĨ,ąĨæÁcčåã°•ĚĂ IĚAÞ[ã^Á^ç^|Á![{ Á&[] & \ccite{A};ã];æ[!•Áœe Áà^}] Áàæe ^åÁ;] Áæcc}å^åÅ;[ã^Á;¢,^]•Á; ^æ` !^åÁ;] Á í ã ^Á å`iā;\*Á;^iā;å•Á; @}Á&[}&!^c¢Açãà;æ;!•Áæ^Áà;ã;\*´,\*,^åĚÀQá;ä`,Á;[¢åÅçœæÁœã,Áá;Á], ^¦Áœġ,Áœ,A;  $|^c c^{|} = A_a^{\dagger} / a A_a^{\dagger} a A_a^{\dagger} A_$ ĺÅ•ÅÁA@Åáā妿ďĺ•ÈĂ

EÞ[ cʰkáÞ[ã^Á+[ { Áå ¦ãç^} Á] ā/• Áã Áàæ ^å Á[ } Á!^&[ ¦å^å Á] [ã^ Á|^ç^|• Á+[ { Á[ c@ ¦Á, @æb - Á ĭ] \*¦æå^•ÊÁą &|ĭ åą \* ÁÞ^ĭ dæļÁÓæÈĚÁÖ^œæj•Á[ Ăœ@Á!^&[ ¦å^åÁ}[ ã^ÁÍ/ç^|•Áæl^Áą &|ĭ å^åÁą Á OĒ[]^}åã¢ÁÔĖĂ Á

#### 7.4 VIBRATION IMPACT

Ö`^Áţ Ác@ Áŝār cæ) &^•Áæ) å Á[ &ææā] }•Á; Ác@ Á] ![] [•^å Åæ&cãçãæ? ázð •Áţ Ás^Á } å^¦cæ) ^ Ác@ !^Áãr Á] [Á ^¢] ^&c^å Áçãa ¦ææā] }•Á{[ { Á] [ ¦ •Á @3&@4 ā]|Á} ^\*ææāç^| Áāţ ] æ&c4+ ` ¦ [ ` } å ā] \*Á'^&^ãç^¦•È\/@á Á @æ•Áa^^} Á&[ } -ā{ ^å Áa æ•^å Á[ } Åc@ Á&[ } cā) ` [ ` •Åçãa ¦ææā] } Á{ [ } ãa[ ¦ā] \*Á, @3&@4 @æ•Áa^} Á &[ } å` &c^å ÁææAT &T æ@2 }•ÁÚ[ ā] cÁY @æ+Á, @3&@4&[ }-ā{ •Ác@ Á&[ }•d` &cāţ } Áæ&cãçãæ? •Á, ā]|Á} [ cÁ \*^}^!æ\*Ár¢</

Ò¢]^¦ā^}&^Á[}Á]¦^çā[`•Á]@eei-Á]¦[b/&or-Áā]å&Bæee^•Ác@eenÁçãa¦æeaā[}Á|^ç~|•Á]ā|Á&[{]|^Á]ão@éc@:Á ¦^|^çæ}oÁ]¦[b/&o/&lãev¦ãæe£ãaj&a]\*Á&Ecaiçãaã)•Á&[}å`&c^åÁeeeÁT&Tæq2}}•AÚ[ā]oÁY@eei-EzÖ^cæaā]•Á[-Á çãa:|æeaā[}Á{[]}ãa[¦ā]\*Áā]å&Bæeaā]\*Á&[{]|ãae}&^Á]ão@éc@:Á'^|^çæ)oÁçãa:|æeaā[}Á&lãev¦ãæeAājÁOE]]^}åãcÁ ÖEÁ

#### 7.5 CONSTRUCTION SCENARIOS

Y @\${^Å} [ã\*^Á{^ç^|• Á [`|å Áà^Á§; -|`^} &^å Áà Áa^Áœ Áå[ { ā} æ) ơÁ; |æ) ơÁæ) å Á``ā, { ^} ơÁ§, Á[ ] ^ ¦ææā] } Á ævÁæ) ^ Á[ } ^ Ácã[ ^ÉÃ&[ } • ãå^¦ææā] } Á@æ• Áà^^} Á\* ãç^} Ác[ Á[ `|Ác ] ã&æ‡Á&[ } • d` &cã] } Á\* &^} æbá] e Áæ [`dā] ^å Áā] ÁVæà|^ÁJEÁV @ā\* Áā] &|` å^• Ác@ Á, [ ¦\• Á'^``ā^å Ác[ Áà^Á&] } å` &c^å Ác[ Ác@ Á|æ) å • ãå^Á æ&ãjãã? • Áæ) å Ác@ Áæ) &á]|æ^ Á• ãc^Áæ) Áå Ác@ ÁGÁ, @eb -Á: [ } ^• Á[ } ÁÔ[ &\æt[ [ Áã |æ) å Á, [ ¦\ā] \* Á •ã, `|æa} ^[`•]^ÉÁ

	EQUIPMENT USED DURING THE PERIOD OF WORKS	NOISE LEVEL
	Óæ¦*^∙Á	
	V¦ĭ&\∙Á	
Ü^{ [çæ‡Á[,~Á ∙d`&c`¦^⊞à^{ []ãaā[}Á	Pæ)åÁ⁄[[ ●Á	W]Á¢[ÁÌÍÁ\$JÓÇCEDÁŠ^ັÁ₁(∄,A)ÁF€{Á
	P^妿ĭ ã&ÁPæ{{ ^¦∙Á	
	C1≣;* ^ÁÕ¦ãjå^¦∙Á	
× / / ×	Óæ¦*^∙Á	
Šãcā)*Á(-Á(æc^¦ãæ)+ÊÁ Ú¦^]æ¦æaā[i}}Á(¦ÁÚā[a]*Á	Ô¦æ}^Á	W]Á{Â,€Á₃ÓÇŒĐÊ^ັÁ∓Í{∄,ÁOÁ∓€{/
	Pæ)åÁ/[[ ●Á	
	Óæ¦*^∙Á	
Q,•cæ¢ ææāį}Áį-Á,^jÁÚã;^•Á	Úąją, * ÁÜðt Á	W]Á{ÁIÍÁ₃ÓÇDEDÁŠ^ĭÁ∓Í{ã,ÁOÁ∓€{/
	Ô¦æ}^Á	
	Óæ!*^Á	
	Ô[}&¦^ơ\ÁÚ`{]Á	
	V¦č&∖Á	
Õ^}^¦æ¢ <b>%</b> [}∙d`&cā[}Á́[¦∖•Á	Ó[æðÁ	W]Á{ÂÍÁీÓÇÐÐÊ^ĭÁFÍ{∄ÁOÁF€{/
	Ô[{]¦^••[¦Á	
	Pæ}åÁ⁄[[ ●Á	
	Õ^}^¦æţ[¦Á	

Table 9 –	Construction	Scenarios
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Þ[cʰkứÓæd\*^Á,āļlÁ,[c/áà^Át,]^¦æcāt,}ædáů`¦āj\*Á,ã\*@c/áat,^Á,^¦āt,å•ÈĂ

#### 7.6 PREDICTED CONSTRUCTION NOISE LEVELS AT RESIDENTIAL RECEIVER

V@ā Á•^&cāį}Á[, Ác@ Á'^] [¦oÁå^cæa‡i•Ác@ Á]¦^åã&c^åÁ}[ā\*^Á/^ç^|•Á¦[{ Ác@ Á]¦[][•^åÅæ&cā;ãã?•Á å^cæa‡i^åÁājÁc@ ÁVæà|^ÁJÁæà[ç^ĚÞ[ã\*^Á/^ç^|•Á@æç^Áà^^}Á&æ‡&č |æe^åÁæeÁc@ Á][c\*}cãæ‡|^Á[['•oÁ æ-^&c^åÁ'^•ãa^}cãæ‡A'^&^ãç^¦•ĚÔæ‡&č |æeāį} •Áāj&]č å^Áåã:cæàj&^Êcãį ^ÁæàjåÁa汦ã≀¦Á&[¦!^&cãį}•Á 、@ ¦^Áæ]]|ã&æà|^ĚÁ

Øāt`¦^Á Ébáā^} cāāt•Á@Ą,'[]^¦cāt•Á, @¦^ÁázÁārÁt¢]^&c\*åÁv@æcÁ[ã^Át, æ)æt^{ ^}oÁrç^|•Á[`|åÁ à^Ár¢&^^å^åÁçQQ •^Á;'[]^¦cāt•Á, ãc@ğiÁc@Á^åÁġ ^DÁæ)åÁv@Aj'[]^¦cāt•Ác@æcÁ[`|åÁahÁ@ët@îÁ }[ã^Áæ-^&c\*åÅçQQ •^Á;'[]^¦cāt•Á, ãc@ğiÁc@Á^å[], Áġ ^DÉAPāt@îÁ;[ã^Áæ-^&c\*åÁt, ^æ)•Á, @¦^Á }[ã^Áæ-^&c\*åÅçQQ •^Á;'[]^¦cāt•Á, ãc@ğiÁc@Á^||[, Áġ ^DÉAPāt@îÁ;[ã^Áæ-^&c\*åÁt, ^æ)•Á, @¦^Á }[ã^Áæ-^kc\*åÁçQQ •^Á;'[]^¦cāt•Á, ãc@ğiÁc@Á^[], Ág }[ã\*ÁA; ^c^|•Áæ, Áœà[ç^Áï í ÁåÓçCHDĚAU c@¦Á',•ãå^} cãæ‡Á',^&^ãç^¦•Á, [`|åÁ懕[Áà^Áæ-^&c\*åÁà^Â }[ã\*ÁAQ;\_^c^¦Áāt]] æ&o Á; }Ác@ •^Á',&^ãç^!•Á, [`|åÁ'^å`&^Áæ Ác@Áåã; æ),&^Át[Ác@Á'^&^ãç^!Á äj&¦^æ-^áæ Áá\*cæát^åÁkjÁt[|][, äj\*Áæà|/•ÈĂ

# Table 10 – Calculated Construction Noise Levels to the Residential receivers to the south of the site in Birchgrove

EQUIPMENT /PROCESS	NOISE LEVEL OF OPERATION	CALCULATED NOISE LEVEL AT WORST AFFECTED RESIDENTIAL RECEIVER LAeq (15min)	NOISE LEVEL CRITERIA DAY/EVENING/NIGHT dB(A) L <sub>eq (15min)</sub>	EXCEEDANCE DAY/EVENING/NIGHT dB(A)
Ü^{[çæ‡Á[,-Á •dǐ&č¦^Eãa^{[ ãã]]}Á	WJÁ¢ĮÁÌÍÁůÓQCEDÁ Š^ັÁri{∄,QÁF€{Á	í Fásóçedá	Í HEBEBÁ	ÊDÊDÊDĂ
Šãcāj*ÁįÁ;æc∿¦ã懕ÉÁ Ú¦^]ælæcāj}}ÁᦦÁÚājāj*/	W]Á[Á €ÁŝÓCCEDÁ Š^ĭÁFÍ{ã,ÁOÁF€{/	IJÁãÓÇŒÐÁ	Í HEBEBÁ	ËÐBEÐÁ
Q•cæ¢ ææā[}Á[·Á]·^j.Á Úā/^• <sup>ÅÅ</sup>	W]Á[ÁIÍÁ≌ÓCCEDÁ Š^ĭÁFÍ{ã,ÁOÁF€{/	ÎFÁ&ÓÇCEDÁ	ÍHÐHÐGÁ	Ì BFÌ BFJÁ
Õ^}^¦æ <mark>‡Á%[}•d</mark> *&cā[}Å [¦∖•Á	W]ÁţÂÍÁŚÓCCEDÁ Š^ĭÁ∓Í{ã;ÁOÁ∓€{/	í Fásóçæ	ÍHÐHÐGÁ	FÐÐÐÁ

<sup>ĂA</sup>Þ[ãr^Á/\ç^|•Áå^cæa‡/^åÁ\$jÁc@Ácæà|^Ácæà[ç^Á{¦Ájājā}\*Áæ4^Ác@Á(æ¢ā]`{Á/\ç^|•Á,@a&@Á,ā||Á;}|^Á à^Á\¢]^¦a^}&\åAåš`¦āj\*Áj^¦ājå•Á;@}}Ájājā\*ÁšjÁsAj\*Á}à

		BiotarBarroo		
EQUIPMENT /PROCESS	SOUND POWER LEVEL - dB(A)	Calculated Noise Level at Worst Affected Residential Receiver LA1 (1 min)	Noise Level CRITERIA Sleep DISTURBANCE dB(A) L10	Exceedance night dB(A)
Q,•cæa ææāį}Á,,,Á Úā/^• <sup>ÅÅ</sup>	W]Á{[ÁF€[ÁŝÓCDĐÊ^˘/ F{ã]ÁOÁF€{Á	ΪΪ ÅåÓÇŒÐÁ	Í GÁ	FÎ Á
Õ^}^¦æ‡Á &[}∙d`&aāį}Á;[¦\∙Á	W]Á{[Á]€ÁŝÓÇCEDÁŠ^ັÁ F{ã]ÁOÁF€{Á	Î GÁSIÓÇEDÁ	í GÁ	ÎÁ

 Table 11 – Calculated Construction Noise Levels for Residence in Birchgrove – Sleep

 Disturbance

<sup>A/</sup>Þ[ã=^Á/\ç^|•Áå^cæa‡/^åÁ6jÁo@Ácæaà|^Áæaà[ç^Á{[¦Á]āfa]\*Áæa<sup>4</sup>^Ác@Á(æ¢afī`{ Á/\ç^|•Á,@a&@Á,āf|Á;}|^Á à^Á∿¢]^¦a^}&\åÁå`¦āj\*Á,^¦ā[å•Á,@}Á,āfa]\*ÁáaA3;\*Á}à^¦cæa\^}ÈÁ

Á

Table 12 – Calculated Construction Noise Levels to the Residential receivers to the north of
the site in Woolwich

EQUIPMENT /PROCESS	NOISE LEVEL OF OPERATION	CALCULATED NOISE LEVEL AT WORST AFFECTED RESIDENTIAL RECEIVER LAeq (15min)	NOISE LEVEL CRITERIA DAY/EVENING/NIGHT dB(A) Leq (15min)	EXCEEDANCE DAY/EVENING/NIGHT dB(A)
Ü^{[çæ‡Á[,-Á ∙d`&č¦^Eãa^{[ ãã][}Á	WJÁqtÁÍÍÁůÓQCEDÁ Š^ັÁrí{∄,QÁF€{Á	Í€ÁãÓÇEÐÁ	Í HEBEBÁ	ÊDÊDÊÂ
Šãcāj*ÁįÁ;æc∿¦ã懕ÉÁ Ú¦^]ælæcāj}}ÁᦦÁÚājāj*/	W]Á[Â.€ÁŝÓCCEDÁ Š^ĭÁFÍ{ã,ÁOÁF€{/	IÌÁªÓÇŒÁ	Í HEBEBÁ	ËBËRËA
Q,•cæ¢ ææāį}}Á,~Á,^,Á Úā/^• <sup>ÅÅ</sup>	W]Á⊈ÁJÍÁ≗ÓCCEDÁ Š^ĭÁFÍ{ã,ÁOÁF€{/	΀ÁãÓÇŒÐÁ	ÍHÐHÐGÁ	Ì⊞FÌBFJÁ
Õ^}^¦æ¢Á&[}∙d`&cā[}/ ,[¦\∙Á	'W]ÁţÂÍÁŚÓCCEDÁ Š^ĭÁ∓Í{ã,ÁOÁ∓€{/	Í€ÁåÓÇŒÐÁ	ÍHÐHÐGÁ	FÐÐÐÁ

<sup>À/</sup>Þ[ãr^Á/^ç^|•Áå^œaa‡/^åÁ9jÁo@Áœaà|^Áæà[ç^Á{[¦Á]ājā]\*Áæ4^Áo@A(;æ¢ā];`{Á/^ç^|•Á;@a&@Á;ā]|Á;}|^Á à^Á%¢]^¦ā?}&^åÁå`¦āj\*Á,^¦ājå•Á;@}Á,ájāj\*Áájå;\*ÁásÁå/āj\*Á}à^¦œa\^}ÈÁ

 Table 13 – Calculated Construction Noise Levels for Residence in Woolwich – Sleep

 Disturbance

EQUIPMENT /PROCESS	SOUND POWER LEVEL - dB(A)	Calculated Noise Level at Worst Affected Residential Receiver LA1 (1 min)	Noise Level CRITERIA Sleep DISTURBANCE dB(A) L10	Exceedance night dB(A)
Q,•cæa ææāį}Á,í-Á,^,Á Úã/^• <sup>ÅÅ</sup>	W]Át[Á≂€ÍÁŝÓCCEDÊ^˘, F{ã]ÁOÁ≂€{Á	ÏÎÁ&ÓÇEÐÁ	í GÁ	FÎ Á
Õ^}^¦æļÁ &[}∙d`&aāį}Á;[¦\∙Á	W]Á[Á]€ÁŝÓÇDEDÁŠ^ັÁ F{ã]ÁOÁ≂€{Á	ÎFÁSIÓÇEBÁ	Í GÁ	ÎÁ

<sup>A4</sup>Þ[ã\*^Á/\ç^|•Áå^cæaapl^åÁajÁc@Áæaà|^Áæà[ç^Á[¦Á]ājā)\*Áæd^Ác@Á[æ¢ā[`{Á/\ç^|•Á]@3&@4]ā|A[}|^Á à^Á\¢]^¦ã\}&\åÁsi`¦āj\*Áj^¦ā[å•Á]@}}Ájāja\*Áaskávāj\*Á}åA;kad^} \*Á

 $V @ \dot{A}_{1} ^{a} a B cc^{a} \dot{A}_{1} a e a \dot{A}_{1} c c^{+} \dot{A}_{2} \dot{A}_{1} \dot{A}_{2} \dot{$ 

Table 14 – Calculated Construction Noise Levels to the Residential receivers to the north of
the site in Greenwich

EQUIPMENT /PROCESS	NOISE LEVEL OF OPERATION	CALCULATED NOISE LEVEL AT WORST AFFECTED RESIDENTIAL RECEIVER LAeq (15min)	NOISE LEVEL CRITERIA DAY/EVENING/NIGHT dB(A) L <sub>eq (15min)</sub>	EXCEEDANCE DAY/EVENING/NIGHT dB(A)
Ü^{[çæ‡Á[-Á •d`&č¦^Đà^{[ ãã]}Á	WJÁqtÁÍÍÁ₃ÓQCEDÁ Š^ັÁri{∄,QÁF€{Á	Í€ÁãÓÇŒÐÁ	Í HEBEBÁ	ËÐEÐEÐÁ
Šãcā),*Á,,-Á,,æe^¦ãeo,•ÉÁ Ú¦^]ælæeā[}}Á[¦ÁÚājā,*/	W]Á[€ÁŝÓQŒÐÁ Š^ັÁ∓Í{ ã,ÁOÁ∓€{/	IÌÁªÓÇŒÁ	Í HEBEBÁ	
Q,•cæ¢ ææāį}}Áį,~Á,^,Á Úā/^• <sup>ÅÅ</sup>	W]Á⊈ÁJÍÁ≗ÓCCEDÁ Š^ĭÁFÍ{ã,ÁOÁF€{/	΀ÁåÓÇŒA	ÍHÐHÐGÁ	Ì BFÌ BFJÁ
Õ^}^¦æ <mark>ļ∕&amp;[</mark> }∙d`&aā[}/ _ [¦\∙Á	'W]ÁţÂÍÁŚÓCCEDÁ Š^ĭÁ∓Í{ã,ÁOÁ∓€{/	Í€ÁãÓÇŒA	ÍHÐHÐGÁ	FÐÌÐÍÁ

<sup>AA</sup>Þ[ãr^Á¦^ç^|•Áå^œaa‡^åÁaJÁc@Áœaà|^Áœà[ç^Á;[¦Á]ājā]\*Áœ4^Ác@Á;æ¢ā[``{Á/^ç^|•Á;@a&@Á;āj|Á;}|^Á à^Á¢]^¦ã}&^åÁå`¦āj\*Áj^¦āįå•Á;@}Ájājā\*Ááj\*Ááz]\*Á3à^åa^¦œa\^}ÈÁ

Table 15 – Calculated Construction Noise Levels for Residence in Greenwich – Sleep
Disturbance

EQUIPMENT /PROCESS	SOUND POWER LEVEL - dB(A)	Calculated Noise Level at Worst Affected Residential Receiver LA1 (1 min)	Noise Level CRITERIA Sleep DISTURBANCE dB(A) L10	Exceedance night dB(A)
Q,∙cæ ææãį}Á,́-Á,^,Á Úã/^• <sup>ÅÅ</sup>	W]Á[Á∓€ÍÁŝÓCDDÊ^˘/ F{ã]ÁOÁ∓€{Á	ÏÎÁŝÓÇŒA	í GÁ	FÎ Á
Õ^}^¦æ‡Á &[}∙d`&aāį}Á;[¦\∙Á	W]Á{Á[Á]€ÁŝÓÇCEDÁŠ^ັÁ F{ã)ÁOÁ≂€{Á	ÎFÁSIÓÇEBÁ	í GÁ	ÎÁ

<sup>A/</sup>Þ[ã=^Á/\ç^|•Áå^œaa‡/åÁ6jÁo@Áœaà|^Áæà[ç^Á{¦Á]áfa]\*Áæ4^Áo@Á(æ¢á[`{Á/\ç^|•Á,@a&@Á,ã||Á[}|^Á à^Á%¢]^¦ā}&^åÁå`¦āj\*Á,^¦ã[å•Á,@}Á,áfa]\*Á§áA3j\*Á§å^åj\*Á§å^Laak\_}}ÈÁ

$$\begin{split} & V @ \dot{A} | ^{a} a \bar{a} \bar{b} c^{a} \dot{A} = \dot{A} [ \bar{a} ^{A} c^{+} | \dot{A} ] \dot{A} \dot{A} @ \dot{A} c^{+} | \dot{A} ] \dot{A} & \dot{A} @ \dot{A} c^{+} | \dot{A} ] \dot{A} & \dot{A} & \dot{A} \\ a^{+} | \dot{A} | \dot{A} & \dot{A} & \dot{A} & \dot{A} \\ a^{+} | \dot{A} | \dot{A} & \dot{A} & \dot{A} \\ a^{+} | \dot{A} | \dot{A} & \dot{A} & \dot{A} \\ a^{+} | \dot{A} | \dot{A} & \dot{A} & \dot{A} \\ a^{+} | \dot{A} | \dot{A} & \dot{A} \\ a^{+} | \dot{A} | \dot{A} & \dot{A} \\ a^{+} | \dot{A} | \dot{A} \\ a^{+} | \dot{A} \\ a^{+} \dot{$$

æ&cāçācā?••Á,āļlÁ\a^Á;}å^¦cæ\^}Á{[Ác@:Á\*`¦![`}åā;\*Á^•ãa^}cāe¢Á^&^āç^¦q•Á^•ãa^}&^A; &A^\*ā; &{[•^Á,ā;å[,•Áa`¦ā;\*Á;ã\*@zÁ,ãc@zÁj'![][•^åAj[¦\ā;\*•Áq[Á/^å`&^Á;[ã\*^Áā[]æ&cAač`¦ā;\*Á;ã\*@zÁ cā[^Áq2]`¦•EÁ

#### 7.7 PREDICTED CONSTRUCTION NOISE LEVELS AT ACTIVE RESERVE

V@#Á+^&cā[}Á[-Ác@Á'^][¦c^å^cæa‡+Ác@Á]¦^å&33cråÅ}[ã\*^Á/^ç^|+Á¦{{Ác@Á]¦[][+^åÅæ&cãçãa3+•Á å^cæa‡/åÁ§JÁc@Á/æà|^ÁJÁæà[ç^ÈAP[ã\*^Á/^ç^|+Á@æç^Áà^^}Á&e&\*`|æe\*åÁæeÁc@ÁOB3cãç^ÁÜ^+^¦ç^Á[}Á Ô[&\æe[[Á@|æ)åÁ{[Ác@Á+[čc@Á]][][\*^åÁ][][+^åÅ]@ee+→ÈÓæ4&č|æeā[}+Á3J&|čå^Áåã/cæ)&^Écã[^Á æ)åÁaæ¦ã\¦Á&[¦¦^&cã[}+Á,@¦^Áæ]]|38æà|^ÈĂ

# Table 16 – Calculated Construction Noise Levels at the Active Reserve (on Cockatoo Island to the south)

EQUIPMENT /PROCESS	NOISE LEVEL OF OPERATION	CALCULATED NOISE LEVEL AT WORST AFFECTED RESIDENTIAL RECEIVER LAeq (15min)	NOISE LEVEL CRITERIA DAY/EVENING/NIGHT dB(A) Leq (15min)	EXCEEDANCE DAY/EVENING/NIGHT dB(A)
Ü^{[çæ‡Á[-Á •d`&č¦^Đà^{[ ãã]}Á	WJÁ{ÁÍÍÁŝÓCCEDÁ Š^ັÁní{∄,QÁF€{Á	JÏ ÁªÓÇŒÁ	ÎÍÁ	HGÁ
Šãcāj*ÁįÁ;æc∿¦ã懕ÉÁ Ú¦^]ælæcāj}}ÁᦦÁÚājāj*/	W] Á{ ÁÌ €ÁŝÓQŒĐÁ Š^ັÁ∓Í{ ∄ ÁO Á∓€{ /	JGÁSÓÇEÐÁ	ÎÍÁ	Ġ Á
Q•cæ¢aæāt}}Át,-Á,^,Á Úā^• <sup>ÀA</sup>	W] Á⊈Á Í ÁsÓQDEÁ Š^ĭÁFÍ{ ã, ÁO ÁF€{/	F€ÏÅåÓÇCEDÁ	ÎÍÁ	I GÁ
Õ^}^¦æ <b>¦Á%[}•d`&amp;cāį</b> }Å _ [¦∖∙Á	W]ÁţÂÍÁÍÁŝÓCŒÐÁ Š^ĭÁ∓Í{ậÁOÁ∓€{/	JÏ ÁªÓÇŒÁ	ÎÍÁ	HGÁ

<sup>A4</sup>Þ[ãr^Á/\ç^|•Áå^cæaä/\åÁ6jÁo@Ácæaà|^Áæaà[ç^Á{¦Á]āfā]\*Áæa<sup>/</sup>Áo@A{ æ¢afī `{Á/\ç^|•Á, @a&@Á,ā‡|Á;}|^Á à^Á∿¢]^¦a^}&\åÁå`¦āj\*Á,^¦ā[å•Á,@}Á,āfā]\*Áã;Áå^āj\*Á3}à^¦cæà^}ÈÁ

EQUIPMENT /PROCESS	NOISE LEVEL OF OPERATION	CALCULATED NOISE LEVEL AT WORST AFFECTED RESIDENTIAL RECEIVER LAeq (15min)	NOISE LEVEL CRITERIA DAY/EVENING/NIGHT dB(A) Leq (15min)	EXCEEDANCE DAY/EVENING/NIGHT dB(A)
Ü^{ [çæ‡Á[Á ∙d`&č¦^Eã_^{ [iãã]}Á	WJÁ{ÁÍÍÁŝÓÇDĐÁ Š^ັÁní{∄,QÁF€{Á	JÏ ÁªÓÇEÐÁ	ÎÍÁ	HGÁ
Šãcāj*Áį.~Á;æc^¦ãæo∳ÉÁ Ú¦^]ælæcāj}}Áį[¦ÁÚājāj*/	W] Á{ ÁÌ €ÁŝÓQŒĐÁ Š^ັÁ∓Í{ ậĨ ÁO Á∓€{ /	JGÁSÓÇEÐÁ	ÎÍÁ	ĠĂ
Q,•cæa¦ææāį}Á,∽Á,^,Á Úã/^• <sup>Å4</sup>	W] Á⊈Á Í Á₃ÓQCEDÁ Š^ັÁ∓Í{ ã, ÁO Á∓€{ /	F€ÏÁŝÓÇŒÐÁ	ÎÍÁ	I GÁ
Õ^}^¦æ <b>¦Á%</b> [}∙d`&aāį}Á _ [¦\∙Á	W]ÁţÂÍÁÍÁŝÓCŒÐÁ Š^ĭÁ∓Í{ậ,ÁOÁ∓€{/	JÏ Áŝóçedá	ÎÍÁ	HGÁ

 Table 17 – Calculated Construction Noise Levels at the Active Reserve (on Cockatoo Island to the West including the camping area)

<sup>\_A4</sup>Þ[ãr^Á4^ç^|•Áå^œaāf^åÁ5jÁc@Áæàa|^Áæà[ç^Á4[¦Ájājā]\*Áæa<sup>1</sup>^Ác@Á(æ¢ā[`{Á^ç^|•Á,@a&@Á,ā||Á[}|^Á à^Á¢]^¦ã}&^åÁå`¦āj\*Áj^¦ā[å•Á,@}Á,āaj\*Áákāyāj\*Á ja

#### 7.8 NOISE AND VIBRATION MANAGEMENT FOR COCKATOO ISLAND WHARF

V@ārÁ+^&cāļ}Á[-Ác@Á'^][¦cÁ]¦^+^}orÁc@Á'^~~ã^åÁ}[ã\*^Á+dæz^\*ã\*•Ád[Á^}+`¦^Á}[ã\*^Á+c,~]+Á ,@}Á{^æ\*`¦^åÁæoÁæÁ'^&^ãç^¦Á ão@3;Á&|[•^Á]¦[¢ã[ãĉÁd[Á+ãcÁ&æ)Áà^Á(ājã[ã \*^åĚW@Áæài|^Á à^|[, Á]¦^•^}orÁc@Á&[}•d`&cā[}Áæ&cãçããã\*•Áæ)åÁåã\*&`••^•Ác@Á{ æ)æ\*^{ ^}ob2^æd{ ^}orÁ ¦^~ ša^åÁt[Áà^Á&[}å`&c\*àÈÁ

EQUIPMENT /PROCESS	Receiver	Discussion
Úąą * Á	Ü^∙ãâ^} cãæ‡Á Ü^&^ãç^¦∙Á	Ö`^ÁţİÁ©Á][ơ}œaddi [Å] [ð] Â ^ æe āà ^Ásə) å Á^æ[}æa ^Á] [ð] Â^ [d] A^
	OBBcãą;^ÁÜ^&¦^ææð∦}Á OE!^æéÁ	Ö`^Áţĺ Á© Á[ @ } căedÁl jÁ [ ã ^ Á^ç^  Ă[ Áœ Á^• ãa^} căedÁ^ & căed j A @ A j A @ A j A @ A j A & căed j A & căed j A & căed j A & căed j A & căed j A & căed j A & căed j A & căed j A & căed j A & căed j A & căed j A & caed & caed A & caed & caed j A & caed & caed A & caed &
	Ô[{{ ^¦&ãæ¢Á Ü^&^ãç^¦∙Á	Þ[Áæååããāį}æ‡Áæ&[č•cã&Ád^ææ{^}o•Á¦¦Á&[}d[ •Á^ččã^åÁ
Ô[}∙dੱ&cāį}Á æ\$kcājān2№A	Ü^● ãâ^} cãæ‡Á Ü^&^ãç^¦● Á	Ä ( Áu) ( Au)
	OBBaãç^ÁÜ^&¦^æaãaţ}Á OE^æÁÁ	
	Ô[{{ ^¦&ãæ¢Á Ü^&^ãç^¦∙Á	Þ[Áæååããā;}æ‡Áæ&[č•cã&Ád^æ&{^}o•Á;¦Á&[}d[ •Á^ččã^åÁ
Á/¦č&∖ÁÇ3j& čåāj*Á c@°Á[æåāj,*Á[-Á	Ü^∙ãâ^}cãæ¢Á Ü^&^ãç^¦∙Á	Þ[Áæ&[č•cã&Á&[}d[ •Á^ččā^åÁ
{æe^\¦ãæd;+Á5jq[Á d`&∖•DÁ	ÓEScãç^ÁÜ^&¦^æaāį}Á OE!^æÁÁ	Þ[Áæååããā;}æþÁæ&[č•cã&Ád^ææ{^}o•A;¦Á&[}d[ •Á^ččã^åÅ
	Ô[{{^\\&&aaq4Â Ü^&^ãç^\•Â Çāj& `åāj*/&&eeee.EÂ æå{āj.kag}åÂ(!\]ā aða`•dãaq/xad^2aĐÁ	Þ[Áæååããą]}æþÁæ&[`•cã&Ád:^ææ{ ^}o•Á[¦Á&[}d[ •Á^``ā^åÁ

#### Table 18 – Recommended Noise and vibration Controls

EQUIPMENT /PROCESS	Receiver	Discussion
	Ü^∙ãå^}cãæ∳Á Ü^&^ãç^¦∙Á	Þ[Áæ&[č•cã&Á&[}d[ •Á^ččā^åA;¦[çãåā]*Á;[č¦ā]*ÁārÁ;[ơ&&[}åč&c^åÁ åč¦ā]*Ájā*@exkaā[^Á@į覕Á
	ÓESkaãç^ÁÜ^&¦^æaãi}}Á OE!^æÁÁ	Þ[Áæååããą]}æþÁæ&[`•cã&Ád^ææ{ ^}o•Á;¦Á&[}d[ •Á^``ā^åÁ
Ô[}&\^&ÁŰ`{]∙Á	Ô[{{^\&&&&&&  Ü^&& ãç^\+ Á Ü^& ã;^ k Â; & ă; * Á& & EÂ æå{ā; Á& à; k â; å`• dãæd, & & & & A Â; å`• dãæd, & & & & & & & & & & & & & & & & & & &	Þ[Áæååãīā]}æ‡Áæ&[`•ca&Ád^ææ{^}o•Á,¦Á&[}d[ •Á^``ā^åÁ

# 8 NOISE AND VIBRATION CONTROL METHODS

V@·Áå^cv:{ ājæaa‡i}Á[-Áæa]];[];"aaaev:Á}[ãe^Á&{]}d[|Á{ ^æe`;'^•Á, āµÁà^Áå^]^}å^}cÁ[}Ác@·Á ]æicā&`|æ:Áæ&caçāaa>•Áæ);åÁ&{]•d`&ca‡i}Áæ]]|ãæ);&^•ÈÁV@àrÁ•^&ca‡i}Á];[çãa^•Áæ);Á[čdā}^Á[čdā}^Á[~Á ][c^}caæ†Áæçæaa‡æaa)^Á{: ^co⊉iå•ÈÁ

#### 8.1 NOISE MANAGEMENT CONTROL FOR PROPOSED NIGHT WORKS

Óæ•^åÁ[}Ác@·Á] ¦[][•^åÁ}ā\*@Ácā[^Áæ&cā;ãnā\*•Ác@·Á-[||[]ā]\*Áæ&[`•cā&Á&[}d[|•Á•@[`|åÁà^Á æå[]c^åÁå`¦ā]\*Ás@ā Ásā[^Ká

 $FE\dot{A} \Rightarrow \begin{bmatrix} \dot{A} & \dot{A} \\ \dot{A$ 

HĂ O EÁ: [ | ãá Áà æl; ãh | Đ & | ^^ } Á [ Áà^ Áā] • œe| ^ å Á [ Ác@ Á] ^ ; ãt ^ ch | Á] · Ác@ Á at ^ ch ^ ; ^ } Ác@ Á æh æh Å ãc@ Á; ãt @ Á; [ ¦ \ • Áæ) å Ác@ Áæå bæ&h } ch ^ åt @ a[ ` ` | • ÈÁ

#### 8.2 SELECTION OF ALTERNATE APPLIANCE OR PROCESS

Y@\!^ÁæÁjæda&`|ækÁæ&aãjãĉÁj¦Á&[}•d`&aãj}Áædj]|ãæbj&^ÁãiÁ{[`}åÅq[Á\*^}^\æz^Ár¢&^••ãç^Áj[ã\*^Á |^ç^|•ÊŽãaÁ{ æੰÁà^Áj[••ãa||^Áq[Á\*^||^&o⁄aðjÁædv];}ææãj^Áædj]|{[æ&@4j]k\*~`ðj{ { ^}dě2[|Á^¢æq[]|^LÁ ] ðjðj\*ÊŽjæda&`|ædj^Ájãa|;ææãj}Ájðj\*Áj}Åk%\cæðjÁæd^æ Áj A&@A`ãvÁjæAj[c\*}ãædj^Á\*^}^\æzA@ |^ç^|•Áj\_Áj[ã^ĚAv¥ðj\*ÁæðjÁædv];}ææãj^Á&[}•d`&aãj}Á{ ^o@På[|[\*^ÁÇãAJ][••ãa|^DÁj[`|åÁ^å`&^Á |^•`|cæðjoÁj[ã^Áãj]]æ&o ÉÁ

#### 8.3 SILENCING DEVICES

Y@\^Á&[}•d`&cā[}Á];[&^••Á[;Áce]]|ãee)&^•Áce/^A][ãr^Ê&c@A´•^Á[-Árā]^}&ā]\*Áå^çã&^•Á[æ∂Áa^Á ][••ãa|^ĚÁ/@••Á[æ∂Ácea-^Ác@Á[;{Á[-Ár}}\*ā]^Á;@[čåā]\*ÉA[¦Á]^&ãae‡Á§jå`•dãae‡Á;ā/}&^¦•Áãac^åÁ d[Ár¢@eĕ•o•ÈÁ

#### 8.4 MATERIAL HANDLING

V@^Áðj•cæp|ææn]}Á[-Ál`àà^¦Á[ææcðj\*Á[ç^¦Á[ææc^¦ãæb,Á@æd)å|ð]\*Áæb,^æe,Á&æd)Á'^å`&^Ác@^Á+[`}åÁ[-Á ã[]æ&orÁsi`^Á{[Á[æec^¦ãæb,4su^ð]\*Ásu¦[]]^åÁsu^Á]Á[ÁGEåÓQCEDDÁ

#### 8.5 TREATMENT OF SPECIFIC EQUIPMENT

Q\Á&^¦cæaj,Á&æe^^ÁaiÁ{; æê Áà^Á};[••ãa|^Á{;Á\*]^&ãæ‡|^Ád;^æAiæÁ;jā^&^Á{; Á\*`čaj;{ ^}ch`ča; &áAiæ; æã&æ‡|^Á ;^å`&^Ás@Á[č}àÁ^ç^|•Á{;ãcc^àĚÁ

#### 8.6 ESTABLISHMENT OF SITE PRACTICES

V@ērÁ6jç[|ç^•Ác@·Á{|'{`|æaāj}}Á[-Á][¦\Á]¦æa&ca&A•Áq[Á'^å`&^A}[ēr^Á\*^}^¦æaāj}ÈÉOEA}[ēr^Á]|æ)Á ,āļÁà^Áà^ç^|[]^åÁ{[¦Ác@ārÁ]¦[b^&cA[`dājāj\*Á][¦\Á]¦[&^å`¦^•Áæ);åÁ{ ^c@[å•Á{[¦Á{]ājā[ērāj\*Á }[ār^ÈÁ

#### 8.7 REGULAR NOISE CHECKS OF EQUIPMENT

V[Áå^ơ\{ ā] ^Áơ@ Á¦^˘ ǎ] { ^}ơ{-{ ¦Á•ā] &ā] \* Áå^çã& ^A[}Á{ æ&@a] ^¦^ÁãAãÁ] ¦[][•^åÅ(á č}å^¦æa\^Á[¦ơ] ā!@q^Á}[ã\*^Á&@ & ÉÞ[ã\*^Á¦^ç^|•Á[ Áæa|Á{ æ&@a] ^•Á[}Á\*ã\*Á ā]Åà^Á{ ^æ\* ¦^åÁ æ) å ÁãÁœ ^Áæ ^Á[ĭ}åÅ[Áa^Á@a!@ ¦Áœa) Aj[{ājæe\*àÁ[¦ÁœæxÁ\*ĭă]{ ^}ơ£]^Éãe\*{ •Á\* &@Áæ { ĭ~-{^!•Áæ}åÁ\*}\*ā]^Á @[ĭå•Á;ālÁá^Á¢æ;ēja^åÁ(tÁ\*)•ĭ!^Áœ^Áæ^ÁajÁ\*[[åÅ;['\ā]\*Á;lå^¦ÉÁ

OEÁ\^&[¦å/ų,-Ác@••^Áų,^æ•č¦^{ ^};•Á,āļļÁa\^Á^]ơ4,}ÁœÁų[¦{Á+ãįāækAų[Ác@aecÁ+@ų,}Å5,ÁOU]]^}åã;cÁ FEÁV@ã+Á{^æ•č¦^Áã+Á^¢]^&cvåÁq[Á{ ﷺ معطى A}[ã\*^ÁæaÁ&[}•æa)oÁ|^ç^|•EÁæa)åÁ]¦^ç^}oÁæ}^Á āj&¦^æ-^•EÁ

#### 8.8 COMBINATION OF METHODS

Q;Á;[{^Á&æe^•ÁācÁ;æô/Áa^Á;^&^••æl^Ác@æeÁç[Á;¦Á;[¦^Á&[}d[|Á;^æe`¦^•Áa^Áā;]|^{^}o\*åÁq[Á {ā}ā;ã^^Á;[ã^^ÈÁ

#### 8.9 SCREENING OF OPERATIONS

Ù&¦^^} ā] \* Á[-Á[]^¦æaā[}•Á] āļ|Áà^Á/^``āl^åA[¦Áæ&cāpānā\*•Á] @38k@Ár¢&^^åA'[[ã\*^Á/·ç^|•ÉAr`&@Áæe Á ]ājā] \* ĚĚÙ&¦^^}ā] \* Ár@[`|åÁà^Á&[}å`&c^åÁ`•ā] \* ÁœÁr[|ãåÁ(æc^¦ãæ‡Ár`&@Áæe ÁæÁ@[æååā] \* Á[¦Ác@ Á |ã ^ĚZOE] ^ Ár&¦^^}ā] \* Áj [`|åÁà^Á/^``āl^åÁt[Á&[{]|^Âjāc@Ác@ Á!^|^çæe) cÁræe^c Áæe) å Á[]^¦æaā[}æ‡Á • œe) åædå•ĚÁ

#### 8.9.1 Noise and Vibration Monitoring

Þ[ã:^Áæ)åÁçãa¦ææā[}Á{[}ãa[¦ā]\*Á,ā|Áà^Á`}å^\cæ\^}Áq[Áå^ơ\{ā]^Ác@Á^~^&caā;^}^••Á[-Á {^æ`\^•Á,@3&@Ácd^Áà^ā]\*Áā[]|^{^} &àĚÁV@Á^•`|o•Á[Á4[]}ãa[¦ā]\*Á&æ)Áà^Á`•^åÁ[Áå^çã=^Á ~`\c@\Á&[}d[|Á(^æ`\^•ĚV@Á[]}ãa[¦ā]\*Á^\*ã[^Á\\*ã]^Á{¦Ás@Á`ãc^ÁāJ&|`å^•Ás@Á[|[,ā]\*Á

FĚÁ Xãa ¦æaā¦}Á ÁÖ`^Áq[Á©@Á]; [¢ā[ãc´Á; Á^&^&^ãç^i+ Á'[{Áo@Á, @ed-Áçãa ¦æaā]; Á; [}ãa[¦ā]\*Á,āļÅ à^Á&[}å`&c^å ÁæeÁc@Á@elãaæ\*^Áà`ā¦åāj\*Á,ão@3jÁ]; [¢ã[ãc´Ád[Ác@Á,[¦\•Áa`¦ā]\*Ác@Á ][c^}cãæ‡|^Á'¦^æe^•oÁçãa ¦æaā[}Á'^} iæaā]\*Áj^¦ā[å+ ÉÁs]\*Éaj\*Ájāj\*ÉÁ

Q Á c@ Á ^ç^}cÁ &[{]|æajorÁ ⊹[{Á çãa læaaj}Á æb^Á l^&^ãç^åÁ æec^}å^åÁ çãa læeaj}Á {^ær`l^{^}orÁ[-Ác@ Áãa^}cãað åÁ^``ā]{^}cÁ\*^}^læaaj\*Ác@ Áçãa læeaj}Á\_ā|Áà^Á &[}å`&c^åÁq[Áær•^••{^}cÁ{æ\*}ãč å^•Á[-Áçãa læeaj}ÈÁQ) Ác@ Á^ç^}oÁçãa læeaj}ÁãrÁ ãa^}cãað åÁærÁ^¢&^^åaj\*Á•]^&ããð åÁçãa læeaj}Á|ã[ãorÁçãa læeaj}A{[]šã[laj\*Á\_ā|Áà^Á ā)•cæa|^åÈÁ

#### 8.10 ESTABLISHMENT OF DIRECT COMMUNICATION WITH AFFECTED PARTIES

Q,Á[¦å^¦Á-{¦Áæ}^Á&[}•dč&a];Á}[ã\*^Á{æ}æ\*^{^}oÁ]![\*¦æ{{^Ád;Á,[¦\Á^~~&a];^|ÉA &[}d]č]č]č[\*•K&[{{`}382æa];/Æ;Á^č\*ã^å&c;^^}Áœd[A]ædæ\*•Aaæ\*^åA;}Á@A´/=DÙYÁÖčã&^|3]^•Á æ)åÁ@AÓÚOZÁQ,cc'iã[ÁÔ[}•dč&a];ÁP[ã\*^ÁÕčã&a];AP[ã\*^ÁÕčã&a]; å)åÁ@AÓÚOZÁQ,cc'iã[AÔ[}•dč&a];ÁP[ã\*^ÁÕčã&a];AP[ã\*^ÁÕčã&a]; å]å\*A@A&[}eA å]\*A@A&[}•dč&a];A&[}dæ&d[¦Áæ)åA^ã@a[č'+eÊA@a;Á\*•cæà|ã@+Áæ&\*}}æ{&A^+[]}\*A ] |[&^••A;@B&@A#|[, •Á{¦¦Ác@Aœåb\*•d;^}d[A&];d[]A(Ac@}A\*A;A]];A æ|A;æa?\*•ÉA

V@^Á{,àb^&cãç^Á§;Á`}å^¦cæàā]\*Áæá&[}●`|cæeā[}Å,¦[&^●●Á§rÁ§[kÁ

- •Á Q,-{; { Áæ} åÁ^å & & & Ac@ Á\*; [`] Áæà [` oÁc@ Á]; [b^ & Ac@ Á] à Ác@ Á} [ã ^ Á&[; d [] Áà^ã ; \* Á ã[] |^{ ^} c^ åLÁ
- •Á Q,&¦^æ^^A`}å^¦•œ) åð;\*Á[~Áæ|Áæ&[`•œ&Áã•`^•Á'^|æe^åÁd[Áœ&]`|[b^&Aœ) åð;"]åd; }•Á æçæajæe)|^LÁÁ
- •Á Ca^}cã^Át'[`]Á&[}&^\}•Át^}^\æe^åÁà^Ác@Áj'[b^&dŹ+[Ác@æÁc@^Á&æ)Áà^Áæåå\^••^åLÁ æ)åÁÁ

V[Á^}•`¦^Ác@eexÁc@exÁj¦[&^••ÁexÁ^~^&caçî^ÉA\^\*`|ædÁej-{¦{ æeaqi}Á^^\*ædåej\*Ác@Aj![][•^åÁj[¦\•Á æ);åÁj^¦ā[åÁj@e}Ác@e^Ájā]Áea^ÁA^``ã^åÁqiÁea^Á&[}å`&c^åAr@[`|åÁeAÁj¦[çãea^åÁqiÁ\*`¦¦[`}åāj\*Á ¦^&^ãç^¦•ÉÁ

V@:Á&[{ { `}ãc´Á}[cãa38ææa[}Á&iÁ(Áà^Á&[}å`&c^åÁ;ãc@3;Ác@:Áæd^æe Áå^cæaa[^åÁà^|[,ÉAj&|`åāj\*Á åãi^&cÁ&[{ { `}ã&ææa[}Á`∙āj\*Áå[[¦Á\}[&\āj\*Áæ);åÁ|^ccc\¦Áå¦[]•Á[¦Á{æaa[Á[`o•Áæe Áå^cæaa[^åÁā;Á Øãi`¦^ÁiÁà^|[,ÈĂ



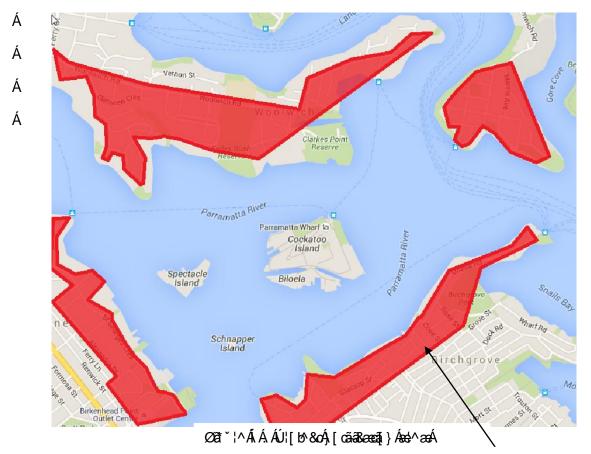
Island\201608506WA\_K4\_COCKatoo What Interchange - Noise and Vibration Impact Assessment.doc

V@^Á,[cãa&æaāā;}●Áæà[ç^Á@æç^Áà^^}Áàæe^åÁ;}Ás@^Á{[||[,ā]\*kÁ

FĚOEIIÁ\^&^āç^¦•ÁÇ^•ãa^}cãadĚÄ\^cæãiÁæ)åÁ&[{ { ^¦&ãadDÁ}@\¦^Á][ã~Á^,cç^|•Á; æêÁ^¢&^^åÁ&;lãæÁ . Ác@Á^åÁ∄^ÊA;[c^Áx@•^Áæ-AæA;`o•ãa^Áx@Á^åÁ;ã|A;[cÁ@æç^Áã^|^Á^¢&^^å^}&\*^∮ãr@3;Áx@Á &[}•d`&cã;}Á;[ã^Á&;lãæEĚÚ![]^¦cã•Á;ãx@3;Áx@•^ÁæAæÁ;ã|A\$a^A;[cãã\*åÁ;ãc@áxaÁ^cc^¦&å![]ĚÁ

 $\begin{aligned} & \textbf{E}\dot{A} \otimes \tilde{a}_{1} + \dot{A} \otimes \tilde{a}_{2} & \textbf{E}\dot{A} \otimes \tilde{a}_{2} & \textbf{E}\dot{A} \otimes \tilde{a}_{2} & \textbf{E}\dot{A}$ 

Q Áæååãaāį } Ád[Ác@Á•^}•ãaãç^Á'^&^ãç^¦•Á'] [c^åÁāj Á28ā`¦^ÁI ÉÉc@ÁÙ^å}^^ÁPæàà[`¦Á2^å^¦ææāj} } Á V¦`•oÁ@æç^Áæá+cæaj åæbåÁæd^æÁ{[¦Á][cãaã&ææāj]}Á[, Áæbj^Â][¦\•Á]}Ác@Áã+|æaj åÉbāj &|`å^åÁæe Á28ā`¦^ÈÉÁ V@Á]¦[b%&oÁc^æ{!Á, āµÁ`•^Ác@ã\*Á{ æ3j Á-{¦Á}[cãaã&ææāj]}Áåč¦āj\*Á&[}•d`&cāj}ÊÉdq[Á^}•č¦^Áæ4|Á ][c^}cãæ4|^Áæ-^&c^åÁ^&^ãç^¦•Áæ^Á][cããvåA[-Á][\+`A][Ëæ&cãç^|?ÈÉÁÁ



Areas of notification

# 8.10.1 Dealing with complaints

Ù@[`|åÁæ)^Á&[{]|æ#jœÁæà[`ơÁ][ã\*^Á[¦Áçāà¦ææ4]}Ă[&&X`¦Á(^æ\*'¦^+^æ\*'\^+ & @e¢|Áà^Á`}å^¦ææ4^}Á[Á ājç^•ocātææ^Ác@Á&[{]]æ#jdÉå^c^¦{āj^Á}@c@¦Á&Jãx'¦ãæÁ@æeÁà^^}Á^¢&^^å^åAæ)åÁæâ^}cã^Ác@Á ¦^``ā^åÅ&@eo)\*^•Á[Á][¦\Á]¦æ&ca&/•ÈKQAć@Á&æe^Á[,4^¢&^^åæ)&^•Á[,46@Áçãa¦ææ4]}Å4ā[ãe/Åæ4Å] [¦\Á][c^}caæ4]^Á;[å`&aj\*Áçãa¦ææ4]}Á @e¢|Á&Aœ^Á}a#A¢&^^åæ}&A^á;aA&}c^•cātæe\*åÉÅ

V@Á^~^&cãç^}^••Á[~Áæ)^Á&@æ)\*^•Á[Á][Á][\\Á]¦æ&cã&^•Á•@e¢|Áà^Áç^¦ãæ\åÁà^-[¦^Á&[}cā)\*ã]\*ĚÅ Ö[&`{ ^}cæeā]}Áœ)åÁc!æējā]\*Á[~Á\*ãe^Á\*cæe-Á\*@e¢|Á[&&`¦Át[Á^}•`¦^Ác@^Á]¦æ&cã&^•Ác@æeÁ]¦[å`&^åÁ c@Á\*¢&^^åæ)&^•Áæh^Á;[cÁ^]^æe^åĚÁ

Q Á ceÁy [ã^Á&[{]|æ‡); c/ã; Á^&^ã; ^åÁc@ Á&[{]|æ‡); c/4; @[`|åÁà^Á/^&[¦å^åÁ[}}ÁceÁÞ[ã^ÁÔ[{]|æ‡); cÁ Ø[¦{ĚV@ Á&[{]|æ‡); cÁ[¦{Á@[`|åÁã chÁ

- •Á V@A, æ{ ^Aæ} åA[ &ææa]; }A, ~ÁœA&[ { ] |æa]; æ} oAÇãA, ¦[çãå^åDuÁ
- •Á V@^Áaāį ^Áae)åÁåaæ^Áo@^Á&[{]|æāj,cÁ,æ•Á^&^ãç^åLÁ
- •Á V@A, æč¦^A, Á@A&[{]|æja oksa) å Ás@Akjā ^Ása) å Åsær Ás@A, [ãr ^A, æ Á@ æ å LÁ
- •Á V@\Á,æ{^Á{,~Ás@\Á`{]|[^^^Á, @Q,Á^&^ãç^åÁs@A&[{]|æ∄jdÁ
- •Á OBScāt } Ácæ\^ } Át Áā, ç^• cāt æe^ Ác@ Á&[ { ] |æan, dÉæn, å Áæé+\* { { æ' Át Ác@ Á'.^• ` |@ Át Ác@ Á ā, ç^• cāt æana, } LÁ
- •Á Ü^č ă^ åÁ^{ ^âaq / âsaq / âsaq / âsag / asag
- •Á Ù { { æ¦ Á¦ Á^^ åaæ& Á[ Á@ Á&[ { ] |æ] æ} æ} dĚA

OEÁ,^¦{ æ},^} ÓÁ^\*ã:c^¦Á; Á&[{ ] |æã; o•Á;@{`|åÁà^Á@|åĚÁ

Ot‡|Á&[{]|æanjorÁ\^&^ãç^åÁ+e@[`|åÁà^Á~||^Áājç^•cātæa^åÁænjåÁ\^][¦c∿åÁq[Á(æn)æt^{^})dĚAV@^Á &[{]|æanjænjoÁ•@[`|åÁæn+[Áà^Á}[cãað\åÁ[-Ác@^Á¦^•`|orÁænjåÁæ&anj}•Áælæiāj\*Á⊹[{Ác@^Á ājç^•cātæanj}}ÈÁ

Y@~¦^Aj;[}Ë&[{]|ãæ);&^•Aj;¦Áj;[ãr^Á&[{]|æãj;orÁæd^Álæãa^åÁo@^Á{;||[¸āj\*Á;^o@[å[|[\*^Á;ā]|Áà^Á ã[]|^{ ^}c^åÉÁ

FĚÁÖ^ơ`¦{ āj^Áo@Áj~^}åāj\*Áj|æ)dĐččāj{ ^}dЦ[&^••Á

- GĐĂŠ[&æe^Ác@Á]|æ}dĐčč]{ ^}dЦ[&^••Áč¦c@¦Áæ;æÂÁ+[{Ác@Áæe-^&c^åÁ'^&^ãç^¦ĢDÁãÁ ][••ãa|^ĐĂ

IÈÁÙ^|^&cāj\*Ásqe?\}æsāç^Á~˘ãj{ ^}cĐ\[&^••^•Á,@\\^Áj[••ãa|^Á

# 9 OPERATIONAL NOISE AND VIBRATION IMPACT ASSESSMENT

V@Aj[•ãāāi}A, Ao@Aj¦[][•^åAj^, Á, @eet-AārA[&æet^åAfaetAtaāræei&a; afætAtaāræei&a; &^A+[{ Ar@; |^Ao@eetAta@; A ^¢ārcāj\*Á, @eet-Aæ)åAo@A-\|^Aà^\c@j\*Áåā^&cāi}AãaA&a[}eārc\*}dá, ār@Ao@A^¢ārcāj\*Á, @eet-A &[}åãaāi}•ÈÈÙā;&^Ac@Aj¦[][•^åA4\|^Ácāi ^•Aeet^Aj[c4^¢]^&c\*åA{i[A&@eet}\*Aæ)åAc@Ataāræei&A &[}åãaāi}\*A; @eet-Aæ)åAc@Aj^[][][•^åA4\|^Ácāi ^•Aeet^Aj[c4^¢]^&c\*åA{i[A&@eet}\*Aæ)åAc@Ataāræei&A à^ç ^^}Ac@Aj @eet-Aæ)åAc@Aj^æA+oAi^\* a^ç ^^}Ac@Aj @eet-AæjåAc@Aj^æA+oAi^\* []^¦æeāi}æetA[ā\*Aāi]æ&oAata[c4&]\*aãa^!^åAi^&A\*•eeta^ÈA

V@AA^•`|cā]\*Aj[ã\*^Aj^ç^|Aã[]æ&cÁ+[{ Ác@^Aj+[][•^åAj @ee+A`]\*¦æå^Aj ā‡|Aà^A+ã[āpeehA[Ác@[•^A &`¦\^}q^A+¢]^¦ã+}&^åÉA

# **10 CONCLUSION**

V @ār Áå[&`{ ^} ớ́́Ą| /^•^} or Áædháār &`••āĮ} Á[ -Ác@ Á] ¦[&^••^•ÊÅ, @ā&@Á, āļ|Áa\^Á[ ||[ , ^ å Áa) Á[ ¦å ^¦ Áq[ Á { æ} æ\* ^Á} [ãr ^ Áæ) å Áçãa ¦ææā] } Áæ••[&ãæer å Á ãr@Áa^{{ [arāt] } Áæ) å Á&[ }•d` &cāt] } Áæ&añçãañ •Á, @ā&@Á ;āļ|Áa^Á^`čā^å Át[Áa^Á&[ } å` &c^å Áæe Á] ædo{[.~Ác@ ÁÔ[ &\ættir [ Á@]æ) å ÁY @æd-ÁΩ, c'¦ &@æ) \* ^ÁÚ¦[ b% &óÁ æ) å Ás@ Át[ c^} cāædhÁt[ ¦Á][ãr ^Áæ) å Áçãa ¦ææāt] Ást] æ&oÁt[ Á^ &^ãç^¦ •Á;ão@a) Át¦[ çāt] ãĉ Át -Ás@ Átār ÉÁ

V@:Á^][¦cÁs\cæa‡+Á^č čat^åA(æ)æ\*t^{ }cÁs[}d[|+Át[Á(ādātæs:A,[ãr^Áæ)åAçãa:|ææat]}Át[]æ&orAt[Á •č ¦¦[č}}åā)\*Á'^&^ãç^¦+Áæ)åÁå^cæa‡+ÁæA{{[}ãt[¦ā]\*Á'^\*ãt\_^Át[^}ãt[¦Á}[ãr^Áæ)åÁçãa:|ææat]}Á ãt\_]æ&orAt[Át[c^}cãa‡Á^&^ãç^¦+ÈĂ

O5ååãoāį}æ¢|^Áæ)Áæ••^••{ ^}oÁ[~Ác@Á]¦[][•^åÁ[]^¦æaāį}•Á[~Ác@Á~č¦^Á, @eet-Á@eerÁà^^}Á `}å^¦cæ\^}Ásæ•^åAí}Ás@Á,¦[][•^åAí]^¦æaāį}Á, Ás@Á, @eet-ÉÁ

Ú¦^]æ¦^åÁà^Á

r. What

Á

# REFERENCES

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- GĐÁ CE dæ)āæ)Á Ùœa)åæ)åÁ OĐÙGIHÎ KFJÌ FÁ% Õõ ँãå^Á d[Á ][ãr^A Á &[] d[|Á[] Á &[] d šæ] Å { æ3j (^} æ)&^Áæ)åÅå { [|ãã]} Á ãc∿ + HÁ
- $HE\dot{A} \ddot{U}^{*} | a = ti \dot{A} J \dot{A} + \dot{A} @ \dot{A} J & \dot{A} = ti \dot{A} = ti \dot{A} + ti \dot{A} @ \dot{A} = ti \dot{A} = ti \dot{A} + ti \dot{A} + ti \dot{A} = ti \dot{A} + ti \dot{A} = ti \dot{A} + ti \dot{A} = ti \dot{$
- IÈÁ U~-ã&^Áį,~ÁÒ}çã[}{ ^}o/se) å ÁP^¦ãæ \* ^ÁQUÒPDÁQ; o^¦ãį, ÁÔ[}•d`&aãį}ÁP[ã:^ÁÕ`ãå^|ã)^Á
- Í ÉÁ Õ^¦{ æ) ÁÙ æ) 忦å ÁÖ O⊅ Á FÍ €ËHÁÇFJJJË∈ODAÁù ld`&覿4ÁX ãa ¦æe‡i} Á ÁÒ---^&o• Ái,-ÁX ãa ¦æe‡i} Á [}Áù d`&č¦-•+Láen) å ÁÁ
- Î ÈÁ Ó¦ããã @ÁÙca) 忦åÁÓÙÁÎ I Ï CHFJJCÁ%Qõ ăå^Ád[ÁÒça‡ ǎæā]} Á[-ÁP`{ a) ÁÒ¢][•`¦^Ád[Á Xãa¦æaā]} Á§IÁÓ ă¦åā] \*•ÁÇFP:Á[ €P:DĚÁ

ΪĖÁÞÙΥÁÒ}çã[}{ ^}œa¢ÁÚ¦[c∿&cãį}ÁŒCoQ¦ãĉÊÁQ,åč∙dãæ¢Á₽[ãr∧ÁÚ[|ã&ĉÈÁ

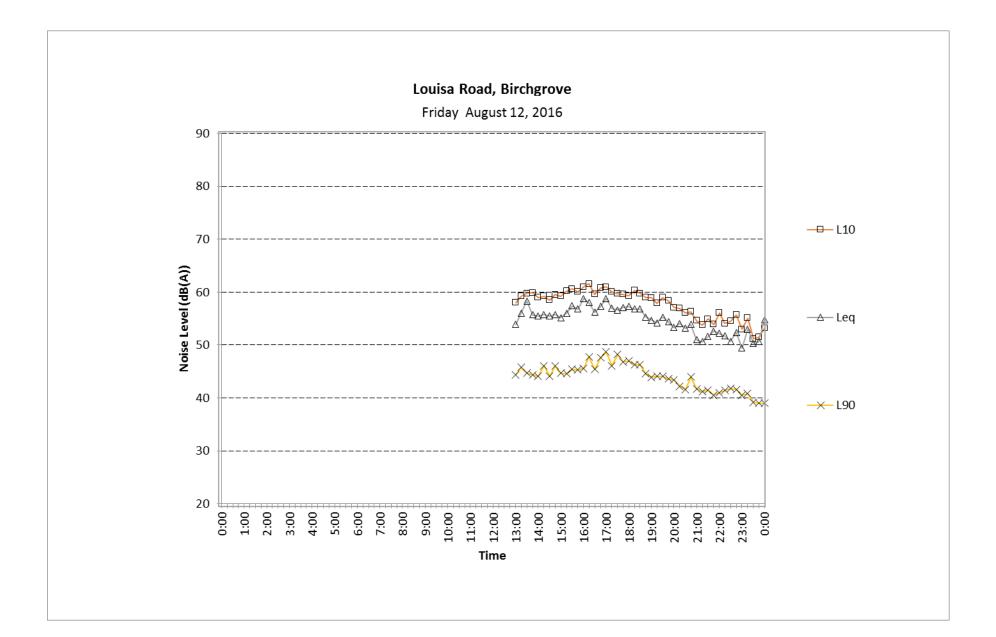
ÌÈÁÜ[æå•Áæ)åÁTælaãa[^ÁÜ^¦çã&^Á©Q[}•d`&aā[}Á¤[ã^Áæa]aÁxãa:|æaā[}ÁÕ`ãå^|ð]^•+ÈÁ

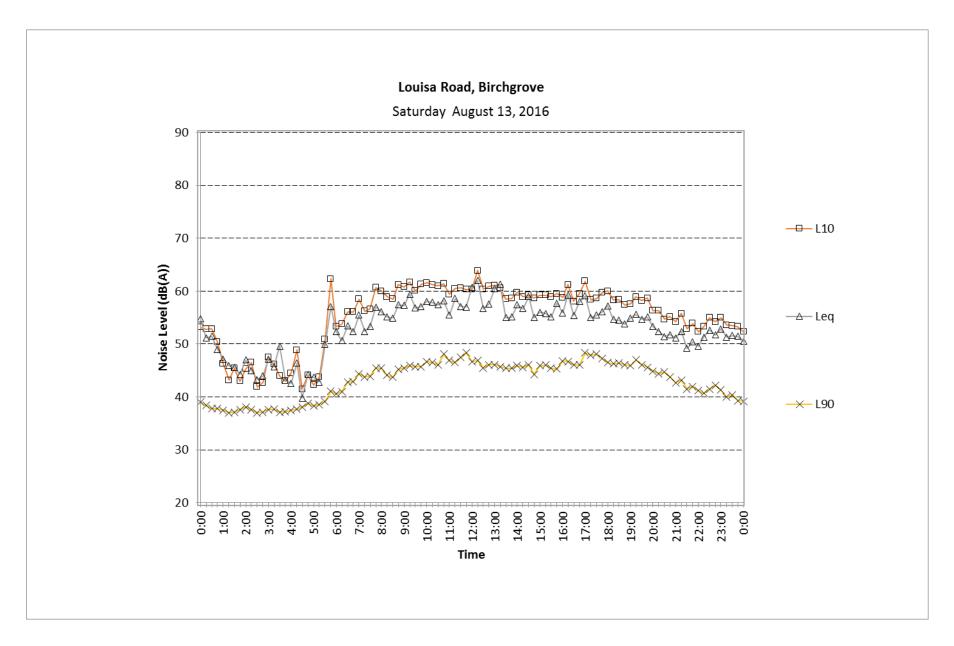
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	APPENDIX AÁ
	ÔUÞÙVÜWÔVQJÞÁŒÚÚŠQÆÞÔÒÁÁ
	ÔUT ÚŠQŒÐ ÔÒÁÔÒÜ VQZQÔŒ/Ò

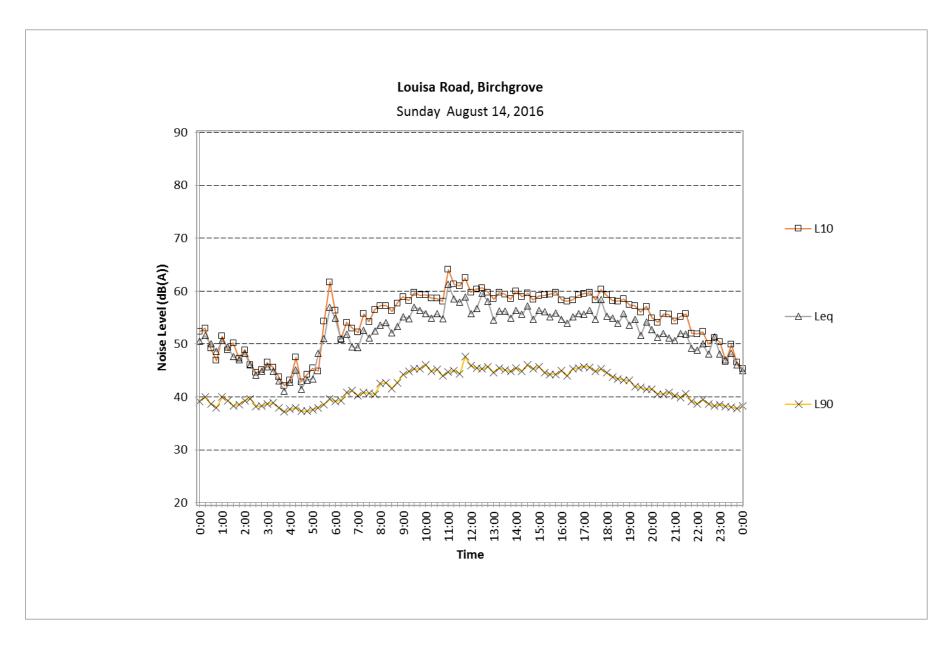
Hansen Y	'unken Constructi	ons
Cockate	oo Island Wharf Pro	ject
Construction A	ppliance Complianc	e Certificate
Month		
Year		
Plant Item		
Allowable Noise Level		
Measured Noise Level		
Complies	Yes	No
Issuing Engineer		
Sub-Contractor		
Project Manager		

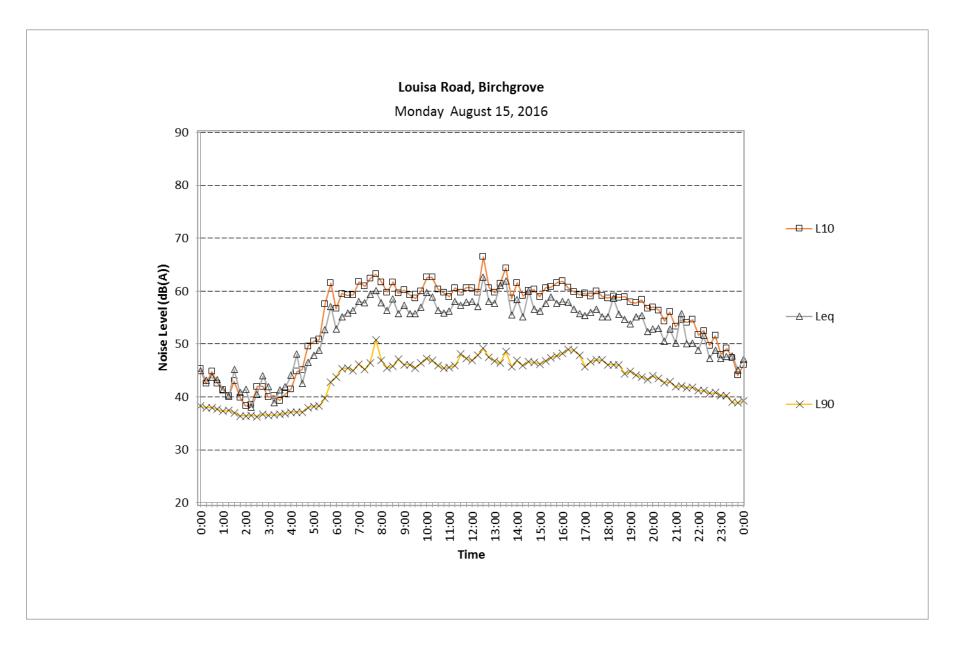
# **APPENDIX B**

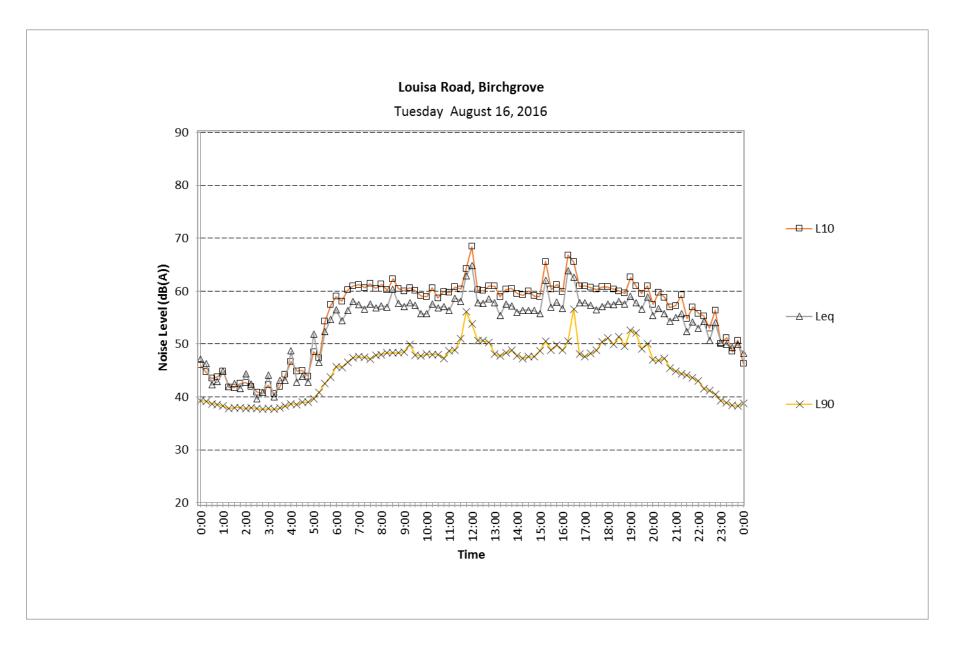
Noise Monitoring Data

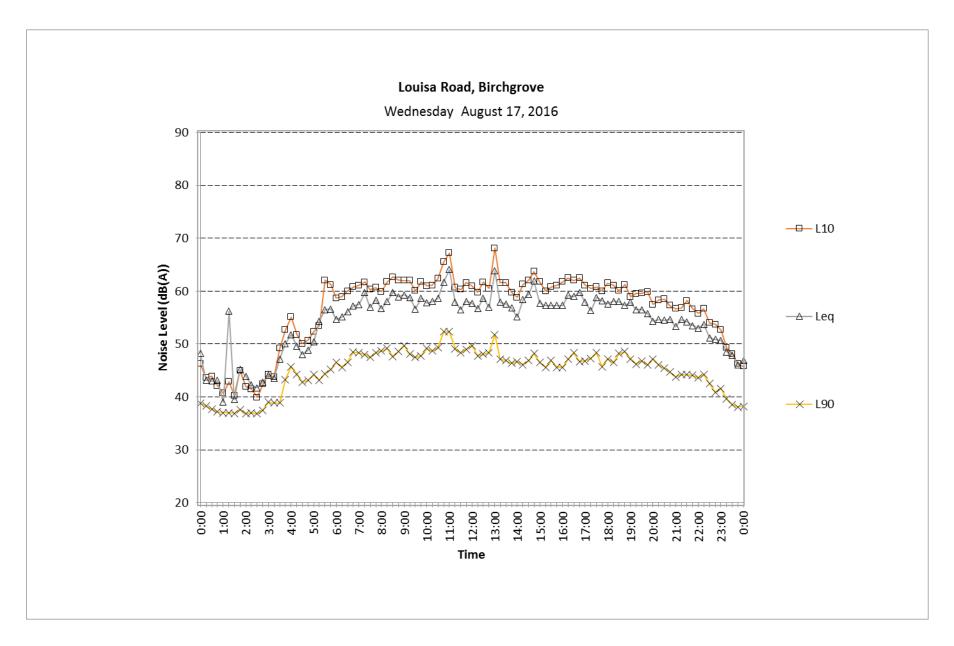


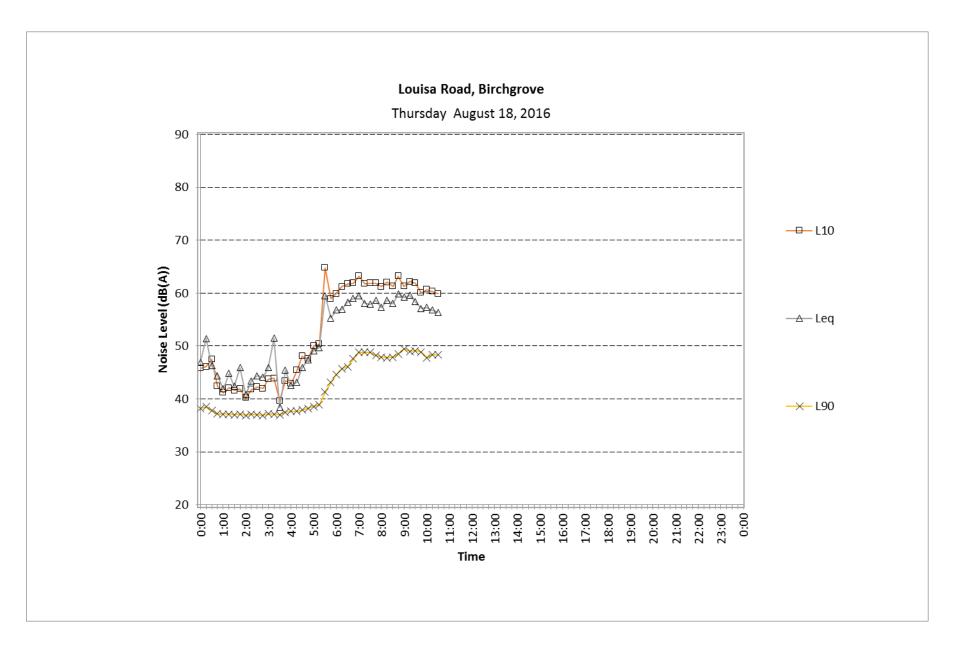


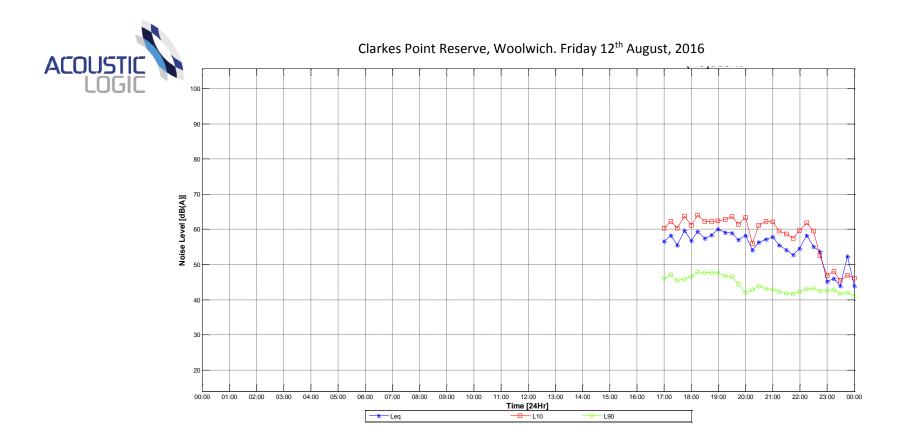


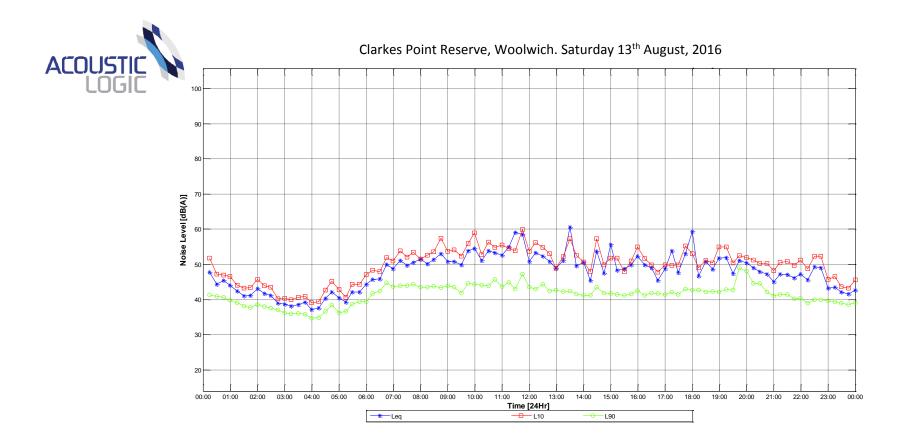


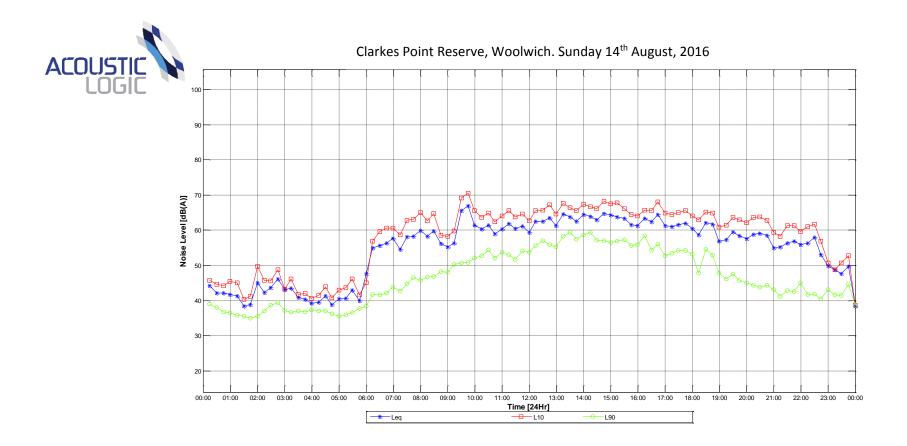


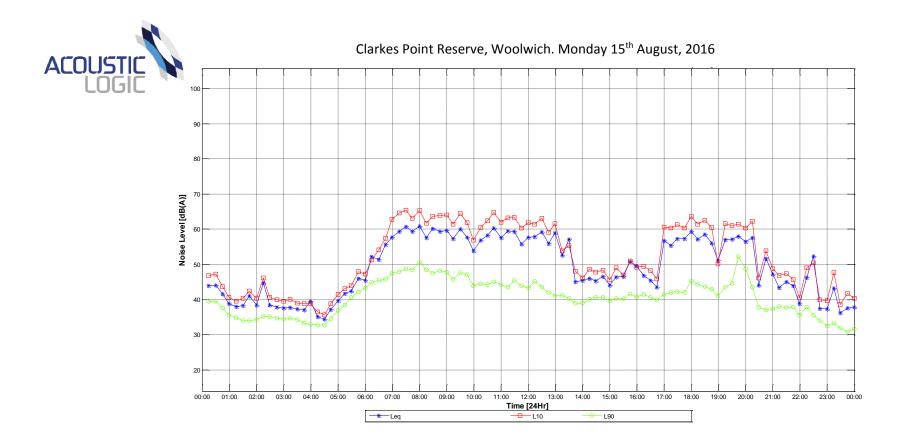


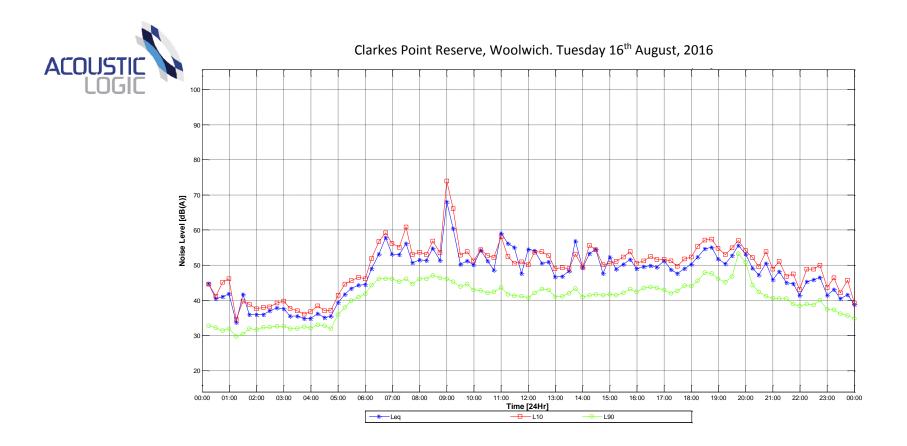


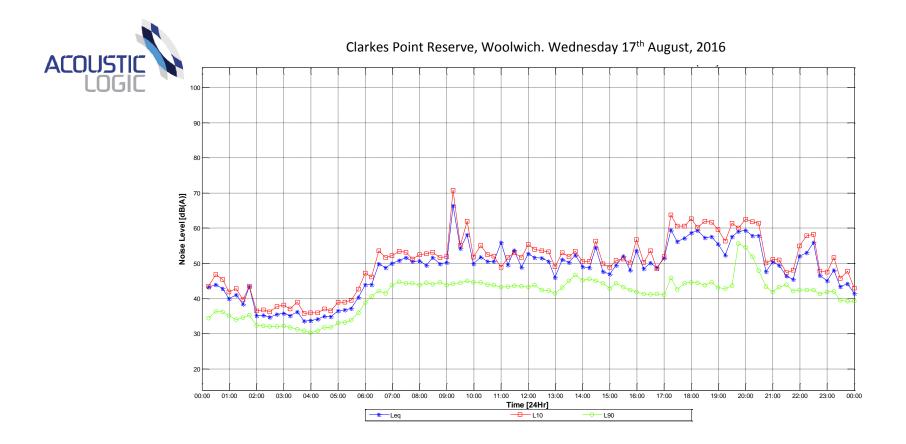


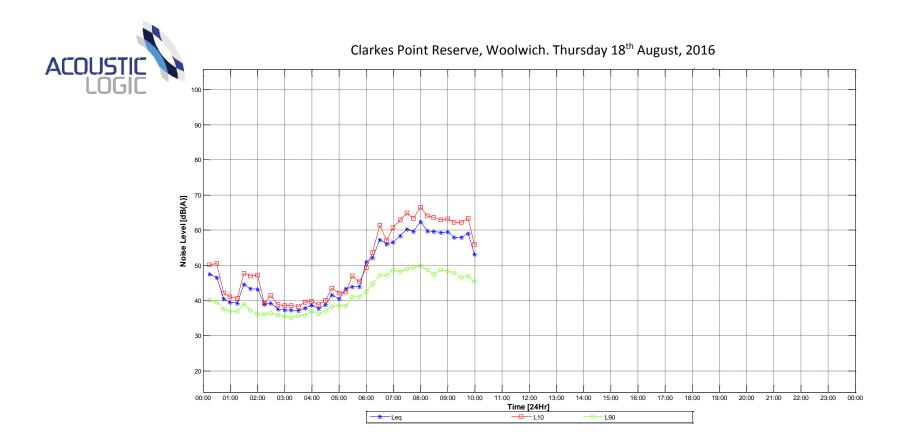






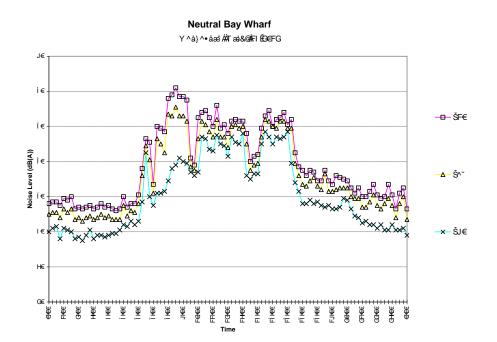






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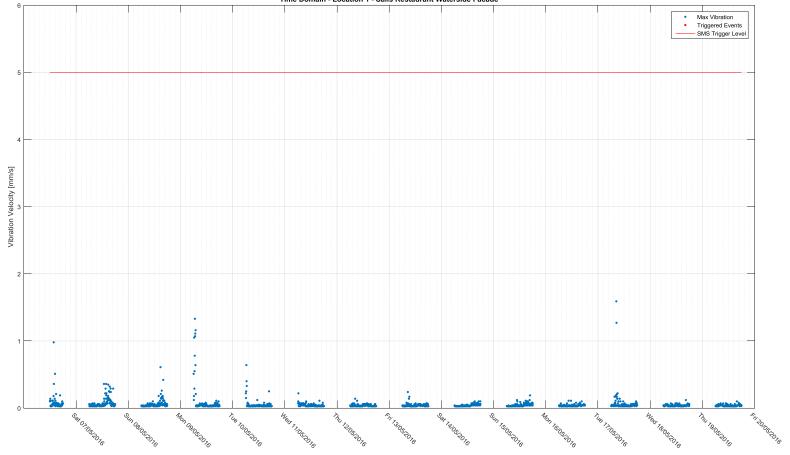
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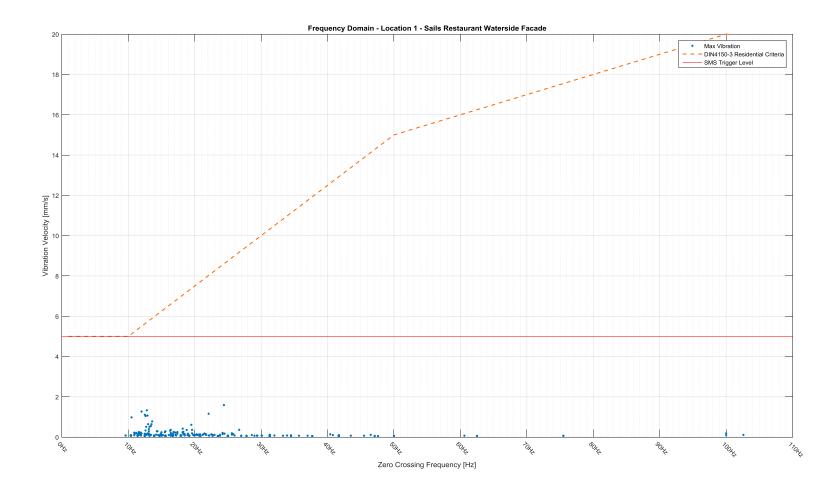
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Time Domain - Location 1 - Sails Restaurant Waterside Facade



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# Appendix E

# COCKATOO ISLAND WHARF INTERCHANGE LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT



Prepared for NSW Roads and Maritime Services November 2016

By Jane Irwin Landscape Architecture



**Document Control** 

Issue	Date	Submission	Author	Review
А	31.08.16	DRAFT	LC	JI
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# 1.0 INTRODUCTION

# 1.1 The project

Jane Irwin Landscape Architecture (JILA) has been engaged by Hansen Yuncken for Roads and Maritime Services NSW (RMS) to assess the proposal for the upgrade of the wharf interchange at Cockatoo Island (the proposal). JILA's scope is to provide urban design and landscape architectural services from concept to documentation, with the landscape character and visual impact assessment (LCVIA) forming part of a process that informs the design outcome of the wharf and landside upgrades.

# 1.2 Assessment envelope

For the purposes of this assessment, and to provide some flexibility should elements need to be adjusted due to any site or navigational constraints, an envelope has been used to assess the potential landscape character and visual impacts of the proposal. The area shown in red outline at Figure 4, combined with the fluctuating height of the pontoon roof structure, forms the envelope that has been used to undertake this assessment.

# 1.3 Purpose and scope of this report

The landscape character and visual impact assessment (LCVIA) has been prepared for RMS as part of the Review of Environmental Factors (REF) for the proposal.

Under clause 68 (4) of the State Environment Planning Policy (SEPP Infrastructure) 2007, development for the purposes of a wharf may be carried out by or on behalf of a public authority on any land without consent, subject to the requirements of Part 5 of the *Environmental Planning and Assessment Act 1979* (the Act). Under the Act, "land" includes the sea.

Part 5 of the Act defines development involving (among other things) the use of land, carrying out of work and demolition and construction of buildings as an activity. When considering an activity RMS as the determining authority must 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 is done through the preparation of a REF.

The requirements of an REF are specified in Environmental Planning and Assessment Regulation 2000 (the Regulations) clause 228 (Under the regulations, guidelines have been developed for the likely impacts of marinas and related facilities such as wharves). The guidelines therefore apply to the commuter wharf projects. LCVIA forms one of the environmental factors which requires consideration as part of the REF process. The Department of Urban Affairs and Planning - *EIS Guideline - Marinas and Related Facilities - September 1996,* sets out the following issues to consider if a proposal is likely to have a visual impact.

a) Visual impact from adjoining properties and from surrounding land and water — consider potential impacts such as changed or obstructed views due to:

- The facility form, bulk, colour or reflectivity.
- Lighting from security requirements or night operations.
- Boat mooring and movements.
- The clearing of vegetation.

b) Proposed methods of reducing visual impact such as landscaping, materials selection and design and orientation of structures.

Under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) a referral is required to the Australian Government for proposed 'actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land'.

Matters of national environmental significance include World Heritage properties, National Heritage properties, listed threatened ecological communities and species and listed migratory species. Cockatoo Island is declared a World Heritage Property (Australian Convict Sites -Cockatoo Island) and listed as a National Heritage Property. The assessment of these matters is considered in Appendix B and chapter 6 of the REF.

The assessment of the proposal's impact on matters of national environmental significance and the environment of Commonwealth land found that there is unlikely to be a significant impact on relevant matters of national environmental significance or on Commonwealth land. Accordingly, the proposal has not been referred to the Australian Government Department of the Environment and Energy under the EPBC Act.

# 1.4 Report structure

The structure of this report is as follows:

- 1.0 Introduction outlines the purpose of the report including the assessment methodology
- 2.0 Contextual analysis
- 3.0 Urban and landscape design concept
- 4.0 Landscape character impact assessment
- 5.0 Visual impact assessment
- 6.0 Summary and Mitigation Strategy

# 1.5 Urban Design policy and guidelines

This report has been prepared based on the structure outlined in the *RMS Environmental Impact Assessment Practice Note EIA-N04 - Guideline for landscape character and visual impact assessment.* (EIA- No4 Guideline) March 2013.

The guideline differentiates between visual assessment (the impact on views), and landscape character (the impact on the aggregate of an area's built, natural and cultural character or sense of place).

Tasks outlined in the guide include:

- Analyse landscape character.
- Identify landscape character zones.
- Assess landscape character impacts.
- Assess the visibility of the proposal.
- Identify key viewpoints.
- Assess visual impacts.
- Refine the concept design to avoid and minimise landscape character and visual impacts.
- Develop a mitigation strategy to minimise landscape character and visual impacts.

These tasks are undertaken to inform the project approval authority, other agencies and the community about the landscape character and visual impact of the proposal and what mitigation strategies should be implemented, as well as improve the proposals overall design.

#### 1.6 Assessment methodology

According to the terms defined within the EIA-N04 Guideline, both a landscape character and a visual impact assessment have been conducted to determine impacts of the proposal on the character of the place and the views within that place.

The assessment grading for the landscape character assessment and visual impact assessment is set out in Table 1 below. Through this table, impact is assessed based on both the sensitivity and magnitude.

Landscape character relates to the built, natural and cultural aspects that make a place unique. Landscape character assessments refer to the sensitivity (ability to absorb change) of the character zone to the proposed change and the magnitude or scale of the project within the character zone. EIA-N04 Guideline notes that landscape character assessment is the assessment of impact on the aggregate of an area's built, natural and cultural character or sense of place.

Visual impact assessments refer to the quality of a view, type of viewer, number of viewers, and how sensitive it is to the proposed change, while magnitude refers to the nature (eg. scale, colour, reflectivity, materials) of the project and its proximity to the viewer. EIA-N04 Guideline refers to visual assessment as the assessment of impact on views. It addresses people's views of an area from their homes or other places of value in the community.

Based on these two assessment criteria a judgement must be made as to the quality of design outcome, and the strategies for mitigating and balancing the objectives of the project with its impact on its setting.

	Magnitude			
	High	Moderate	Low	Negligible
High	High Impact	High-Moderate	Moderate	Negligible
Moderate	High-Moderate	Moderate	Moderate-low	Negligible
Low	Moderate	Moderate-Low	Low	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

# 2.0 CONTEXTUAL ANALYSIS

# 2.1 Location

The study area for the LCVIA is Cockatoo Island, located at the centre of the main channel of the Parramatta River, within Sydney Harbour, approximately 4.5km from the Sydney CBD by water (see Figure 1).

# 2.2 Landscape Context

The proposal is located at the northern side of Cockatoo Island situated at the centre of the main channel, close to the mouth of the Parramatta River. Cockatoo Island is framed on the northern side of the river by Woolwich Peninsula and on the southern side by Birchgrove Peninsula. To the north east is Greenwich Peninsula and beyond this Balls Head. West of Cockatoo Island lie two smaller islands, Spectacle and Schnapper Islands which are currently used for Naval purposes and are not publically accessible. Beyond these islands is Drummoyne Peninsula. These surrounding peninsulas are identified in Figure 2.

# 2.3 Character of the proposed wharf interchange in its setting

Cockatoo Island is located at the junction of the Parramatta and Lane Cove rivers in Sydney Harbour. Originally a heavily forested sandstone knoll, the form has been heavily modified, cleared and extended through its various uses since European settlement. The island contains extensive built heritage from both its convict period, where it was the site of a prison for convict re-offenders, and its industrial use as the centre of shipbuilding between 1857 and 1991.

The wharf is located on the northern shore of the island. Immediately south of the wharf are a series of brick heritage buildings that form the gateway to the island. To the west a broad open grassed apron forms the site of permanent tent camping. To the southeast the foreshore apron has been cleared of buildings forming vast concrete and grassed spaces with pieces of machinery from the shipbuilding era scattered through the space. Directly to the south of the wharf the island rises sharply up to the sandstone knoll. The upper level contains a range of smaller houses and administrative buildings including the former convict prison. Expansive views over the island and surrounding harbour are available from this level.

The island is accessed by ferry or private vessel. There is a recreational boat mooring area on the southern side of the island adjacent to Camber Wharf (shown Figure 3).

Cockatoo island contains a range of mixed uses operating out of the heritage buildings and sheds that remain, including a series of cafes and bars on the foreshore level, holiday accommodation and offices on the upper levels and a permanent campsite on the northern foreshore. The eastern side of the island is used as an event space.

The shoreline at Cockatoo Island was heavily modified for its industrial ship building function and consists of concrete sea walls, punctuated by docks, and on the exposed northern side by a sandstone ballast edge.

The topography of Cockatoo Island consists of a central sandstone knoll that rises approximately 18 metres above sea level offering clear views around the harbour. The original sandstone island was quarried in many areas for building projects on site and around the city. A reclaimed and extended foreshore surrounds the island, formed by broad concrete aprons. On the southern side of the island are two dry docks, Fitzroy Dock which was constructed by convicts, and Sutherland Dock, both were constructed from stone quarried from the island. A series of tunnels run through the sandstone knoll connecting the northern and southern sides of the island.



Figure 1. Context map (image courtesy of Google Maps)



Figure 2. Context with proposal location (image courtesy of Google Maps)

PUBLIC OPEN SPACE



Figure 3. Cockatoo Island proposal areas (image courtesy of RPS)

The recent redesign of the island following the closure of the shipbuilding industry use, including the demolition of over 40 buildings, has opened up broad scale areas for pedestrian and cycle access. The structure of the island has been formalised through cantilevered stairs and walkways, amenities, shade structures, furniture and signage. There is a unique character with high aesthetic and cultural value on the island due to the colonial and industrial heritage combined with the unique form of the sandstone knoll.

The material selections and finishes link back to the historic uses of the site through concrete and sandstone. Recent changes are inserted as asphalt, concrete and turf spaces between the remnant structures.

#### 2.4 Heritage Context

The Heritage Impact Statement concluded that the project will not impact the significance of any of the heritage items listed at Cockatoo Island, therefore no further heritage assessment will be required in relation to the ferry wharf upgrade. The following general management recommendations have been formulated with consideration of all available information and have been prepared in accordance with the relevant legislation.

- Recommendation 1 In accordance with Schedule 1, Section 3.4 (c) of the Bilateral Agreement made under Section 45 of the Environment Protection and Diversity Conservation Act 1999 (Cth) Relating to Environmental Assessment made between the Commonwealth of Australia and the State of New South Wales a copy of this assessment should be provided to the Minister of the Federal Department of Environment.
- Recommendation 2 All policies contained in the Sydney Harbour Federation Trust Management Plan Cockatoo Island of 2010 should be followed during all phases of the wharf upgrade.
- Recommendation 3 Should any unexpected finds be uncovered during the course of construction, the mitigation and management measures set out in the RMS Standard Management Procedure – Unexpected Archaeological Finds should be followed.

#### 2.5 Sydney Harbour Foreshores and Waterways DCP Context

Cockatoo Island is unmapped under the Sydney Harbour Foreshores and Waterways DCP 2005 Landscape Character. The island is identified as requiring site specific investigations.

#### 2.6 Planning Context

The planning context is detailed in the Review of Environmental Factors for the proposal.

The proposal will be assessed under Part 5 of the Environmental Planning and Assessment Act 1979, and the following planning instruments are relevant to the proposal:

- Environment Protection and Biodiversity Conservation Act 1999
- State Environmental Planning Policy (Infrastructure) 2007
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
- Cockatoo Island Management Plan (2003)
- Cockatoo Island Dockyard Conservation Management Plan (2007)
- Cockatoo Island Conservation Management Plan for the Convict Buildings and Remains (2009)
- Sydney Harbour Federation Trust Act (2001)



Figure 4. Assessment Envelope (image courtesy of RPS)

# 3.0 URBAN AND LANDSCAPE DESIGN CONCEPT

# 3.1 Vision

To upgrade the wharf interchange to promote ferry travel around Sydney Harbour and along the Parramatta River. The interchange will provide commuter amenity and safety, and will be integrated sensitively into the landscape.

The proposal would include the replacement of the existing gangway, pontoon and the upgrade of the fixed wharf structure at Cockatoo Island. For the purposes of this REF, a proposal area of about 11,000 square metres (about 4,000 square metres on the landside and 7,000 square metres on the waterside) (shown in Figure 4) has been assessed to consider potential changes to the proposal should they be required following further design development.

During the construction phase, the existing Camber Wharf to the south of the island will be used to maintain the existing ferry service. This will require temporary relocation of some equipment and temporary wayfinding installation prior to use.

# 3.2 Objectives and principles

# Objectives

- Minimise clutter and work with the shapes and materials of Cockatoo Island.
- Reduce visual impact on the character of the Parramatta River and Cockatoo Island.
- Minimise interruption to views.
- Respect the setting and place.
- Promote features that contribute to the character of the setting in any design interventions contemporary design, robust materials palette.
- Retain and enhance the existing pedestrian systems.
- Upgrade facilities to meet current standards and improve amenity.

# Principles

- Maintain views through the gangway and pontoon to mitigate the visual impact of the structures and to retain views beyond.
- Interventions to the public domain, including extension of paved space, inclusion of structures should complement the existing design patterns and materials.
- Path and ramp construction to achieve accessible grades to the wharf should be sensitively integrated into the existing foreshore.

# 3.3 Preferred concept - waterside

The proposed wharf interchange would include the construction of a new wharf as follows:

# Demolition and removal of the existing gangway and pontoon

• The existing gangway and pontoon would be removed using a barge with a mounted crane.

# Construction of a new bridge, gangway and pontoon

- A new bridge about six metres wide and six metres long would be constructed from the fixed wharf. The bridge would be supported by about four piles and would be oriented at about 10 degrees to the land.
- A new uncovered aluminium dual gangway (about 18 metres long and 6 metres wide) would connect to, and be supported by, the bridge and floating pontoon. The gangway would continue the same orientation as the bridge. The gradient of the gangway will vary according to the tides.
- A new rectangular steel floating pontoon about 27 metres long and 12 metres wide would be constructed at the eastern end of the gangway. The pontoon will be covered by a curved zinc roof supported by steel columns and will have berthing faces on the northern and southern sides. The southern side of the western end of the berthing face will be allocated for recreational vessels. The pontoon would be oriented approx. 20 degrees to the bridge and gangway. The new pontoon will be held into location by the installation of 4 locating piles.
- Three protection piles on the southern side of the pontoon will be installed to prevent collision of moving vessels with the existing jetty area
- Installation of safety and security facilities including balustrades, seating, lighting, closed circuit television (CCTV), ladders to the water and a life ring on the pontoon, glass weather screen, and tactile floor treatments.
- Connection of electrical power to an existing supply to provide power to the wharf for lighting and security. Utilities are not required to be relocated.
- Relocation of Opal readers and Ferry Operations and Customer Information System (FOCIS) screens and related equipment.

• The wharf would be constructed to be accessible to people with a disability except for the gangway which would only be accessible for no less than 80 per cent of the high and low tide levels listed in standard tide charts.

Refer to Figures 5-7 for details of the proposed wharf.



Figure 5. Proposed wharf photomontage (image courtesy of Hansen Yuncken)

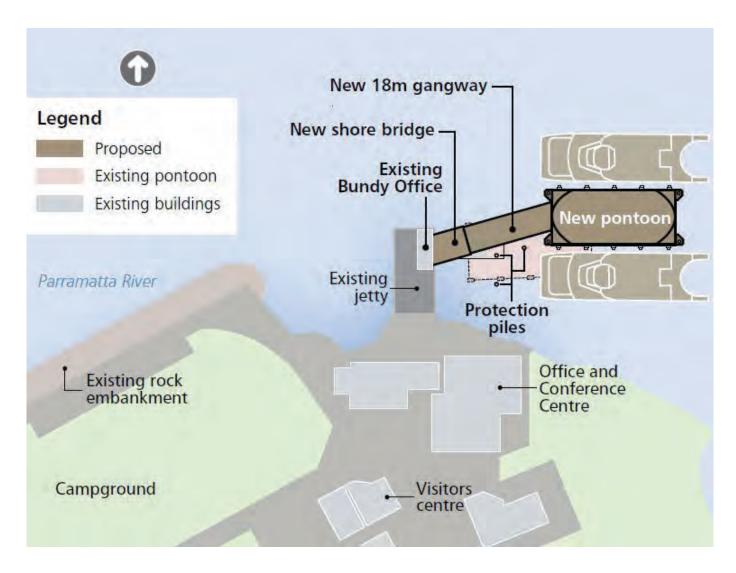


Figure 6. Proposed wharf plan (image courtesy of Conrad Gargett Ancher Mortlock Woolley)

#### Architectural Character

The proposed ferry wharf is comprised of five new interconnected elements adjacent to the foreshore:

#### The Pontoon

The pontoon would provide an additional gathering or holding place for ferry passengers. It is sized to accommodate passengers, with its users mainly consisting of commuters. Its primary purpose would be to provide shelter from the weather and a secure environment while passengers wait to board ferries and other vessels.

The roof form on the pontoon would be curvilinear, clad in a unfinished zinc or metal sheet (light grey in colour), and would achieve the lowest profile necessary to shed rainwater. The roof form and its surrounding glass screens would assist in deflecting wind away from waiting passengers. Internally the shelter would have a curved ceiling to give an uplifting and welcoming feel to the space.

The pontoon would operate with the tides and vary in level with the tides. It would consist of an platform that would always sit about 850mm above water level. The pontoon would be supported by and operate around four steel piles that would be fixed in the harbour. The height of these would be determined by the tidal range. They would also be painted in a predominantly light colour, primarily for navigation purposes.

#### The Gangway

The gangway would be used by passengers to move from the waiting area to the pontoon and eventually on to ferries. This element would be affected by tidal movements, like the pontoon, and consequently would rise and fall. It is designed to be a transitional space and would be slightly lower in scale than the adjoining shelter. The structure would employ a truss system. Views would be maintained through the gangway as it is generally open, light and uncovered.

#### The Bridge

The bridge would form a cantilevered structure between the foreshore and the gangway. It would be of an open construction with a stainless steel balustrade.

Refer to Figures 5-7 for detail of architectural elements of proposed wharf.

#### Lighting

Lighting at night would be designed to achieve adequate illumination for safety and security, whilst trying to reduce glare, and loss of light to the sky. All this is required so as not to create a brightly illuminated object that is hazardous to the ferry and other maritime operations.

Lighting would be achieved through a series of up/down lights flooding the ceiling of the pontoon roof, whilst illuminating the floor only, and not the surrounds.

Lighting of the gangway and bridge would be by down lights illuminating the floor. Refer to Figure 8 for a material palette of architectural elements.

#### 3.4 Preferred concept - landside

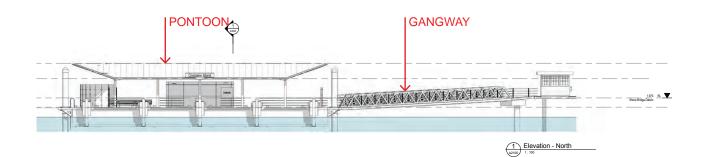
The proposed wharf interchange would include the construction of associated landside infrastructure as follows:

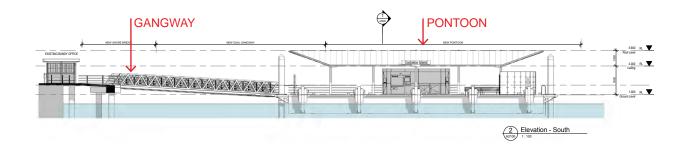
#### Landside infrastructure

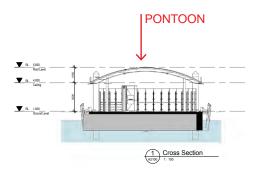
- Bundy Office refurbishments (subject to approval from Sydney Harbour Federation Trust) including:
  - Provision of a level landing from Bundy Office to top of gangway
  - Potential relocation of existing rails/post supports to enable rails to match gangway paths of travel

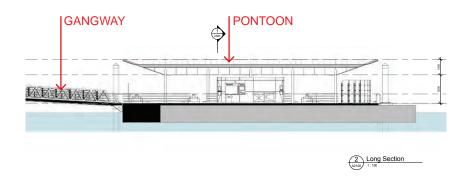
#### **Ancillary facilities**

- Installation of a temporary compound including site sheds for use as an office, mess and amenities, with an associated lay-down and storage area. A shipping container may also be required for the storage of some tools, equipment and materials. The temporary compound would be operated for the duration of works.
- Temporary relocation of existing Opal Readers and Self Service Machine from Parramatta Wharf to Camber Wharf to enable this to be temporarily operational.
- Temporary Wayfinding to/from Camber Wharf from the Cockatoo Island Visitors Centre.











Stainless steel handrails





Non-slip floor surface



Open light steel truss system - gangway



Bridge and gangway



Service Pod



Pontoon with service pod



Figure 8. Material palette of wharf (Images courtesy of Hansen Yuncken)

#### 4.0 LANDSCAPE CHARACTER IMPACT ASSESSMENT

#### 4.1 Surrounding Landscape Character

In assessing the landscape character of Cockatoo Island, and how the proposal will fit within this, it is important to consider:

- The character of Cockatoo Island as a UNESCO world-heritage site.
- How the proposal will sit against the heritage foreshore buildings and escarpment behind.
- The character of Parramatta River at this location with its foreshore parklands and former industrial sites.

Figure 9 indicates the character zones surrounding the proposal. Table 3 provides an assessment of the impact on these character zones.

- 1. Cockatoo Island 6. Woolwich Point Residential Zone 11. Greenwich
- 2. Birchgrove Residential Zone
- 7. Spectacle Island
- 11. Greenwich Point Reserves
- 12. Parramatta River Corridor

- 3. Balls Head Reserve
- 8. Schnapper Island
- 4. Woolwich Peninsula Reserves
- 9. Drummoyne Residential Zone
- 5. Pulpit Point Residential Zone 10. Greenwich Point Residential Zone

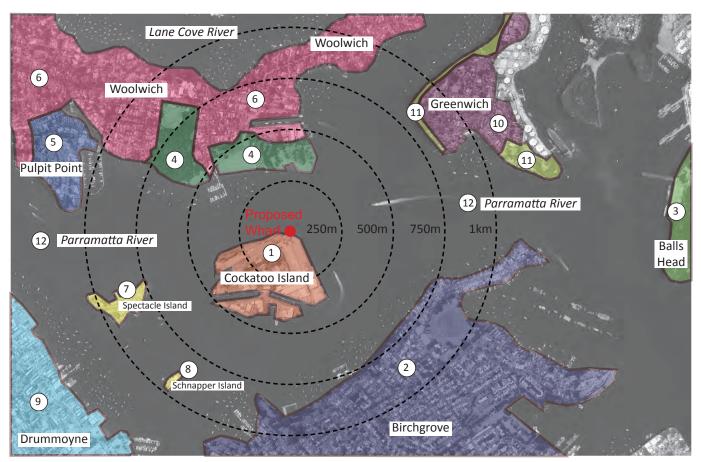


Figure 9 - Land Uses and character zones

Table 3. Landsca	be Character	Impact Assessment
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Landscape character zone	Description of zone	Sensitivity	Magnitude	Description of impact by proposal
ZONE 1. Cockatoo Island	A large island at the mouth of the Parramatta River where it meets Sydney Harbour. Cockatoo Island has a rich convict and industrial past now reinterpreted as recreational and exhibition spaces. The underlying geology of the island is of Hawkesbury Sandstone which is revealed both in the material quality of heritage buildings, but also expressed at various points through exposed sandstone benches and outcrops, and through dramatic escarpments, cuttings and dry docks. Much of the shipping history of the site remains in the heritage sheds, warehouses and docks across the island. The rich convict history of the site is also retained on the upper island.	Н	M	The impact is considered high- moderate given the existing heritage buildings and elements that contribute to the landscape character of this zone. As the main point of arrival to the island the proposed wharf interchange will introduce a new range of materials and character against the existing foreshore.
ZONE 2. Birchgrove Residential Zone	The suburb to the southeast of the Cockatoo Island is characterised by a predominantly residential foreshore rising up to the ridges behind. Public parks occupy both points. Buildings range from one to three storeys high. The architecture of the suburb is mixed with a dominance of terrace form housing and small lot sizes creating a fine grain character. Streets are narrow and follow the ridgelines.	L	L	The close proximity of Cockatoo Island combined with the shared history of shipping industry and working waterfronts link these two character zones. However, this linked character has seen a rapid shift over the last 50 years as the working harbour function is replaced by a residential waterfront at Birchgrove, and toursim, heritage precinct and events at Cockatoo Island. The impact of the proposal on the character of the Birchgrove Peninsula is considered low.
ZONE 3. Balls Head Reserve	A vegetated headland at the southern point of the Waverton Peninsula. This reserve is characterised by native Angophora forest, sandstone outcrops and the distinctive Coal Loader facility on the western side.	N	N	Given the distance from the proposal and the unique character of the headland reserve the impact is considered negligible. Cockatoo Island and the proposal form part of a panoramic backdrop to the natural beauty of the vegetated headland reserve.

Landscape character zone	Description of zone	Sensitivity	Magnitude	Description of impact by proposal
ZONE 4. Woolwich Peninsula Reserves	Clarkes Point was the main site of industry on the Woolwich Peninsula consisting of reclaimed land, slipways and warehouses associated with the adjacent Mort's Dock to the north and Cockatoo Island directly to the south, the area is now predominantly open grassed parkland. Kellys Bush Reserve is located to the west of Clarkes Point Reserve with the open lawn of the sailing club located between these two spaces. Kellys Bush Reserve extends from the river up to the ridge and is comprised of open grassed fields, sandstone outcrops and areas of bush. These reserves combine to provide a continuous public foreshore to the southern side of the peninsula.	M	M	This zone holds close ties with Cockatoo Island through the shared history of working harbour uses. Both zones have been recast as recreational precincts with remnants of the shipping past preserved in artefacts, buildings, slipways and foreshores. The wharf structure introduces a new built element into this character zone. The impact of the proposal on this zone is considered moderate to high given the close proximity and shared character of these zones. The scale of the structure is such that it has moderate interruption of visual connections with the island, which mitigates the potential impact.
ZONE 5. Pulpit Point Residential Zone	Located on the southern-most point of Woolwich Peninsula, this residential estate is characterised by a uniform housing type and streetscape. The focus of the estate is views towards the marina and east along the Parramatta River.	L	L	The distance of this character zone from the wharf combined with the contained character of the suburb renders the impact low. The proposal projects into the prominent view corridor and will be an increase in scale from the current structure particularly as the new pontoon is covered.
ZONE 6. Woolwich Point Residential Zone	The peninsula to the north of Cockatoo Island, between the Lane Cove and Parramatta rivers, connected to the West to Hunters Hill. The eastern end of the peninsula, along Point Road, formerly known as Onion Point, contains the ferry wharf, larger allotment sizes and residences along the main ridge and extending down to the water. They contain a mixture of architectural styles with buildings up to three storeys.	L	L	The impact on this zone is considered low. The character of Woolwich Point Residential Zone is tied to the large block size, grand waterfront residences, predominance of sandstone buildings, and generous well established streetscape. The proposal will be in keeping with the proposed upgrades at Woolwich Point wharf, tying into a family of upgraded wharf structures throughout the harbour. A strong connection exists between Woolwich wharf and Cockatoo Island as they share the same short ferry route.
ZONE 7. Spectacle Island	Located to the west of Cockatoo Island, Spectacle Island is the site of the oldest naval explosives manufacturing and storage complex in Australia. The island was expanded in size using spoil from the Balmain coalmine. From 1913 the Royal Australian Navy took over the island and still control its use as a naval training facility and storage for the Naval Repository.	L	L	Spectacle Island has close ties with Cockatoo Island through shared uses, geological form and location. While Spectacle Island remains isolated due to its lack of public access, it still maintains a strong presence at the centre of the Parramatta River and is viewed in association with Cockatoo Island. The impact on Spectacle Island by the proposal is considered low.

Landscape character zone	Description of zone	Sensitivity	Magnitude	Description of impact by proposal
ZONE 8. Schnapper Island	Located to the southwest of Cockatoo Island, Schnapper Island like Cockatoo Island was originally a sandstone knoll towards the centre of the Parramatta River. It was reformed, flattened and expanded during WW1 and used as additional storage for Cockatoo Island Dockyard. The island was used as a naval training base from the 1930's and shaped like a ship. The island is currently the site of naval artefacts and closed to the public.	L	L	Schnapper Island has close ties with Cockatoo Island through shared uses, geological form and location. Schnapper Island remains isolated due to its lack of public access. Cockatoo Island has been restructured to accommodate a range of tourism and commercial uses today that require contemporary structures to be sensitively integrated into the heritage context of the island. The impact on Schnapper Island by the proposal is considered low.
ZONE 9. Drummoyne Residential Zone	The suburb of Drummoyne occupies the peninsula between Iron Cove and Five Dock Bay. It is surrounded on three sides by the Parramatta River. The peninsula is relatively flat and intersected by two main roads, Victoria Road and Lyons Road. The suburb is predominantly residential with its character tied to the water views that are available throughout the peninsula.	Ν	Ν	The impact on this zone is considered negligible given the distance from the proposal. The proposal will have a shared character with the upgraded wharf interchange at Drummoyne that forms a point of arrival to the peninsula.
ZONE 10. Greenwich Point Residential Zone	The peninsula to the northeast of Cockatoo Island encompassing Greenwich Point and Manns Point. This zone is characterised by large residential houses of two to three stories in a range of styles. There are a large number of federation style buildings within the suburb. The terrain is steep with sandstone outcrops and tree lined streets.	L	L	The character of the suburb is tied to its distinctive built form, topography of steep sandstone and its established streetscapes. The impact is considered low given the distance from the proposal and the separate identities of the two zones.
ZONE 11. Greenwich Point Reserves	The western side of the peninsula is comprised of a linear foreshore park with sandstone outcrops stepping down the the water and dense vegetation screening the residential houses from the harbour.	M	L	The impact is considered modertate to low. This zone forms a buffer between the Parramatta River and the residential suburb of Greenwich Point. A strong connection exists between Greenwich wharf and Cockatoo Island as they share the same short ferry route.
ZONE 12. Parramatta River Corridor	The body of water surrounding Cockatoo Island. Parramatta River extends from Sydney Harbour 25km west to Parramatta. Formed from a drowned river valley the river twists with many bays and inlets, creating a sequence of different spaces with distinct character.	L	L	The position of the wharf on the northern side of the island renders it visible on approach from both east and west. The wharf is currently a low uncovered pontoon projecting from the foreshore. It will read as a suite of similar wharf structures when viewed alongside surrounding wharf upgrades. The character of the river at this point will remain relatively unchanged. The impact is considered low.

N=Negligible; L=Low; ML=Moderate-Low; M=Moderate; HM=High-Moderate; H=High

#### Landscape Character Assessment Methodology

Magnitude (the degree of intrusion/scale of the project). Magnitude is the expression of change in landscape character between the proposal and the existing environment.

Sensitivity (how sensitive is the landscape character zone to the proposed change, relating to natural environment, scale, number of viewers). Visual sensitivity is a measure of the importance of the visual environment to different user groups and areas. The sensitivity is affected by the function of areas, and the perceived quality of particular land uses and landscapes.

Character impact is then determined from the magnitude of change and the sensitivity of the landscape character zone to the change. This is calculated using the landscape character and visual impact matrix, Table 1.

#### Magnitude

The magnitude of the impact on landscape character is potentially low, given the presence of a wharf structure in this location. The new structure does represent a change in scale due to the inclusion of a covered pontoon. The covered structure does not directly block the front elevation of the most significant adjacent heritage building, and care has been taken to reduce the potential impact of the gangway, by providing an uncovered structure.

#### Sensitivity

The broad landscape character is potentially highly sensitive to change, being a relatively intact world heritage site. However, the function and land use of the area of immediate potential impact - the wharf area - will not change, and therefore has a relatively low sensitivity.

#### 4.2 Overall Landscape Character Impact - Low

The character areas of 2, 4, 7 and 8 have cultural associations and a shared history of working harbour uses that tie these zones together as a character group. The potential impact on character zone 4 - Woolwich Reserves, is moderate, given the proximity of the Reserves to the island at the point of the proposal. The scale of the proposed structure is such that it has moderate interruption to existing visual connections with the island, and it is an extension of an existing facility. These factors mitigate the potential impact. Overall, the impact on the whole range of reserves is considered moderate to low, as only a small portion of the whole shoreline public domain is potentially affected.

Character zones 3 and 9 have a negligible impact due to the distance from Cockatoo Island and the lack of discernable character ties.

The highest impact on landscape character is found on the island itself with sensitivity of the zone to change considered high and the scale of the proposed change introducing a moderate impact.

### 5.0 VISUAL IMPACT ASSESSMENT

The proposed upgrade to Cockatoo Island wharf replaces an existing but smaller built element on the island foreshore. The key viewpoints are described in Figure 10.

Distance zones have been established within the visual catchment to aid in assessing the impact on key views. These zones are shown in the diagram below and referenced in the table. Distance has been broken down to:

- Foreground zone (FZ): 0-250m from the viewer
- Middle ground zone (MZ): 250m to 500m
- Background zone (BZ): areas greater than 500m from proposed new wharf

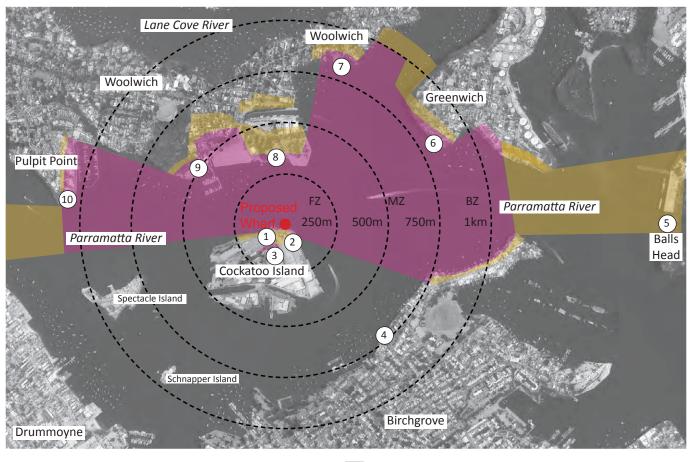
#### 5.1 Visual Envelope Mapping - Methodology of Visual Assessment

The visual impact of each key viewpoint is established through an assessment of the sensitivity of the view combined with the magnitude of the proposal within that viewpoint. The impact is then determined by using Table 1 and the viewpoints shown in Figures 11 to 22.

Key viewpoint locations include:

- 1. Cockatoo Island northern foreshore
- 2. Cockatoo Island eastern foreshore
- 3. Cockatoo Island upper level
- 4. Cove Street Birchgrove
- 5. Balls Head Reserve/ Coal Loader site

- 6. Greenwich Wharf
- 7. Woolwich Wharf
- 8. Clarkes Point Reserve
- 9. Kellys Bush Reserve
- 10. Pulpit Point



Prominent and high visibility

Less prominent and fragmented visibility



Figure 11 - View from northern foreshore looking east towards existing wharf and Sydney Harbour Bridge beyond.

#### Viewpoint 1 - Cockatoo Island - northern foreshore

View looking east towards current wharf jetty, waiting shed and pontoon. Heritage buildings and sandstone sea wall to right of the view. Background views towards Greenwich Peninsula, Balls Head Reserve and the Sydney Harbour Bridge (refer Figure 11).



Figure 12 - View from eastern foreshore looking north west towards existing wharf and Woolwich Peninsula beyond.

#### Viewpoint 2 - Cockatoo Island - eastern foreshore

View looking north west towards current wharf pontoon, gangway and waiting area. Woolwich Peninsula is visible in background (refer Figure 12).



Figure 13 - View from upper level of the island looking north towards wharf interchange, Woolwich Peninsula and Waverton Peninsula in background.



Figure 14- View from upper level of the island looking northeast towards wharf interchange, Woolwich Peninsula and Waverton Peninsula in background, North Sydney and Chatswood CBD's along the ridgeline.

#### Viewpoint 3 - Cockatoo Island - upper level

Clear uninterrupted views are available from the upper level of the island taking in the wharf interchange precinct, eastern apron, and campgrounds in the foreground. Beyond the Parramatta River in the mid-ground the viewpoint takes in the Woolwich, Waverton and Greenwich peninsulas with the CBD's of North Sydney and Chatswood visible along the ridge (refer Figures 13 + 14).

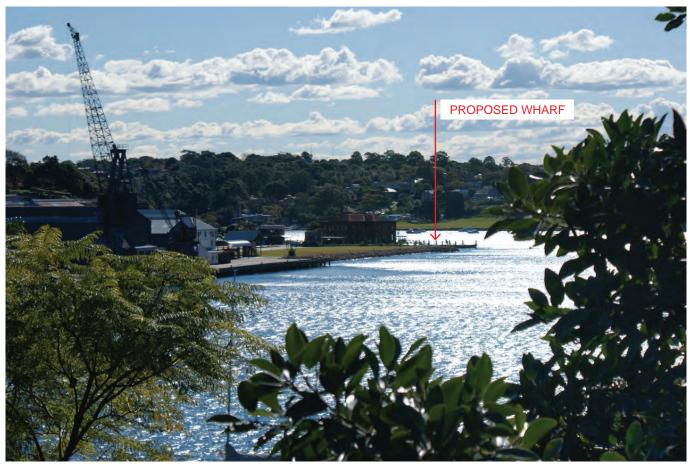


Figure 15 - View looking north with Parramatta River in foreground, Cockatoo Island in mid-ground and Waverton Peninsula in background.



Figure 16 - View looking northwest towards southern shore of Cockatoo Island and the proposed temporary wharf facility at Camber Wharf, Drummoyne Peninsula in background.

#### Viewpoint 4 - Cove Street, Birchgrove

The view from the end of Cove Street in Birchgrove takes in Cockatoo Island at the centre of the Parramatta River with the Waverton Peninsula forming the background. The current wharf pontoon is visible off the eastern side of the island (refer Figures 15 + 16).

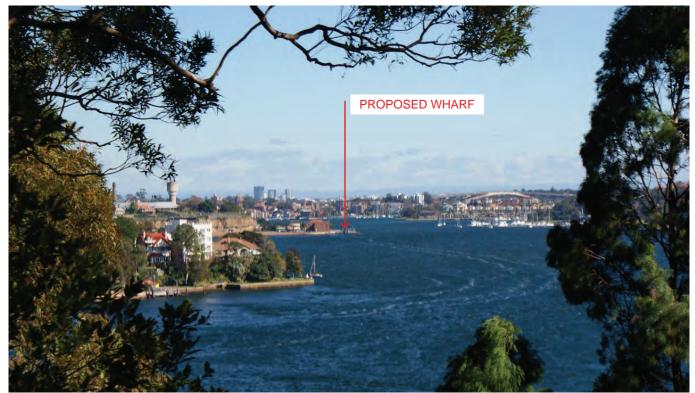


Figure 17 - View west looking towards Cockatoo Island in the mid-ground, Birchgrove Peninsula is visible in the foreground left, with the background comprised of overlapping peninsulas with the dominent form of Gladeville Bridge visible on the background right.

#### Viewpoint 5 - Balls Head Reserve/ Coal Loader Site

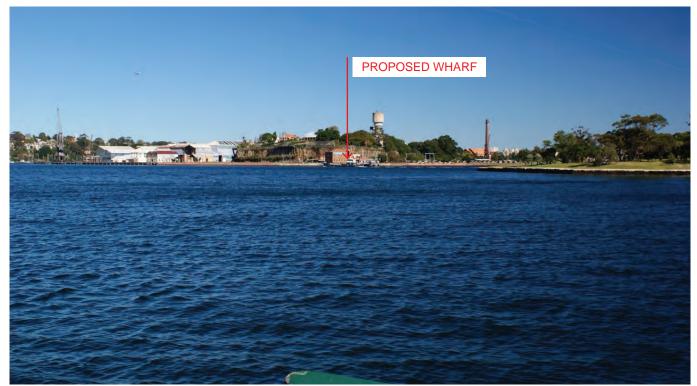
Views from Balls Head Reserve are filtered through a screen of mature trees and dense vegetation. There are a number of informal viewing points along the western side of the headland that provide clear views along the Parramatta River to the west. Views from the Coal Loader site are clear and uninterrupted. Given the distance from Cockatoo Island the proposed wharf falls in the mid-ground of these viewpoints projecting into the channel of the Parramatta River (refer Figure 17).



Flgure 18 - View from above Greenwich Wharf looking southwest towards Cockatoo Island and the Birchgrove and Drummoyne peninsulas beyond.

#### Viewpoint 6 - Greenwich Wharf

Clear views towards Cockatoo Island are available from Greenwich wharf. The island sits against the complex background of the Birchgrove and Drummoyne peninsulas. The wharf is visible in profile against the foreshore of Cockatoo Island and the series of heritage brick buildings along the northern side (refer Figure 18).



Flgure 19 - View looking southwest from Woolwich wharf towards Cockatoo Island. Clarkes Point Reserve is visible in the mid-ground (right side).

#### Viewpoint 7 - Woolwich Wharf

Clear uninterrupted views across the Parramatta River are available from Woolwich Wharf and the reserve surrounding it. Cockatoo Island forms part of a complex background set against the Birchgrove and Drummoyne peninsulas. Clarkes Point Reserve projects into the mid-ground (right side) of this viewpoint (refer Figure 19).

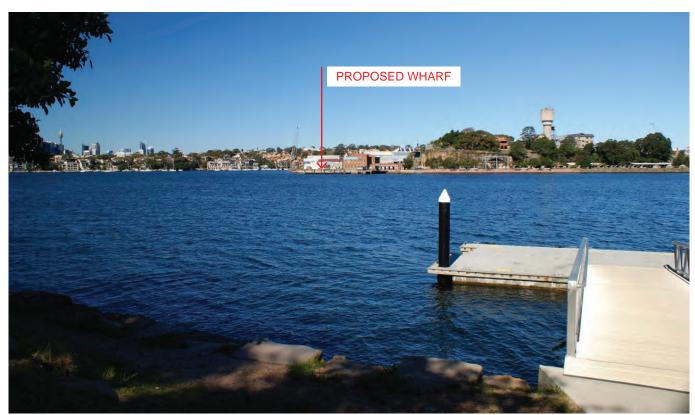
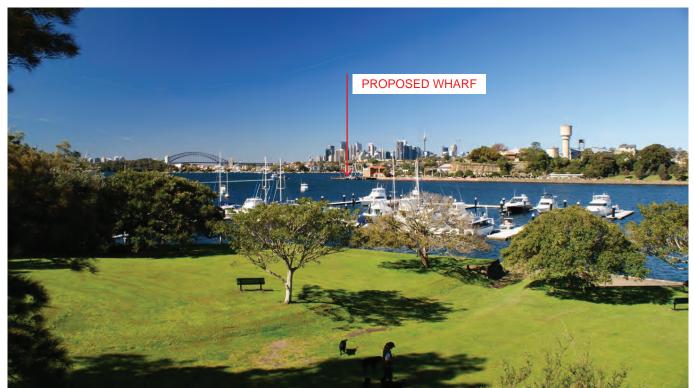


Figure 21 - View looking south towards Cockatoo Island from Clarkes Point Reserve.

#### **Viewpoint 8 - Clarkes Point Reserve**

Clear uninterrupted views are available from the foreshore of Clarkes Point Reserve due to its structure of open grass and limited built elements. The view takes in the Parramatta River in the forground with Cockatoo Island set against the Birchgrove Peninsula in the background. The Sydney CBD is visible beyond the Birchgrove Peninsula (far left)(refer Figure 21).



Flgure 21 - View southeast from the upper level of Kellys Bush Reserve taking in the Parramatta River, Cockatoo Island, the Birchgrove Peninsula and Sydney CBD.

#### Viewpoint 9 - Kellys Bush Reserve

Kellys Bush Reserve is comprised of a relatively open grassed foreshore stepping up to a more heavily vegetated series of sandstone outcrops and native bushland. Clear views are available from the upper viewing platfrom towards Cockatoo Island and the Birchgrove Peninsula, with the Sydney CBD and Sydney Harbour Bridge visible beyond. From the foreshore level views towards Cockatoo Island are filtered through boat moorings (refer Figure 21).



Flgure 22 - View looking east from the foreshore of Pulpit Point, taking in Cockatoo Island (right) and Clarkes Point Reserve (left) in the mid-ground and Sydney (right) and North Sydney (left) CBDs framing the Sydney Harbour Bridge (centre) in the background.

#### **Viewpoint 10 - Pulpit Point**

Clear views are available from the lower foreshore of Pulpit Point looking east along the Parramatta River. Views from further around the foreshore boardwalk are filtered through boat moorings. The view is centred on the prominent feature of the Sydney Harbour Bridge framed by the two CBD's of Sydney and North Sydney. Cockatoo Island forms a complex element in the mid-ground of this view (refer Figure 22).

Table 4. Visual Impact Assessment

Viewpoint	Setting	Visible elements	Sensitivity	Magnitude	Distance zone	Overall rating	Comment
1 Cockatoo Island - northern foreshore - view east Figure 12	Parramatta River, Cockatoo Island heritage buildings, background Greenwich, Balls Head + Birchgrove peninsulas with Sydney Harbour Bridge behind	Existing waiting shed + Pontoon	Н	Η	FZ	H	High visibility and high number of viewers. The view to the east sees the proposed wharf structure set against the Sydney Harbour Bridge. The impact is considered high due to the significance of the viewpoint and the proximity to the foreshore heritage buildings.
2 Cockatoo Island - eastern foreshore - view west Figure 13	Parramatta River, Cockatoo Island heritage buildings, background Woolwich Peninsula	Pontoon, part gangway + bridge	M	H	FZ	ΗM	The impact is considered moderate to high. There is a high visibility from the grassed foreshore immediately adjacent the wharf to the east. The open unstructured nature of this part of the foreshore provides general views to the surrounding harbour rather than focussed viewpoints. This is a lesser view with a general impact on the wider contextual view (harbour) from a limited area of the foreshore.
<b>3</b> Cockatoo Island - upper level - view north east Figures 14 + 15	Northern + eastern aprons of Cockatoo Island, heritage buildings, Parramatta River, mouth of Lane Cove River between Woolwich + Greenwich peninsulas	Part of Pontoon	Μ	Μ	FZ	Μ	There is partial visibility of the proposed structure from any one viewpoint on the upper level. Wide harbour views are maintained with the proposal seen as fragmented pieces within a collection of built elements on the foreshore. The impact is considered moderate.
<b>4</b> Cove Street - Birchgrove - view north Figures 16	Parramatta River, Cockatoo Island southern and eastern sides, Woolwich Peninsula in background	Part of Pontoon roof	N	L	BZ	N	Limited access to views from a small reserve at the end of the street. The proposal is seen as a minor interruption against the island and harbour. The proposal represents a change in scale. The impact is considered negligible.

Viewpoint	Setting	Visible elements	Sensitivity	Magnitude	Distance zone	Overall rating	Comment
5 Balls Head Reserve/ Coal Loader Site - view west Figure 18	Birchgrove + Greenwich Peninsulas framing mouth of Parramatta River, Cockatoo Island + Woolwich Peninsula in background	Pontoon	N	N	BZ	N	Changing, filtered views are available along the wester edge of the headland. The wharf is seen in the context of broad harbour views, which are stronger here than the relationship of the wharf to the heritage buildings on Cockatoo Island. The impact is considered negligible.
6 Greenwich Wharf - view south west Figure 19	Parramatta River, Cockatoo Island, Birchgrove + Drummoyne background	Pontoon	M	L	BZ	ML	The proposal is seen in the broader harbour context. The wharf is seen against the island heritage buildings - distances mitigates this impact. The impact is considered moderate to low.
7 Woolwich Wharf - view south west Figure 20	Mouth of Lane Cove River, Clarkes Point Reserve, Parramatta River, Cockatoo Island, Birchgrove Peninsula in background	Pontoon, gangway + bridge	Μ	L	ΒΖ	ML	The impact is considered moderate to low. The proposal is seen in the broader harbour context. The proposal interrupts the form and facade detail of the heritage buildings on the foreshore. The proposal appears in the forefront of this viewpoint.
<b>8</b> Clarkes Point Reserve - view south Figure 21	Parramatta River, Cockatoo Island, Birchgrove Peninsula in background	Pontoon, gangway + bridge	M	M	MZ	M	The potential impact is related to the juxtaposition of the new form of the wharf against the heritage building. The proposal appears in the forefront of this viewpoint. The impact is considered moderate.
<b>9</b> Kellys Bush Reserve - view south east Figure 22	Parramatta River, Cockatoo Island, Birchgrove Peninsula in background	Pontoon + part gangway	Μ	L	MZ	ML	The proposal is not set against the building from this viewpoint, rather seen in the context of broader harbour views. Views are filtered through the visual clutter of the marina at the lower park level.
10 Pulpit Point - view east Figure 23	Parramatta River, Cockatoo Island, Birchgrove + Greenwich peninsulas with Balls Head in background	Part pontoon	L	N	BZ	N	The impact is considered negligible given the distance of the viewpoint from the proposal. Views are filtered throuh the marina with only part of the wharf visible. The wharf is seen in the broader context of the harbour.

N=Negligible; L=Low; ML=Moderate-Low; M=Moderate; HM=High-Moderate; H=High

Foreground zone (FZ): 0-250m from the viewer

Middle ground zone (MZ): 250m to 500m

Background zone (BZ): areas greater than 500m from proposed new wharf

#### 5.3 Visual Impact Assessment Summary - Overall visual impact - moderate to low

The location of Cockatoo Island at the centre of the harbour, and the prominent location of the wharf as the single element extending from the northern shore of the island, from surrounding areas to the north, east and south. The wharf is also highly visible on approach by water from the east and west. Broad, open views to the island are possible from the surrounding foreshore areas, particularly Clarkes Point Reserve where the open grassed areas of the parkland offer unobstructed views to the south towards the wharf. Filtered views to the island are also available from Greenwich Point Reserve through the native planting along the foreshore.

The heritage buildings adjacent to the wharf generally obstruct views from the lower foreshore level of the island to the proposal. Clear views are available however, from the northern foreshore looking east towards the wharf, and from the south east of the wharf.

Views from the upper level of the island are again partially obstructed by the heritage buildings and are restricted to specific view corridors between the existing buildings, with only fragments of the proposal visible from only one point.

Views towards the wharf on approach from the east and west are open and unobstructed. The wharf reads as a single element extending from the northern shore of the island.

The wharf is overlooked from Woolwich, Greenwich and Birchgrove peninsulas, with longer distance views possible from Drummoyne and the Waverton Peninsula. The upgrade is anticipated to have a low impact on these views. Views from these areas are general panoramic, taking in a wider-angle views of the harbour, rather than narrow focussed views.

Views from surrounding points to the east and approach by water take in a landscape dominated by the sandstone knoll and the scale of the remaining industrial buildings and machinery on the island. The bulk and scale of these built elements are much greater than the proposed wharf.

The greatest potential for impact is from the foreshore immediately surrounding the wharf. (viewpoints 1 & 2)

There is a moderate impact on views where the proposed new structure, particularly the roofed section, is seen directly against the heritage buildings on the foreshore at this point. (viewpoints 6,7 and 8)

Overall the impact is considered moderate to low with the proposal forming part of a broader harbour context for the majority of views.

### 6.0 SUMMARY OF URBAN DESIGN CONCEPT AND MITIGATION STRATEGY

#### 6.1 Summary of urban design recommendations and mitigation measures

The concept for the proposed wharf and interchange upgrade works at Cockatoo Island has been based on an investigation of the following:

- potential visual impact;
- heritage considerations;
- access (including maintaining existing access to the Bundy office);
- safety and security;
- buildability;
- material palette and character;
- architectural form and design;
- vegetation impacts; and
- maintenance.

#### The concept design responds to the following elements:

#### Scale

In catering to future commuter demand and user amenity, the proposal increases the scale of the wharf structures at Cockatoo Island. The change of scale requires sensitivity to the surrounding landscape character.

#### Design

Material selection, location of services, and a standardised family of elements form the key design strategies for mitigating the impact of the proposal. Attention has been given to ramps and walkways within the proposed wharf to meet access standards. The proposed wharf has been designed for amenity through protection screens to minimise impacts of weather on ferry users, however, the walkway is uncovered to minimise the scale of the project, as a response to the sensitivity of the setting.

#### Colour

Colour plays an important role in mitigating the impact on views and landscape character. Selection of materials and paint colour respond to the surrounding palette, are low in reflectivity, and complement the surrounding elements of the wharf precinct and the river landscape through neutral tones. Overall the proposal would promote a unified palette of materials which, while responding to the maritime heritage and surrounding character, also separates the structure as a piece of architectural design.

#### 6.2 Conclusion

Potential impact on landscape character and views, is highest in the immediate context and surrounds of the island itself. The proposed wharf, while part of a broader family of wharf structures within Sydney Harbour and the Parramatta River, introduces a new form and material character in the heritage context. This is most obvious when the wharf is seen in direct juxtaposition with the existing brick buildings sitting on this point. These views are mostly limited and fleeting.

More broadly the island has a complex landscape character that has and is evolving to meet the changing uses. Within this broader context, the proposed structures are a minor element, with limited impact on character and views.

Mitigation strategies employed during the detailed design for the proposal include:

- selection of neutral and transparent materials;
- extension of pontoon and location of covered service pod outside of the elevation of the existing building on the shoreline, to reduce loss of view and minimise impact on the character of the building;
- gangway uncovered to retain a clean view of existing buildings;
- design of lighting to maintain the primacy of Cockatoo Island in the night time view; and
- The pod has been removed from the pontoon, and there are no bins, to allow a clear view through to Cockatoo Island.

# **Appendix F**

# **COCKATOO ISLAND WHARF UPGRADE -REVIEW OF ENVIRONMENTAL FACTORS:**

# AQUATIC ECOLOGY ASSESSMENT



Figure 1 Aerial view of Parramatta River showing the location of Cockatoo Island Wharf in relation to its locality (Photo from NSW Government SixMap Website).

# **Report Prepared for Hansen Yuncken Pty Ltd**

# Marine Pollution Research Pty Ltd October 2016

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-	
REPORT TITLE:	COCKATOO ISLAND WHARF
	CONSTRUCTION: REVIEW OF
	ENVIRONMENTAL FACTORS - AQUATIC
	ECOLOGY ASSESSMENT
CLIENT & CONTACT:	Mr Paul Blair Design Manager
	Hansen Yuncken Pty Ltd on behalf of
	Transport for NSW (TfNSW)
MPR REPORT No:	MPR 1063-16
DRAFT REPORT	Draft Version 1 sent to RPS 23 August 2016.
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RECEIVED:	to assess Camber Wharf Wetland status.
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MPR APPROVAL:	Pond Animle
PAUL ANINK	

#### Disclaimer:

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# **1 INTRODUCTION**

Transport for NSW (TfNSW) is proposing to construct a new wharf at Cockatoo Island (the proposal) to replace the existing Cockatoo Island Wharf (also known as the Parramatta River Wharf) located on the northern side of the island (see Figure 1). Hansen Yuncken Pty Ltd has been appointed project managers for the project. The proposal is required to be assessed via a Review of Environmental Factors (REFs) and Marine Pollution Research Pty Ltd (MPR) has been commissioned to undertake an aquatic ecology assessment to inform the REF.

This report assesses the aquatic ecology of the proposal against the Fisheries NSW Policy and Guidelines (Fisheries NSW 2013), considers the likely impacts on the aquatic ecology of the proposal and provides impact mitigation measures where necessary.

# 1.1 Cockatoo Island Wharf Proposal

The proposal would include the replacement of the existing gangway, pontoon and the upgrade of the fixed wharf structure and associated landside infrastructure at Cockatoo Island Wharf. The concept design for the proposal is shown in Figure 2 for this report and in Appendix A of the REF. For the purposes of this REF, a proposal area about 11,000 square metres in area (about 4,000 square metres in area on the landside and 7,000 square metres in area on the waterside) (shown in Figure 3) has been assessed to consider potential changes to the proposal should they be required after further design development. Over the approximate six months construction period ferry services to and from Cockatoo Island will be relocated to Camber Wharf at the southern end of the island (see Figures 1 and 3). The use of this wharf will be temporary and aquatic ecological implications arising from the use of this wharf are considered in Appendix B. The Cockatoo Island Wharf proposal is as follows:

### Demolition and removal of the existing gangway and pontoon

• The existing gangway and pontoon would be removed using a barge with a mounted crane.

# Construction of a new bridge, gangway and pontoon

- A new bridge about six metres long and six metres wide would be constructed from the fixed wharf. The bridge would be supported by about four piles and would be oriented at about 10 degrees to the land.
- A new uncovered aluminium dual gangway (about 18 metres long and 6 m wide) would connect to, and be supported by, the bridge and floating pontoon. The gangway would continue the same orientation as the bridge. The gradient of the gangway will vary according to the tides.
- A new rectangular shaped steel floating pontoon about 27 m long and 12 m wide

would be constructed at the eastern end of the gangway. The pontoon will have berthing faces on the northern and southern sides and the southern side of the western end of the pontoon will be allocated for recreational vessels.

- The new pontoon will be orientated about 20 degrees to the bridge and gangway and will be held in place by four locator piles.
- Installation of three protective piles on the southern side of the pontoon to prevent collision with moving vessels.
- Installation of safety and security facilities including lighting, closed circuit television (CCTV), ladders to the water and a life ring on the pontoon, glass weather screen and tactile floor treatments.
- Connection of electrical power to an existing supply to provide power to the wharf for lighting and security. Utilities do not require relocation.
- Relocation of Opal readers and FOCIS screens and related equipment.
- The wharf would be constructed to be accessible to people with a disability except for the gangway which would only be accessible for no less than 80 per cent of the high and low tide levels listed in standard tide charts.

# Ancillary facilities

• Installation of a temporary compound including site sheds for use as an office, mess and amenities, with an associated lay-down and storage area. A shipping container may also be required for storage of some tools, equipment and materials. The temporary compound would be operated for the duration of works.

# Construction of landside infrastructure

• Construction of landside infrastructure is generally located above the riparian boundary and is not considered further in this assessment

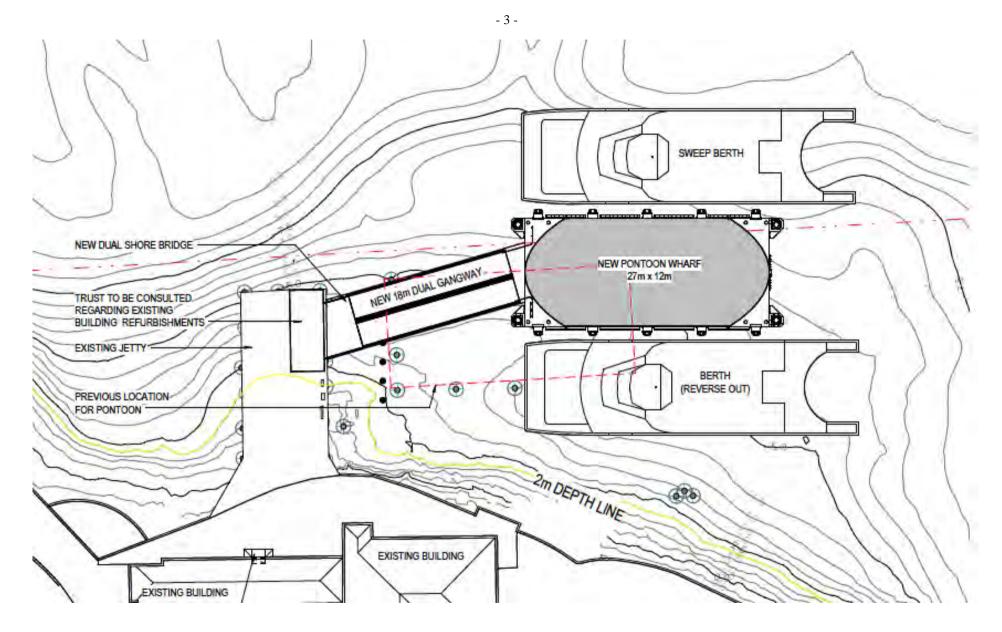


Figure 2 Site Plan for the Proposed Cockatoo Island Wharf

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Figure 3 Aquatic Ecology Study Area for Cockatoo Island Wharf. Note that assessment of the temporary use of Camber Wharf is provided in Appendix B.

# 2 AQUATIC HABITATS AND ECOLOGY

# 2.1 Study Methods

A preliminary review of existing aquatic ecology information was undertaken to identify possible aquatic habitats at the study site and identify possible threatened species and ecological communities (see Section 2.2). The preliminary review also considered aquatic habitats plus flora and fauna of conservation significance that are protected under both State and Federal legislation (see Section 2.3).

Aquatic ecology field surveys comprised aquatic habitat mapping as required in the Department of Primary Industries (DPI) Fisheries Survey Guidelines (DPI Fisheries 2013). Combined walk-over and diving surveys of the study area (see Figure 3) were undertaken on 17 August 2016 and results of the surveys are provided in Section 2.4:

• The survey day was sunny and calm and waters were sufficiently clear for subtidal surveys. Repeated swim transect searches were made in order to determine the main aquatic habitats in the study area, ascertain the presence of seagrass or of the listed pest algae species *Caulerpa taxifolia*. Specific surveys were then made of vegetated aquatic habitats (both reef-based and on structures) to ascertain the suitability of these habits to support possible protected species such as cryptic fish and sygnathids (seahorses, pipe fish and the like).

# 2.2 Available Information on Aquatic Habitats

Figure 4 shows a portion of Map 6 for the Harbour Foreshores and Waterways Area Development Control Plan 2005 that includes Cockatoo Island and adjacent Parramatta River foreshores. Map 6 does not indicate any aquatic habitats around Cockatoo Island, but possible aquatic habitats may be inferred as there are "*mixed rocky intertidal and rock platform*" habitats indicated around Spectacle Island (to the west of Cockatoo Island) and on parts of the southern mainland foreshore east of White Horse Point. The Parramatta River northern foreshore supports "*mixed rock intertidal and sand*" habitat. There are no vegetated aquatic habitats (mangroves, saltmarsh or seagrass) indicated for the locality.

Sheet 5 for the Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (Figure 5) indicates 'wetlands' on the southern and western shorelines of Cockatoo Island with no wetlands indicated at or in the vicinity of Cockatoo Island Wharf. Wetlands are shown around Spectacle and Snapper Islands and along the Drummoyne and Balmain foreshores.

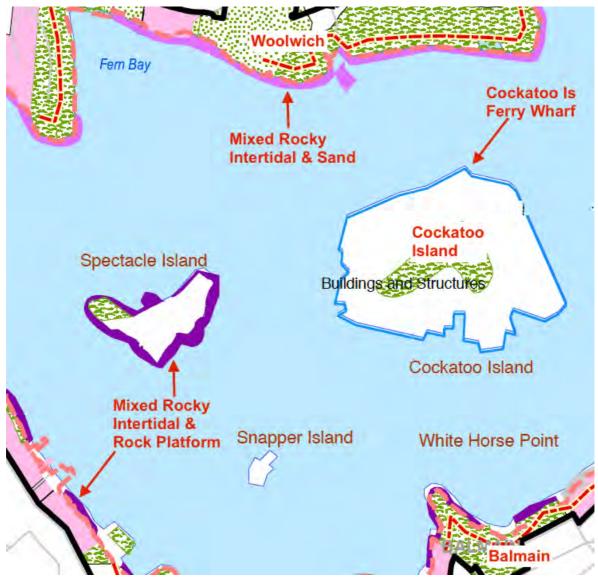


Figure 4 Portion of DCP Map 6 showing aquatic ecology communities in the vicinity of the proposed Cockatoo Island Wharf (See Appendix A for Complete DCP Map 6).

Mapping by Department of Primary Industries Fisheries Division (DPI Fisheries NSW) in 2005 shows the location of the nearest aquatic vegetation habitats to Cockatoo Island Wharf (Figure 6).

Allen et al (2007) and Kelleway (2007 prepared riparian and intertidal vegetation surveys for Parramatta River, and CLT (2010) provided more recent riparian and aquatic vegetation mapping for the lower Parramatta River. None of these studies mapped estuarine habiats around Cockatoo Island.

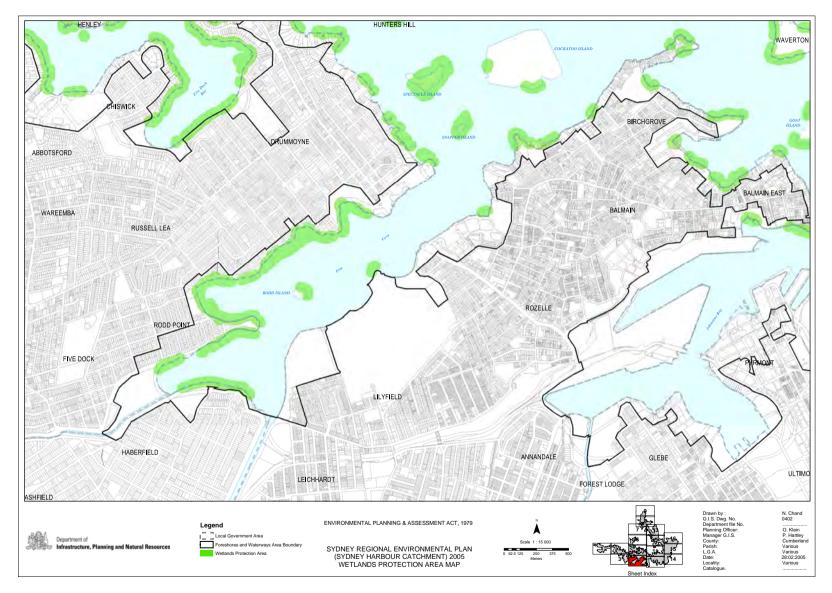


Figure 5 SREP (Sydney Harbour Catchment) Wetlands Protection Area Sheet 4 showing designated wetlands at Cockatoo Island.

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Figure 6 Portion of DPI Fisheries Aquatic Vegetation Habitat Map 39a showing isolated beds of seagrass along the Spectacle Island and Parramatta River foreshores in the vicinity of Cockatoo Island.

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Based on the review of aquatic habitats presented above, the '*wetlands*' designation shown around Spectacle Island and along the Parramatta River foreshores in Figure 5 generally coincide with *rocky reef algae* habitat with several isolated beds of seagrass habitat as indicated on Figure 6:

- There are *Zostera* seagrass beds indicated in the Fisheries NSW mapping around Spectacle Island in Greenwich and Snails Bays and on the Drummoyne foreshore with a bed of *Halophila* seagrass indicated east of White Horse Point. Given the fact that most of Cockatoo Island foreshore is reclaimed land with sandstone or concrete seawalls it is unlikely that there would be seagrass beds around Cockatoo Island.
- The predominant marine vegetation indicated from the literature review is brown macroalgae assemblages growing on natural intertidal to subtidal reef or on rock rubble foreshores fronting reclamations. This is likely to be the case for Cockatoo Island foreshore.
- There are no saltmarsh communities indicated for the islands or the mainland in the vicinity of Cockatoo Island and given the complete reclamation of Cockatoo Island foreshore none are expected at Cockatoo Island.

# 2.3 Summary of Threatened Species and Populations

Aquatic habitats, flora and fauna of conservation significance are protected under both State and Federal legislation. In NSW, threatened species, populations and ecological communities of animals and plants are protected under the *Threatened Species Conservation Act 1995* (TSC). Threatened species, populations and ecological communities of fish and marine vegetation are protected under the *Fisheries Management Act 1994* (FMA). The TSC and FMA also list a number of key threatening processes that may threaten the survival of species, populations and ecological communities.

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC*) protects wetlands of international importance, Commonwealth Marine Areas, nationally threatened species and ecological communities and migratory species, nuclear actions and world and national heritage places.

The FMA, TSC and EPBC Acts require that any proposed activity be assessed with respect to its potential impact on species or ecological communities listed as threatened under the Threatened Species Schedules of the Acts or listed as migratory species under the EPBC Act.

Searches were made of the following relevant agency data-bases of listed species; Fisheries NSW *Fish Records Viewer*, Office of Environment and Heritage (OEH) *Bionet Atlas of NSW Wildlife* and the Commonwealth Department of the Environment *Protected Matters Search Tool* using a 10km square search area.

# 2.3.1 Fish, sharks and marine vegetation

The FMA and EPBC Act list a number of marine and estuarine shark and teleost fish species as Vulnerable Species under Schedule 5 of the Act. Syngnathiformes (seahorses, sea-dragons, pipefish, pipe-horses and sea-moths) are protected under the EPBC Act and the FMA, marine vegetation is protected under the FMA. The FMA and EPBC Act searches reveal that there are no listed fish or sharks recorded within the Parramatta River upper-middle estuary above Sydney Harbour Bridge, and due to the riverine influence of the Parramatta and Lane Cove Rivers at this location in the estuary, none are expected.

Of the 31 species of syngnathids known from NSW waters, whilst few seahorses would be expected to penetrate this far up the estuary, Whites seahorse has been recorded from the wetted kelp-covered surfaces of wharves at Drummoyne, and there would appear to be sufficient shelter and feeding habitat on rock rubble reefs in this part of the estuary to support these seahorses. Pipefish are commonly found in seagrass beds, particularly *Zostera* seagrass beds, and whilst they could be expected in the *Zostera* beds located around Spectacle Island they are unlikely to occur at the wharf proposal site at Cockatoo Island.

Seagrass beds in Sydney Harbour that include *Posidonia australis* are listed as an *Endangered Ecological Community* under the FMA and are listed as a *Threatened Ecological Community* under the EPBC Act. No *Posidonia* plants or beds are found in the inner harbour or rivers west of Bradleys Head, Mosman.

Saltmarsh communities are listed as endangered ecological communities (EECs) under the TSC Act and are listed as a *Threatened Ecological Community* under the EPBC Act. There are no saltmarsh communities known from the locality and the nearest saltmarsh stands that could be considered EECs are located in Iron Cove upstream of Iron Cove Bridge, more than 2.5 km south of Cockatoo Island Wharf .

All other marine vegetation (other seagrass species, marine macroalgae and mangroves) are protected under the FMA:

• Macroalgae stands are widespread on rocky reefs and other hard substratum

habitat throughout the harbour and the lower reaches of the Parramatta and Lane Cove Rivers and are expected from the rock rubble reefs in the vicinity of Cockatoo Island Wharf.

- Seagrass beds and patches are found throughout the harbour and in the major bays draining to the mid to lower Parramatta River and beds of the two protected species (*Zostera capricorni* and *Halophila ovalis*) are located around Spectacle Island (some 800 m west of Cockatoo Island Wharf), in Iron Cove south the Iron Cove Bridge, and along the Parramatta River foreshore (see figure 6).
- Mangroves can occur along the full estuary shoreline with larger stands generally confined to the upper Parramatta and Lane Cove River banks and as pockets of growth in the major bays draining to these rivers, including Iron Cove.

# 2.3.2 Other listed or protected species

With regard to other aquatic species or ecological communities and migratory species listed under the TSC and EPBC acts, listed cetaceans (whales and dolphins), marine mammals (seals and sea lions), marine reptiles (turtles and sea-snakes) and sea-birds (migratory ocean birds, shore birds and waders) are known from the outer Sydney Harbour and are known to penetrate the harbour to the upper harbour reaches, albeit rarely:

- The Bionet searches indicate no records of marine mammals and reptiles this far up the river and none are expected.
- A number of protected or migratory wading birds are known to utilise the mud flats and saltmarsh stands of the upper river, particularly in the upper reaches of Homebush Bay and in the Olympic Park site, and utilise mudflats along the upper river banks above or inside the upper river shallow embayments including Majors Bay, Hen and Chicken Bay and Iron Cove (CLT 2010). The complete lack of drying mud flats at and near the proposed Cockatoo Island ferry wharf site, and the proximity to disturbance from the use of public walkways in the immediate vicinity of the wharf means that there is a lack of both suitable feeding and roosting habitat for shore and wading birds at the wharf site. Of the species that may occur in the vicinity of the site, none would be utilising the resources of the site to any great extent and would generally be in the locality as transients or opportunistic feeders.

It is concluded that there would not be any threatened species residing within the locality of the wharf site and that the wharf and the site do not constitute specific habitat for other threatened aquatic species as listed under the FM, TSC and EPBC Acts.

# 2.4 Aquatic Ecology of Cockatoo Island Wharf

Figure 7 provides an oblique aerial view of the existing ferry wharf, and Figure 8 shows the location of aquatic habitats superimposed over an aerial photograph of the site. Figures 9 to 11 provided views of the intertidal aquatic habitats at the site and Figures 12 to 21 show aspects of the sub-tidal aquatic habitats.



Figure 7 Oblique aerial view of Cockatoo Island Ferry Wharf

The main aquatic habitats of the study area are described as follows:

- There is intertidal and sub-tidal sandstone rock wall and rock rubble reef along the whole foreshore (Figures 7 to 11). The sub-tidal rock rubble reef terminates on coarse shelly sand (Figure 15) at around -3m offshore from the seawall as indicated in Figure 8.
- The rock seawall and rubble habitats support a mixed and varied assemblage of macroalgae and attached biota including barnacles, molluscs, tubeworms, ascidians, bryozoans and sponges (Figures 12 to 15).
- The wharf concrete support piles, the wooden ferry arrester piles and the steel pontoon locator piles all support biota similar to the biota on rock rubble and with similar overall depth zonation (Figures 16 to 20), but there are overall fewer

species attached to piles than are found in the more topographically complex rock rubble habitat.

- Whilst there were only a few reef fish species noted during the surveys and no cryptic fish or syngnathids were found during detailed searches, the fish that were observed on the rocky reef habitats were abundant (Figure 21).
- Sub-tidal silty-sand habitat extended from the rock reef out into the river and the character of the sediments changes from mixed fine and coarse sand inshore to mixed silt and sand grading to more muddy sediment with depth.
- There were no seagrass or algae noted on the sediment seabed.

There was a distinct zonation in the rocky reef biota, described as follows:

- Intertidal sandstone seawalls supported small numbers of grazing molluscs and barnacles in the high to mid intertidal with a lower zone dominated by oysters and *Bembicium* molluscs.
- There is a relatively broad intertidal to sub-tidal fringing zone (to -1m depth) where there is sufficient turbulence to keep the rocks clear of silt, and that supports a variety of red, green and brown algae typical of the shallow sub-tidal fringe in the lower Parramatta River including turfing red algae encrusting red coralline algae, a variety of green and brown tufting algae and *Sargassum* (see Figures 12 to 14).
- There is a mixed macroalgae zone between -0.5m and -1m depth that supports *Sargassum* as a dominant canopy species, some kelp and a variety of smaller algae plus encrusting fauna (Figures 12 and 13).
- The deeper rock and pile habitat below the *Sargassum* algae zone (from about 1.5m depth down) supports a low and sparse cover of kelp plus mixed fauna comprising encrusting and attached bryozoans, ascidians and sponges (Figures 14,15, 18 to 21).
- Common rocky ref fish observed included fan bellied leather jacket, bream, luderick, eastern hula and crimson wrasse. No seahorses, pipefish or other cryptic fish such as pygmy leatherjackets were observed despite specific searches.
- Detailed transect swims across the soft sediment seabed in the study area confirmed that there were no marine plants (seagrass or algae) on the seabed below the in-shore toe of the rock and rubble reef and specifically, the listed pest algae species *Caulerpa taxifolia* was not present at the site.
- There are burrows in the off-shore (sub-tidal) sediments away from the rock rubble revetment indicating a diversity of benthic (bottom dwelling) fauna.



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Figure 8 Aquatic habitats at Cockatoo Island Wharf. River bed contours are metres below chart datum (ISLW).

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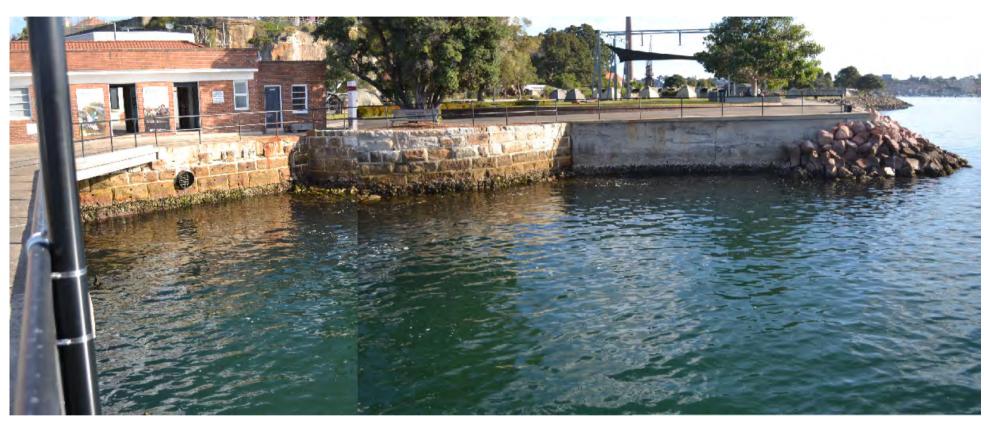


Figure 9 Intertidal sand stone wall and rock rubble habitats along the riparian shore to the west of Cockatoo Island Wharf.



Figure 10 Intertidal sandstone wall and rock rubble habitats along the riparian shore to the east of Cockatoo Island Wharf.



Figure 11 View of wharf support piles and of existing wooded ferry arrester structure inshore from the existing southern pontoon berth.



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Figure 12 Close up of lower intertidal and sub-tidal rubble transition zones west of wharf. The lower intertidal rocks support filamentous green algae and the shallow sub-tidal supports a mixed red and brown algae diversity including red coralline algae, various tufted red, green and brown algae and the reef forming brown macroalgae *Sargassum sp.* in slightly deeper waters.



Figure 13 Rock rubble habitat on east side of wharf showing narrow low intertidal bands of green filamentous algae and red coralline algae with a broad band of *Sargassum* in the shallow sub-tidal.

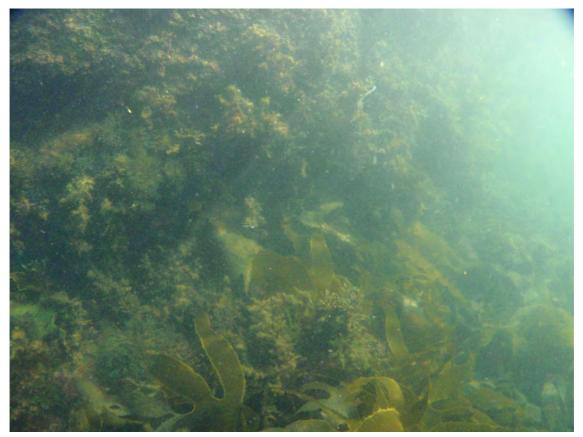


Figure 14 Transition from Sargassum to Kelp algae with depth on the rock rubble habitat (east of wharf).



Figure 15 Outer edge of rock rubble kelp habitat at inner Ferry arrester pile (south-west).Cockatoo Is Wharf Aq Ecol Ver2MPR 1063-16Marine Pollution Research Pty Ltd



Figure 16 Intertidal oyster, barnacles, tubeworms and ascidian band on wetted pile surface.



Figure 17 Transition shallow sub-tidal frondose algae zone on pile surface dominated by *Dictoyota*, and filamentous red algae.



Figure 18 Sparse kelp, bryozoa and sponge growth on deeper pile surfaces (in this case a ferry arrester support pile).



Figure 19 Detail of soft plus hard bryozoa and sponge growth on deeper pile surfaces.



Figure 20 View of Pontoon locator piles showing sparcity of kelkp growth on the piles.



Figure 21 There was an abundance of fish on the rock rubble ref habitat including schools of bream (pictured) plus luderick, fan-bellied leather jackets, eastern hula fish and crimson wrasse.
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With regard to the possibility of any threatened aquatic species as listed under the NSW FMA and TSC Acts or under the Commonwealth EPBC Act residing in or near the locality, no threatened aquatic species or ecological communities were noted during the field work and, given the nature of the locality and the aquatic habitats, none are expected:

- There are no natural riparian shores at or near the wharf site that could support saltmarsh species.
- There is no suitable aquatic or wading bird roosting or feeding habitat at the site with only a very thin strip of rock rubble below the rock seawall at low tide and no sediment habitats available above or within the intertidal rock rubble. Roosting habitat use is also limited by disturbance from the high pedestrian and bike traffic along the public walkways. On the field days no wading or aquatic birds were seen at or near the location).

With regard to the Fisheries NSW waterway classification scheme (as shown in Table 2 of the revised Policy and Guidelines document – Fisheries NSW 2013), the waters around Cockatoo Island are Class 1 "Major Key Fish Habitat" (KFH) by virtue of it being an estuarine waterway.

In regard to Key Fish Habitat (KFH) sensitivity classification (as defined in Table 1 of Fisheries NSW 2013):

- There is no Type 1 "highly sensitive KFH" at or in the immediate vicinity of the ferry wharf site.
- *Zostera* and *Halophila* seagrass patches located around Spectacle Island to the west of Cockatoo Island are classified Type 2 "moderately sensitive KFH".
- The rocky reef macro-algae habitats at Cockatoo Island Wharf are classified as Type 2 KFH.
- The soft sediment seabed under the wharf and into deeper waters is classified Type 3 "minimally sensitive" KFH by virtue of the lack of macroalgae or seagrass cover.

#### **3 IMPACT ASSESSMENT AND MITIGATION**

With regard to the assessment of possible aquatic impacts from construction works, the proposed Cockatoo Island Wharf upgrade requires removal of the existing gangway, pontoon, ferry arrester and pontoon locator piles, construction of a new concrete bridge six metres long and six metres wide supported on four steel piles extending out from the existing fixed wharf structure. An aluminium gangway (about 18 metres long and six metres wide) will be supported by the new bridge at its western end and by a new steel floating pontoon (about 27 metres long and 12 metres wide) located at the eastern end of the gangway. The pontoon would be held in pace by four steel locator piles and there will be additional arrester piles placed along the inner eastern side of the wharf.

Accordingly, the only direct impact arising from the proposal is the disturbance of offshore sediment habitat from removal of the existing pontoon locator and ferry arrester piles and from placement of the new bridge, pontoon locator and arrester piles.

Indirect impacts are associated with the potential for mobilising bottom sediments during construction works resulting in the production of turbidity plumes and the potential for mobilising sediment contaminants into the water column.

#### **3.1 Assessment of Construction Impacts**

All removal and placement of piles is into bare sediment habitat, which will displace some benthic (bottom dwelling) assemblages residing in the sediments and cause some turbidity:

- Given the large expanses of these sediment habitats throughout the area, disturbance to benthic assemblages is considered trivial. Further, the wetted intertidal surfaces of the new piles and pontoon will provide additional hard substratum habitat to support molluscs and fringing algae, as suitable compensation for soft sediment habitat losses.
- Turbidity arising from individual pile placement and from pile pulling would be in the order of the wet weather turbidity of the upper river estuary and would be generated as pulses localised to the immediate area around the piling work area, generally confined to bottom waters and would settle rapidly.
- The benthic assemblage in the vicinity of the piles would be expected to contain organisms that are generally tolerant of occasional turbidity. That is, the organisms most likely to be affected by localised turbidity would already be turbidity-tolerant and would thus not be impacted.
- There is a risk of mobilising contaminants from the sediments during removal and

placement of piles. This risk is considered low for pile driving, which has the effect of pushing sediment laterally away via displacement then drawing sediments downward via the pile friction effect. This means that there is little or no upward mobilisation of the sub-surface sediments that could contain contaminants, as the pile driving action further buries or displaced sub-surface sediments. Pile removal has a slightly higher risk of mobilising seabed sediment but the risk of mobilising contaminants from these sediments is low as demonstrated by Knox and Johnston (2009).

The new gangway and pontoon will be shading areas of seabed that have not been shaded previously. However, as the seabed at this location does not support any marine vegetation there is no shading impact arising from the proposal.

Given the depths of water within the construction zone, the potential for construction vessel wash disturbing seabed sediments and mobilising contaminants to the water column is considered low.

#### **3.2 Assessment of Operational Impacts**

With regard to potential operational impacts both berthing faces of the new pontoon wharf will be located in water depths greater than the present pontoon wharf (from minimum -5m to -6m on the north berth and from minimum -1m to -2m on the southern berth), and at these depths there is minimal risk of mobilising bottom sediments at extreme low tide times during vessel arrivals and departures from the sweeping berth with no risk at other tides.

With regard to litter generation arising from use of the new pontoon wharf, this is an ongoing concern at all the public ferry wharves in Sydney Harbour.

#### 3.3 Fisheries Management Act Habitat Protection and Permit Requirements

Section 7.1 of the Fisheries NSW Policy and Guidelines (Fisheries NSW 2013) states that there must be *no net loss of fish habitat* and Section 3.3.3 of the Policy and Guidelines notes that under the FM Act Section 220, there are a number of activities available that can be used to mitigate damage to fish habitat: *habitat rehabilitation* is defined as repairing damage caused by past activities, and *environmental compensation* is defined as the creation or enhancement of fish habitats or fisheries resources in order to compensate for anticipated adverse or actual environmental effects of proposed developments:

• Habitat rehabilitation can be either passive or active. After the removal of the damaging or inhibiting factor or structure some habitats can be left to passive natural processes to rehabilitate the area.

• Environmental compensation (where required) must consider the representativeness and value of different types of habitats and compensation for Type 1 to 3 Key Fish Habitat must be calculated on a minimum 2:1 basis (Policy and Guidelines Section 3.3.3.2).

For Cockatoo Island Wharf project, the aim of *no net loss of fish habitat* would be achieved by the creation of additional hard substratum habitat in compensation for the loss of smothered soft bottom benthic habitat and environmental degradation would be minimise by the implementation of best practice construction management procedures that can be written into the Construction Environmental Management Plan (CEMP) for the project.

Part 7 of the FM Act sets out the conditions under which permits are required for various construction activities, and the conditions under which a permit may be granted are specified in the DPI (Fisheries) Policy and Guidelines (NSW Fisheries 1999). With respect to estuarine activities, permits are required for reclamation or dredging works, for the taking or harming of marine vegetation or for relocating fish unless the provisions of either Section 199 or 200 of the FMA apply, in which case the determining authority is required to consult with the Minister for Primary Industries:

- The proposal does not include activities that fall under the definition of dredging and reclamation.
- There are no material direct or indirect impacts on marine vegetation arising from the proposed works and construction works would not result in any loss of macroalgae, seagrass or mangrove habitat.

#### 3.4 Sydney Region Environmental Plan (Sydney Harbour Catchment) 2005

Clause 21 of the SREP (Sydney Harbour Catchment) outlines nine criteria for biodiversity, ecology and environmental protection:

- 21(a) Need for development to have a neutral or beneficial effect on water quality entering the waterway.Provided construction works utilise best management practice for containing water and materials runoff from the site, water quality impacts would be
  - minimal and temporary.
- 21(b) Need for development to protect and enhance terrestrial and aquatic species, populations and ecological communities and, in particular, should avoid physical damage and shading of aquatic vegetation (such as seagrass, saltmarsh and algal and mangrove communities).
  There are no saltmarsh or mangroves at the development site and

development would not result in shading of existing marine algae vegetation inshore of the construction works. Marine mammals, reptiles and aquatic or migratory birds are unlikely to utilise the aquatic resources of the site, even on a transient or opportunistic basis. Whilst the rocky rubble reef provides Syngnathid (seahorse and pipefish) habitat at the site, no Syngnathids were found on the wharf structures and none are expected.

21(c) Need for development to avoid indirect impacts on aquatic vegetation as a result of increased access.

There will be no increased access to the inshore aquatic algae vegetation at the site arising from the development.

21(d) Need for development to avoid indirect impacts on aquatic vegetation (such as changes to flow, current and wave action and changes to water quality) as a result of increased access.

The proposal will not result in altered river flows and, by virtue of the greater distance off-shore for the replacement pontoon, there is overall less risk of inshore erosion resulting. Accordingly there will be no indirect impact on in-shore intertidal aquatic vegetation arising.

- 21(e) Need for development to protect and reinstate natural intertidal foreshore areas, natural landforms and native vegetation.
  The proposed development does not include any alterations to the intertidal foreshore areas at the wharf site and the proposal will have no impact on aquatic vegetation on adjacent intertidal foreshores.
- 21(f) Need for development to retain, rehabilitate and restore riparian land. There are no natural riparian lands at the site as the riparian lands comprise reclaimed and paved land behind retaining sea-walls developed as walkways and roadways.
- 21(g) Need for development on land adjoining wetlands to maintain and enhance the ecological integrity of the wetlands and where possible to provide a vegetative buffer to protect wetlands.

Whilst there are no designated wetlands at or near the site there is intertidal to shallow sub-tidal rock reef that supports macroalgae beds immediately inshore of the wharf. The proposal would not result in any material change to this habitat.

21(h) Need to assess the cumulative environmental impact of the development.Assessment of the impacts of the proposal on the aquatic environment provided above indicates that the project would result in an overall increase in hard substratum pile and pontoon wetted surfaces that would be colonised by an assemblage of aquatic biota that would be similar but not necessarily the same as that currently on in-water pile and pontoon habitats at the site. There are no long-term water quality or ecological impacts arising from the

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proposal. The new algae-based habitats provide additional feeding and shelter habitat for fish, particularly juvenile fish, and this is considered to be a beneficial impact.

21(i) State whether sediments in the waterway adjacent to the development are contaminated, and what means will minimise their disturbance. Whilst numerous studies identify the Parramatta River estuary as being impacted by contaminated sediments (CLT 2008, AECOM 2010), higher concentrations of contaminants are generally associated with particular point sources (e.g. former industrial sites on the eastern shore of Homebush Bay), and the upper reaches of embayments where creeks and stormwater outlets enter the estuary. As Cockatoo Island Wharf is located alongside the main river channel where flood scouring would be expected to mobilise and rework inshore sediments, the sediment contamination loads are expected to be low compared to the concentrations in sediments in sheltered bay, mid river deep basins and large point source stormwater sites. The project will result in short pulse disturbance of river sediments that are considered to pose a low risk for mobilisation of contaminants to the water column. Residual risk would be minimised by using silt curtains where necessary during construction to limit the spread of surface turbidity plumes.

#### **3.5 Recommended Mitigation Measures**

Whilst specific searches for syngnathid fish (sea-horses and the like) did not yield any specimens and the review of impacts indicated a low possibility of there being sygnathids in the vicinity of the demolition and construction works, it is recommended that a final precautionary survey of the piles and seabed in the demolition area be undertaken immediately prior to commencement of demolition works. If found, sygnathids are to be captured and relocated to suitable sub-tidal rock and kelp habitat, located to the east of the project site. The work would be undertaken by suitably qualified and experienced personnel using protocols established for the ferry wharf replacement project under an existing DPI Fisheries Section 37 Permit; 12/0008-2.0.

The Cockatoo Island Wharf project can achieve the aim of *no net loss of fish habitat* by the implementation of appropriate construction mitigation measures and all contractors undertaking construction work associated with the project should ensure that their activities do not cause any harm to marine vegetation habitats (i.e., inshore shallow and intertidal rock and rubble reef generally south of the three metre depth contour).

Potential impact can be mitigated to insignificance by the use of best practice construction management procedures incorporated into the project Construction Environmental Management

Plan (CEMP) that includes the following precautions:

- Use of on-shore silt curtains at the top of the seawalls to limit off-cut, turbidity and sediment spills from the various on-shore construction tasks.
- Use of turbidity curtains inshore of the piling works to contain turbidity and enhance resettlement of disturbed seabed sediments away from inshore rock rubble habitats.
- No stockpiling of demolition or construction materials on the seabed and all demolition materials are to be removed off-site for appropriate disposal or re-use.
- The potential for materials (structural off cuts, debris associated with fit-out) to be dropped or discharged into the waters during demolition and construction works can be minimised by the use of best practice construction management procedures to be included in the Project CEMP. These are to include provision of suitable rubbish containers at all nearwater or over-water work sites and instructing contractors at tool box meetings about the choking dangers from off-cuts and fragments to fish, marine mammals, turtles and aquatic birds.
- In order to minimise wash and prevent bottom scouring of the marine sediments during construction, vessel masters of towing or pushing vessels are to be instructed to not use excessive power to manoeuvre barges or vessels into place when near inshore rock rubble reef habitats. Scouring damage can also be minimised by 'working the wind and tides', i.e., only moving floating plant into place on high tides and under favourable or no-wind conditions.
- Scouring and scalping damage to the inshore rock reef and rubble habitat can be minimised by ensuring that anchors, mooring blocks or mooring lines (cable or chain) used for construction related vessels or barges are not placed in or on these habitats, located south of the three metre depth contour.

#### **4 CONCLUSIONS**

It is concluded that the construction activities for the Cockatoo Island Wharf project can be undertaken with no material loss of aquatic habitat at the site:

- There were no threatened aquatic species or communities located at or near the construction site and none are expected by virtue of the lack of suitable roosting, feeding or shelter habitat. There are no mangroves or seagrass at or near the site and there are no saltmarsh habitats at the site. Then listed pest algae species *Caulerpa taxifolia* was not located at the site and is not expected at the site by virtue of the riverine nature of the site.
- Cryptic species such as protected syngnathids (seahorses and pipefish) were not found at the site and although there is suitable feeding and shelter habitat in rock rubble reefs in the locality there was no suitable shelter or feeding habitat on wharf structures and none are expected by virtue of the site location in the lower riverine part of the estuary. Notwithstanding, a final precautionary survey to find and relocate syngnathids will be undertaken prior to commencement of demolition works.
- There are diverse macro-algae based aquatic assemblages on the inshore rocky rubble reef at the site and some less diverse algae-based assemblages occur on the wharf piles and pontoon wetted surfaces.
- There are no shading impacts arising from the proposal, as the proposed marine works are located over bare seabed sediments.
- Encrusting algae-based assemblages will colonise wetted surfaces of new piles and the ferry pontoon surfaces, resulting in a net increase of wetted surface habitat area.
- The use of silt curtains around the proposed piling works will ensure that disruption to other associated fish assemblages on in-shore rock reef and rubble habitat will be negligible.
- Possible impacts arising from the proposed construction works and from operation of the new facility can be minimised by appropriate construction and operational safeguards as outlined in the report and in the project CEMP.

Accordingly, the project would satisfy the aquatic ecology conservation requirements of the SREP (Sydney Harbour Catchment) 2005 and the FMA aquatic ecology and fish habitat conservation requirement of *no net loss of fish habitat*, as set out in the DPI Policy and Guidelines (Fisheries NSW 2013).

With respect to estuarine activities, permits are required under Part 7 of the FMA for *reclamation or dredging* works, for the *taking or harming of marine vegetation* or for *relocating fish* unless the provisions of Section 199 or 200 of the Act apply, in which case the determining authority is required to consult with the Minister for Primary Industries. The proposed Cockatoo Island Wharf project does not include these activities and a permit is not required. Sygnathid relocation, if required, would be done against an existing Section 37 permit.

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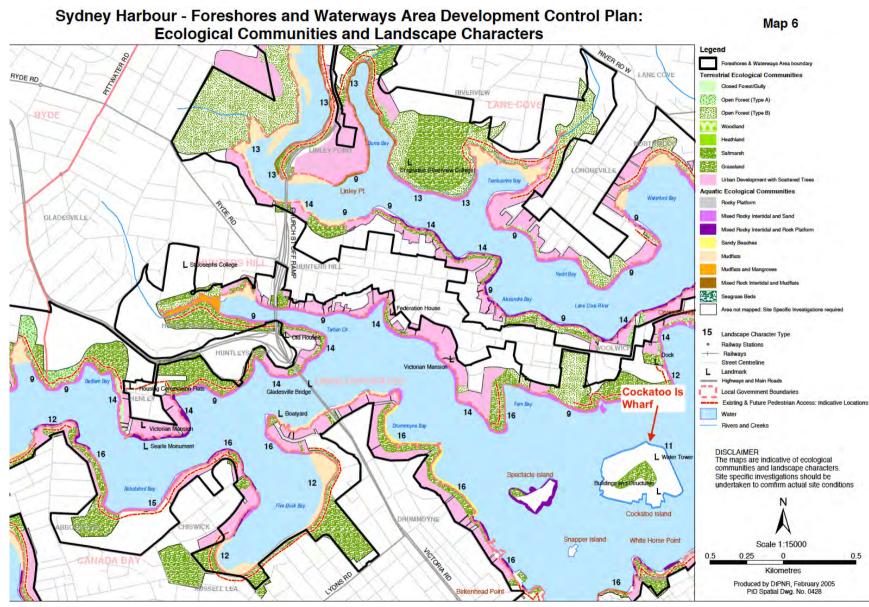
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## **APPENDIX A**

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## FULL VERSION OF HABITAT MAP USED FOR THIS REPORT



DCP Map 6 showing aquatic ecology communities at the proposed Cockatoo Island Wharf (See detail in Report Figure 4).

Cockatoo Is Wharf Aq Ecol Ver2 MPR 1063-16 Marine Pollution Research Pty Ltd

## **APPENDIX B**

- 33 -

## AQUATIC ECOLOGY ASSESSMENT

## FOR FERRY USE

### OF

## **CAMBER WHARF**

## **DURING COCKATOO ISLAND**

## WHARF CONSTRUCTION

#### **B1 INTRODUCTION**

Marine Pollution Research Pty Ltd (MPR) were requested by RMS to provide additional assessment of the temporary use of Camber Wharf for Parramatta River Ferry services whist the new Cockatoo Island Wharf is being built. In particular RMS required assessment of the implications of use of the wharf in relation to the presence of 'wetlands' around the Camber Wharf site (see main report Figure 5).

#### **B2 FIELD SURVEY**

An MPR dive team was mobilised on 2<sup>nd</sup> October to visit Camber Wharf and determine the aquatic habitats at the site with particular emphasis on assessing the 'wetland' status of the site. The weather was ideal for the survey, wind still and sunny and water clarity was relatively good for this part of the estuary and sufficient for the divers to view the seabed under the wharf and inshore. Figures B1 to B3 show views of the site.



Figure B1 Camber Wharf Pontoon with boat ramp to the left (photo facing north-west).



Figure B2 View of pontoon wharf looking north-east.



Figure B3 View along eastern side of pontoon looking north to boat ramp.

#### **B3 AQUATIC ECOLOGY OF THE SITE**

Figure B4 below provides an aerial view of Camber Wharf with the main aquatic habitats indicated.

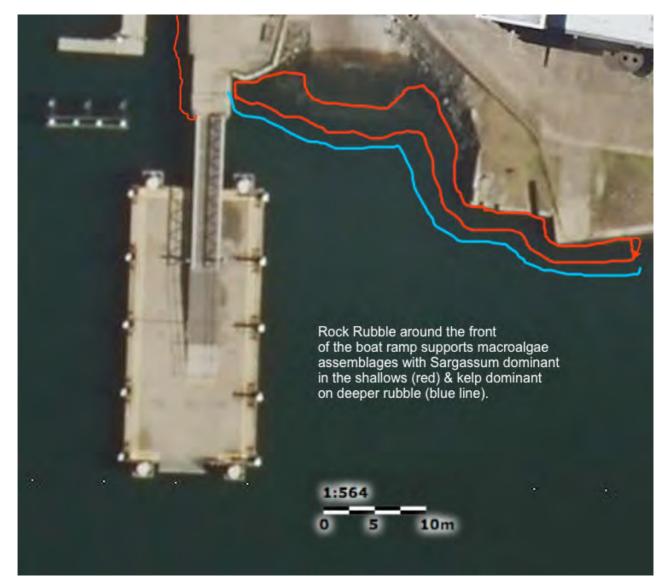


Figure B4 Aerial view of Camber Wharf showing distribution of macropyte beds.

In the main, the aquatic ecology of the pontoon, piles, vessel arrester structure and of the seabed under the pontoon match the descriptions for the same structures at Cockatoo Island Wharf as detailed in Section 2.4 of the main report.

There is a relatively wide area of rock rubble extending out from, and around the edges of the concrete boat ramp (Figure B4), and this habitat supports a dense *Sargassum*-based macroalgae bed in the shallows (Figures B5 and B6). There is an abrupt half metre drop at the edge of the *Sargassum* rubble reef down to larger sized rock and this deeper section of reef supports a kelp based macroalgae assemblage.



Figure B5 Rock rubble habitats around the boat ram include intertidal oyster beds and shallow sub-tidal macroalgae dominated by *Sargassum*.



Figure B6 The rock rubble continues into deeper waters and the deeper reef supports a kelp based macroalgae assemblage.

The remainder of the seabed between the rock rubble ref and the pontoon wharf comprises bare shelly sand and there is no other marine vegetation such as seagrass or the declared pest algae species *Caulerpa taxifolia*.

On the basis of the present survey, it is concluded that the 'wetlands' designation for this locality as shown on Figure 5 of the main report relates to this extended rock rubble habitat around the boat-ramp that supports dense macroalgae beds. There is no other 'wetland' vegetation (mangroves, saltmarsh or seagrass) present at the site.

#### **B4 IMPACT OF TEMPORARY USE OF CAMBER WHARF BY FERRY SERVICES**

Depth measurements taken along the long axis of the wharf-bridge, ramp and pontoon indicate that the water depth over the macrophyte rock rubble reef ranges from -0.5m to -1.5m below Lowest Astronomical Tide LAT. The inner pile of the pontoon is in -2m depth and on bare sediment, and there is a steep decline to a depth of around -7.5m depth half way along the pontoon then a more gradual slope to the outer edge of the pontoon at -10m depth LAT.

As the only approach to the two pontoon wharf berthing sides is from the south, ferries using this wharf will drive forward into the berths and then have to back out well and past the end of the pontoon before they can turn to resume their route. As a result ferry propulsion gear will always be located more than 24m offshore from the rock rubble reef over deep (minimum - 10m) waters and will always be directed south into deeper waters (when approaching) or north against the hull of the vessel (when stopping or backing out).

Accordingly, it is concluded that use of Camber Wharf by Sydney Ferries for regular ferry services would not affect the inshore macroalgae beds growing on the rock rubble ballast around the boat-ramp. This conclusion is in line with our field observations in that there were no indications of any scouring of rock rubble or attached algae arising from the present routine usage of Camber Wharf by both private and commercial passenger vessels.

Given these berthing depths there is also little risk of mobilising bottom sediments at extreme low tide times during vessel arrivals and departures with no risk at other tides.

It is concluded that the temporary use of Camber Wharf for the duration of the Cockatoo Island Wharf construction project can be undertaken with no material loss of aquatic habitat at the site and that this use would satisfy the aquatic ecology conservation requirements of the SREP (Sydney Harbour Catchment) 2005 for protection of *wetlands* and satisfy the FMA aquatic ecology and fish habitat conservation requirement of *no net loss of fish habitat*, as set out in the DPI Policy and Guidelines (Fisheries NSW 2013).



#### Bat Survey Miniopterus schreibersii oceanensis Cockatoo Island Wharf

#### Introduction

Eastern Bent-wing Bats are a listed threatened species. These bats have two known roost sites in the North Sydney precinct on Sydney Harbour: at Balls Head and at Primrose Park. The bats are occasionally recorded at other sites around the harbour and these records are presumed to be foraging bats that have dispersed from the known roosting sites (Hoye and Spence 2004). However, other minor roost sites, such a timber wharves, are likely to be present that have not been recorded.

#### **Methods and Results**

In December 2014 Biosphere Environmental Consultants Pty Ltd were engaged to undertake a rapid assessment of the possible presence of Eastern Bent-wing Bats at or near a number of Sydney ferry wharves, including Cockatoo Island Wharf.

On the afternoon of the 23<sup>rd</sup> of March 2015, Dr Arthur White visited Cockatoo Island with the aim of pre-determining the most likely sites where Eastern Bent-wing Bats could be detected. In general, the bats prefer reasonably densely treed sites where there is little or no night lighting.

Cockatoo Island is located immediately south of the Woolwich Peninsula and about 1 kilometer upriver from Balls Head. The island has been retained as a historic area containing old convict buildings, industrial architecture relating to the days when ship building was the main activity on the island. Many of the buildings on the island have been gutted and only the external shells remain. There are also two tunnels that transect the island but these are well lit day and night.

The old buildings, tunnels and other structures, including the approaches to the wharf (Figure 1), were traversed on foot before nightfall and the wooded areas in the Historic

#### Figure 1 Cockatoo Island Wharf



Precinct were scanned using a hand-held Anabat detector (White 2011). After nightfall, the buildings were again surveyed but a routine monitoring station was established between Buildings 22 and 24 as a bat was detected there. Recording were taken at each site and later analysed using Anabat 5.0 software to determine the species identity of the bat calls recorded. The recording details are presented in Table 1 below:

Location	Times	<b>Micro-Bats Detected</b>
Cockatoo Island	7.50-8.00	Nil
Wharf	8.50-9.00	Nil
	9.50-10.00	Nil
Building 22 and	8.05-8.15	M. schreisbersii
24	9.05-9.15	Nil
	10.05-10.15	Nil
Industrial	Various times	Nil
Precinct	between 8.20 and 10.50 pm.	

Table 1 Anabat recording Sites and Times

#### Discussion

Eastern Bentwing Bats were detected on Cockatoo Island but not near the wharf. The wharf area is devoid of trees and is very exposed to wind and night light. A Bentwing bat was sighted flying between Buildings 22 and 24 and a recording was made of the bat. A search of the edges of the buildings and nearby structures failed to locate anything that could serve as a roosting site for these bats. It is possible that this bat had flown to Cockatoo Island after dusk and was not roosting on the island. The night was warm and there was only a gentle breeze blowing so a bat could easily have flown to the island from a nearby roost, such as Balls Head.

Grey-headed Flying Foxes *Pteropus poliocephalus* were also sighted in the fig trees across the island but not near the wharf structures.

#### Conclusion

Bent-wing bats do not appear to be present in the area around the Cockatoo Island wharf, although these bats clearly fly to the island when weather conditions permit.

Dr Arthur White 24 March 2015

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# **Appendix G**

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## **Statement of Heritage Impact**

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#### **IMPORTANT NOTE**

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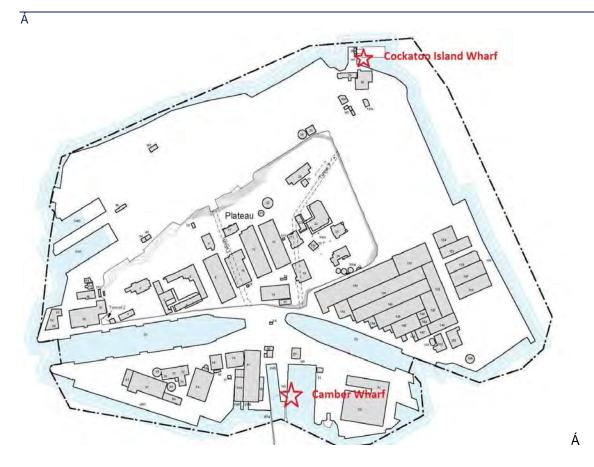
ÜÚÙÁ@æ Áa^} Á} \* æ \* å Áa^ ÁPæ) • ^ Á?` } &\ ^ } ÁUĉ ÁŠcå Á[; } Áa^ @æļ-Á[, ÁPÙY ÁÜ[ æå• Áæ) å ÁT æbãā[ ^ ÂÙ^¦ç&X^• ÁÜ[ æå• Á æ) å ÁT æbãā[ ^ DÁæ) å Á/¦æ) • ] [ ¦ cÁ[ ¦ ÁP^ \_ ÂÙ[ ` c@ÁY æ]^ • ÁQ/ - ÞÙY DÁ[ Á] ! ^ ] æ^ ÁæÂÛææ^{ { ^} of[, -ÁP^ | ãæt ~ ÁQ ] æ&cÁ QÙ[ POMæ) å ÁOEa[ ¦ ât ā] æþÅa` ^ Åa äjät ^ } &^ Áæ• • • • { ^ } cÁ[ ¦ Ác@ Á] ! [ ] [ • ^ å Á^ å^ ç^ |[ ] { ^ } of[, -Ác@ ÁÔ[ &\ æt[ [ Á@|æ) å Á Q^ ; ! ^ ÁY @æb -Áæ) å Áæ) å • ãa^ Áæ&ājãāt • Á } å^ ¦ Ác@ ÁEnvironment Protection and Biodiversity Conservation Act FJJJÁ QÙÚÔÓÁD&DÁæ å Á@ áO} çã[ } { ^} cæ Planning and Assessment Act 1979ÁQÒÚBOÆD&DÁMA

### 1.1 Study area

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#### 1.2 **Proposal description**

The proposal would comprise the following elements:

#### Demolition of the existing gangway and pontoon

•Á V@ Ák¢ācāj\*Átaaj\*, æÂaajåÁ[]d[]Êbaj&|čaāj\*Ák¢ācāj\*Ájāţ^•Êbáj[č|åÁah^Á^{[ç^åÁ•ā]\*Áaaábad\*^Ájão@abaÁ {[č}c\*åÁ&iaaj\*Ébá

#### Construction of a new bridge, gangway and pontoon

- ■Á OZÁ,^, Ásiláða\*^Ásæà[čoÁs@^^Á; ^d^●Á; áða^Ásæ) å ÁrátóA; ^d^●Á[}\*Á;[č|å Ása^Ás4] } edč & cvå Å Å; [č |å Ása^Ás2] } edč & cvå Å Å; [č |å Ása^Ás2] } edč & cvå Å Å; [č |å Ása^Ás2] } edč & cvå Å Å; [č |å Ása^Á; ]] [¦cvå Ása^Ásæà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsa^Ásaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsa^Ásaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsa^Ásaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsa^Ásaà; [č oÁ; č ¼ ¾ Å Åsæ]
- •Á CEÁ,^, Á}&[ç^\\^åÁæqiǐ{ājã{ Ášiǎa phía}\*, æÂÁçaæi[č Ahī]Å[, ^d^• Á[}\*Áæ)åÂiÁ(, ^d^• Á;ãå^DÁ;[`|åÁ&[})^8AÁt[ÉA æ)åÁsi^Án`]][ \c^åAsiˆÉk@Asilãå\*^Áæ)åÁt[ææ]i\*Áj[}d[]}ÈÁV@Afæ)\*, æÂý[č |åÁ&[}c]ič^Ak@Aíæt[^Á [\a?}cææ]i}Åæ•Ák@Asilãå\*^ÈÁV@Afkæåa}Aft[ææ]i\*Áj[}d[])
- •Á O2Á,^, Á^&cæ)\* \* |æłÁ c^|Á|[ææ]; \*Á,[] d[] / áæi [` xÁe] č xáe (`



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- •Á Ü^|[&æeā] } Á[ -ÁU] æhÁ^æå^!•Áæ) å ÁØ^!!^ÁU] ^!æeā[ } •Áæ) å ÁÔ` d[ { ^!ÁQ, -[ !{ æeā[ } ÂÛ^ c^{ (AQUÔQ)DÁ &!^} + Á æ) å Á^|æe^ å Á^` ~ã] { ^} dĚ
- ■Á V@Á, @eet-Á, [`|åÁa^Á&[}•d`&cvåÁţÁa^Áæ&&^••ãa|^ÁţÁ,^[]|^Á, ão@áæ4åã æaàããa Á\*¢&^] Áţ¦Á@Á\*æ}\*, æê Á , @a&@Á, [`|åÁţ}|^Áa^Áæ&&^••ãa|^Áţ¦Á, [Á\*\*•Áœea) €A, ^¦Áx^} Aţ Áx@Á@a\*@áæ)åÁ[, Ásãa^Á\*ç\*)•Áã cvåÁşiÁœA •œa)åæååÁsãa^Á&@eetorEÁ

#### Construction of landside infrastructure

- ■Á Ó`}å^ÁU~a&^Á^~~`¦àãe@@;^}œÁ§j&|ĭåāj\*kÁÁ
  - Á Ú¦[çãrā[}Á[,-ÁæaÁ^ç^|Á;aa) åā] \* Á¦[{ ÁÓ`}å^ ÁU~-a&^Á{[Á{[]}Á[,-Á\*;aa) \*, aê Á
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#### **Ancillary Facilities**

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CE;^Á;æc^¦ãæþÁ&@eð;\*^•ÁqiÁx@eÁ&[}•d`&cāj}Á;(^c@;å[|[\*^Á;@3&@A&[č|åÁ^•č|oÁ5jÁsæååãaāj}æ¢Á?;dā[]{{^}cæþÁã[]æ&orÁ qiÁs@[•^Áse•^•^åÁ5jÁs@áAÜÒØÁ;[č|åÁs^Áčàb^&A4čiÅb%A

#### Site establishment and wharf closure

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- •Á Ò• cæàlãr @ (^} ơh, Áæá&[}•d`&aāt} Á, [¦\ Áæc^æá •āj\* Ál[ææā]\* Áa[[{ Át[Áas^|ā]^æc^ Ás@á Áæc^ædā v@á Á; [` |å Á; æà ^ Á æh[[, æ) & ^ Át[ ¦Ás@o Át` ç æbå Á^æ&@ At æb@ Ásæb\* ^ q Át[ ` ¦Áæb} & @ ¦æ\* ^ Át[ā] o Eðt ç^\ Á; @ B&@ At æbā ^ Ås/•••^ |• Át æb Á }[ ơks:[•• Át[ ¦Áæ^c Á^æe[] • EÁ/@ Áæb; @ Baj æc^å Á ã ^ Át á ^ Át@ Ásæb\* ^• Ást Á] Át Áæà[` ơhO€At ^ d^• Ás Á H€At ^ d^• Ás Á •ã ^ Á
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- •Á V¦æ-a&k%{[}d[|Á, ^æ\* ¦^• ÁG, &| åā]\*Á, æ\*\& ædÉ, ^å^• dãe) Áe) å Á& &|ã o DÁ, [`|å Áà^Á cæà |ã @ å Á§ Á æ&&[ å æ) & A, ão@Á@ Ádæ-a&A, æ) æ\* { ^} o∱ |æ) ÁÇVT ÚDÉ, @&@4, [`|å Áà^Á, ![ å` & ^åA[ ||[, ā]\* Ás@ Á å^c^\{ ā] æaā]}Á, Ás@ ÁÜÒØEÁCE]] ![] ¦ãæe\*Á, æ`-āj åā]\*Á ât} æ\* ^Á, [`|å Áà^Á§, • cæ|/^å Ásæåçã ā]\*Á, Áse/c^\} æaã, ^Á dæ) •][ ¦o∱,] cā] } • Á, @ ¦^Á, ^& • • æ\* Á
- •Á Ò}çã[}{ ^}œa¢As[}d[|•Á,[`|åÅa^Á\*•œaà)ã\*@°åÁsjÁsessa[¦åæ)&^Á,ãœás@^As[}•d`&cãi}Å\*}çã[]{ ^}œa¢Á { æ}æ\*^{ ^}o∱,|æ)ÁÇÔÒTÚDÁ{¦Ás@^Á,![][•æ¢Êç,@a&@Å,[č|åÅa^Á,¦[å`&^åÁ{[||[,ã]\*Ás@Aå^c^\;{ãjææãi}}Á;Ás@A ÜÒØÈÁÁ
- •Á Ü^|^çæ) óÁ`` ĝ { ^} óÁ[ Áà^Á^|[ &æe^àÁ[ Ás@ ÁÔæ{ à^\Á' @ed-ĐA} æb] ĝ \* Ás@ Á&[ •` \^Á[ ÁÔ[ & æ[ [ Á@]æ] åÁ Y @ed-Á[ \Á] \* |æb^ÈĂ

#### Demolition and removal of the existing ferry wharf

- •Á Ú¦ā; ¦Áţ Á@Á§[}•d`&aā; }Áţ Á@A^, Á, @ee+Éb@Á¢ã cā; \*Á, @ee+Áş [č]åÁa^Á\$4] (\*^åÁe)åÁãcA; d^Áe)åÁ¢ãA ][ā] @Áş [č]åÁa^Á4•cæaà]ã @åÁţ ¦Á@Á§[}•dč &aā; }Á

#### **Removal of piles**

- •Á Ùơ^\ÁQ: \Áqā à^\DÁ; qh^•Á [č|å Áà^Á^{ [ç^å Á q] \* Ásaký gā læq[ \^Á@æqi { ^\Áq Á×¢d æ& xók@ Aj, qh^•Á\[ { Ás@ Áà^å| [&\ÈÁ V@ Á@æqi { ^\Á, [č|å Áà^Á; a& aAi, ç^\Ás@ Aj, qh^Á • q] \* Ásakásæk \* ^A; [č] č å Á& aa) ^ ÈEQÁs@ Aj, qh^Áa; Á æà aai (^Át, Áa ]č ||^å Á; čÉšáný, [č|å Áà^Á&; cóh ç^|Áq Ás@é à [č|Åà^å Áq; Á^{ æqi, áŋ Á áč ĚÖ áç^\+, Á, [č] å Á& cóh@ Aj, qh^ÁsæÁ, æà ^å Á ]č ||^å Áq; čÉšáný, [č] å Áà^Á&; cóh ç^|Áq Ás@é à [č] Åà^å Áq; Á^{ æqi, áŋ Ás; ÉÖ áç^\+, Á, [č] å Á& cóh@ Aj, qh^ÁsæÁ, æà ^å Á ]^c, [Å • q] \* Ásq] \[] \;äsæ^Á; å^\;æs^\Á \* q] { ^} có
- •Á Úậh•Á, [č|åÁàhÁh{ [çhảÁà Áàæł\*hÁt Ás@A, ~Ë ãn Áæsajãc ÈÁ/@Á, ậh•Á, [č|åÁàhÁhč\*•håÊá, @¦hÁ, [••ãa|hÊá, lÁ ^çh}čæļĥÁ^{ [çhảÁt Ásajāch Ásajāch] &hå Áæháð & e chá æ)æth{ h} chábá Asajāc Át lÁàā] [•æhá

#### Installation of piles within the waterway

- •Á Ùơ^\|Á[&æɛ[¦Ájā/•Á[¦Á@Aj[}d[] di [] Áj[č|å/ás/Áş]• cæd|^å/áş] di Aísi di
- •Á Ô[}•d`&cāj\*Ájā^Á{[`}åæeāj}Á^^•c^{{ •Á5jÁs^å}[&\Ás[}•ã•o•Á;-Ás2[{ ][}^}o•KÁ
  - ■Á Phase 1Á Ás¦ā∥ā) \*Ájā^•Áājq Á[&\ÁājÁ&æa‡{Ájæe^¦Á

- . Á Ďæ&@Á,ā^Á,[č|å/ås^Á,áē&°åÁ¦[{ Ás@ Asiael\*^Áse)åÁ,`ó49,d[Á,|æ&&Á\*6];\*Áse4siael\*^Ё; ] \* & \*Áse4a)^ĔADEÁ å¦ā|Áā\*Á; [č] & \*áAá;}d[ Áse4siael\*^Á,[č] å Áseecce&@Át[Ás@ Á;ā^Á •ā] \* Áse4@|{ ^cÁāccā];\*ÉV@ Ási¦ā|Áā\*Á;[č|åÁ •&¦^, Ás@ Á;ā^Áşid[ Ás@ Ási^å|[&、Át[Áse4sia^] c@4;-Á] Át[Ásea][čo4s@^^Á; ^c^+EÅ
- •Á Phase 2Á Á@æ{ { ^¦∄,\*Á, ∄^•Á{ Á^~`•æ/ŧ Á&æ{{ Á æe^¦Á
  - . Á V@ Ájā^•Áæ¢ Á@eŧ { ^\^å Áç •āj \* Á∞Á HEÁt[}}^Á, ^ā @DÁt[Á^~ •a¢HÉRP æţ { ^\āj \* Áj 4∱•Á,[č |å Áæà ^Á ]|æ&^Áæ¢Á^æe oÁj}^A&eo áj }^Å&eớ \f&ilājā \* Áj 4∱a P ÈÃQA & fæb; dã&aj æstå Ás@eæcÁ æ&@ájā A^Á,[č |å Áå^Á@eæt { ^\^å Á -{ \f&æa[č oft]}^Át aj č AfQæa[č oft∓€Á@ano Ájão@k@e Á@eæt { ^\Ájão@ajÁj}^A {ájč c^DDÁQ[ \fA æ&@ájā ArÁs@ex Á æ&cãçãc ÁarÁa]^[Át 4,8&` \fác^Aáa] ~•Á; ç^\f&eÅ]^ å å (4,4) ^ {ājč c^DDÁQ[ \fA æ&@ájā ArÁs@ex A
- •Á Phase 3Á Á&č ccậ \* ÉÁ ^ | åậ \* Áse) åÁ | č \* \* ậ \* Á Á Á Á ãc @Ás [ } & < c ^ Á
  - . Á V@ Á: </ ( ` |å,á;@) } Ás^ /&` CÊ; ^ |å^å,ée; å,i ` \*\*^å,i ãc@/&[ } & ^ ` \*\* ^ å

#### Construction of the bridge, gangway and pontoon

- •Á Qtd a8æec Ájácaj\* Áse) å Áj |æ&c{ ^} ofa, -Á&[ { ] [ } ^ } or Áj, -Ás@c Áj, ^ Å @eet-Áj [ ` |å Ása ^ Ásæet læt å Áj, |æ&c{ ^} ofa + ásæfsa æt\* ^ Á { [ ` } c\* å Áslæ) å Áj |æ&c{ ^} ofa + ásæfsæ æt\* ^ Á { [ ` ] c\* å Áslæ) å Åj |æ&c{ } as a fa \* ásæfsæ æt\* ^ Å } å \* |æ \* Åsæet [ Å } çā [ ] { ^} æet Åsæt [ å å å Å \* ]æ \* Åsæet [ Å ] çā [ ] { ^} æet Åsæt [ å å å Å \* ]æ \* Åsæt [ Å ] å å Åsæt [ Å ] å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å Åsæt [ Å ] å Åsæt [ Å ] å å Åsæt [ Å ] å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å Åsæt [ Å ] å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å Åsæt [ Å ] å å Åsæt [ Å ] å Åsæt [ Å ] å å Åsæt [ Å ] å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å Åsæt [ Å ] å Åsæt [ Å ] å Åsæt [ Å ] å å Åsæt [ Å ] å åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å åsæt [ Å ] å å Åsæt [ Å ] å å Åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å å Åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å å Åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] åsæt [ Å ] å åsæt [ Å ] åsæt [ Å ] å åsæt [ Å ] å åsæt [ Å ] åsæt
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#### Landside infrastructure

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#### Site clean-up and opening of the new wharf

- ■Á V@^Ááã~Á,[č|åÁà^Á&|^aa)^åÁ]Áa)åÁ^•d[¦^åÁa[Áão•Á,¦^çã[č•Ácaaz^Á
- A Ô[ } d[ | Áæ) å Áe^{ ] [ ¦æ ć Á d č & č ¦^ Á [ č | å Áa ^ Á^{ [ ç^ å Á
- A ODEA az c Áse ^ • { ^} oÁ, -Ás@ Á d` & c` | ^ Á, [` |å Ás ^ Ásæ l ð å Á,` oÁt Ásæ ) ^ Á ã \ Áse ) ^ Á áz \ Áse ) ^ Á áz \ Áse ) ^ Á az c Áse ) ^ Á az c Áse ) ^ Á az c Áse ) ^ Á az c Áse ) ^ Á az c Áse ) ^ Á az c Áse ) ^ Á az c Áse ) ^ Áse c ás à A c č Áse ) ^ Áse c ás à A c č Áse ) ^ Áse c ás à A c č Áse ) ^ Áse c ás à A c č Áse ) ^ Áse c ás à A c č Áse ) ^ Áse c ás à A c č Áse ) ^ Áse c ás à A c č Áse ) ^ Áse c ás à A c č Áse ) ^ Áse c ás à A c č ás à A c č ás à A c č ás à A c č ás à A c č áse ) ^ Áse c ás à A c č ás à A c č áse ) ^ Áse c ás à A c č áse ) ^ Áse c áse ) ^ Áse c ás à A c č áse ) ^ Áse c áse ) ^ Áse c áse ) ^ Áse c áse ) ^ A c č ć áse ) ^ A c č ése ) ^ A c č ése ) ^ A c č ć áse ) ^ A c č ć áse ) ^ A c č ć ć ć ć ć ć ć c
- •Á CĘĮÁ&{}•d`&cąį}Á^}&āj\*ĐQ; astašj\*ÁsejaÁ\*ã\*}az\*^Á;[č|åÁsh^Á^{{[c]}}Åsh^Á\*[[]^}Ás@^Á; @set-Ás[Ás@^Ájča|38EA

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Ü[zeå•Áe)åÁTzeläãā[^Á;laa)Á[Ászell^Á; Ós@Á;l[][•æ4A;ç^lÁsz4;^lājåÁ;Ásze]`ÓAšacÁ;[}œÁÇ,^zez@lÁ;^l{äcā}\*DÁ •czelcā]\*Á§Ás@Á^&[}åÁ`zelc\*l4;ÁGEFÏÈÁ

Ô[}•d`&aā[}Á,[`|åÁ,[¦{ ae||^Áa\^Áa[ãc^åÁ[Áa^ç, ^^}Áo@Á[||[,ā]\*Áaa)åæbåÁ,[¦\Áaā[^•kÁ



- ■Á Ïæ{Á{Â]{ÁT[}åæîÁ{{ÁQ}ããæîÁ
- ■Á Ìæ{Á{[ÁF]}{ÂÛæč¦åæÊÈĂ

Y [ ¦\Áse&cāçāā?\•Á,`orāå^Á,-Árcæ) 忦åÁ@(` ¦•Á, [ ` |åÁà^Á^´ ă^å/\$jÁ, ¦å^¦Å', Ákæk (ákæ¦^Á, ` of), ðjāj \*Áse&cāçãa?\•Áæ) å/\$jd &&æe\*Á |ãorÁ¦[{ Ás@/Ásæł\*^Ё[[ ` } c^åÁ&¦æ)^Êåš`^Á{[Á^´ ` ð^{ ^} ð^{ ^} ð^{ cā|[Á æ\*¦ÈÁCBCāçãa?\•Ás@æsÁæ^Áð ^|^Á[Ás^Á ` } å^¦cæ\^}Á,`orāå^Á,-Árcæ) åæ}åÅ, [ ¦\Á@(` ¦•Áse^Á,` dj3^åÁs^|[ , KÁ

#### Intricate lifting activities

- •Á V@:\^Á, [`|åÅå^Áæà[`óÆ=€Áşid a38æe\*Á㜠Á@@[`\*@[` %@ ´Á&[} •d` &caţi}Á,^\aţi åÈÁQid a38æe\*Áãæ3; \*Áæ) åÁ, |æ&^{ ^}óÁ [~Á&[{][}^)œ Á; A&@ Á; @æb-Á; [`|åÅà^Á&æb;lātaÁ; čÁ •ā] \*Áææ\*^E; [`} c\*åÁ&;æ)^ÈV@ãr Áæ&æãçãc Á,^^å•ÁţiÁa^Á `}å^\cæb.^}ák` ¦ā] \*Á&æaţ(Á\*)çā[] { ^} cæþÁ&[} åããt] •ÁQicata[Á; æe\*\Áæ) åÁ; ājā; æþÁ; ājå DĚÁ

#### **Piling activities**

- •Á Úậảj\*Á, [¦\Ác] 38æa‡î^Áæà ^•Áæd[`}åÁs@^^Á, ^^\•Át[ÁS[{]|^crÁçæà[`óÁãc?^}Å, ât[œa‡DÁt], æåáks@Á à^\*ā]}āj\*Át, Ás@ ÁS[}•d`&cāt]}Á,^¦āt àÉÁUátāj\*Á, [¦\•Áæb^Á@at@`A´][¦æå38ÈÁV@:\^Át, æ∂Ás^Á[ā^Át][{Á @æt; { ^¦āj\*Ásej åÁsliajlaj\*Át, ÁscAt, āt^Át[¦Áset]`}åÁT=CÁt, āj`cr•Át; lÁ[Ásej åÁs@}Å,[A`à•cæj cãætÁ,[ã^Át[¦Át=EÁ { āj`cr•Át; lÁt, [¦^ÈĂ
- Ù\*{{ æ^^/4; ~Á@{ \* |•/4; ~Á; ãt @zÁ; [ |\•Á; |Á; ājā; \* Ás¦āj|ā; \* Áse8uāçãaā\*• kÁ
- ■Á Ù^č]Á{¦Á&¦á∥ð)\*Á¦[{Á∓Gæ¢;Á{Á∓æ¢;Á
- •Á Ölalla)\*Á,-Á,a^•Á'[{ÁFaa;Á;Âaa;Á
- ■Á Úæ&∖Á]Á\*^}^¦æ∥^Âiæ{Á§Áiæ{ÈĂ
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#### **Plant and equipment**

V@^Á^``ā]{^}oÁg[Áa^Á •^åÁş[`|åÁa^Á&[}-ā{{ ^å/ás`¦ā]\*Ás@^Á&[}•d`&caj;}Aj|aa}}āj\*Áj![&^••ÈÁ/^]a&aa4Áj|aa)oÁsajåÁ ^``ā]{^}oÁjá^|^Ág[Áa^Á •^å/ás`¦ā]\*Á&[}•d`&caj;}Áj[`|å/áaj&]čå^kÁ

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#### Earthworks

V@?Á,¦[][•æ‡Á,[č|åÁ5jç[|ç^Áo@?Á[||[,ā]\*Á(ā][¦Áæa)å•ãå^Á,[¦\•KÁ

- ÁÅ ■Á Ùãa∿Áj¦^]ælæaāj}Á
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 $\label{eq:constraint} V@\dot{A} + [] [\bullet a a h \& [ ^ \bullet \dot{A} [ o \dot{A} ^ \check{\ } \check{\ } \check{a} ^ \dot{A} \& ) ^ \dot{A} (a b ) + \dot{A} (a ) +$ 

#### Source and quantity of materials

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#### Traffic management and access

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#### **1.3 Legislative context**

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#### Environment Protection and Biodiversity Conservation Act 1999 Á

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#### Sydney Harbour Federation Trust Act 2001

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#### Native Title Act 1993

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#### Environmental Planning and Assessment Act 1974

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Ù^&cāt}}ÁFFGÁt,-Ás@ ÁOBBoAf;¦[çãa^•Áx@enzekab) Áxe8cãçãč Ás@enzekab) Ása^Á&ed;lðrå Aft`oÁ, ão@;`oKsa^ç^|[]{ ^}oÁsa (} •^}oÁsa (Ata^)^Á q[Á@enç^ÁxaÁrði}ãaBeab) oÁr~~&oAft}Ás@ Ár}çãa[]{ ^}dÓb}çãa[]{ ^}cab/AQ] æ8cAÙcæer{ ^}oÁscÓuDAft`•oÁsa Afti(^]æ^åÁ æ)åÁsab];¦[çæAfa^Ár[`\*@Á4:[{ Áx@ ÁTējārc°¦Át[¦ÁÚ|æa}}āj\*Ásab)åÁD}çãa[]{ { ^}dÉA

#### Heritage Act 1977

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#### National Parks and Wildlife Act 1974

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W) å^¦Á^&caį} JOEĄ Á@ÁÞÚY ÁDBOÁDEa[¦ã jā ædĄ àb/&orÁQa) åÁ ãor•DĄ č•ó/a^Á/][¦c^å/Aţ Ás@ ÁÖā^&ct ¦EŐ^}^¦ædÁ Q [, ÁÔ@A\*ÁÒ¢^&č cãç^Dฎ Áœ ÁU~ã&A Á ÁÒ}çā[]{ { ^} ó/aa) åÁ?^¦ãæ² ^ÁQUÒPDÁ ão@já Áœ Á^æe[}ææi/^Áaj ^ÁÇ}|^••/ãaÁ @æ Á¦^çājč•|^Áa^^}Á^&[¦å^å/aa) åÁčà{ ãoc^å/At ÁOEPQT ÙDÀÚ/^}ædoa?•Át ÁÅFFÊEEEÁt[¦Áaa) Ábjåãçãačæk/aa) åÁÅCOÊEEEÁ {|ÁæA&[¦][¦æaāt]}Át æő Áaa]]|^Át[¦Á\*æ&@Atàb/&oA^][ó/a][¦c^åÈĂ

## Ü^|^çæ); ó%&[}•^¦çæaā[}}Áj[|&&^Á

Q ÁÐ EEL Á © ÁÕ[ç^¦}{ ^} o ÁÐEL& @zer & aqu Áu ~ 38 ^ Át, Á to @ Á @ } ÁP ÙY ÁÖ ^] æt d ^} o Át, ÁÔ[{ { ^ \ &^ Á ^ \ ^ Á } \* æt ^ å Át Á ] \^] æt^ Á æt Á [ ] \* ^ \ ; cæat } ÁT æ) æt ^{ { ^} o Áu] æj Á ÇÔT ÚDÁY; \ Á © ÁÔ[ } ç 38 o ÁŬ ` å å ä \* • Áæj å ÁÜ ^{ æt j \* A \* } ÁÔ[ & at [ Á @ |æ) å É ÁQ Ár æt ^ Á ^ æt É Õ[ å å ^ } ÁT æ& æt Å [ \* æ) Á æt Å } \* æt ^ å Át Át Á \ / A \* æt ^ å Át [ Å : A \* æt Å \* æt å \* æt Å \* æt å \* æt Å \* æt å \* æt Å \* æt å \* æt å \* æt Å

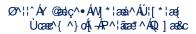
Q ÁGEF€ÁÙ^ å}^^ ÁP æsà[`¦ÁØ^å^¦ææãį}Á/¦`•oÁ&[{ { ã•ãį}}^åÁæÁT æ)æt^{ ^}oÁÚ|æ)Á[¦ÁÔ[&\æti[[ÁQ|æ)åÈÁV@Á Tæ)æt^{ ^}oÁÚ|æ)Á§ &|`å^•Á&[}•^¦çææãį}Á,[|&&& A^|ææ3]\*Át[Á@!ãæt^^A(;}ÁœAát]æ;)áÈV@•^Áæ}^Ás¦[\^}Á§ d[Á \*^}^¦æ¢Á,[|&&& É&e Á, ^||Áæ Á]^&ãã&A,[|&& A^|ææ3]\*Át[Áæs&@æ\*[|[\*^ÈV@[•^Á^|^çæ)ó4t[ÁœátA,![b\*&ó4e^A å^cæã4^åÅs^|[,ÈÁ

No.	Policies	Supporting policies
FÁ	V@Á⊃æaā[}æakÁæ)åÁÔ[{{[}},^æ¢c@Á@¦ãæe*^Áçæa;*^•Áæ)åÁ ][c^}cãækÁY[¦ åÁP^¦ãæe*^Áçæa;*^•Á;4Ô[&\æa[[Á® æ)åÁæ)åÁæ)åÁæ ^ ^{^}s^Ace*A&@Aaæe*ãA{[¦Á&[}•^¦çā]*Áæ)åÁ(æ)æ*ä]*Ás@Áæà¦&&Á [-Ás@Á]æ&^Á	æbĂ Ô[}•ãā^¦Áo@Áā[]æ&oA[-Áaa)^Áaæ&cā[}Á [-Áo@Á¤æaā[}æhÁaa)åÁ Ô[{{[}, ^æho@A?^¦ãæe*^Áçæaa*^•Á [-Áo@Á] æ&^bÁá
		à Ă W ^ Ás@ ÁSignificant Impact Guidelines 1.1 and 1.2, Department of Environment and Heritage, May 2006Át Áæ • ā مُهْعَ Á ¦^æ&@] * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى إ^ç^ الْمَرْ الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْ
GÁ	Ôæł¦^ Á; `oko@ Á; č¦^ Á&[}•^¦çææā]} Áæjå Áæåæå ææā]; A á, Áko@ Áæà¦ & A [-Áko@ Á; æ&^ ÁşiÁæ&&[¦åæ); &^A;ãc@ko@ Á;¦āj&a] ^• A á, Áko@ ÁCE•dæa#aA ©ÔUTUÙÁO`¦¦æAÔ@eedc¦⊞EXÁ	æbĂ Ò}•`¦^Ás@ ÁÓ`¦¦æAÔ@eetor¦ÁarÁ [à•^¦ç^åA\$ajÁse‡ Ářč'!^Á,[!\•Á &æe¦ā∿åAî,`oAî,}As@ Áar æajåDéA
ÍÁ	Y@}Á&[}•ãā^¦āj*Áj¦[][•憕Á{¦Á&@enj*^Ásaj憰•^Áj[ơ};œãedÁ ā[]æ∨Á;}Á@Áæaj*ãa ^ÁsajåÁsjœaj*ãa ^Á@iłãæ#^Áşæ‡`^•Á;Á@Á ã* æ)åÈÉY@i^ç^¦Áj¦[][•憕Áse^Áá^Aj^Á{á[j]æ&oA}Á@iłãæ#^Á çætj`^•ÉseefP^¦ãæ#^ÁQ]æ&oAUcæer{{ ^}o4,ã]Ása^Áj¦^]æ^åÉseejåÁ ,@i'^Á^`čã^åÁ^~}i!^åÁ`}å^iÁceÁOUÓOÁOB&oÁ	åÈÁ P^¦ãaæt*^ÁQ;]æ&oÁÙcææ^{^}œ, ÁjáļÁ à^Áj¦^]æ{^å&î^á±eá/^ ^çæ}oÁ @°¦ãaæt*^Áj¦[-^•∙āj}æ†ÈÁÁ Á
ΪÁ	T^æe*`¦^∙ÁţĨÁ`]*¦æå^Áàĭā¦åāj*•Áa)åÁrd`&cĭ¦^•ÁţĨÁæ&@a∿ç^ÁÓÔOZÁ &[{] ãaa)&^Áa)åÁţ^^oÁUPÙÁræa)åæå•Áæ∀ÁţÁţájā[ãrÁá@A ¦^{[çæ4Á]¦Áæåæ];œæaĵ}}Áţ~Ás@Ár¢ãrœ]*Á?ä}ã&æa)óÁæà¦ã&Á	Á

Table 1 Ü^|^ça) o∱[|3&a) • Á¦[{ÂÛPØVÁTa) a≛ ^{ ^} A∫|a) ÁÇGEF€DÁ



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No.	Policies	Supporting policies
ÌÁ	Ò}•`¦^Ás@eenÁee)^Á,^, Ás`ā¦åäj*•ÉArd`&c`¦^•ÉAes8ajãa?•Á;¦Á&@ee)*^Á æh^Ár^{]æc@ca8kÁt[Á;¦Ár}@ee)&^Ás@A@¦ãaæ*^Áçæq*^•Á;~Ás@Á ] æ&^Á	æbĂ Y @ ¦^Á,^, Áa`ā¦åā),*●ÉA(d`&c'¦^●Á æ)åÁæ&ajānā?●Áed^Áedj]¦[]¦ãaee^Áo@ãlÁ å^●ãt}Á;`●dA
		■Áà^Á^{ { ] ææ@ cã&Át[Áx@ Á@ ¦ãæ≇ ^Á çætĭ^•Át_Áx@ Ási  æ) å Ê&@ Á&@eeææc^¦Á [ Áx@ Áj æcã&ĭ  æ Áj ¦^&āj &oÁsej å Á ^¢ã cāj *Ásĭājåāj *•Ásej å Áã¢cč ¦^•Ásj Áx@ Á çã&āj ãc Ásej å Áx@ ãlÁ^^ccāj *LÁ
		■Áæ••ãroý, ãno¢ko@ Á\$j, c^¦]¦^cæaāj} /á, -Á @~¦ãæz*^Ási`å¦å3j*•Á;¦Áã¢c`¦^•Ás@æaÁ @æç^Á;¦^çā[`• ^Ási^^}Á^{{ [ç^åLÁ
		■Á¦^cæaā)Ás@Á5)å`•dãadaÁ&&ad^Áaa)åÁ[¦{Á [-Á∿¢ārcā)*Ásìšalåāj*•Á5)Ás@Á;asbānā[^Á ]¦^&ā)&daÃ
		●Á@æç^Áæ4á[à`●Ó&&@esta&c*¦Áæg)åÁjææ3jæá ājÁ^^]āj*Ájã@kb@Á[¦{ ^¦Á§jå`●dãædÁ ●^ccāj*Á§jÁj@a&@kb@^Áest^Á[&æes^åÈÁ
FÍ Á	Ü^&{*}ā*^Áæ)åÁ^cæa3jÁ*ã}ãa&æ)oÁşã?,•Át[ÉÅ+[{Áæ)åÁ;ãc@3jÁc@A ã* æ)åÁ5jÁão-Á@esà[`¦Á^ccā]*LÁj^\{ãcā]*Á>æ^Á^&{*}āãa]}Áæ)åÁ	&ÄÁ Ô[}•ãā^¦Áv@Á,[♂}āæa¢Káį]æ&oAí,Á _ [¦\•Áį}KÁ
	ĝi c^¦]¦^œaa‡i}∕ki,-Åa` ‡låĝi* •Ê4aĝiå•&æġi^Á^aæči^•Ê4aĝiå/&¦aĝi^•ÊA	■ÁCB&&^●●Á[Á:ã]}ãa3&a)okçaa)cæ≛^Á][ã]c●Á [}Ác@/Ãsa aa)åLÁsa)åÁ
		=ÁXār, •Á(-Áo@Áar aa) åÁ¦[{Áo@Á, aae^¦Á aa) åÁ`¦¦[`}åāj*Á(@;¦^ āj∧•ÈÁÁ
FÎ Á	Ú¦[c^&cAæy)åÁ&[}•^¦ç^Áæq Áæd&@æe^[ [*a&æqA^{ æng}•Át}ÁÔ[&\æq[[Á Qe æn)åÁ	à ÈÁ W•^Áse&@ee*[ [*38æ¢Á^}•ãñaçãc Á {æ}•Á¦[{Áx@ ÁÔ[}•^¦çæaā]}Á Tæ)æ*^{ ^}ơÅ/ æ)Áse Áse** ĭãa^Á ,@}Á, æ}}3;*Á,[¦\•Á]}Ás@Á ã- æ)åÈÁ
G€Á	Ò}&[`¦æ*^⁄j,`à æk/æ&&^∙•∕k[/ko@/æ æ)åÁ	æbĂ Ò}&[覿≛^Áæ)åÁą[]¦[ç^ÁA¦¦^Á ●^¦ça&^●Á[Ác@Á≣ æ)åLÁÁ
		& EÁ W ⊧^ Áoc@ Á&[}d[ Á; Áaa&& ^•• Á(f Áaa) å Á c@[** @ Áoc@ Á ãc^ ÁO * Á^cæaa) aj * Á Ô[& æaa[[Áoc]aa) å ÁY @ æa-Aaae Áoc@ Á { æaaj Áj[aj cA[-Á*}d * DÁv(f Áoc]] Á aj c*¦]¦^ cÁoc@ Áoc! ãaæ* ^ Áoçæa‡* ^• Áj - Á c@ Áj]æ&^ EÁ
<b>GFÁ</b>	OBB&A∿••Át[Ánc@/Áas aa)åÁasÁt[Ána^Á¦¦ā[a⇔áāîÁna^Á∧¦¦^Bo&@ea+ov- Á aa)åÁniaa)•][loÁjãnc@bjÁÔ[&\aae[[Áno aa)åÁasÁt[Ána^Á¦¦ā[a⇔áāîÁ ]^å^•dãaa)Á	æbĂ Ú¦[çãã^ÁæbÁ^*č æbÁ^¦¦^Á^¦ç3&^Á¢[Á c@?Áãr æ)åÊĂ∙ē]*Áeób&[{àē]æsā4}∱,Á ]čà 3&Áob}å∱,¦ãçæscÁr^¦ç3&^•DĂ
GGÁ	Q,] ^{ ^} ơ¼ ^æĕ ¦^• Á⊈ Á@ ]Á ^&č ¦^ÁÔ[&\æa[[ÁQe æ)å Áset ænang • ơÁ c@ -oĐẤçæ)å ænapäa {Áset)å Á‡ c@ ¦Ásiāna č ¦à æ)&^• Á	&ÈÁ Ô[}•ãâ^¦Á§j•cæqlææāţ}Áţ-Á&l[•^åÁ &ã& ãÁ∞l^çãaţ}ÁţÁ[4,[]ãqt¦Á •ãt}ãã&ag)óAs ăåãj*•ÁæjåÁ c@q¦[`* @æd^•Áţ}Ác@/Áarjag)åÈÁ
I FÁ	Ò¢ãrcāj*Áj@eel-æet^ÁasiÁtįÁa^Á^œeanj^åÁae)åÁ^`∙^åÁj@el^ç^lÁ ][••ãa ^Á	æbĂ Ò¢ãrcāj*Áj @eet-æt^ÁsarÁtjÁsa^Á ¦^cæaāj^åÅeetjåÁn`∙^åÁj@e'^Á ]¦æ&ca&æaai ^Éttãp^}Ás@Áj@•&&ædÁ ¦^``ãl^{ ^}orAtjÁsgor}å^åÁ*•^LÁ
		à ĐÁ Ò ¢ã c3) * Á @et ç^• Á æ Át Á æ át á d[ Áeð) å Ár¢ c^} å^å Áeð) å Å, ^ Á g @et ç^• Á æ Át A^ È • cæna) ã @ å Á g @ l^ Ál [{ ^ l Á @et ç^• Ár¢ ã c^ à ĐÁ





## 1.4 Authorship and acknowledgement

Á

V@&rÁ^][¦oÁ, ærÁ, ¦ãoc^}Ásô^ÁÜÚÙÁ?^¦ãoz#^ÁTæ); æ\*^¦ÁÖ^à[¦æ@%a2ætājæ4,ão@%ae+ãræa); &^Á¦[{ÁÜÚÙÁÙ^}āt¦ÁÕ@ÙÁ OEjæ4^•oÆPæt{ãaÁSætāt[ãÈV@A^][¦oÁ, ærÁ^çã?, ^åÁsô^ÁÜÚÙÁÙ^}āt¦ÁÔ¢^&`cãç^ÁÁÔ}çãt[}{ ^}o%ae); åÁ?^¦ãoz#^ÁÔ¦ājÁ Yājlãet{•ÈÁ

 $V @ \dot{A} U \dot{U} \dot{A} a = \dot{A$ 

Table 2 OB& } [	, ^å*^{ ^}♂Á
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Name	Position	Organisation
Úæĭ  ÁÓ æãÁ	Ù^}ā[¦ÁÖ^∙ā"}ÁTaa)ae"^¦Á	Pæ}∙^}ÁŸ`}&\^}Á
Ú^&\¦ÁT æ}*^ •Á	ÜÒØÁÚ¦[b^&oATæ)æ*^¦Á	ÜÚÙÁ
Sæda Á0#[&@¦&@Á	ÜÒØÁÚ¦[b∿&oÁTæ)æ*^¦Á	ÜÚÙÁ
Óæ¦^ ÁÕ`} c@∿¦Á	Ù^}āį¦ÁÔč 覿‡Á??^¦ãaæ≛^ÁO2åçãa[¦Á	ÜT ÙÁ

Á





# GÁ Œa[¦ãtājæ‡Á@\¦ãuæt^Á

#### 2.1 Local environment

## Õ^[|[\*^ Áæ) å Á [ã• Á

 $\begin{array}{l} \forall @ \hat{A} U \check{c} & a^{A} \Delta E^{A} & a & A^{A} & a & A^{A} & a & a^{A} &$ 

### V[][\*¦æ];@Áæ);åÁ@å¦[|[\*^Á

Ô[&\æq[[Á@[æ]åÁārÁæÁ[&\^Áar[æ]ååÁrãčæe\*åÁ9jÁæÁ @|c\*¦^åÁ[&ææa]}}Ájão@ÁY[[|, &&@A,^}]ð]•`|æÁq[Á@A,[¦c@Á Óã&@¦[ç^Á,^}ð]ð]•`|æÁq[Á@A[`c@Á\*ærdÉÖ|`{{[^}^Áq[Ác@A,0^4]åÅÖ|^^}, &&@ÁV[[], &&@Á\[]ð]oÁq[Ác@A,[¦c@Á\*ærdÉÁV@A ã\*|æ)åÁāær^|~ÁarÁ\*¢c\*}•ãç^|[]^åÁæ}åÁ\*`;![`}å^åÁa`ÁôZat@?Á,[]`|æe\*åÁ&[{{ ^!&&æ4Ás}åÁ^•ãa^}cædÉÁ @ÁarÁær[Á]&æe\*åÁsjÁæás`•^Á,æe\*;, æÁjão@Á^;;?\*E%&æ\*[Á;^ã@e\*;•ÁsajåÁ,|^æ\*;^Á&;æoÁse]Á,æ•ð]\*ÁsaÁ ;^\*`;æÁsæ?ãÆÁ

#### Ø[[¦æÁse);åÁæě}æÁ

V@^Á,`¦][•^Á;Á&@^Á{||[\_]ā]\*Á`{{æ}^ÁseÁt[Á,¦[çãe^Áse)Áse]Áseäta]}Á;Á&@Ac]^•Á;ÁA(¦¦æakee)åÁæ}}æá,@&&@4;æá @æç¢Ása^^}Áseçæasjææi|^Át[ÁOEa[¦ātā]æaká,^[]|^ÁsejÁs@•Á;æ•ó4{¦Á`•c^}æ)&^Áse}åÁæ;á;æe^¦ãæaká^•[`¦&^•È4/@siÁ^&cat]}Á å[^•Á,[cá/^]|æ&^á([¦^Ása^cæat}^åá\*&[|[\*a&æakáčåa?•ÈÁ



 $T a = \frac{1}{2} \wedge A^{-1} [ + 8^{-1} A_{1} = - \frac{1}{2} +$ 

CEÁa&@ýcæða°c´Ąí-Á;æðā,^Á^•[`¦&^•Å;[`|åÁ@æç,^Áa^^}}Áæçæājaæà|^Át[Áæ)^[}^Ąt;}Áv@ /≦r|æ)åÉdaj&|`åã,\*Áār@ÉA;@||-ār@Á æ)åÅ;æe^¦Ásãå•ÈÁ/@/Ás[}^•Áse)åÁ^{{æi}}•Á; Ásejā;a\*já;æjá;æjá;Asejã;æjáÅ?\*}Å^8[ç^!^åÁ\[{ÁOEa[¦ãtā;æ]A\*áz?•Á?¢&æçæe\*åÅajÁ c@ÁÛ^å}^^Á^\*ā;}Á`\*\*^•cā;\*Áv@æxÁv@^Á;^!^Á;[`¦&^•Á;Á\[`åÁçEcer}à'![`ÅOEE[¦ãtā;æ]Á\*če\*(Å\*æ)Å@¢Áœã^•EÁ à[}^•ÁsejåÁe^^c@Á;Á{[{^Át;-Ás@Áce\*^¦Át;æ{{æ}•Á;æ^{Ase}A\*}Å\*^}Á\*•^åÁt¦ÅOEa[¦ãtā;æ]Á&[[c@aj\*ÉAt]}æ{^}cæaāt})ÉA [¦Á;c@¦Áat]]/{^}oÈA

## Ú¦^çā[`•Áæ)åÁ •^Áæ)åÁåã č¦àæ)&^Á



#### Ç¢4[{ÂÛPØVÁÔTÚÁG€F€KL€DDĂ

RPS

### Ù^} c@•ã Ą{ ↔} çã[ } { ^} c\$¢Á

 $V @ \hat{A} U \check{c} a^{A} (\Delta E^{A} a A \oplus A^{A}) A^{A} \phi c^{A} + a \check{c}^{A} (A \oplus A^{A}) A^{A}$ 

#### 2.2 Archaeological context

#### Ò c@; [\* ¦ æ]; @ & Á & [} c^¢ ¢ Á

 $\begin{aligned} Cl{p}cq{}^* @{A} | ask^a A_{a}^{c} <^{A} A_{a} & A_{a}^{c} | coe_{i} \} A_{a} & A_{a}^{c} coe_{i} \} A_{a} & Q_{i}^{c} A_{a}$ 

Q ÁrīJFÁÕ[ç^\}[¦ÁÚ@aja]Á^&[¦å^åÁs@eenÁ@ÁYæ)\*æjÁ;æ{^Á[¦ÁÔ[&\æe[[Á@|æ)åÁ;æ ÁYæ^Ae[æ®e2eAA@fæ;Á][oÁ}[,}Á @{, Ás@ Áæ|æ)åÁ;æ Á•^åÁs^Ás@ ÁYæ)\*æjÉå;c@\¦Ás@e)Á[¦Áãr@3]\*Áse)åÁj[••ãa|^Á[¦Á\*•3]\*Ás@ Ás¦^•Á[¦Ásæ)[^Á {æ}3]\*Á©2/~c&@\¦ÁGEFFKÏÍDEĂ

Tæ)^Á, Ás@ÁDEa[¦ātājæ¢Ks[{{`}ānā\*•Ánāçāj\*Áse[`}åÂÛ^å}^^Áœeaà[`¦Ē£sj&|`åāj\*Ás@ÁYæ)\*æ¢Á,[]`|æanā;}Ē4, ^!^Á å^çæreæe\*åÅå^Ás@Á,`cà!^æa\Á, Á{ æ¢|][¢ÆsjÁFÏÌ]Ĕ4QA5a Ás@2\*æ@Asea[`}åÁœekæ[`}åÁœekæ[`}å |ãçāj\*ÆsjÁÙ^å}^^ÁseeAs@eexAsa[^Á, ^!^Á;ä∥^åÆs`Ás@Æsäa^æe^ĔATæ)^Á, Ás@ÂÙ^å}^^Æs|æ)•Á, ^!^Æsa^&a¢AsejåÁ {[ç^åÁs[Á;c@!Áse4^æeÆsjc\*}åäj\*Ás[Á\*•&æaj^Ásc@Æsäa^æe^EA

## Ú¦^çāį`•|^Á^&[¦å^åÁŒa[¦ã†ājæ‡Áãz^•Á

CEÁ ^ æð & @ Á } å^ ¦ œð ^ } Á; -Ás@ ÁOEa [¦ðiðj æ¢ÁP^¦ãæð ^ ÁQ,-{¦{ æaā[} } ÁT æj æð ^{{ ^} oÅÛ^• c^{ { ÁQEP OT ÙDÁ;} ÁGI Á Ø^à¦˘æ'^ÁQEFÍ Ásj Áæ&&[¦åæj & ^Á, ão@ k@ AÖ`^AÖ aðði ^ } & ^ÁQ -{¦{ æaā[} } ÁT æj æð ^{{ ^} oÅU^• c^{ { ^} AQEP OT ÙDÁ;} ÁGI Á @^àlč å^ÁQEF æÁ, ^¦^AŐÖOCEZ[}^AÍ Î ÉÖæ cðj \*•ÁHGJJÎ I Át ÁHFFJÎ I Áæj å ÁÞ[¦c@ðj \*• GÍ GI Í Ì Át GÍ I I Í Ì ÉÁ, ão@ káká à`~^¦Á; -Á €Át ^d^• ÈÁ/@á Á ^æ&@Á^ç^æt^å Ás@æck@ ¦^Áæ^ÁGI Á;!^çãj \*•|^Á^&[¦å^åÁDEa[¦ð að A\* e Á ã @ðj Ás@•^Á &[[¦åðj ææ\*•ÁQ2ði č]^AGÊÁ/æði]^ÁHDĚÁ/@ Á ^æ&@Á\*•č]o ÉÁQ; ^cç^¦Ébetp[Á @], ^åÁs@æcÁ;[}^Á; Ás@ •^Á ãæ\*•Á &[[¦åðj ææ\*•ÁQ2ði č]^AGÊÁ/æði]^ÁHDĚÁ/@ Á ^æ&@Á\*•č]o ÉÁQ; ^cç^¦Ébetp[Á @], ^åÁs@æcÁ;[}^Á; Ás@ •^Á ã &[[¦åðj ææ\*•ÁÁ]} ÁÔ[&\æt[[Á@]æ] å ÈACE; Á] åæ\*\*åÁ ^æ&@Á\*•ð; \*Ás@ Áæti ^Á&[[¦åðj ææ\*•Á]}å^¦æa^} Á; AFFÁCE \* \* oÁGEFÎ Á ¦^č }}^åÁs@ Áæti ^Á^•č]o ÉÁ

Site type	Frequency	Per cent
Ù@~ c^¦Á,ão@4(ããå^})Á	ÌÁ	HÃÁ
Tãåå^}Á	ÎÁ	GĨĂÁ
Ù@\@^¦Á,ão@&a^][•ãaÁ	FÁ	IÃÁ
Óĭ¦ãæ‡ÉAi@∘ c^¦Ájão@Ajiaãåå^}Á	FÁ	IÃÁ
Ü[&\Á^}*¦æçāj*ÊA @e c^¦Ájão@Á å^][●ãnÁ	FÁ	IÃÁ
Ü[&\Á^}*¦æçā)*ÊA;@r ơ∖¦Ájão@Á {ããå^}Á	FÁ	IÃÁ
Tãåå^}ÊÁ⇔ec∿-æ&oÁ-&æec∿¦Á	FÁ	IÃÁ
Œ¢^Á*¦ājåāj*Á*¦[[ç^ÊÁ,æe^¦Á@; ^ÊÁ ,^∥Á	FÁ	IÃÁ
Ù@ &¦Á,ão@\$eedE4;@ &¦Á,ão@\$ea^][•ãA	FÁ	IÃÁ
Ù@ &¦Á ãoéééééééééééééééééééééééééééééééééééé	FÁ	IÃÁ
Tãåå^}ÊA(@\ c^\¦Ájãc@ÁaekoÁ	FÁ	IÃÁ
Ù@\ ơ\¦Á, ão@\$aałdĂn:@\ ơ\¦Á, ão@4(, ãa å^}Á	FÁ	IÃÁ

Table 3 Ù `{ { æ' Á; -Á0EP QT Ù ÂUãx^• Á; ãc@3; Áx@ Á ^ æ&@ å Á&[ [ ¦å ∄; æx^• Á



Site type	Frequency	Per cent
Total	24	100%

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## OE&@ee^[|[\*a&aek/Áaex^¦æeč¦^Á^ça?\_ Á

Õãç^}Ác@Á¢c^}•ãç^Á;aa)åÁ;[åãã&ææãi}Áæ)åÁ•^Á;—ÁÔ[&\æe[[Á@|æ)åÊ&c@¦^Áæ+^Á^, Áæ+&@æe'[|[\*ã&æ‡Á^][¦o•Á å^æ‡3;\*Á;ão@k@Æi|æ)åq×ÁDā[¦ãtā]æ‡Á@ěiq[¦^Á§jÁæ)^Á^æ‡A&^]c@ÈA/@Á{[||[,ā]\*Á^][¦o•Á&^æ‡Á;ão@ko@Áæ+&@æe'[|[\*^Á [Áæ+^æ=Á`¦¦[`}åā]\*ÁÔ[&\æe[[Á@|æ)åÊ#§j-{|¦{æeãi}}Á;-Á;@&&@A&æ)Á&^Á¢cdæ][|æe^åÁ{[Áæ]]]^Á{[Ác@AÛcčå^ÁDE^æ#Á

## Australian Archaeological Survey Consultants Pty Ltd, 1995. Archaeological Assessment of Callan Park and Yurulbin Point

 $\begin{array}{l} & \forall \mathfrak{Gr} \ \texttt{Ase} \bullet ^\bullet \bullet \cdot \{ \ ^ \} \ \texttt{G} \ \texttt{C} \ \texttt{C} \ \texttt{G} \ \texttt{C}$ 

20āç^Á, āā å^}Áā v•Á, ^!^Áāā^}cāð àÁ, ācēð àÁ, ācēð, Ácē Ácēda) ÁU[ā] ok sek a ab 20` ^ Át[Áx@ Á, [c\*] cā ab 4^}, Áā x• Át[Á à^Á, !^•^} ofð, Á } åā c` !à^ à Á'.[`} à ÉAUEEUÔÁ, [c\* à Áxeá, `{ à^!Á, -Á, að) a zt ^{ } & } of A^&[{ { ^} à azeāt} • Át] !Áx@ Á; āā à^} Á •āx• Éðð, &{` åā] \* Áxae!^ā] \* Á; ´ok sej Áxe&@eve[|[\* ab ad Ás]; ç^• cāt azeāt] } Át !āt !Át[Áxe) ^ Át č !^ Ab azeāt] • Át !Áx@ Á; āā à^} Á •āx• Éðð, &{` åā] \* Áxae!^ā] \* Á; `ok sej Áxe&@eve[|[\* ab ad Ás]; ç^• cāt azeāt] } Át !āt !Át[Áxe) ^ Át č !^ Ab azeāt] • Át !Áx@ Á; āā à^} Á •āx• Éðð, &{` åā] \* Áxae!^ā] \* Á; `ok sej Áxe&@eve[|[\* ab ad Ás]; ç^• cāt azeāt] } Át !āt !Át[Áxe] ^ Át č !^ Ab azeāt] • Át !Áx@ Á aze[ābā] \* Áb ^ ç^][] { ^} ok fa Áx@ Áç ab aj āc Át -Áx@ Á; āb a^} • Áse) à Á ^^ ( ] āt ab a^ A Ase At aze At aze At At a At aze At

#### Tanner Architects, 2011. Callan Park Conservation Management Plan, Volume 1

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## Ù^} c@•ã/Á ÁŒa[¦ã ã) ækkek&@æ^[∥[\*ã&ækka[} c^¢cÁ

V@Á^•č|œÁ;-Á;¦^çā[č•Áæ&&@ee^[|[\*ã&æa¢Aş;ç^•cātææaā;}•ÁşiÁc@ÁÚ[¦cÁRæa&\•[}Áæc^æaAč\*\*\*^•óAs@æa¢OEa[¦ätājæ4A;^[]|^Á \_@/Áşi@æajāc^åÁs@Áæ^æAşiÁc@Á;æ•óA;æåoÁ;•^Á;-ÁxáAæ}\*^Á;-Á[&æa|^Áæçæaajæai|^Á^•[č¦&^•Áşi&|čåāj\*Á@||-ãt@ÉAã;@ÉA



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## RPS

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#### 3.1 Broad historical context

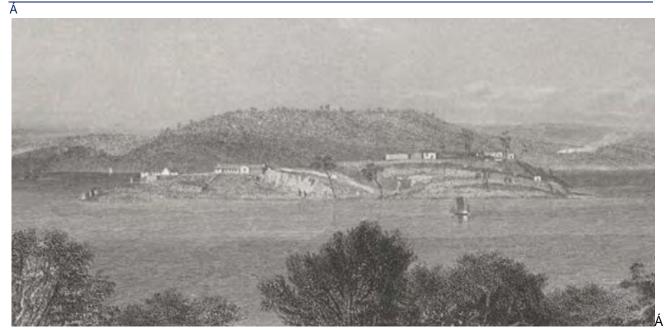
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- FÌÍ€ËFÌÏ€Á Á Øãc¦[^ÁÖ[&∖Áæ);åÁγ[¦\•@2]ÊÁ@3jÁsìĭā¦åãj\*Á
- FÌÏ€ËFÌÌ€Á Á Óã[[^|æáQ,å`•dãæ4ÁÛ&@[[|Á{[¦ÁÕã|•Áæ);åÁÜ^-{[¦{ æ[[¦^ A
- FÌÌ€ËFÌJ€ÁÁÁ Ù@ājàĭājååāj\*ÁsejåÁ^]æãiÁse&cañçãaã∿•LÁÙĭc@°¦|æ)åÁÖ[&∖Á
- FJJ€ËEJH€Á Á Ô[{{[},^æ¢@4xpæçæ¢4Ö[&\^æ¢åÁ
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- FJIÍËFJĨÍÁ ÓEā áñāā;}æ¢Á@ājà čājåāj\*ÁæjåÁ^]æālÁ^-āñĄ(-Á/Ёk]æ•Á`à{ækāj^•Áæ)åÁ⊳æç^Áå^•d[^^¦•ÁçÈÈÁ HMAS VoyagerÁæ)åÁHMAS VampireDÁ
- FJÎ Í ËFJJCÁ LÁN^¦ça&^Áæ) åÁ^~ão4, -ÁUà^¦[}Á&|æe•Á, -Á`à{æiāj^•Áæ) åÁ&[}•d`&cāti}Á, -ÁHMAS Success.Á Ö[&\^æ\åÁ&|[•^•ÁajÁFJJOEÁ, æ&@3j^¦^Á+[|åÁ, -Áæ) åÁæai[ĭo4\€Áaĭāda]\*•Áæ) åÁ^ç^¦æ4Å, @eelç^•Á æ^Áa^{{[|ã:@°åÁ
- GEEFË,¦^•^}ơÁ kểrâ}^^Á?æàà[`¦Áơ^å^¦æa‡i}Á/¦`•ơ£æ••`{^•Á&[}d[|Áį.4‰@Ášar|æa}åÁ{[||[,ā]\*Áæáå^&ææå^Áį.-Á ā]æ&cāçāĉ ÈÁ@|æ)åÁ^[]^}^åÁţiÁc@Á,`à|ã&ÁşiÁGEEÏÁ{[||[,ā]\*Á∿¢c^}•ãç^Á^{ ^åãæa‡i}Áœ)åÁ ¦^@æàāfãææa‡i}ÈÁ

## Ú¦ã[}Á

Q ÁRÌ HJÉÁ 㢠Ć Á, ¦ãr[}^\+ Á, ^\^Ásk|[`\*@ÓÁ'[{ Á¤[+-[|\Á@|aa) å Át[ÁÔ[& \æt[[Á@|aa) å ÈÁŠã ^Á, ^Aæa' ÁÕ[ææA@|aa) å ÉÁ • ^å Á ær ÁæÁ, |æ&^Á, Á@æå Áæai[`|Át[¦Á&[}çã&or Á āj & ^ÁRÌ Ge= ÉÉÔ[&\æt[[Á@|aa) å Á@æå Áæt]]^Á`]]|ã∿ Á, Áa) å• d[}^ÉÄ ]¦[çãa ā] \*Á∞ Á, ^] |^Áæ¦ãç^å Á&[}çã&or Á, ãr@Á, [|\ÈÁ\@^Â, ^\^Á&@æ\* ^å Á, ãr@Á&[}•d`&aa] \*Á∞ Á&[}çã&orÁ d[&\æå ] ār@Á%[[Á5] å`|\*^} & ^Ásk^î[} å Ás@ Á dã&oŕÕ[ç^¦}{ ^}oÁæaā]} +ÁÇÙ^å}^^ÁÕæ ^cc^Áæ) å Á¤^, ÁÙ[`c@ÁV æ†^•ÁOãç^¦œ\*^¦Á ā fÃÕ[åå^} ÁT æ&\^ÁŠ[\*æ) Á⊖€€JKFÍ DĚÁ





 $\begin{array}{l} \textbf{Plate 3} \ddot{O}^{\alpha} a \ddot{a} \dot{A}_{\gamma} & \dot{A}_{\gamma}$ 

V@ Áā•oÁsĭāpåāj\*Áj@ze•^Áį}ÁÔ[&\ze[[Á@(|ze)åÁq[[\Áj|ze3x^Ás^ç\_^}}ÁFÌHJÁze)åÁrÌIFÈÁVzeà|^Á.Á^o•ÁjĭoÁs@ Á &[}•dĭ&cāj}•Ášĭ¦āj\*Ás@žrÁj@ze•^KÁ

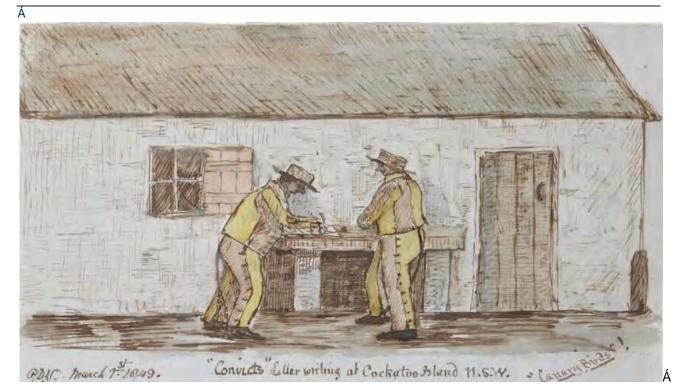
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FÌ I €ЁÌ I FÁ	Op.c^¦āj¦Áāncāj*Áj,-Áj,^••Á;@°åÉÁQ[•]ãnca‡Á,[ĚÁHÁ, cebåÉáseb&@Aj,ç^¦Ánca}∖ÉÉ\¢c^}•āj}Ág[Á, @eeb-ÉÁ cebååãnāj}a‡Á^ã:@cÁ;āj[•Á

#### Á

Ø| &čæaā} ) •Áşi Á @æaÁ, ¦æð^ Áşi ÁFÌ HJÁ, ![{] chả Ác@ Ár¢&æçæaā} ) Á, -Á ¦æaji Áā[ •Áşi ḍ Ác@ Ási^å¦[&k Á, -Ác@ Ær |æ)i å Át[ Á •q[ ¦^Ás@æ]i | Ás[ \* @Á'; æsi ÈZ/@ Á [ |\ Á; } Ác@ Á ā][ •Ási^\* æ)i Áşi ÁFÌ HJÊşi ãr@Á; āj ^Á ā][ •Ási[ 4] / å Åsi ÁFÌ I FÈZÖæ&@Á •a][ Á( ^æ ` ¦^å ÁGEÁ^ ^dý; ÈEJ Á( ^d^ • DÁ; ãa^Áse)i å ÁFÎ Á^^ dý; È Ï Á( ^d^ • Dás^] ] ÉÅi ãr@Á; ãtá ā][ •Áā]/ å Å; ãr@Á; @æafæi i FÈZÖæ&@Á •a][ Á( ^æ ` ¦^å ÁGEÁ^ ^dý; ÈEJ Á( ^d^ • DÁ; ãa^Áse)i å ÁFÎ Á^^ dý; È Ï Á( ^d^ • Dás^]] ÉÅi ãr@Á; ãtá Aā][ •Áā]/ å Å; ãr@Á; @æafæi i A •a][ Á( ^æ ` ¦^å ÁGEÁ^ ^dý; ÈEJ Á( ^d^ • DÁ; ãa^Áse)i å ÁFÎ Á^^ dý; È Ï Á( ^d^ • Dás^]] ÉÅi ãr@Á; ãtá Aā[[ •Áā]/ åÅ; âr@Á •a][ Á( ^æ ` ¦^å ÁGEÁ^ ^dý; æá ^ÉÅU ) & A ^ aa ^ à ÉŠc@ Á ā][ •Á][ c^&c å Ác@ Á ‡] æi A[ { á Ac - Dás^] ÉÅi aciá Áā[ •Áā]/ åÅ; ãr@Á; FÌ I €ÁÕ[ ç^\}] [ ¦ÁÕā]] • Á^] [ ¦c å Át Á `aa ^ à ÉŠc@ Á ǎ][ •Á] [ c^&c å Ác@ Á ā][ •Áæi à Ác@ Á, `, E[ ` } å Á^ &: i ất Á; Át[ [ å Á[ ` i & A FÌ I €ÁÕ[ ç^\}] [ ¦ÁÕā]] • Á^] [ ¦c å Át ÁŠ[ } å[ } Ác@ Á \* &&^• • Á; Ác@ Á ā][ •Áæi à Ác@ Á, `, E[ ` } å Á^ &: i ất Á; Át[ [ å Á[ ` i & A FÌ I €ÁÕ[ c^\}] [ ¦ÁÕā]] • Á^] [ ¦c å Áti ÁŠ[ } å[ } Ác@ Á \* &&\* • • Á; Ác@ Á ā][ •Áæi à Ás@ Á, `, E[ ` } å Á^ &: i ất Á; Át[ [ å Á[ ` i & A FÌ I €ÁÕ[ c^\}] [ ¦AÕā]] • Á^] [ ¦c å Áti ÁŠ[ } å[ } Ác@ Á \* &&\* • • Á \* A@A ā][ •Áæi à Ás@ Á, `, E[ ` } å Á^ &: i ất Á; Át[ [ å Á[ ` i & A fi ! Ác@ Ás[ [ [ ] ` ÈÕ[ |[ ] ãæi ÁÚ/ & a a Á ï æi Ai [ · A]] |ð å Át@æat a A [ i ] # Ác@ Á i æi ÉÕā]] • Áœat As c' a ` A c@ Át/^ Ati æi ^ Ati æi ^ Aée Á æi Át Á ~ ||Áæi [ Á ~ ||Áæi [ / å@ Á í æi Át] æi Á: Aj ` a ]æAee čat } ÈÕā]] • Á; à^^ ^ à ÊÉQ a •ā[ •Á, ^ \^Á, [ cÁs[ { ] | ^ c\*] Á\* ] æi å Á; ∂á @a ÁFÌ ( = ÁÇÙ/ å) ^ Æ æat ] ` Áơ/ à a ÉEE KFÌ DĚĂ









## V@•ÁØãc¦[^ÁÖ[&∖Á

V@狥o^{1} | [b%&o^{1}[ k‰ Á2āc: | [^ÁÖ[ &\ Å æ Á@ Á; ç^ \ @eĕ |ā] \* Á; -Á@ Á; æçæk/si ä ÁPT Ù ÁHerald Ás Á&[ } ç& co ÈáOÁ •`à•^``^} d^Á^] æā^å Áça å Ázi ä å A^ ; ç& as ági \* ÁÜ[ ^æk/A æçæk/A @g] • ĚÓ[ } ç& co Áct+ [ Ás`āo Ác@ ÁÒ} \* ā] ^^ !• of kaj å Á Ó |æ&\ •{ ã@ of A@] Æsi Åze •[ &ãæeāt] } Á ão éx @ Á2āc: | [^ÁÖ[ &\ Ê\$, @&A@, æ Ás`āo Áct Ázi Åo?} \* ā] ^^ !• of kaj å Á Ó |æ&\ •{ ã@ of A@] Æsi Åze •[ &ãæeāt] } Á ão éx @ Á2āc: | [^ÁÖ[ &\ Ê\$, @&A@, æ Ás`āo Áct Ázi Åo?} \* ā] ^^ !• of kaj å Á Ó |æ&\ •{ ã@ of A@] / Åsi Áze •[ &ãæeāt] } Á ão éx @ Á2āc: | [^ÁÖ] &\ Ê\$, @&A@, æ Ás`āo Áct Ázi [ ^ æAÔ} \* ] Åze Å àæ ^å Át] Ác@ ÁÚ[ !o { [` o@ÂU c æt ÁZæ&q: | ^ Ási ÁÒ} \* |æ] å ÈÁOEH Át æ&@t ^! ^ Ási Ác@ Á; [ !\ • @] Á æ Á c æt Át] ^ !æc å Á } œh FJ€FÁQÙ å } ^ Áz æa à [` ! ÁZO å^ !ææt] } Á/!` • of QEF€KFÌ ÉFJ DĚA



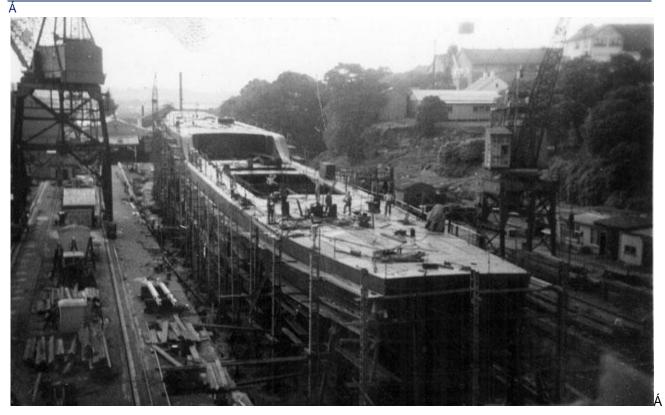


Plate 6 PT OÈÙÁX æ{ ]ã^^Á§ ÁØãc ¦[^ÁÖ[&\É&&ÈA

## Ò}åĄ[,~ÁÚ¦ã;[}Á,ÁÓ^\*ã]}ãj\*Ą[,~ÁQ}å`•dãæqÁæ)åÁÜ^-{;¦{ æ;[¦^ÂÙ&@?[|•Á

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Plate 7 Óã[ ^ |æÁ^, ∄ \* Á[ [ { Á&ÈÈÌ Ï €• ÁÇÔ[ č ¦ c∿• ˆ ÁÙ å } ^ ^ Á? æàà[ č ¦ ÁØ^å^¦æãã] } Á/¦č• dĎÁ



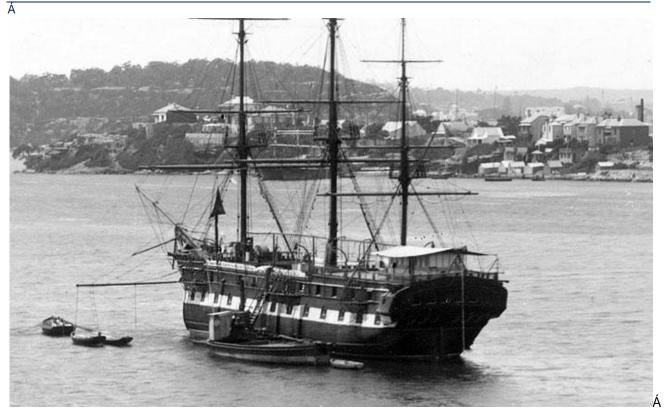


Plate 8 *HMS Vernon* { [[¦^å/ų ⊶ÁÔ[&\æa[[Á@|æ]åÉ&ÈÈÌÏ €ÁÇÔ[˘¦ơ∿•ˆÁÙ^å}^^Á?æàà[˘¦Áơ⁄\å^¦æaã[} } Á/¦˘•đĐĂ

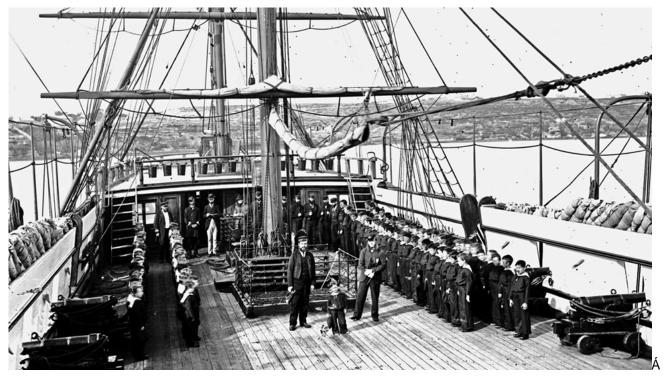


Plate 9 Ø[[ ó/‰¦ ǎ]|Áæà[ æ¦åÁs@/ ÁHMS Vernon É&Fì ï €• ÁÇÔ[ č ¦ c^• ^ ÁÖ38cā[ } æ' Á[ ÁÙ \* å} ^ DĚA

## Ü^č¦}Á§[Á∞áÚ¦ãa[}Á

Q[ ||[, ā] \* Áx@ Á∧{ [çæ‡Á, Áx@ ÁÓā][^|æÁ\*ā]•ÊÂÔ[&\æt[[Á@[æ] åÁ;} &^ Ázë æāj Áå^&æ{ ^Á@[ { ^Át[ Ásæå `|o∱, lǎr[}^!•Ê&@ă Á cãt ^Áb[ c@Áx] \* Åk@ Á [ { ^} ÈÅu ç^\¦ÁC€€Á, lãr[ } ^!•Êåu[ c@Áx@[ •^ Átj &æd &^ læt å Åæ Åk@ Á [ { ^} ÈÅu ç^\¦ÁC€€Á, lãr[ } ^!•Êåu[ c@Áx@[ •^ Átj &æd &^ læt å Åæ Åk@ Á [ { ^} Åk]æ • Á A { ^d[] [ Ĩaæ} Áşæ læj o +Áæj å Åx@ Á; ç^\¦-[] Ál[ { ÄÖæljã] \* @ !• AŐāt[ IÉÅ, ^\^Ász&&[ { [ åæze åÁ; } Áx@ Áz [ æ] æ] æ] Åx@ Áz [ A



ੁ^!^Á@Ų`•^åÆÿÁs@Á[;¦{^¦Æs[}ç38oÆv||•ÊÅ,@≱roÁ,[{^}Å,^¦^Á@Ų`•^åÆÿÁseA,^`,Æs|[&\Á,^æAs@Æs[}ç38oÁ |`{à^¦^æåÅ¢ÇÕ[åå^}ÁTæ&\æÂĞ[\*æ}ÁG€€JK(€DDĂ

CEpcqL \* @A[}|^Áag c^}å^åÁq[Áa^Ác^{[][¦æð\*Êás@•Á]¦ãe[}Á\œê^åÁq[}ÁÔ[&\æq[[Áqe|æ);åÁ\[{ ÁrìììÁ}cā/ÁrJeÌÈÁ√@·Á č'}[ç^¦Á;æe Á@ãt@ÉAj ão@Áæaj]¦[çã[æc\*\°ÁrHe⊞i€Áj¦ãr[}^!•Á\*}c\*lāj\*Áræa&@Áj^^\ÊAj ão@ÁæÁ^æ\|^Áz`¦}[ç^¦Áq-Á æaj]¦[çã[æc\*\°ÁnEÉ€€ÁqÕ[åå^}Áræ&\æâÁõ[\*æ);ÁG€€JKIFDDĂ

#### V@ÁĴ@]^æ¦å•Á

V@[`\*@[`&@[\*A]; addata adda

W]Á}cāļÁs@Á,\*`cà¦^æ\Á, ÁY [¦|åÁY ælÁFÉ£æ]]¦[¢ā[æe\*\^ÁFÍ€Á\*@]•Á@æåÁà^^}Áà`ā¦c4;}ÁÔ[&\æe[[Á@|æ)åÈÁQ,ÁFJFHÉÁ [,}^\•@]Á, Ás@Áæ|æ)åÁ, ærÁsæ)•-^\¦^åÁ'[{ Á⊳^, ÁÙ[čc@ÁY æ}^•Át[Ás@AÔ[{ { [}, ^æ¢c@áæ)åÁa^&æt[^Ás@A å[&\^æåÅ{{ ¦Ás@AÜ[^æ‡ÁCE•clæ#ãæ)Á>æe,^ÈÁÁ

Ö`¦ā)\*ÁY[¦¦åÁYækÁFÉAţç^¦ÁLÉE∈€Áţ^}Áş^!^Á?(]|[^^åAţ}Áv@A≆|æ)åÉ&Q[}•d`&ca]\*ÉA^-aaca]\*Áţ¦Á&[}ç^¦ca]\*Á;@3]•Á q[Á&æe¦^Ád;[]]•Áæ)åÁ@;¦•^•Áq[Áv@;Á;æHÉA2[||[\_]ā]\*ÁY[¦¦åÁYækÁFÉEæaA?ā1@AÔ[``¦c4å^&a=ā]}Á,¦^ç^}c^åÁv@;Áa;[&\^æ+åÁ -√[{Áxe&&^]ca]\*Á;[¦\Á¦[{Áæ}^[]}^Áşc@;!Áv@ea)Áx@;Áõ[ç^¦}{^}cA}cEA;

 $\begin{aligned} & \mathsf{CEe^{}}_{A} & \mathsf{A}^{}_$ 

 $\begin{aligned} & \mathsf{Cee^{A}} \left[ \mathbf{A} \otimes \mathbf{A} \right] \left[ \mathbf{A} \otimes$ 



V@:Á;ææ^Á;FJJ€•Ë\*æ}|^ÁGEE€•Á;@AÛ^å}^^Á;#æà`[`¦ÁØ^å^¦ææ‡i}`}Á/¦`•oÁ;æ•Á\*•cæà|ã\*@åÁ{[Áæå{ ājārc\*¦Á;@AÖ^-^}&^A Šæjå•Á\$JÁÛ^å}^^Á;#æà`[`¦É\$Bj&{`åāj\*ÁÔ[&\æt[[Á@]æ)åĚ¥@%Æs[æ)åA;æ•Á;]^}^åÁ{[Á]`à]&A&&&A\*({ÁC})

#### 3.2 Historical development of Cockatoo Island wharf

Ó^āj\*ÁæÁų[¦{^¦Á`@aj^ælåÉko@¦^Á@eç^Áa\^}}Á;æ)^Á;@ed-ç^•Á;}ÁÔ[&\æt[[Á@|æ)åÁāj&^ÁÒ`¦[]^æ)Á^œt^{^}∂ĚÁ V@Á&`¦¦^}oÓÔ[&\æt[[Á@|æ)åÁv´@ed-Ána ÁæÁ^|ætaço^|^Á^&^}oKa[}•d`&caţ}ÈZ/@Á%ea|ã•oÁ^&[¦åÁ;Áæ4Å;æ••^}\*^¦Á 、@ed-ÁæeAÔ[&\æt[[Á@|æ)åÁna ÁæÁ,^、•]æ}^¦Áedca&|^Á¦[{ÁFJ€ÌÉÄ;@a&@Ácæe^•ÁxœeAÁ

%aaÁ,^, Á, @aat-Á@aat,Åa\^} Áa¦^&c^å,Á;} Ás@^Á,[¦c@E^æroK&[¦}^¦A[,ÁÔ[&\æat[[Á@;|æ];åÊÉeeeA;@B&@As@A;c^æt[^¦+Á ]|^∄;\*Á;}Ás@Aú/æa¦æt;æt;ætæaæÆŰãç^¦Ár^¦çB&^Á;ã]A&æt|At[Áæ;)åÁ;æ••^}\*^¦•+Á\$QÒç^}ã;\*Á>^,•ÁFJ€ÌKHDÁ

V@Aseca84^A\*[^•A;}A{EA æ Ás@æaA@¦^A;æ AsejA;låAjæ•^}\*^¦A;@ed-A5;A\*•Af;}As@A;['c@';}Asej![}A;As@A5;læjåA ;@&&@4;^æjo&@æaAc\*æ{^¦•Ebsec\*lAf^æçi}#AÔ[&&aet[A@læjåE4;^^å^åAk{Asei[`okf];`ksæi[`okfA;![&^^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&^åAk[A\*'[];&&&Ak[A\*'[];&&

V@ Áţ¦ātāja a¢ ÁÔæţà^¦ÁY @ad-Á, æs Á&[}•d`&c^åÁ, @}Ás@ Á ãc^Á, æs ÁsadÔ[{ { [}, ^ado@AraaçadAÖ[&\^ædåÉ&a^ç^^}A FJFHÁsajå ÁFJHHÉX/@ Áã¢^åÁ, @ad-Á\|^{ ^}cAţ ÁÔ[&\ad[[Á@q]aðåÁY @ad-Á, æs Á&[}•d`&c^åAů`¦āj\*Ás@ Áx&3\^¦•Á Ô[&\ad[[Á\ada{, ~Åå^ç^|[] { ^}cÁsædá@ Ása|ajåÉ&a^ç^^}AfrJIÌÁsajåÁFJÌÎÁQÙPØVÁGEFFKAFJDÉACE;Áse'¦ãadAá[æt^Áţ Á Ô[&\add[[Á@q]aðåÁ+[{ Ás@ Árad] ÁFJÍ€A @q, •Ás@ Á, @ad-Áaj&]`åãj\*Áãç^åÁ, @ad-Á\|^{ ^}cA[c^A;ÅcÆ]čA

Y @‡•ok@/≨i|æ)åÁ, æ Á\*•^å/æi Aæ/ @3j^æåÉA^¦¦^Á^¦ç3&^•Á[¦Á [¦\^¦•Á]^!æ&\*å/AæA^@ão/&@@e)\*^A&ã ^•Ě4/@Á , @ed-Á, æ /åæa{ æ\*^å/\$j/ÁQEEI Á§j/Áæ&&[||ã\*ã]}Á, ão@Áæ&ç^••^|/Åi`^Át[/Áæ/æi|cî/Árcæ+à[æ+å/A}\*ð]^É&e)å/A@/\*æ)\*, æ Á æ)å/A[}d[]{d[]}Aæ/A[/A@eç^Aa^}/&]/&[]•d`&c\*å/A3]&^Ao@exAã[^AÉA

Q ÁGEEÏÁÔ[&\æt[[Á@|æ)}åÁ^[]^}^åÁse Ásaki[č¦ãróksed;æskati]}ÊÅ,ãrókho@Å,@ed-Ásap+[Á^[]^}ā)\*Át[¦Åjčà|a&Á^¦¦^Á •^¦ça&^•È&DaÁs@Ásä[^Á;-Á,¦ãaä)\*Éko@a;Á^¦¦^Á.^¦ça&^Á;]^¦æx^•Áse Á;ækA;Ás@Áúæk]æt;ætæææækŰãç^¦Ákülãç^¦&æekÁ^¦ça&^ÈÁ





#### 3.3 Recorded Non Aboriginal Heritage

CB&\}[, |^å\*^åÁ@`¦ãæ±\*^Áaz^{ • Áaz}åÁ;|æ&^• Áaz^ÁA\*&[¦å^åÁajÁ cæzč (;¦^Áaz)åÁ;[}Ёcæzč (;¦^Á^\*ã c^¦• Á@ |åÁæzÁs@ Á -^å^¦ædÉ4cæz^Áaz)åÁ[&æd4Á^ç^|Áa^] ^}å∄ \* Á;}Ás@ ãA^ç^|Á;-Á\*ã }ã&32æz)&^ÈQpc';}æzā;}æd†^Á\*ã }ã&32æz)oA\*ãx•A;A -{čocæz}å∄ \* Á}ãç^¦•æd4çæzi^odaz-Áaj•&;äa^åÁ;}Ás@ ÁY [¦|åÁP^¦ãæz\*^ÁŠã\*oÁzz)åÁajÁč;¦}ÉA\*`&@Á\*ãx•Aź+Á\*\*æd†^Á -{%[\*}ã^åAx@[\*\*@ks@ ãÆaj&]a]\*Á;}Á^å^å^¦æd4æz)åÁ cæz\*Árç~|Á^\*ã co!•ÈÁ

 $\mathcal{O}^{a^{+}} = \frac{\partial h^{a^{+}}}{\partial h^{a^{+}}} = \frac{\partial h^{a^{+}}}{\partial h$ 

$$\begin{split} \mathsf{P}^{i} \tilde{a} \tilde{a} \tilde{a} \tilde{a} \tilde{A} = \hat{A} (\hat$$

## Y[¦|åÁP^¦ãæð\*^Á

Ô[&\æq[[Á@|æ)åÅ,æ Á^\*ãro\'^åÁse Áse∱,æoló,Ás@ ÁY[¦|åÁP^¦ãæe\*^Áãro‡)\*Á;Á^A|^ç^}Aãro+Áse[`}åÁOE•dæ)äæÉÂ &[||^&oãç^|^Á}[]}Áse ÁGE•dæ)äæ)ÁÔ[}çã&oAJãr∿+ÈÁÔ[&\æq[[Á@|æ)åÁārÁ5,&]\*á^åÅ5,Ås@eenÁäro‡)\*ÁsA&ee\*•^Á;ÁserÁ |æ\*\*\|^Á5jcæ&oÁ^{ æ5j•Á\_Ac@Á&[}çã&oÁ;¦ãr[}Ási\*ājåj\*•ÁsejåÁ;c@:¦Á&[}çã&däi\*ājoA\*d\*&cč¦^•ÈÁ

Table 5 Á⁄ [¦|åÁP^¦ãæť^Ájã cậ \* Á

Item	Address	Description of protected area
CE•dæ¢ææ)ÁÔ[}çæ3oÁ Ùãe∿∙Á	Ô[&\æt[[Á@ æ)åÁ	Œa[čo/FrìÁ@aa£abb,ÁÙ^å}^^ÁPaetà[č¦Ébbà^ç,^^}ÁÓã&@l[ç^ÁÚ[ājo5beojåÁ Y[[[,ā&@ÁÚ[ājdÉb&[{]¦ãaj*Ás@Á,@tļ^Á[-Ás@Á@e aojåÁq[Á[,Á,æes\běA

## $e = \frac{1}{2}$

Table 6 Þæcāj}æļÁæ)åÁÔ[{ { [}, ^æ)c@Á@e¦ãæe\*^Ájã:cāj\*•ÁÁ

Item Address	Description of Protected Area	Significance	Approximate distance from Cockatoo Wharf
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Ô[&\æq[[Á@()æ))åÁ	Ü[∶^  ^ÊÉÞÙYÁ	Œa[čóÆrÌÁ@eebɧjÁÙ^å}^^Á	Þæaaj}ælÁ	Yão@a≱ÁÛcǎå^Á
		Pælà[`¦Ásh∧c,^^}ÁÓã&@'¦[ç^Á Ú[ā)oÁæ)åÁY[[ ,ā&@ÁÚ[ā)dÉÅ &[{]¦ã:ā]*Ás@Á,@[ ^Á[→Áœ)Á @( aa)åÁt[Á[,Á;aæ^¦ÈĂ		Œ!^æÁ
Óæ¦æ&∖•ÁÓ∥&∖Á	Ô[&\æt[[Á@q æ)åÁ	Úæida[-Ás@∘ÁÚ¦ã[}ÁÓæ¦æ&∖•Á Ú¦^&&j&dÊÔ[&∖æq[[ÁQ æ)åÊÂ Ù^å}^^APæià[č¦Á	Ô[{{[}, ^æ¢o@Á	HH€Á(^d^∙Á ∙[čo@Á,^•oÁ
Ó≱^[ ǽЮ́¦[`]Á	Ô[&\æt[[Áqe æ)åÁ	Ô[{]¦ã^^ ÁÔā[^]æÉ4[¦{^!Å Ù`]^!ā c}åa; cq Á`æc'!•Á æj å Á ¢c'}•ā] •ÉÁ c[}^Á &[ ccæ!^Á! Á ^• ch - ÁÔā[^]æÉA U^{ æ3; ā + Á} å^!*![`}åÁ •ā[ •Á! Á[`cœE`æ ch - ÁÔā[^]æÁ æj å A[['cœE`æ ch - ÁÔā[^]æÁ æj å A[['cœE`æ ch - ÁÔā[^]æÁ æj å 4[]^/&[ cœE` & ch - ÁÔā[^]eÁ (cœE ^ AÔá[^]eÆ0 + Á8[ cœE ^ A ^æ ch - ÁÔā[^]eÆ0 + Á8[ cœE ^ DÉA Ô[ & æ![ Á@]a; åÊÛ^ å}^^ Á	Ô[{{[}, ^æ¢c@Á	FI €⁄[ ^d^•Á •[čœý ^•ơÁ
Ô[&\æq[[ÁQe æ)åÁ Qaå`∙dãæd,Á Ô[}•^¦çææa[}Á DEI^æA,	Ô[&\æt[[Á@q æ)åÁ	Œa[`onFÌÁ@eeb£ajÁÙ^å}^^Á Pælà[`¦Êbà^ç,^^}Á Óã&@':[ç^ÁÚ[ậ]obajåÁ Y[[ ,ã&@ÁÚ[ậ]dÊb&[{]¦ãrậ]*Á c@Á,@[ ^Á,Aố@Áas aa)åÁq[Á  [,Á,aeer^¦Á	Ô[{{[}, ^æ¢o@Á	Yão@3)ÁÙc*å^Á CEE^æÁ
Øãc¦[^ÁÖ[&∖Á	Ô[&\æt[[Á@( æ))åÁ	Ù[`O@È`æ• &\} &{] }^!A;A Ô[&\æt[[Á@]æ) å ĎÁÖi^Ås[&\A ã Á[, ÁsÈI Í Á; ^d^•Áş Á  ^}* O@Ás) å Áse•Á ãå^•Ás4^Á • c^]]^ å Á; ã @Á æ) å • (} ^Á à  [&\•ĎÁU   ã āj æ) Ås[ ]æ) å • Á à  [&\•ĎÁU   ã āj æ) Ås[]   æ) å • Á Ç ¢ Ё CA;[`} å^!Ásæ) } [] • Á^ A ā (Át]] Á; -Á@ Ás[[&\DÁs4^A CA] ā (Át]] Á; -Á@ Ás[[&\DÁs4^A CA] A ā (Át]] Á; -Á@ Ás[[&\DÁs4^A CA] A [ 2 æ3 * Ásæs • [] } Á; ær Át Ás@ Á a lî Ás[[&\DÁœ Ás4 à a^!Á;] ^ ÈÁ	Ô[{{[}, ^æ¢o@Á	ΗF€Á[^d^•Á •[čα9Á
T ^•• <i>Á</i> ?æ∥Á	Ô[&\æt[[Á@q æ]åÁ	Úæidų[-ÁÚ¦ã[]}ÁÓæi¦æ&∖●Á Ú¦^&ãj&dÊÔ[&∖æt[[Á@( æ)åÁ	Ô[{{[], ^a‡o@Á	HH€Á[^d^•Á •[čœ∯,^•ơÁ
Tápãæas <sup>^</sup> AÕ≚æslåÁ Ü[[{Á	Ô[&∖æ[[ÁQe aa)åÁ	Úæidų́-ÁÚ¦ã[}ÁÓæi¦æ&∖●Á Ú¦^&ãj&d∄Ô[&∖æq[[Á@ æ)åÁ	Ô[{{[}, ^æ¢@Á	HH€Á,^d^∙Á •[čo@Á,^•oÁ
Ú[,^¦Á P[`•^ÐÚ`{]Á P[`•^Á	Ô[&\æt[[Á@()æ)åÁ	Y^•oÁN}åÁį,⊸ÁÔ[&\æa[[Á Qe æ)åÊÂÙ^å}^^ÁPælà[č¦Á	Ô[{{[}, ^æ¢@Á	I€ÍÁ(^d^•Á •[čc@Á,^•oÁ



A				
Ú¦ãr[}ÁÓæs¦æ&∖∙Á Ú¦^&ðj&oÁ	Ô[&\æt[[Á@( æ))åÁ	Ô[{] ¦ã ĝ * Ásæ¦æ& + Á &[{]  ^¢ Á, Á ¦ã [} Ás à Å @ •] ãæ Á æ å E& [ \ ÁQ * - A æ å Á ^ • • Á @ å Ás à Å ^ & [ • ^ å Æ ' & å Å E Å ^ & [ • ^ å Æ ' & å Å E Å [ - Æ ^ ! o Å Æ ] '   d Á !   { ^ ! Á [ - Æ ^ ! o Å A @ Å Å ] [ { L Á ! { ^ ! Á [ ~ Æ ^ ! o Å Å ] [ { L Á ! { ^ ! Á { ã ã æ ^ Å * æ å Å [ [ { L Á ! { ^ ! Á { ã ã æ ^ Å * æ å Å [ [ { L Á : } A { ã ã æ • ^ å Å } & [ • ` ! ^ L Á { ã ã æ • ^ å Å } & [ • ` ] ^ L Á { ã ã æ • ^ å Å } & [ • ` ] ^ L Á { ã ã æ • ^ å Å } & [ • ` ] ^ L Á { ã ã æ • ^ å Å ] & [ • ] ^ A { a å Å ! æ • ^ å Å } & [ • ` ] ^ L Á { a å Å ! æ • ^ å Å } & [ • ` ] ^ A { a &  A : } & A :	Ô[{{[}, ^æ¢@Á	HH€Ą́ ^d^•Á •[čœý́ ^•œ́
Ù" c@⊹ æ)åÁÖ[&.∙Á	Ô[&∖æq[[Á@e æ)åÁ	Ö¦^Á¦!Á'¦æçā)*Áå[&∖Á;}Á •[`c@È;^•c%¦}Á:ãa^Á;-Á Ô[&\æt[[Á@]aa)åÉÅ;@!^ÁaóAarÁ ^¢&æçæ*åÁajq!Á:@Aaráa aqÁ •æa)å•q!}^ÈÁ\@Áa[&\ÁarÁar {^d^•Á[}*Áaa)åÁs@Áa^]c@Á ;æe*¦Á;ç^!Ás@Áa]ÁaeÁ@E (cãa^ÁarÁJÉIÁ;^d<+ÈÁ	Ô[{{[}, ^æ¢@Á	HG€Á(^d^•Á •[čœÅj^•cÁ
W}å^\*¦[`}åÁ Õ¦æa∄ÁÙa∦[∙Á	Ô[&\æt[[Á@( æ))åÁ	O£a[`oÂİİÁ; ^d^•Á;[`o@Á>æəoÁ [-ÁÓā[^ æÁeb)åÁā[{ ^åãæet^ ^Á à^ç, ^^}Á@(A&[cccet*A4; æ4\^åÁ Ü[ààÁçÔ ^\\A; AÚ^cc`Á Ù^••ā]}•ÁÔ[cccet*DÁeb)åÁ@(Á &]ã-ĒÃÔ[&\æe[[Á@e]æ)åÉÂ Ù^å}^Á?ædà[`¦Á	Ô[{{[}, ^a¢o@Á	FI€A[^d^•Á •[čœý,^•dÁ

### Ùcæe^Á₽^¦ãæe≛^Á

 $\begin{aligned} & \mathsf{CEA} \land \mathsf{ads} \otimes \mathsf{QA} \land \mathsf{AS} \otimes \mathsf{AP} \land \mathsf{I} \ \mathsf{azet} \land \mathsf{AQ} \ \varsigma \land \rbrace \ \mathsf{d} \ \mathsf{f} \ \mathsf{I} \land \mathsf{As} \ \mathsf{azet} \land \mathsf{AQ} \ \mathsf{s} \ \mathsf{c} \land \mathsf{f} \ \mathsf{I} \land \mathsf{As} \ \mathsf{azet} \land \mathsf{AQ} \ \mathsf{c} \land \mathsf{f} \ \mathsf{I} \land \mathsf{As} \ \mathsf{azet} \land \mathsf{AS} \ \mathsf{azet} \ \mathsf{AS} \ \mathsf{AS} \ \mathsf{azet} \ \mathsf{AS} \$ 

## Ù^&cāį} ĂFÏ€ÁÜ^\*ãc^¦∙Á

Ù^&cāt,}Árï€Át, Ás@∘ÁHeritage Act 1977Á^˘`ã^•ÁÙcæe^ÁÕ[ç^¦}{^}ơÁOE\*^}&ð+ Át[Á^^]Á^&t|\*å•Át, Á@¦ãæ\*^Áãr{•Á [,}^åÁt,¦Át]^¦æe^åÁs^ÁtaĒÁV@•^Á^\*ã=c\*¦•Á&æa}Ás^Át[\*}åÁt,}Ás@ ÁPÙYÁP^¦ãæ\*^ÁQţç^}d[¦^ÈAOE\*A&&@At, Ás@\*Á ĝ;ç^}d[¦^Á;æe Á&æd¦ð\*åÁt, ŏAt,}ÁGÆT|^ÁGEFÍÁsa}åÁt[Áser{•Át,}ÁÔ[&\ætt[[Áqe]æ}åÁ,^¦^Ása^}cãð\*åÁse Ás^ĝ\*Át[&æe\*åÁ ;ã@3;Ás@ Ácčå^Áse\*aÆĂ

## Š[&æ¢Á₽^¦ãæ≛^Á

OE Ás@ Ájæa) å Á ãå^ Áj ~ÁÔ[&\æt[[Á@|æ)) å Á¥r ÁsælÔ[{{[}} ^æ¢c@Aj,}}^å/¥r |æ)) å É¥rs/¥r Aj °or ãå^Ás@ Ási¦ār å ã&caj}}Át[¦ÁÙcææ^Á |æ; •Á^˘ ăā] \*ÁŠ[&æ¢AÔ}çā[]}{ ^} œ¢AÚ|æ) •Aj¦Áj c@ ¦ÁÙcææ^Áj|æ)}ā] \*Á§j •d `{ ^}or ÈA

## Tælānā[^Ásel&@ee^[|[\*^Á

CEÁ ^ æ&@Á, Ás@ Á>ÙY ÁT æiãā; ^ ÁP ^ ¦ãæ± ^ Ásæææàæ • Ásjå å 88ææ\* • Ás@æeÁ@ ¦ ^ Áæ' ^ Á; [ Á } [ ¸ } Á @āj ¸ ¦ ^ &\ • Á ^ &[ ¦å ^ å ÁsjÁ c@ Áş38ājā: Ấ, ÁÔ[ &\ æ[[ Á@ |æ) å ĚÁV@ Á@ |\ Ấ, Ấ, } ^ Á } [ ¸ } Áç^ • • ^ |ĔázÁst[ ¦] ^ å[ Ёā[ æeÁs ^ • d [ ^ \ ¦Ás@ ÁP T OÈÙÁWarregoÉÁ



• æ) \ Áser/sæý, @æi-Áser/Ô[&\ æ[[Á@|æ) å Ásj ÁFJHF Ásec^\ Ás^āj \* Ás|[]} Å] É<br/>É@[], ^ç^\ Ás@ Ásææaiæ ^ Á, [c\*• Ás@ær/s@ Á, \^&\ Á<br/>, æ Á`à•^``^} d^ Á^{ [c\*• Ás@ær/s@ Á, \^&\ Á<br/>P`\'ãæt ^ ÁÖææaiæ \* ^ Á) åær å DÉ<br/>A

#### 3.4 Potential Archaeological Resources

Õãç^}Ás@Á\*¢c\*}•ãç^Á\*•^Á; ÁÔ[&\ ඤ[[Á@|æ]åÁs@¦^Æi Ása4@ã @4;[c\*}ãæ4Á[¦Áse&@e\*[|[\*ā&e4Á^•[`¦&^•Á§,Á;[•Á æ\*^æ ÈÁP[, ^ç^¦Áse Ás@á Áse•^••{ ^} óÆi Át Áse•^••Æi ]æ&o4;}Á@¦ãæ\* ^Áse Ása4^•`|o4; Ás@ Ás^{{ [ãã]}}Áse)åÁ &[}•d`&cāi }Á; Ás@ ÁÔ[&\ æi [Á@|æ]åÁY @et-Ébei Áse•^••{ ^} o4; Á,[c\*} ɑãe4Áse&@e\*[|[\*ā&e4Á^•[`¦&^•Á;ā|Ás^Á &[}-ā]^åÁt Ás@ Áç; [Áse^æ A; Áse&ãçãçãçÊA; æi ^|^ÁÔ[&\ æi [Á@|æ]åÁY @et-Æi

CE]]^}åã;kÁ Á; Ás@ÁÜPØVÁÔ[&\æt[[Á@|æ)åÁÔ[}•^\çæaā]}ÁTæ)æ\*^{^}ofú|æ)Á&[}œæi, Aæi, æ]Á; Ásæ&@e&[|[\*&&æiÁ •^}•ããā;ãîÊĂ;@B&@Áã;orÁà[c@ÁÔ[&\æt[[Á@|æ)åÁ;@eæi-Áæ)åÁs@AÔætjà^\ÁY@eæi-ÁæiÁa^3;\*Á;Á@tj@Áse&@e&[|[\*&&æiÁ ][c^}čãæpEÁM/}å^\ÁÔ\ãs^\ã]}ÁÔÁÇ\ü^+~æ&&@ÁÚ[c^}cãæpHDÁ;ÁOE]]^}åã;kÄÁQsaæaā]}æ/Á?^\ãæ±^ÁSã;cāj\*+DÉAsAácæ\*•KÁ

The surviving archaeological elements of now demolished or obscured structures and functions of the dockyard in particular the remains of docks, equipment, warehouse and industrial buildings and range of cranes, wharves, slipways and jetties, have potential to illustrate and reveal the materials, construction techniques and technical skills employed in the construction of shipbuilding and dockyard facilities that are no longer available through other sources in Australia".

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Q45a Ác@¦^-{¦^ÁS(} • ãå^¦^åÁ'} |ã^|^Ác@ecA\*ão@¦Ác@ÁÔ[&\æt[[Á@|æt)åÁY @et=4,\'ÁÔæt{à^\ÁY @et=4,`ä|Áā\*|åÁet)^Á ~`¦c@;¦Átj-{¦{ætt]}}Á;[cAeti^ætå^ÁS[||^&c^åÈQA^|ætt]}Át[Ác@A,[c^}cāte44(Asãa`c`¦àÁt ætiāta\*^Ás@&[[[\*^Ês@A,\]^Á ;[¦\•Á,ão@Ac@A,[c^}cāte44(Asãa`c`¦àÁst&@ev[|[\*ã&et4A^{ ætt]}•Áte^Ás@A,`ā^•A\*Akt Á cæta‡ãa^Ás@A,[}d[]}d[]}A,[¦ct]}•Á [Ác@;Á;@et=AÇ[¦Á\*¦c@;¦Áte\*•^••{^}d,As@a\*Át]]ætcÉ4\*^AQA&ta\*]}ÂÈ!As^[];DÉA

V@ ÁÔ[& \æt[[Á@|æ)åÁT æ)æ\*^{ ^} ÁÚ|æ)ÁŒF€Á cæe\*• Ás@æetÁ} ^ Á, Ás@ Á, lặ[lắč Áæe \• Á[lÁ^bč ç^} ætā] \* Ás@ Ás |æ)åÁ , æ Ás@ Ák6 ā]• cæe\*{ ^} cá[ ÁÔæ{ à^lÁr @et Áse} åA][} d[] +ÉÄ( æ\^åÁse Á&[ { ] |^c\*Áse Á[ Å. Ás@ Ásæe\*A; Ás@ Á T æ)æ\*^{ ^} cÁÚ|æ)ÁÇÙ å} ^ ÁP ætà[ ` ¦ÁØ\*å^lætā] } Á/l` • cÁŒF€KFFCDĚÁ/@st Á[ ` |åŧj å&&æ\*Ás@ætÁ@ Á '^&?} cÁÚ[æ]ÁÇÙ å} ^ ÁP ætà[ ` ¦ÁØ\*å^lætā] } Á/l` • cÁŒF€KFFCDĚÁ/@st Á[ ` |åŧj å&&æ\*Ás@ætÁ@ Á '^&?} cÁÚ[æ]ÁÇÙ å} ^ ÁP ætà[ ` ¦ÁØ\*å^lætā] } Á/l` • cÁŒF€KFFCDĚÁ/@st Á[ ` |åŧj å&&æ\*Ás@ætÁ@ Á '^&?} cÁQã { ^ åãæe\*/î Á}!^ÁG€F€DÁ&[} • d` & cáţ} } ÈÁQ Ást) ^ Á&æ\* ^ És@st Á; @et -Á; ā||Á,[ cÁ@æţ;^Ást) ^ Á,ā\*•Ás[āç^} Á§, d[ Ás@ Á • ^ åã ^} cÁse ÁseJ, æto4, Æs@ • ^ Á, [ ¦\ • Ást) åÁs@ !^ -{ !^ A&æt) Ás A\* c&]` å^ å Å{'[ { Ást) ^ Á\* ! c@ ! Ást&@æt[ |[ \* &&ætA æ• ^•• { ^} dĚA

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# IÁ Xãa ča‡Á§)•]^&cāį}}Á

Œkşãa čapkāj•]^&cāta]}Át,⊸Ás@AÙčå^ÁŒE^æký,æe Át,æå^Át,}ÁFIÁRť|^ÁC€EFÍÁsà^ÁÜÚÚÙÁP^¦ãaæt^ÁTæ)æt^¦ÁÙ^å}^^ÉA Ö^à[¦æ@Áz@ætājækæjåÄÜÚÙÙÁÚ|æ}}^\!ÉESææ3∿ÁCE[&@¦&@ÉÁV@Át[||[¸ā]\*Ájæ}æt¦æ]j@Ásj&|ĭå^Áæásåã&č••āta]}Át,Ás@Á \*^}^!æpÁj@•38æpÁ&[}c^¢cAt,Ás@Ácčå^ÁseAzÉæ)åÁt[[¦^Áså^cæatAsAbe)æt°•^•Át,Ás@Á@¦ãæt^Áse/{eHÁ

- A Otable aj aj \* Ás@ ÁUč å ÁOE^ antáce) åÁ
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 $V @ \dot{A} [ & a c c a \dot{a} \\ \dot{A} ( & a c \dot{a} ) \\ \dot{A} ( & a c ) \\ \dot{A} ( & a c ) \\ \dot{$ 

#### 4.1 General physical context

U}Ás@Áār|æ)åqAxæcv¦}Ásej¦[}Ás[Ás@Á[čo@A;Ás@Á,@est-Ás@¦^ÁārÁseAjæst\*^ÉAjæsA;]æ&AA[¦{ ^¦|^Áj,&&č]ðråÁsi^Á &¦æ)^•ÁsejåÁ@å•Á •^åA[¦Á @gjàčaj\*ĚÁÁ

#### 4.2 Cockatoo Island Wharf

OEÁ, @eet-Áng Ás@entÁ[&æeentā}}Á@eer Ása^}Át•^å Árāj&^ÁFJ€ÌÁæejåÆng or¦{ãacv}d^Át, [åãæ3råÁt,ç^¦Ás@/Áng or¦ç^}āj\*Át,^¦āt,åÈA V@Á, @eet-Áng{{]¦ã^• ÁzeAñge^åA`A @P¦^à¦ãa\*\*^Á, @anz @entÁtj&oråÆng ÁseAng [¦c@Ée[č@4&sātāA &caţi}Át[{Ás@/Áns |æejå ÈÉOEÁ -{¦{ ^¦ÁOč}å^ÁD-~anz^ÊÉ, @P¦^Á,[¦\^¦•Á •^å ÁseAngač}åå +k&ajå Ásed}ãçāj\*Ásejå #Ásejå #Ás@Æns |æejå åÊEens ÁseA zamañgi\*ÁseA ∞aAsejå Áx[}cæangi•ÁU]æekAsezåÁr^æaå^¦•Ásejå Á @P(or\Át;lÁ, æmañgi\*Áse[{ {čr¦•ÁtÇú]æerÁFFDEXÁ

V@ Á&`;¦^}oÁ, @eet-Á&[{]¦ã^• ÁxaÁ,[}d[[}d[[}Á;¦ã\*}c\*åÁş, Áxae dË; ^• oAsiã^ & caj;}Á; --Áx@ Á,[¦c@A\*xee c\*¦}Á,[j]d,[-Áx@ Á ã |æ) åĎÁŠæ) å•ãa^Áxa&&^• Æi ÁxaÁã/\*å Áxi à^¦Á; ä\*åÁ; @eet-Á; ão@ÁxaÆ][}&¦^c Æs^&A; ão@Áxaj;}Á; ão@Áxaj; A,[j]d,[]Æi Á; ãxaÁxaÆ; a)\*, æi Á V!æ)•][¦oÁUæ^c ÁQ;ç^• cã\*æaaj;}ÁGEEI KFÍ DÁXDB&^•• Ás^ç ^^}Áx@ ÁxacA; @eet-Áxab; åÁ,[]d,[]Æi Á; ãxaÁxaÆ; æ)\*, æi Á QÚ|æc\*ÁFCDDÁÁ



### Legend

## Commonwealth Heritage Areas

- 1 Prison Barracks
- 2 "Biloela" complex
- 3 Cockatoo Island Industrial Conservation Area
- 4 Fitzroy Dock
- 5 Mess Hall (former)
- 6 Military Guard Room
- 7 Power House/Pump House
- 8 Prison Barracks Precinct
- 9 Sutherland Dock

CLIENT: RMS

10 Underground Grain Silos

Figure 3: Commonwealth Heritage Elements

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762) 241 DENISON STREET BROADMEADOW PO BOX 428 HAMILTON NSW 2303 T: 02 4940 4200 F: 02 4961 6794 www.rpsgroup.com.au

JOB NO.: **PR119759** PURPOSE: HERITAGE

150

LOCATION

250

DATUM: GDA94

Data Sources: RPS OEH

PROJECTION: MGA Zone 56

200

Cockatoo Island Wharf

50

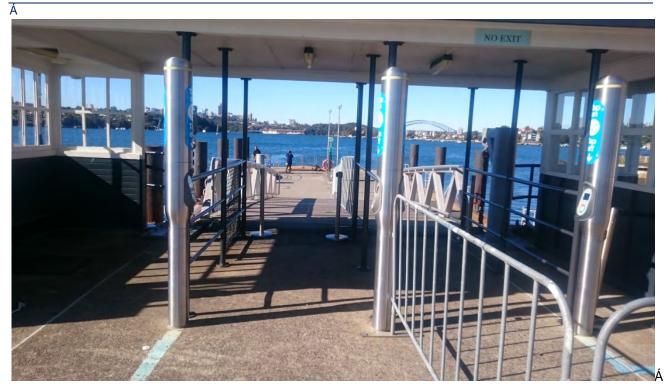
25

100

SCALE 1:4,000 AT A4 SIZE



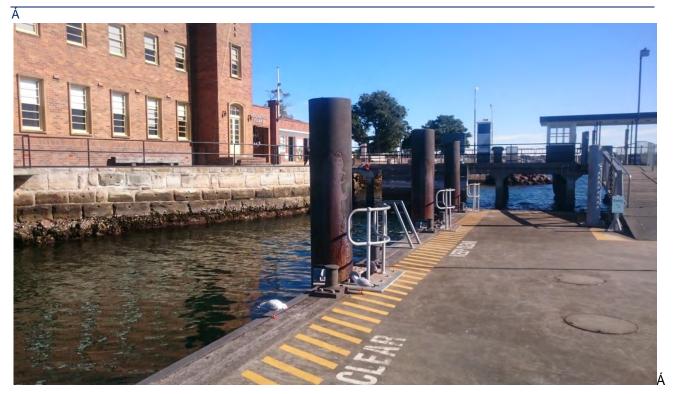




 $\begin{array}{l} \textbf{Plate 11} & \mathcal{Q} \mid \{ \land \mid \acute{A} \land \& ` \mid \widetilde{a} \widetilde{c} \land \& \mid \phi \widetilde{E} A \} \mid \ , \ \} \land \& \bullet \land \& \circ \acute{E} A \upharpoonright ( \mid \land a ) \land \& \circ \check{E} A \upharpoonright ( \mid \land a ) \land \& \bullet & \check{E} A \upharpoonright ( \mid \land a ) \land \& \bullet & \check{E} A \upharpoonright ( \mid \land a ) \land \& & \check{E} A \upharpoonright ( \mid \land a ) \land & \check{E} A \lor &$ 







# 4.3 Camber Wharf

V@ ÁÔæ{ à^¦ÁY @ed-ÆarÁ&`¦!^}d^Á •^åÁ{ ¦Ás@ Á{ [[¦ā]\*Á¦-Á]¦ãçæe^Áç^••^|•Áçãããā]\*ÁÔ[&\æ{[[Á@|æ]åÅæ]åÁ;æ Á `]\*¦æå^åÁ§iÁOEEI ËGEEÍÁÇÔ[¦å^||ÁÔ[}•d`&aãį}ÁÚ¦[b^&orÁÚc´ÁŠcåÁOEEÍDĚÁÁ/@ãrÁ, @ed-Á,ā|Áa^Á;}|^Áa^Á •^åÁ{ ¦Á &[{ { č°¦Á^¦¦ð•Áå`¦ā]\*Ás@Á^å^ç^|[]{ ^}ơh[-Ás@ ÁÔ[&\æ{[[Á@|æ]åÅ⁄@ed-ĚÅ



# Á ÍÁ Ùã\*}ãã&æ}&∧Áæ••••{ ^}ơÁ

V@^Áðjåðj\*•Áį~Ás@·ÁĮ ||[, ðj\*Á@\¦ãæ\*^Áse•^••{ ^}œfse^^Á`{ { æbār^å ŧjÁsaÁÙœæ^{ ^}o∱i\_AÛði }ãã&æ}&^Ás^|[, ĔÁ

# 5.1 Historical themes in evidence

Australian Theme	NSW Theme	Notes
FÁ/¦æ&aj*Áv@-Ájæc覿þÁ∿ç[ čqāj}AjÁ CE∙dæþãæÁ		
GÁÚ^[] āj*ÁCE∙dæ ãæÁ	Ô[}çã&oÁ	OE&cāçāaā∿•Á^ æeāj*Át[Á5j&æe3&^¦æeāj}ÊÁ dæ)•][¦ÓEÃ^-{¦{ ÉÁme&&{[{ [åæeāj}}Á æ)åÁ,[¦\āj*Ásiĭ¦āj*Ás@A&[}ça3koÁ ]^¦ājåÁ5jÁpÙYÁQFĨÌÌİËFÌÍ€DEÁ
HÁÖ^ç^ []ā]*Á[&æ‡ÉÁ^*ā[}æ‡Áæ)åÁ }æaā[}æ‡Á%&[}[{ā∿•Á	Ô[ { { ^\&^Á	O58cāçāā?•Á^ æa∄*ÁţÁs`^∄*Ê4*∧  ∄*Á æ)åÁ*¢&@e)*∄*Á*[[å•Áæ)åÁ •^¦çã&^•Á
HÁÖ^ç^ []ā]*Á[&æ‡ÉÁ^*ā[}æ‡Áæ)åÁ }æaā[}æ‡Á%&[}[{ā?∙Á	Ò}çã[}{ ^}oÁ.Á&č 覿¢4/æ)å∙&æ3j^Á	CB3Caãçãa2ð•Áæ••[&ãaaæ∿åÁ,ãc@Áx@A ājc^¦æ&Caã}•Áà∧ç,^^}Á@{æ)•ÉÁ @{æ)Á[&ã?cã•Áæ)åÁc@Á(@æ)ā)*Á(-Á c@ãAj@•ã&æ)Á`¦¦[`}åā)*•Á
HÁÖ^ç^ []ā]*Á[&æ‡ÉĂ^*ā[}æ‡Áæ)åÁ }æaā[}æ‡Á%8[}[{ã∿∙Á	Òç^} œ Á	OE8cā;āā?+Áaajå∱¦[&^++^+Ás@een∜,aa\Á c@/Á&[}+^``^}&^+Á;-Ajaeč¦aa/AaajåÁ &` c`¦aaµÁ;&&`¦!^}&^+Á
HÁÖ^ç^ []ā]*Á[&æ‡Éấ∧*ā[}æ‡Áœ)åÁ }æaā[}æ‡Á%&[}[{ā∿•Á	P^æ¢0@Á	CB3Ccāpānā?●Áee●[&ānnee^åÁjān©Aj¦^]ædāj*Á æ)åAj¦[çãåāj*Ái^^å&3&æd∳ee●ārcæ)&^Á æ)åED¦Aj¦[{[cāj*Áj¦Ái;ænājcænājāj*Áo@A j^  Áa^āj*Áj-Á@{æ}●Á
HÁÖ^ç^∥[]āj*Á[&aa‡Éá^*ā[}aa,Áaa) }aaaā[}aa,Á^&[}[{ā∿∙Á	V^&@;[  [ *^Á	CB3Caäçãa3№ Áæ) å Áj.¦[&^••^•Áæ••[&ãææ^åÁ ¸ãc@Ác@Á•^AjÁj. A&@æ) ã8æ4Áætor Áæ) å Á æ]] a?å Ái&&a?}&^•Á

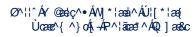
Table 7 0 E • d aqáaa) Ása) å Áp Ù Y Á O ár († ¦ a & a q k k (\*) • á k (\*) • á k (\*) \* á k (\* Á k \* A k (\*) \* A k (\* A k \* A k



Australian Theme	NSW Theme	Notes
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lÁÓٽą̃åa]*Ár∧cq^{^}orÉát[,}∙Áæ)åÁ &ããã∿∙Á	V[,}●ÉA`à`¦à•Áæ)åÁçã∥æ≛^∙Á	OB&cā;āa?)•Áse•[&ãæe*\åÁ;ão@%k¦^æa3;)*ÉÁ ] æ}}3;*Áse)åÁ;æ}æ*3;*Á'¦àæ}Á ~}&cã;}•Éáæ)å^&*&æ3;^•Áse)åÁjã^•c° ^•Á 3;Á{;}}•Éá`à`¦à•Áse)åÁçã æ*^•Á
lÁÓٽāإåāj*Ár∧cq^{^}orĒ&t[,}●Áæ)åÁ &ãaā∿∙ÁÁ	Wtaaar•Á	O5&cājāā?•Áæ••[&āææ^åÁjāc@Á ]¦[çā:āj}Aj~Ár^¦çā&^•ÉÅ•]^&āæaþ ^Aj}Á æÁ&[{{č}}adAsæ:āEĂ
lÁÓٽāإåāj*Ár∧cq^{^}orĒ&t[,}●Áæ)åÁ &ãaā∿∙Á	088&8[{{[åæsaā[}Á	OB&cā;āa?•Áæ••[&āææ^åÁ;āc@Á@Á ]¦[çā:ā]}Á;-Áæ&&[{{[åæaā]}Áæ}åÁ ]æ\ca&` æ6Ácî]^•Á;-Áæ&&[{{[åæaā]}ĚÁ
Í Ár [ ¦\ ą * Á	Šæà[č¦Á	O5&cāpānā*•Áæ••[&ānæ*\åÁjãn@Áj[¦\Á ]¦æ&cā&∿•Áæ)åÁ;¦*æ)ā*\åÁyàÁ `}[¦*æ)ā*\åÁjæà[`¦Á
ÎÁDåĭ&æazā)*Á	Òå šæaatij } Á	OB&cāpāāa∿-Áæ••[&ãaæe^åÁ;ão@kraæ&@a)*Á æ)åÁ(^æ}āj*Áki^Á&@aåi^}&æjåÁæå* o•ÉÃ -{¦{æ îÂæjåÁ§i-{¦{æ}jîÉĂ
Ϊ <b>ΆÕ[ ç^</b> ¦}ą̄*Á	Ö^-^} &^Á	O & C & & & & & & & & & & & & & & & & &
Ϊ <b>Ά</b> Õ[ ç^¦} āj * Á	Šæç Áæ) å4(́¦å^¦Á	CB&cā;āā?!•Áæ••[&āæe*åÅjār@Á {æ\$j;cæ3jā]*ÉŦ[{[c3]*Áæ)åÅ ā[] ^{^}čā]*Á&!ā[ā]æ∮Ææ)åÅ&ā;āÅæ; Á æ)åÅ^*æ4Ŧ[&^••^•ÈÅ
Ϊ <b>Ά</b> Õ[ ç^¦} āj * Á	Y^∣-æ!^Á	OB&cā;āā?•Áæ)åÁ;¦[&^••Áæ••[&ãæe^åÁ ,āc@Á@A;¦[çā*ā]}Á;-Á[&ãæ‡Á^^¦çā&^•Á à^Ác@Aùcæe^Á;¦Á;@aa)c@[]ā&Á [;*æ)ā*æaā]}•ÈÁ
ÌÁÖ^ç^ []ā]*ÁCE∙dæ ãæeqÁ&č 覿4Áã^Á	Ö[{^•ca&Áã^Á	OERcaājānā? • Áse• • [&āaner^ å Ájāc@4&kk ^ aeeaj * ÉÁ { aeaj caeajāj * ÉÁjājāj * Áse) å Áj [¦\āj * Á ael[ັ} å ÁQi č• ∧ • Áse) å Ásj• caāč caīj} • ÉÁ

# 5.2 Significance assessment

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Criterion	Assessment
GaĐÁ Ôç^} œ Áaà åÁ¦ ¦[ & ^ • • ^ • ÁËÁ/@ Á jaæ^ Á@æ Á [ č œ caà åã] * Á@ ¦ãæð ^ Áçað ` ^ Áξ Á@ Á } æãã } æþá ^ & æš • ^ Á j Áœ Á jaæ ^ e Á ã ] [ ¦caà & ^ Åa Ác@ Á&[ č ¦ • ^ ÊÅ ¦ Á ææ^ \} Á Á CE • d æþãæn Á æš ¦æþá ¦ Á& jc ' ¦æþÆð d ¦ ^ Á Á	Ô[&\æq[[Á@[æ]åÁ;^^orÁc@irÁs\är\laī}ÈÁQQ,æAæA,`\][-^Ás`ajo&[}ça3oÁ •^cq^{ ^}o^K cajār^åAsh^&æi •^A,fi-AsorÁs [aeaa]}Á\[{Ás@A*}^}leA&[}ça3oÁ ]\[çaāa]*Ás[co@i^^&`lačÁt[kk@As[}caj`^åAsh8eæ8^\aeaa]}Á;A&[}ça3oAeaa ]\[çaāa]*Ás[co@i^^&`lačÁt[kk@As[}caj`^aÅsh8eæ8^\aeaa]}Á;A&As[}ca3oAeaaA -{!Kk@A*^}\aea4A[]]` asA^ÈÁQA;æAsa4, asA^A;Aæ8A^aaa[`!Asa}åA^aa] }{`}aa@(^}oA^c^}caa ^As^8[{ a}*As@A}[aaa^A;aaaA;aaa]`]aaa^A; }aaA^As[}ca3oAi,A`]&}aAa[{ a}*As@A}[aaa^A;aaaA;aaa] { aaA^As[}ça3oAi,A`}&`}aAa[{ ka}a][]
	Ô[&\æt[[Á@]æ)å Á&‡[Á&]}dãa` ơ å Át[Á@ Áå^ç^ []]ð]*Á, ÁŒ • dæ‡ãæÁ@[`*@Á ão Á • ^ Áæ Áæ£a[&\^ æðå Át[¦Á&]{ { { ^\&ã#4&} å/& ^>}& ^ A @] à ă å å 3 * ĚÁ\@ Á Øãc ![^Á&][&\^ æ Á&]}•d` & c å Á • ð] * Á&]}çã& A @] à ă å å 3 * ĚÁ\@ Á Øãc ![^Á&][&\ Á æ Á&]}•d` & c å Á • ð] * Á&]}çã& A @] à Å ^ ĚÁ\@ !^ Ás Á\ @ A @# * ^ • o & ] } çã& E':æ4,` à ] ã& Á [ !\ • Á ` ¦çãç ð] * Ás Á\ ^ å ^ ` ĚÁ\@ !^ Ás Á& (@ Á & * ^ • o & ] } çã& E':æ4,` à ] ã& Á [ !\ • Á ` ¦çãç ð] * Ás Á\ ^ å A ^ ĚÁ\@ !^ Ás Á& (@ Á & * ^ • o & ] } çã& E':æ4,` à ] ã& Á [ !\ • Á ` ¦çãç ð] * Ás Á\ ^ å ^ ` ĚÁ\@ !^ /s Á& (@ A & ] ; çã& A & A & A & [ !\ • Á ` ¦çãç ð] * Ás Á\ ^ à ^ ` ĚÁ\@ !^ /s Á& (@ A & ] ; çã& A & A & A & A & A & A & A & A & A & A
ĢaDÁÜælaã:Ákó@Aj æ&Ak@ælÁ;`orcæ)åä]*Á @¦ãæe*Akýæ‡`^AkjAk@eAjæa‡i}AsA&eĕ•^Aj-A c@Aj æ&AqAj[••^••4j}Aj-A'}&[{ { [}ÊA  æAAj æ*Aj*A}*]^&e j^&orAj-A CE•dæläæenAjæ*iaaAjiA&ičiaaA@id îÈA	Ô[&\æq[[Á@]a)å/(^^o/k@i/&\är\i] EX/@ii/AQ[{]!ā^+áxá/a>/Áçæq[]/Á, ÁxáÁ ]`!][•^Ei ā/x&[}çãkoÁ^@[{^}dž, ã@A, @i/k@]/k@]/k@]/A&/A**********************************
(%DÁÜ^-^æt&@áÁ/@Á æ&^Á@ætáčorætáčorætášá @¦ãætá^Áçætč^Átá Ás@Á;ætát}Ås^&ætášá @%Á æ&^qÁ[c^}äætátá â;-{!{ætát}Åá@ætátátá â;-{!{ætát}Åá@ætátátátá }ætát} }ætát} }ætát}][[ætás &^Átás@Á č}å^!•cætjåäj*Á;-ÁCE•dætátættÁ &č č!^•Á;!Ás@Á;ætč!ætÁ;[! åEĂ Á	q Ác@ Á } å^!• cæ) åðj * Á -ÁCE • dæjæær Ás^ç^[[] { ^} dĚMCEc@ * @Á; [• cá, -Ác@ Á ã  æ) åq Á&[ } çã&cá, æ cá^{ 255, 000 } æðj • ÊS@ !^ Ásc^ Á[ { ^Á, æto Ác@æv/@æç^ Á, [dã, !Ásc^ Á i [a• & ',  ^ åÉMJ} ^ Á * &@Á çæ; ]  ^ Ás Ác@ Á * } ã @ ^} of&   • ÊS, @&@ é, ^!^ Á \}[, } Át Á@æç^ Árçã cr å Ás ` of, }  ^ Á } ædo å Ås ÁCEEJEMÁ U c@ ! Ásch æ Ác@æcÁ cæj Åc@ Á, [ c² } cãæbÁt Á&] ACEEJEMÁ U c@ ! Ásch æ Ác@æcÁ cæj Åc@ Á, [ c² } cãæbÁt Á&] ACEEJEMÁ U c@ ! Ásch æ Ác@æcÁ cæj Åc@ Á, [ c² } cãæbÁt Á&] ACEEJEMÁ U c@ ! Ásch æ Ác@æcÁ cæj Åc@ Á, [ c² } cãæbÁt Á&] dãa * c Ást ] [ !cæj ofsj -{ !{ æst } Å å &] å^ Ac@ Ác@ac ![ ^ Ás[ & ^ æsl åÊA* * ä] { ^} cÉA æ^ @ * • Asbj å Æst å * cãæbÁ ä å å å å a * ác@ Ac@ac ![ ^ Ás[ & ^ æsl åÊA* * ä] { ^} cÉA æ^ @ * • Asbj å Ásj å * • cãæbÁ à * ä åå j * • Ê&!æj ^• eÊA @æ¢ ^• EA [a] , æ • Ásbj å Ás cæð • EÁV @• ^ Æ æbbA* Æst Åcæst Å ^ çãa^ } & Aá Ac@ A Æst } eC * & Cat } Ár & @ a * åsbj å Ås cæð & & & & & & & & & & & & & & & & & & &
(ᡭa DÁÚ¦āj & aj adyAs@adsacsC¦ār cāše Áj Akadas æe Aj A ] æ&A•Affakaj Ansor { Á@ae Aj [ C* } canada Aj aj A aj -{ !{ ænāi } Ác@ae Aj [ C* } canada Aj a ăj -{ !{ ænāi } Ác@ae Aj [ C* } canada Aj A č } å A' !• caaj å aj * Aj - An ÙY op A&č   C*   aap Aj l A } æč ¦ aap Á@ar of !^ Á Á	CE Á cær à Á§ Á@ Á Þæað } æ ÁR ^ ¦ãæð ^ KŠã cð * KÁ "Cockatoo Island represents some of the principal characteristics of Australian convict sites including: hard labour as a means of punishment and deterrence to the British "criminal class"; use of convict labour for the establishment of a colony through public works; and secondary punishment for re-offending convicts" (J)^^ ÁOE ] ^} åæÂ DĂ Ø ¦c@ ¦Éæ Á§ &]` • ð } Åæ Á æd Áæ Á& Å& Å A P^¦ãæ ^ KŠã cA çãa^} &^ • Á æd ( Á@ A& ] ção Á ã • Á Á Á & Á P^¦ãæ ^ KŠã cA çãa^} &^ • Á A @ Á@ Á !ð &] * • Å & A [^]  ^• ^} • Á@ Á !ð &] æd æd & & A [^]  ^• ^} • Á@ Á !ð &] æd æd & & A [^]  ^• ^} • Á@ Á !ð &] æd æd & & A [^]  ^• ^} • Á@ Á !ð &] æd æd & & A [^]  ^• ^] !



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Criterion	Assessment
Ç DÁ OE*•c@ ca3k/&@eetæ&c^\ärca3e*Á Ás@ Á,  æ&A Á @eetÁ`orcæ) å ji *Á@ \äræt ^Áşæt ^Ág Ár@ Á } æaāt } æ\%a ^&æi *^Át -Ás@ Á,  æ&A qA ät ] [ \ca9 & A 45 Ár¢@aaäti * Á, ætca3c  æA æ*•c@ ca3k/&@eetæ&c^\ärca3e*Áşæt ^å/&a fasA & *c@ ca3k/&@eetæ&c^\ärca3e*Áşæt ^å/&a & { { ` } ãc Át \Ás`  c` \æ4A \[` ] Á	CE;cQ`*@kw@A^cc3;*A;4Ô[&\æt[A@ æ)åÅa*Aæ••c@c38æ# ^A; ^æ-3;*Êah^3;*A [}AÙ^å}^^A?æda[`:E3;3c@A;^^]3;*A;&;•A*æ-c4g;,æda•Ac@A&36;A;A Ù^å}^^A\^]3^Êac@AU^å}^A?æda[`:KÓ;ãa*^As+3;åA[`c@Ag;,ædaAc@AQ[}A Ô[ç^AÓ;ãa*^Êam A@;1äæ*^A#3;ã&2æ)&^Ara;A;[`cA^]āæ;d4;A&36;EÁV@AQ[}ç3&cA •^cq^{ ^}cA; æ:A*•cæah]ā@aA[;A0[&&;æt[[A@]æ)aA[*a;A;A**A@AA**;1äĉA [~~^!^åAs^As+3;Aam]a;@aA[;A0[&;aæ];A[A===================================
ÇDÁ Ô!^ææãç^Áţ! kár&@; 38æk/æ&@?rç^{ ^} oñläko@ Á ]  æ&^Á@ee Áţ`o œa) å äj * Á@ ¦ãæet ^Áçæţ` ^Áţ Á c@ Á; ææãţ } Ás^&æč •^Áţ -Ás@ Á  æ&^q Á ãţ ] [ ¦œa) &^Á§ Ás^{ [ } • clææäj * Áæk/@t @Á å^* ¦^^ Áţ -Æs¦^ææãç^Áţ ! Áer&@; 38æk æ&@?rç^{ ^} oksen/æðţ ælcaðt`  æl/ŋ,^¦áţ å Á	
Ç DÁ Ù[ & and Ak Á/@ Á,   æ& Á@ e Á, `o œ) å ä, * Á @   and Ak Ak Ak Ak Ak Ak Ak Ak Ak Ak Ak Ak Ak	Ô[&\æq[[Á@(æ)åÅ@æ•Á]^&ãæ4Áæ••[&ãæa4j}+Ájão@kçæ3āj`•Á&[{{`}}ãa3v•ÉÁ @[_^ç^¦Áæ+ÁæA@æ•Á[[•q^Áa^^}&4x4]*}æ4&[[[}^Ê&[] ^Ê&[]!^&&ãç^Aæ&3jãc Áæ)åÁ 3)å`•dãæ4k&[{] ^¢É&a4&[^•A][ơ4(^^ok@æiA&;ãr\tā]}Á{[¦Á[&ãæ4É&; c`;æ4A[;A •]ããčæ4Áæ•[&ãæaāj}ÈĂ
Ç@DÁ Œ•[&ãæcā]}•Ák Á/@Ą aa&∧Á@æÁ [čoca)åā]*Á@¦ãæe!^Áşæ¥`^Át[Ás@Á }æaā]}a¢ha^&æĕ•^Át[Ás@Á]aæ&^qÁ]^&ãætA æ•[&ãæcā]}Åjão@k@Áā^Át¦Åj[¦\•Át_ÁsáA ]^!•[}Át¦Á*![č]Át_Á^!•[}•Éát_Á ã]]['ca)&^ÁtJÁCE•datjãæen,Ájæč ¦azhÁt¦Á &č' cč¦azhÁcãa (t]?Á	CE;cQ`*@k@{&[}ç38o/A\;ækj,æqj,}[^kækj{æql/j,ædvf,-Ac@A@ard[!^/j,-AÔ[&&;æq[[Á Qe]æg å Ebbo%ar Aj[}^c@ ^••Aeg Ag]]['cæg o/j,ædvf,-Ab@A@ard[!^Aj,-AÔ[&&;æq[[Á Qe]æg å Ebbo%ar Aj]}^c@ ^••Aeg Ag]]['cæg o/j,ædvf,-Ab@A@ard[!^EAV@arAsa Aç^} { [ !^AA[A*āç^}ko@azAo@AÔ`\[]^ag A@ard[!^Aj,-AOE •d;ædæg As^*3]•Aj ac@boa A`ā]*Áedj,^}ædA[[]}^EAAV@!^Asa Ac@!^-{ !^Aéedj,^c*•Aba^c,^^}ko@A*ae]^Á &[}ç38ce Aeg å Abo@Aj,^}ædA*•c*{ Aeg å Abo@A*:[]_c@Aj,-Abo@Aj;ædæj}EA Á
ÇADÁ V@A, æ&∧Á@æa,Á`orcæ)åā]*Á@¦ãaæ*^Á çæ `^ÁgiÁc@A,æaaji}&ak^&æe`+^A,a{c@A ] æ&∧orAgi[¦ãā]æ4A clæaåãaji}Å	Ο Ξ Α̈́, [ ơ ʰåkæà] [ ç ʰĒkæá, æ À, [ ơ ʰåko@ændÔ[ & æt [ [Áo] æ) å Á, æ Á • ^å Àà Á CĒa[ ¦ātā] æda, ^[]   ʰkæako@ Aʿā] ^ Ái, ÁO` ¦[] ^ æ) Ã&[ } œasokæ Aʿæá, • [ ` ¦ & A *æc@ ¦ā] * Áiāơ Ēř@ , ^ ç ^¦ Aʿa ^ & e ^ Ái, Áo@ Áæà• ^} & A´i, Aʿaŝi /ā * Á, æơ \́A / Å ā   æ) å ḖA æ Aُ, ^ ç ^¦ Áæá,   æ& ^ Aí, -Á@æàāæaā] } ĒÁA @ē• ofs@ Â,   æ& ^ Å, æ Â, [ Aʿa[ ` à oÁ [ -Áā] ] [ ¦ œa) & Aát Aʿa, àā a * } [ ` • Aít æåāāā] } Ēbáa faa Â, [ ofsæ• ^•• ^ å Áæ• Aʿa ^ Å [ ` œ æa) å ā̄, * Á@ei āæa* ^ Áç æ≱ ` ^ Á¢i Ás@ Aُ æaā] } Áî, } Ás@æa āæ āē EÁ

# 5.3 Statement of significance

 $\begin{aligned} & G^{4}_{a} \dot{A}_{a} & \bullet \wedge \bullet \bullet \wedge \dot{A} \dot{A}_{a} & A^{2}_{a} & A$ 



# 5.4 Grading of site elements' significance

 $\label{eq:linear_lin$ 

Element	Integrity/Intactness	Contribution to the Significance of Cockatoo Island	Significance impacted by Proposal Y/N
Óæ¦æ&∖•ÁÓ[[&∖Á	O E • ^ • • ^ å Á;}ÁC E • d æ¢ãa)Á P^¦ão zť ^ ÁÖ æcæà æ ^ ÁÇCP Ö DÁ æ Á; ^ ^ cā) * ÁÔ[{ { [ } , ^ æ¢o@Á • ã }ãa Bæ)& ^ Á&;ã∞¦ãæÁO ÉÓ Á æ) å ÁP Á; ÁæÁ@ ã¢/ç^ ĚÁ Moderately intact, high integrityĚÁ	Ò¢&^] αįį́}æļÁ	Þ[ Á
Óậ∧[ æứÕ¦[˘] Á	Oee•^••^å/ų́}ÁOEPÖÁseÁ {^^cāj*ÁÔ[{{[},^a‡o@Á •ã}ã&aa}&^Á&ã~¦ãaa⁄OEAOÉA ÒÉEØÁsajåÁ?EÁAHighly intact, moderate integrityĔÁ	Pã @Á	Þ[ Á
Ô[&\æq[[ÁQe æ)åÁQ0,å`•dãæ¢Á Ô[}•^¦çæqā]}ÁOE^^æAÉÄçæeðā[`•Á •ãe^•Á	Oe • • • • ^ å Á[} Á∞ ÁOP ÖÁæ Á { ^ ^ cā} * ÁÔ[{ { [ } , ^ æko@Á • ã } ãææ) & ^ Á&ã & \ãæÁOHÁÓHÁÓÁ æ) å ÁP ÈModerately intact, moderate integrityÉÁ	Pā @Á	Þ[ Á
Øãc¦[^ÁÖ[&∖Á	Oe • • • • ^ å Á[}ÁOEP ÖÁæÁ { ^ ^ cā} * ÁÔ[{ { [ } , ^ æ¢O9Á • ã }ãææ) & ^ Á&ãe \ ãæÁOEAÓEÖEA Ò Áæ) å ÁØEAModerately intact, high integrity.	P∄ @Á	Þ[ Á
T^•• <i>Á</i> ₽æ∥Á	Oe • • • • ^ å Á[}Á0EP Ö Áse Á { ^ ^ cā} * ÁÔ[{ { [ } , ^ a‡o@Á • ã }ãa3ca) & ^ Á&ião \ãa#OEAOÉAOÉA Ò Áse} å ÁCIÁMo derately intact, Moderate integrityĚA	Ò¢&^] αįį}æ¢Á	Þ[ Á
Tajaĩæh^ ÁÕč æhåÁÜ[[{Á	OE•^••^å/ų}ÁOEPÖÁæÁ {^^cā}*ÁÔ[{{[},^a¢o@Á •ã}ã&æ}&^Á&ãe^¦ãæÁOEAOÁ æ}åÆEModerately intact, Moderate integrityĔA	Ò¢&^] αą̃}æ¢Á	Þ[ Á
Ú[,^¦Á?[`•^ÐÚ`{]Á?[`•^Á	Cee•^••^å/ų́}ÁCEPÖÁæÁ {^^ca}*ÁÔ[{{[}, ^a¢o@Á •ã}ã&æ}&^Á&ã~¦ãæ∕CEÓÓÉÖÉA ÒÆ;åÁ2DÈAModerately intact, Moderate integrityÈA	Pā @Á	Þ[ Á

Table 9 (0) cæ&c) ^•• Áæ) å Æj c^\* ¦ãĉ Áj Á&[ { ] [ } ^} o Áj ÁÔ[ & æj [ Á@|æ) å Á



A Element	Integrity/Intactness	Contribution to the Significance of	Significance impacted by Proposal Y/N
		Cockatoo Island	
Ú¦ãr[}ÁÓæs¦æs&∖∙ÁÚ¦^&ðj&oÁ	Œ:••••^å/ų́}ÁŒPÖÁæÁ {^^@j*ÁÔ[{{[},^œ¢@Á •ã*}ããæa)&^Á&iæÁŒÉÓÉÖÉA ÒÁæ)åÆÈÉModerately intact, Moderate integrity.	Ò¢&^]αįį}æļÁ	Þ[ Á
Ù″o@°¦ æ)åÁÖ[&∖∙Á	OE••^•^å/ų́}ÁOEPÖ/ See Á { ^^caj* ÁÔ[{ { [ } , ^ae)c@Á •ã*}ãã Baaj&^/sűszá OEEÓEÄÖEÄ Ò/ Sea à Á20EEModerately intact, Moderate integrityEĂ	Pã @Á	Þ[Á
W}å^¦*¦[`}å <i>ĥ</i> Õ¦æ∯ÂÙą́[∙Á	OE••^••^å/ų́}ÁOEPÖ/seeÁ { ^^caj*ÁÔ[{ { [ } , ^aekc@Á •ãt}ãa3cea)&^/&siãea/DÉAOÁ æ)åÆPEÁHigh intactness, high integrity.	Ò¢&^] cąį}æ¢Á	Þ[ Á

Grading	Justification	Status
Exceptional	Üæl^Á¦¦Á,`o•cæ)åð)*Á≊c^{Á¦-Á [&æ4Á¦¦Á Ùcæe∿Á:ði}ã&æ3)&∿ÉÆPði@Ásh^*¦^^Á; ðjcæ&c}^••ÈÁ&cr{á&æ3)ÁshÁsjcr¦]¦^c∿åÁ ¦^ æaãç^ ^Á>æað,ÈÄ	Ø″  -ā]•Á&¦ãe^¦ãeeÁĮ¦Á[ &edÁ¦¦ÁÙceee^Áã;cā]*ÈĂ
High	Pāt@\$\$\$^*¦^^Á;_A;¦ātājæ‡Áæà¦a3dĚÁ Ö^{[}•dæe*•ÁæÁ^^Á^/A ^{ ^}@^Á ãe^{ qe/Áāt}ãa38æa}&^ĚÁOE‡ev¦ææāj}●Á\$a[Á,[cÁ å^dæ&eA4[{ Áāt}ãa38æa}&^ÈÁ	Øĭ  -ậ≢ Á&¦ãe^¦ãæÁĮ ¦ÁĮ &eq4́į¦ÁÛcæe∿Á?a cậ, * ÈĂ
Moderate	OĘc^¦^åĄ́i¦Ą́[åãðååÁʰ ^{^}oÞĚÁ Ò ^{^}oĄ`acoAjãcoAácd^Á@`¦ãæ*^Áçæ*^Ás`oÁ ,@38@Á&[}dãa`c^Át[Ás@>Áţç^¦æ‡ Á •ã*}ãã&æa}&∧Áį-Ás@Aác^{ÈĂ	Ø″  -ā]•Á&¦ãe^¦ãæÁų ¦Áį[&ed4į́¦ÅÛcæe^Áæicāj*ÈĂ
Little	OE‡c^¦æaāj}∙Ásh^dæ&oÁ¦[{Árâ*}ãa38æ)&∧ÈÁ Öã—a3&` oÁgi∕cv¦]¦∧dĚÁ	Ö[^•Á][ơÁĭ -āþá&iãơ\¦ãæÁţ¦¦Á[&æ‡4ţ¦Á Ùœæ^Áã-cā}*ÈÁ
Intrusive	Öæ; æ*^Á;[Ás@/Ása∿{qrÁrã*}ãa38æ;}&∧ĔÁ	Ö[^•Á][ơÁ*]-ālÁ&iãơ\¦ãæÁĮ¦¦Á[&æ‡4[¦Á Ùœæ^Ájã:cā]*ÈĂ

A Á

# ÎÁ Ù cæe^{ ^} o⁄ [ 4 4 @ \ azet ^ / 5] æ8 o Á

V@Á[||[\_] ā] \* Á^&atī] Áze • ^ • • ^ • Áz@Áā ^ | Á@ ¦ãzet ^ Átī] æstor Á[, Áz@ Á] ! [] [ • ^ å Ásı^ç^|[] { ^} of, } Áz@ Á@ ¦ãzet ^ Á • āt } ãatsan) &^ Á[ -ÁÔ[ &\ azē[ [ ÁQ |aa) å Áze Áze • ^ • • ^ å Ázei [ ç^ ĚÁY @} Á&[ } • ãa ^ ! ^ å Ázei [ \* Å ãz@Ázei [ ÍAQ |aa) Á[ !Á &[ } • ^ ! çazēj] Ázei å Á[ aa) æt ^{ } ^ f @ Coog ! Ázei [ POÁzei [ ] • Åzei Ás] Ásj - [ ! { ^ å Ásu ^ &a at } Å [ } \* Å ãz@Ázei [ ] & Åzi ^ Å [ ] as Â[ ! Å &[ } • ^ ! çazēj] Ázei å Á[ aa) æt ^{ } ^ f @ Coog ! Ázei [ POÁzei [ ] • Åzei Åsi ^ Åsj - [ ! { ^ å Ásu ^ &a at } Å [ ] \* Å ázei Åzi ^ Å @ Coog ! Ázei Å [ ] [ • azi ⁄ Æ &[ } • ^ ! çazēj ^ Åzei Å ⁄ Åzei \* \* & @źzei Æ Å Å [ POÁzei [ ] • Azi ⁄ Å Åzei Æ] Åzei Åzi ^ Å ázei Æ Å &[ ] cæj ^ å Ásj Áx@ ÁÔ[ } • ^ ! çazēj } ÁT aa) æt ^{ } ^ A óú | aa) Á[ ! Áx@ ÁÔ[ ] çazofO´ ä å ∄ \* • Ázei å ÁÚ/ { æj • ÁQÕ[ å å^ } ´ Æ &[ ] cæj ^ å Ásj Áx@ ÁDĈ [ } • ^ ! çazēj } ÁT aa) æt ^{ } ^ A óú | aa) Á[ ! Áx@ ÁÔ[ ] çazofO´ ä å ∄ \* • Ázei å ÁÚ/ { æj • ÁQÕ[ å å^ } ´ Æ &[ ] cæj ^ å Ásj Áx@ ÁDĈ [ } • ^ ! çazēj } ÁT aa) æt ^{ } ^ A óú | aa) Á[ ! Áx@ ÁÔ[ ] çazofO´ ä å ∄ \* • Ázei å ÁÚ/ { æj • ÁQÕ[ å å^ } ´ Á &[ ] cæj ^ å ÁGE€€J Dázei å Áx@ ÁU å } ^ ÁP azèa [ ` ! ÁØ^ å^! aæij } Á/!` • cÁT aa) æt ^{ } ^ A óú | aa) Á ÁÔ[ &\ æt [ ] Á@ |aa) å ÁQÙ ^ å } ^ A Pazèa [ ` ! ÁØ^ å^ ! aæij } Á/!` • dÓEF€DIÁ

# 6.1 Summary of proposed changes

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#### 6.2 The proposal

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# 6.3 Impact of proposal on physical fabric, attributes and setting

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Ú¦[][•^åÅ,[¦\•Áa^^[}å&@Á@¦ãæet^Á&`¦daþeet^éAg &|`å^Áx@Aåv^{{[|ãda]}Áæ}åÅ^{{[;cad4, Áx@Á¢ārd3,\*Á\*a9)\*, æÂ að åÅ,[]{d[]}ÁædÔ[&\æd[[Á@|að)åÁY@eð-EÁæ)åÅx@Á%[}•d`&da]}Å;ÅæÅ,^, Áalåa\*^EA\*a9)\*, æÂæð åÅ,[]}d[]}ÁæÁ Ô[&\æd[[Á@|að)åÁY@eð-EÁY[|\•Á`&@Áæ Áx@Áæ-ã¢3]\*Á;Áx@Á,^, Á\*a9)\*, æÂk[Å@Á¢&ard3,\*Å,@eð-Á,3]|Åa^A ^}å^\cae\^}Å,@\^Áx@Á&`;\^}of\*a9)\*, æÂærÅE&æe\*åE&@{\^-{\^Ág Áæ}Aæ}æ6,ae4,`]^Ag ]æ&c\*åÅa^Áx@Á\*aæ{^A ~}&da]}EXA

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#### 6.4 Impact of proposal on potential archaeological resources

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# 6.5 Conclusion

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Ô@aa]{ aa) /ÃÕ EÁCEÉEB /ÂÔ EŠEÉAT č ¦]@ /ÁCFJ Ì J DEÉ<u>Ù[ ā] ÁŠaa)</u> å • &aa] ^ • /Á -Á@ /ÂÙ^ å} ^ ^ /F.KAF<del>CC ÎECC</del>AÛ@ ^ dEÂU^ å} ^ ^ ÉA Ö^] aa'q( ^} o/{, -/Ô[} • ^ ¦çaaaā]} /Áaa) á /ÁSaa) á /AT aa) aat ^{ ^} o/EA

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# **Appendix G**

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# **Statement of Heritage Impact**

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#### **RPS AUSTRALIA EAST PTY LTD**

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# HANSEN YUNCKEN

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Á ÔUÞØÖÖÞVQUĚÁ



#### **IMPORTANT NOTE**

CEjædÁ¦[{ÁænáÅå^ædaj\*Á¦¦Án@´Á,`¦][•^•Á;Á,¦ãçææ^Ácčå^ÉÁ^•^æ&&@É&käa&æei{É4;¦Á^çã},ÁæeiÁ,^¦{ãcc\*åÁ}å^¦Án@`ÁÔ[]^¦ãt@dÁ CE&dÉ}[Á,ædó[,Áx@áÁ^][¦dÉ#áe Áeacæ&@(^}oráj!á&j]^}å&?v•Á;æêÁs^Á^]¦[å\*&^åÅa^Áæj^Á,![&?v••Á;ão@`ók@@Á;¦ãcc?}Á&[}•^}óÁ [-ÁÜÚÙÁCE•dænáÆdÔæeiÓUcőÁŠcáÉACE[Á?]`ãð?•Á;@`|åÅa^Åaã^&cvåÁ¢[ÁÜÚÙÁCE•dænáÆdÔæeiÓUcőÁŠcáÉÁ

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Q,Á,!^] æðað \* Ác@á Á^] [¦cý, ^ Á@æç,^Á; æå^Á&<!cæaj, Áæe • `{ ] cāj } • Ě¥ / Á@æç,^Áæe • `{ ^ å Ás@æn Áæl/Áşi - f, !{ ææaj } Áæj å Á&l[ & { ^} or Á ] ![çãð ^ å Át[ Á • Ási ^ Ás@ ÁÔ] ā\*} oft, ! Áæe Ásaá ^ ` | oft, - Ásaá · A \* - oft, ! Á\*} ` ča ^ A, ^ ! ^ A&[ { ] | ^ cr Ébase & ` | æet Asj å Á] Ĕt[ Ĕaæer È¥ @ ! ^ A , ^ Á@æç,^ Á; à cæaj ^ å Áşj - f, !{ æetaj } Á\*l [ { Åæá\*[ç, !} { ^} oft, - Ásaá \* c\*l Á; ! Ási ææa æe ^ ÉÅ, ^ Á@æç,^ Áse • ` { ^ å Ás@æn Áæj & [ & [ Eaæer È¥ @ ! ^ A , ^ Á@æç,^ Á; à cæaj ^ å Åşj - f, !{ æetaj } Á\*l [ { Åæá\*[ç, !} { ^} oft, - Åsaá \* C\*l Á; ! Ási ææa æe ^ ÉÅ, ^ Á@æç,^ Áse • ` { ^ å Ás@æn Áæj - f, !{ æetaj } Á\*a Á æ&&` ! æe\* È¥ @ ! ^ Ásaj, Áse • ` { ] cāj } Á@æe Ása^ } Á; æå ^ ÉÅ, ^ Á@æç,^ Á, [ oft, æå ^ Ásaj ^ Å] ^ å a^] ^ } å ^ ] ^ å å ^ ] oftj • Áset ^ Áş & { æer ! • Ás@ Á \* à b\*soft, - Ás@æn Ása • ` { ] cāj } Ě¥ ^ Áset ^ Á, [ oftse æ \* Át, -Ásej ^ Á ^ æe] } Á; @ Ásaj ^ Át, -Ás@e Áse • ` { ] cāj } • Áset ^ Áş & [ ] @ Asaj ^ å b\*soft, - Ás@æn Ása • ` { ] cāj } Ě¥ ~ Áset ^ Á. [ oftse æ \* Åt, -Ásaj ^ Á \* æse ` { ] cāj } • Áset ^ Áş & [ ] @ Ásaj ^ Å \* æse \* { ] cāj } Čæ + Åse \* Åj . [ oftse æ \* Åt, -Ásaj ^ Á \* æse \* { ] cāj } • Áset ^ Æj & [ ] @ Ásaj ^ Å \* æse \* { ] cāj } Ě¥ ~ Åset \* Åj . [ oftse æ \* Åt, -Ásaj \* Æse \* { ] cāj } • Áset ^ Æj & [ ] @ Ásaj ^ Å \* æse \* { ] cāj } æ Åt \* Åset \* Åj . ] @ Åset \* Åj . ] @ Åset \* Å Å & ] @ Åset \* Åta \* & ] @ Åset \* & ] @

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#### **DOCUMENT STATUS**

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#### APPROVAL FOR ISSUE

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# <sup>A</sup> FÁ Q2d[å šcáj] Á

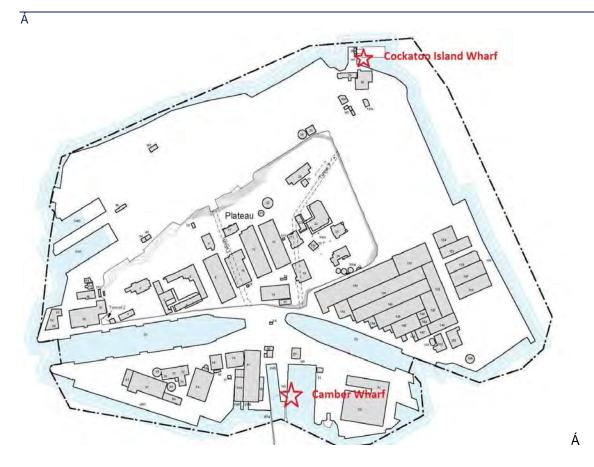
ÜÚÙÁ@æ Áa^} Á} \* æ \* å Áa^ ÁPæ) • ^ Á?` } &\ ^ } ÁUĉ ÁŠcå Á[; } Áa^ @æļ-Á[, ÁPÙY ÁÜ[ æå• Áæ) å ÁT æbãā[ ^ ÂÙ^¦ç&X^• ÁÜ[ æå• Á æ) å ÁT æbãā[ ^ DÁæ) å Á/¦æ) • ] [ ¦ cÁ[ ¦ ÁP^ \_ ÂÙ[ ` c@ÁY æ]^ • ÁQ/ - ÞÙY DÁ[ Á] ! ^ ] æ^ ÁæÂÛææ^{ { ^} of[, -ÁP^ | ãæt ~ ÁQ ] æ&cÁ QÙ[ POMæ) å ÁOEa[ ¦ ât ā] æþÅa` ^ Åa äjät ^ } &^ Áæ• • • • { ^ } cÁ[ ¦ Ác@ Á] ! [ ] [ • ^ å Á^ å^ ç^ |[ ] { ^ } of[, -Ác@ ÁÔ[ &\ æt[ [ Á@|æ) å Á Q^ ; ! ^ ÁY @æb -Áæ) å Áæ) å • ãa^ Áæ&ājãāt • Á } å^ ¦ Ác@ ÁEnvironment Protection and Biodiversity Conservation Act FJJJÁ QÙÚÔÓÁD&DÁæ å Á@ áO} çã[ } { ^} cæ Planning and Assessment Act 1979ÁQÒÚBOÆD&DÁMA

# 1.1 Study area

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Ô[}•ã c^}cÁ ão@Á@AÛPØVÁT æ)æt ^{ ^}cÁU|æ)ÁÇƏEF€DÉA&@Áār|æ)åÁj¦^&&j&o Áed^Á^-^¦¦^åÁt[Ás@[`\*@[`m@`cÁs@áA !^][¦cÁee Ás@AÛ[`c@\}ÉE>[¦c@\}Áea)åÁÒæe c^\}ÁDE;![}•ÉEæ)åÁA©AÚ[æc^æiÁÇÚ|æc^AFDÈA/@Át[{ ^\A´@j^ædå•ÉA å[&\^ædå•Áea)åÁt[[•cÆsjå`•clãædA@|ãæt^Áed^Af[&æcc^åAt]}Ás@At[[`c@\}ÉE3,[¦c@\}Áea)åÁ^æe c^\}Áe3,i[}•ÉA;@‡•cÁs@A &[}çã&cÁx¦æ4ea)åÁÓāf[^|æAÜ^-{;{ æt['Âs`āda]\*•Áed^Af[&æcc^åAt]}Ás@Aú[æc^æiÉA





 $Plate 1 \acute{U}_{83} & \acute{A} = \acute{A} & \acute$ 

# 1.2 **Proposal description**

The proposal would comprise the following elements:

#### Demolition of the existing gangway and pontoon

•Á V@ Ák¢ācāj\*Átaaj\*, æÂaajåÁ[]d[]Êbaj&|čaāj\*Ák¢ācāj\*Ájāţ^•Êbáj[č|åÁah^Á^{[ç^åÁ•āj\*Áaaábad\*^Ájão@abaÁ {[č}c\*åÁ&iaaj\*Ébá

#### Construction of a new bridge, gangway and pontoon

- ■Á OZÁ,^, Ásiláða\*^Ásæà[čoÁs@^^Á; ^d^●Á; áða^Ásæ) å ÁrátóA; ^d^●Á[}\*Á;[č|å Ása^Ás4] } edč & cvå Å Å; [č |å Ása^Ás2] } edč & cvå Å Å; [č |å Ása^Ás2] } edč & cvå Å Å; [č |å Ása^Ás2] } edč & cvå Å Å; [č |å Ása^Á; ]] [¦cvå Ása^Ásæà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsa^Ásaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsa^Ásaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsa^Ásaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsa^Ásaà; [č oÁ; č ¼ ¾ Å Åsæ]; č óÅ; [č |å Ása^Á; ]] [¦cvå Åsa^Ásaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsa^Ásaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsa^Asaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^Á; ]] [¦cvå Åsaà; [č oÁ; č ¼ ¾ ¾ Ásæ) å Å; [č |å Ása^A; ]] []
- •Á CEÁ,^, Á}&[ç^\\^åÁæqiǐ{ājã{ Ášiǎa phía}\*, æÂÁçaæi[č Ahī]Å[, ^d^• Á[}\*Áæ)åÂiÁ(, ^d^• Á;ãå^DÁ;[`|åÁ&[})^8AÁt[ÉA æ)åÁsi^Án`]][ \c^åAsiˆÉk@Asilãå\*^Áæ)åÁt[ææ]i\*Áj[}d[]}ÈÁV@Afæ)\*, æÂý[č |åÁ&[}c]ič^Ak@Aíæt[^Á [\a?}cææ]i}Åæ•Ák@Asilãå\*^ÈÁV@Afkæåa}Aft[ææ]i\*Áj[}d[])
- •Á O2Á,^, Á^&cæ)\* \* |æłÁ c^|Á|[ææ]; \*Á,[] d[] }éæi[ \* ÁGi Á, ^d^• Á[] \* Áegi å ÁFGÁ, ^d^• Á, äå^Á [ \* |åÅa^Á &[ } •d \* &c \* å Áec \* |Å4] ææi \* Å [ ] d[ ] }éæi [ \* ÁGi Á, ^d^• Á] ] d[ ] Å [ \* |åÅa^Á&[ ç^!^å Åa \* Áedk \* ] c^ å Á ] &Á[ [ \* a Åa \* Åedk \* ] c^ å Á ] &Á[ [ \* a Åa \* Åedk \* ] c^ å Å ] &Å [ \* a Å Å ] &Å [ \* a Å ] &Å [ \* a Å ] &Å [ \* a Å ] &Å [ \* a Å Å ] &Å [ \* a Å ] &Å



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- •Á HÁ; [co&cā; }Á; ā^• á; }á@A[`c@; }Aá@A; A; 4@CA; [}d[] 4; []
- •Á Ô[}}^&cāt]}Át,-Á\*|^&cta8aadA,[,^\kata6aa,\*Á\*]]|^Át[Át]; çãa^A,[,^\kata6aa,\*Á\*]]|^Át[Át]; çãa^A,[,^\kata6aa,\*Át]; Áta7aaa,\*Át]; Áta7aaa,\*Áta7 Ata7aa,\*Ata
- •Á Ü^|[&æeā] } Á[ -ÁU] æhÁ^æå^!•Áæ) å ÁØ^!!^ÁU] ^!æeā[ } •Áæ) å ÁÔ` d[ { ^!ÁQ, -[ !{ æeā[ } ÂÛ^ c^{ (AQUÔQ)DÁ &!^} + Á æ) å Á^|æe^ å Á^` ~ã] { ^} dĚ
- ■Á V@Á, @eet-Á, [`|åÁa^Á&[}•d`&cvåÁţÁa^Áæ&&^••ãa|^ÁţÁ,^[]|^Á, ão@áæ4åã æaàããa Á\*¢&^] Áţ¦Á@Á\*æ}\*, æê Á , @a&@Á, [`|åÁţ}|^Áa^Áæ&&^••ãa|^Áţ¦Á, [Á\*\*•Áœea) €A, ^¦Áx^} Aţ Áx@Á@a\*@áæ)åÁ[, Ásãa^Á\*ç\*)•Áã cvåÁşiÁœA •œa)åæååÁsãa^Á&@eetorEÁ

#### Construction of landside infrastructure

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  - Á Ú¦[çãrā[}Á[,-ÁæaÁ^ç^|Á;aa) åā] \* Á¦[{ ÁÓ`}å^ ÁU~-a&^Á{[Á{[]}Á[,-Á\*;aa) \*, aê Á
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#### **Ancillary Facilities**

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Ô[}•d`&cā[}ÁārÁ×¢]^&c^åÁq[Á&[{ { ^}&^/Ág Áx@/Ár^&[}åÁ`æ÷c^¦A[,~ÁGEFÏÁæ)åÁæèt^Á]Áq[Áæè[`oÁiã¢Á[[}c@/Áq[Á &[{ ]|^c^ÈÁ

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CE;^Á;æc^¦ãæþÁ&@eð;\*^•ÁqiÁx@eÁ&[}•d`&cāj}Á;(^c@;å[|[\*^Á;@3&@A&[č|åÁ^•č|oÁ5jÁsæååãaāj}æ¢Á?;dā[]{{^}cæþÁã[]æ&orÁ qiÁs@[•^Áse•^•^åÁ5jÁs@áAÜÒØÁ;[č|åÁs^Áčàb^&A4čiÅb%A

#### Site establishment and wharf closure

•Á Ò cæà i @ Q ^} cħ - Áxék { ] [ } ] & Âxê (\* ] [ } ] Åxê - Åk 3\* (\* ] [ \* ] Åxê - Åxê (\* ] [ \* ] Åxê -

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- •Á Ò• cæàlãr @ (^} ơh, Áæá&[}•d`&aāt} Á, [¦\ Áæc^æá •āj\* Ál[ææā]\* Áa[[{ Át[Áas^|ā]^æc^ Ás@á Áæc^ædā v@á Á; [` |å Á; æà ^ Á æh[[, æ) & ^ Át[ ¦Ás@o Át` ç æbå Á^æ&@ At æb@ Ásæb\* ^ q Át[ ` ¦Áæb} & @ ¦æ\* ^ Át[ā] o Eðt ç^\ Á; @ B&@ At æbā ^ Ås/•••^ |• Át æb Á }[ ơks:[•• Át[ ¦Áæ^c Á^æe[] • EÁ/@ Áæb; @ Baj æc^å Á ã ^ Át á ^ Át@ Ásæb\* ^• Ást Á] Át Áæà[` ơhO€At ^ d^• Ás Á H€At ^ d^• Ás Á •ã ^ Á
- ■Á Ùãe^ÁA}d^Áæ)åÁ\*¢ãA∱[∄,œÁ;[č|åÁà^Á\*•œaà)ã\*@åÁ{{¦Á@? Á&[}•d`&aã;}}Á;[¦\Áãe^ÁÁ
- •Á V¦æ-a&k&[}d[|Á, ^æ\* ¦^• ÁG, &|`åā]\*Á, æ\*\'& ædÉ, ^å^• dãe) Áse) å Á& &|ã or DÁ, [`|å Áà^Á\* cæà |ã @ å Áş Á æ&&[ ¦åæ) & ^Á, ão@Á@ Ádæ-a&A, æ) æt ^{ ^} o∱, |æ) ÁÇVT ÚDÉ, @a&@Á, [`|å Áà^Á, ![ å` & ^åA[ ||[, ā]\* Ás@ Á å^c^\{ ā] æaā] } Á, -Ás@ ÁÜÒØDÉACE] ] ![] ¦ãæe\*Á, æ`-āj åā]\*Á ât} æt ^Á, [`|å Áà^Á§, • œe|^å Ásæåçã ā]\*Á, -Áse¢c^\} æaãç^Á dæ) •] [¦o∱,] cāt] • Á, @ ¦^Á, ^&\* • • æt Á
- •Á Ò}çã[}{ ^}œa¢As[}d[|•Á,[`|åÅa^Á\*•œaà)ã\*@°åÁsjÁsessa[¦åæ)&^Á,ãœás@^As[}•d`&cãi}Å\*}çã[]{ ^}œa¢Á { æ}æ\*^{ ^}o∱,|æ)ÁÇÔÒTÚDÁ{¦Ás@^Á,![][•æ¢Êç,@a&@Å,[č|åÅa^Á,¦[å`&^åÁ{[||[,ã]\*Ás@Aå^c^\;{ãjææãi}}Á;Ás@A ÜÒØÈÁÁ
- •Á Ü^|^çæ) óÁ`` ĝ { ^} óÁ[ Áà^Á^|[ &æe^àÁ[ Ás@ ÁÔæ{ à^\Á' @ed-ĐA} æb]å] \* Ás@ Á&[ •` \^Á[ ÁÔ[ & æ[ [ Á@]æ] åÁ Y @ed-Á[ \Á] \* |æb^ÈĂ

#### Demolition and removal of the existing ferry wharf

- •Á Ú¦ā; ¦Áţ Á@Á§[}•d`&aā; }Áţ Á@A^, Á, @ee+Éb@Á¢ã cā; \*Á, @ee+Áş [č]åÁa^Á\$4] (\*^åÁe)åÁãcA; d^Áe)åÁ¢ãA ] [ā] @Áş [č]åÁa^Á•cæaà]ã @åÁţ ¦Á@Á§[}•dč &aā; }Á
- A \@ A^\car{a}caj \* A\_[ } d[ ] & E^\(\tar{a}\) \* \_ ac A\(\tar{a}\) a A\(\tar{a}\) \* \_ ac A\(\tar{a}\) a A\(\tar{a}\) \* \_ ac A\(\tar{a}\) A A \\ a a A\(\tar{a}\) A A \\ a a A\(\tar{a}\) A \\ a A \\ a a A\(\tar{a}\) A \\ a A \\ a a A\(\tar{a}\) A \\ a A \\ a a A\(\tar{a}\) A \\ a a A\(\tar{a}\) A \\ a A \\ a a A\(\tar{a}\) A \\ a A \\ a a A\(\tar{a}\) A \\ a A \\ a a A\(\tar{a}\) A \\ a A \\ a a A\(\tar{a}\) A \\ a A \\

#### **Removal of piles**

- •Á Ùơ^\ÁQ: \Áqā à^\DÁ; qh^•Á [č|å Áà^Á^{ [ç^å Á q] \* Ásaký gā læq[ \^Á@æqi { ^\Áq Á×¢d æ& xók@ Aj, qh^•Á\[ { Ás@ Áà^å| [&\ÈÁ V@ Á@æqi { ^\Á, [č|å Áà^Á; a& aAi, ç^\Ás@ Aj, qh^Á • q] \* Ásakásæk \* ^A; [č] č å Á& aa) ^ ÈEQÁs@ Aj, qh^Áa; Á æà aai (^Át, Áa ]č ||^å Á; čÉšáný, [č|å Áà^Á&; cóh ç^|Áq Ás@é à [č|Åà^å Áq; Á^{ æqi, áŋ Á áč ĚÖ áç^\+, Á, [č] å Á& cóh@ Aj, qh^ÁsæÁ, æà ^å Á ]č ||^å Áq; čÉšáný, [č] å Áà^Á&; cóh ç^|Áq Ás@é à [č] Åà^å Áq; Á^{ æqi, áŋ Ás; ÉÖ áç^\+, Á, [č] å Á& cóh@ Aj, qh^ÁsæÁ, æà ^å Á ]^c, [Å • q] \* Ásq] \[] \;äsæ^Á; å^\;æs^\Á \* q] { ^} có
- •Á Úậh•Á, [č|åÁàhÁh{ [çhảÁà Áàæł\*hÁt Ás@A, ~Ë ãn Áæsajãc ÈÁ/@Á, ậh•Á, [č|åÁàhÁhč\*•håÊá, @¦hÁ, [••ãa|hÊá, lÁ ^çh}čæļĥÁ^{ [çhảÁt Ásajāch Ásajāch] & hát Ásajāch Át Asajāc Át LábahÁnč\*•håÊá ][•æjÁ

#### Installation of piles within the waterway

- •Á Ùơ^\|Á[&æɛ[¦Ájā/•Á[¦Á@Aj[}d[] di [] Áj[č|å/ás/Áş]• cæd|^å/áş] di Aísi di
- •Á Ô[}•d`&cāj\*Ájā^Á{[`}åæeāj}Á^^•c^{{ •Á5jÁs^å}[&\Ás[}•ã;orÁ;4xc@^^Á&[{ ][}^}orKá
  - ■Á Phase 1Á Ás¦ā∥ā) \*Ájā^•Áājq Á[&\ÁājÁ&æa‡{Ájæe^¦Á

- . Á Ďæ&@Á,ā^Á,[č|å/ås^Á,áē&°åÁ¦[{ Ás@ Asiael\*^Áse)åÁ,`ó49,d[Á,|æ&&Á\*6];\*Áse4siael\*^Ё; ] \* & \*Áse4a)^ĔADEÁ å¦ā|Áā\*Á; [č] & \*áAá;}d[ Áse4siael\*^Á,[č] å Áseecce&@Át[Ás@ Á;ā^Á •ā] \* Áse4@|{ ^cÁāccā];\*ÉV@ Ási¦ā|Áā\*Á;[č|åÁ •&¦^, Ás@ Á;ā^Áşid[ Ás@ Ási^å|[&、Át[Áse4sia^] c@4;-Á] Át[Ásea][čo4s@^^Á; ^c^+EA
- •Á Phase 2Á Á@æ{ { ^¦∄,\*Á, ∄^•Á{ Á^~`•æ/ŧ Á&æ{{ Á æe^¦Á
  - . Á V@ Ájā^•Áæ¢ Á@eŧ { ^\^å Áç •āj \* Á∞Á HEÁt[}}^Á, ^ā @DÁt[Á^~ •a¢HÉRP æţ { ^\āj \* Áj 4∱•Á,[č |å Áæà ^Á ]|æ&^Áæ¢Á^æe oÁj}^A&eo áj }^Å&eớ \fái ajjā \* Áj -Ájā^•ÈĂQA5a Áæb; a58a] æs^å Ás@eæ¢A æs@ájā^Á, í ` |å Áa^Á@e¢ { ^\^å Á -{ \fáæa[č ofi}}^Á; aj č c Áçæa[č ofi∓€Á@ãe Áj ão@ác@ Á@e¢ { ^\Áj ão@ajÁ;}^Á; aj č c DDÁQ[ \fáæa&@ájā Aj As@aj æscāçãc Áa Áa]^[Át[Áj &&č \fáeA] ^ •Á; c^\fáeA] ^ iā c^\fáeA] ^ iā c^\féeA]
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#### Construction of the bridge, gangway and pontoon

- •Á Qtd a8æec Ájácaj\* Áse) å Áj |æ&c{ ^} ofa, -Á&[ { ] [ } ^ } or Áj, -Ás@c Áj, ^ Å @eet-Áj [ ` |å Ása ^ Ásæet læt å Áj, |æ&c{ ^} ofa + ásæfsa æt\* ^ Á { [ ` } c\* å Áslæ) å Áj |æ&c{ ^} ofa + ásæfsæ æt\* ^ Á { [ ` ] c\* å Áslæ) å Åj |æ&c{ } as a fa \* ásæfsæ æt\* ^ Å } å \* |æ \* Åsæet [ Å } çā [ ] { ^} æet Åsæt |æ \* Åsæfsæ æt\* ^ Å } å \* |æ \* Åsæet [ Å ] çā [ ] { ^} æet Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* Åsæt |æ \* åsæt |æ \* Åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \* åsæt |æ \*
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#### Landside infrastructure

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#### Site clean-up and opening of the new wharf

- ■Á V@^Ááã~Á,[č|åÁà^Á&|^aa)^åÁ]Áa)åÁ^•d[¦^åÁ{ [Áão•Á,¦^çã[č•Á caaz^Á
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- A ODÉA æ ^ c Áæ ^ • { ^} oÁ, -Ás@ Á d` & c` |^ Á, [` |å Ás ^ Á&æ ł ð å Á,` oÁt [ Ásā ^ áæ ^ áæ] ^ Á æ ^ c Á @e æ å å ^ A ^ ` |@] \* Á! [ { Ás[ } • d` & cā] } Ás ^ - { |^ A, ] ^ ] \* Á@ • ^ Áæ ^ æ Át [ Ás@ Á,` à | ð A
- •Á CĘĮÁ&{}•d`&cąį}Á^}&āj\*ĐQ; astašj\*ÁsejaÁ\*ã\*}az\*^Á;[č|åÁsh^Á^{{[c]}}Åsh^Á\*[[]^}Ás@A^Á; @set-Ás[Ás@Ajča|38EA

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Y [ ¦\Áse&cāçāā?\•Á,`orāå^Á,-Árcæ) 忦åÁ@(` ¦•Á, [ ` |åÁà^Á^` ǎ^å/áj Á, ¦å^¦Å', Ákæki^Á, ´ Á, ðjð, ðjð, \*Áse&cāçãa?\•Áæ) å/áj dææ? Á |ãorÁ¦[{ Ás@/Ásæ}\*^Ё, [ ` } c^åÁ&¦æ) ^Êåš`^Á{ Á^` ǎ^{ ^ ` ð^{ ^ A ` ð^ } orÁ[ ¦Á cāļļÁ, æ\*¦ÈÁCBCāçãa?\•Ás@æÁse^Áð ^| Á[ Æ\^Á ` } å^¦cæ\^}Á,`orāa^Á,-Árcæ) åæ}åÅ, [ ¦\Á@ ` ¦•Áse^Á,` djð, ^åÁà^|[ ¸ KÁ

#### Intricate lifting activities

- •Á V@:\^Á, [`|åÅå^Áæà[`óÆ=€4ajda8ææ\*ÁãœÁ@[`\*@[` %@`óÁ@(Á&[} •d`&caja) Áj^¦ajä àĚ4Q)da8ææ\*Áãcaja \*ÁæjåAj|æ&^{ ^}óÁ [~Á&[{][}^) œ Áj ~Á∞@ Áj @æe+Áj [`|åÅå^Á&æeb¦a?åÁj`ŏÁ •aj \*Áaæ\*^E;[[`} c\*åÁ&¦æ)^ÈV@ärÁæ&caçãcã Áj^^å•ÁgiÁavÁá `}å^\cæa\}Ás`¦aj \*Á&æab{ Á\*}ça][}{ ^}caehÁ&[}åãa]) •ÁQicanAj &æ\*\¦ÁæjåAj æ#\jájaj æ‡Aj aj dDžÁ

#### **Piling activities**

- •Á Úậảj\*Á, [¦\Ác] 38æa‡î^Áæà ^•Áæd[`}åÁs@^^Á, ^^\•Át[ÁS[{]|^crÁçæà[`óÁãc?^}Å, ât[œa‡DÁt], æåáks@Á à^\*ā]}āj\*Át, Ás@ ÁS[}•d`&cāt]}Á,^¦āt àÉÁUátāj\*Á, [¦\•Áæd^Á@at@`Á][¦æå38ÈÁV@:\^Át, æĉÁà^Á, [ã^A4;[{Á @æt; { ^¦āj\*Áæ}åÁsi¦ājlāj\*Át, ÁscAj, āħÁt[¦Áæd[`}åÁFEÁt, āj`cr•Át;lÁt[Áæb]åÁs@}Å,[Ár`à•cæ);cãætA,[ã^Át[¦ÁHEÁ { āj`cr•Át;lÁt, [¦^ÈĂ
- Ù\*{{ æ^^/4; ~Á@{ \* |• /4; ~Á; ãt @zÁ; [ |\ Á{ ¦Aj ājā; \* Ásl āļļā; \* Áse8uāçãaā? KÁ
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- •Á Ölalla)\*Á,-Á,a^•Á'[{ÁFaa;Á;Âaa;Á
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- ■Á Pæ{{^¦ā}\*Á¦-Ájā^•Á¦[{Áíæ{ÁgiÁiæ{ĚÁ

#### **Plant and equipment**

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- ■Á Yæz^¦Áj`{]●Á
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# Earthworks

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- ÁÅ ■Á Ùãa∿Áj¦^]ælæaāj}Á
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### Source and quantity of materials

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#### Traffic management and access

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Plate 2 Ô[&\æ[[ Á@|æ) åÅ [ ¦\•Áæ^æ Á

# **1.3 Legislative context**

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# Environment Protection and Biodiversity Conservation Act 1999 Á

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# Sydney Harbour Federation Trust Act 2001

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# Native Title Act 1993

V@AÔ[{ { [ } ^ ઋ ๗@Ю̃[ ç^¦} { ^} o^A} æstor å Ás@ÁNative Title Act 1993Át Át ¦{ æ ∥^Á^&[\*}ā^Áæ) å Á; ¦[ c^&o⁄a, æstīç^Á œ ų/Áāt @o-ÁsjÁCE•dæ) a Át [][, ]] \* Ás@Ás^& āt ]} Á; Ás@ÁPāt @ÁÔ[`¦o⁄a, ÁOE•dæ) a ÁT æài[ ÁBÁU¦•ÁçÁÛ`^^}•|æ) å ÁÇD[ ĚÁ cĐÁÇFJJCĐÁFÏ Í ÁÔ ŠÜÁFÁÇ755 æài[ +DĚÁ

 $\begin{aligned} & \mathsf{CF}_{\mathsf{c}} \mathcal{Q}^* & \mathscr{Q}_{\mathsf{b}} \mathcal{Q}^* & \mathsf{A}_{\mathsf{b}}^* \mathsf{A}_{b}^* \mathsf{A}_{\mathsf{b}}^$ 

Šæ)åÁv@æe/Á@e/Áa^}Á capēr^åA{[¦Áx@ Á&[}•d`&capi}Á,¦Ár•cæaà|ār@(^}c4,-Á,`à|a&A,[¦\•Áad+[Ár¢ca]\*`ār@ •Áad)^Á,æaã;^Á cād¦^Áāt@e/Áad)åÆgic^¦^•orÁ{¦ÁæeA{[}\*ÁæeÁk@ ^Áad^Á •^åÁ{¦Áx@æaA,`¦][•^ÈÁ\c@ ¦Áæd)åÆv}`¦^ÊA`&@ÁæeÁ,ājā]\*Á |^æe^•ÊA(æéÆa^Áx`àb%&A4[Áæaã;^ÁxādүÊ&a^]^}åā]\*Á;}, @?Áx@eA^æe^Á,æeÁ';æeA\*;æeA\*;

 $\label{eq:constraint} V@`!^^{kab}^{A} = \frac{1}{2} \left[ \dot{A} = \frac{1}{2$ 

### Environmental Planning and Assessment Act 1974

V@.Áp.ÙY ÁÔÚBOEÁOBBcÁæ) å Ás@.Áp.ÙY ÁÒ}çã[}{ ^}cæ¢ÁÚ|æ)}ðj\*Áæ)åÁOE••••{ ^}cÁÜ^\*\*|æa‡i}ÁOE€€ÁÇÕÚBOEÁ Ü^\*\*|æa‡i}DÁj¦[çãå^Ás@:Árcæz`q[¦^Áj|æ}}ðj\*Á&[}c^¢cÁ4[Á\*[ç^\¦}Áæ)åÁ`•^Áj|æ}}ðj\*ÉA\*}çã[}{ ^}cæ¢Áæ••••{ ^}cÁ æ)åÁæ]]¦[çæ¢Á5jÁp:ÙY ÉĂ

W}å^¦Ác@ÁQBdÉtáÁejÁ;çã[}{ ^}œelÁ;læ)}ð]\*á§\*é§\*ed`{ ^}o∱;[çãã^•ÁcœenÁ]^8ãð\*åÅå^ç^|[]{ ^}of, æ éå^Ásæi¦ð\*åÁ [čd, ãc@[čds@Aj^^åA[¦Ás^ç^|[]{ ^}ds[]\*o^}d£s@Aŝ^ç^|[]{ ^}df, æ éå^Ásæi¦ð\*åÁ;čdsæi¦ð\*åÁ;čdsæi¦ð\*åÁ; ð]\*dč{ ^}df, æ ába^ácenÁ;læ ába?seil} ð]\*dú[|ðs?ÁgQ+de\*dš\*ása^Ásæidő;ásæidő\*ásei]{ ^}ædá[) ] \*dú[|ðs?ÁgQ+de\*dš\*ása^Ásæidő\*ásei] ] \*dú[|ðs]\*ásei] ] \*dú[|ðs]\*áseidő: ásæidő ] \*dú[|ðs]\*áseidő;ásæidő\*áseidő;áseidő\*áseidő ] \*dú[|ðs]\*áseidő;ásæidő\*áseidő\*áseidő\*áseidő ] \*dú[|ðs]\*áseidő ] \*dí] ] \*dú[|ðs]\*áseidő\*áseidő;áseidő\*áseidő ] \*dí] ] \*dí

Ù^&cāt}}ÁFFGÁt,-Ás@ ÁOBBoAf;¦[çãa^•Áx@enzekab) Áxe8cãçãč Ás@enzekab) Ása^Á&ed;lðrå Aft`oÁ, ão@;`oKsa^ç^|[]{ ^}oÁsa (} •^}oÁsa (Ata^)^Á q[Á@enç^ÁxaÁrði}ãaBeab) oÁr~~&oAft}Ás@ Ár}çãa[]{ ^}dÓb}çãa[]{ ^}cab/AQ] æ8cAÙcæer{ ^}oÁscÓuDAft`•oÁsa Afti(^]æ^åÁ æ)åÁsab];¦[çæAfa^Ár[`\*@Á4:[{ Áx@ ÁTējārc°¦Át[¦ÁÚ|æa}}āj\*Ásab)åÁD}çãa[]{ { ^}dÉA

# Heritage Act 1977

Pǎro[¦&BadyÁsek-&@zee'[|[\* 3BadyÁ^|&Be ÉÉai ǎa ǎ] \* • ÉÉa d` & c`¦^ • ÉÉad & @zee'[|[\* 3BadyÁsi^][• ǎor Ása) å Á^ æzi ¦^ • Ása^ Á; ¦[ơ & ơ à Á `} å^¦Ác@ ÁHerita ge Act 1977Ása) å Á(æ) Ása^Ása^} cãað à Á(} Ás@ ÁÙ cæae^Á? ^¦ǎiæae' ÁÜ/ \* ǎr ơ ¦ÁçÙ PÜ DÁ(¦Ása^Ása) Ása8cáç^Á Q, ơ ¦ã(Á? ^¦ǎiæae' ^ÁU ¦å^ ¦ÉÁ

V@ÁP^¦ãæ±^ÁÔ[`}&ā¦Á,ÁPÙYÊX&[}•cãč c^åÁ}å^¦Ás@ÁHeritage Act 1977ÊÉniÁsē]][āj,c^åÁs^Ás@ÁTājā:c^¦Áse)åÁsiÁ ¦^•][}•āa|^Á[¦Á@¦ãæ±^Á§jÁPÙYÈA/@ÁÔ[`}&ã¦Á^+/&orÁsóáka¦[••Ë=^&cāj}}Á;Á&[{ { `}ãĉÊK[ç^¦}{ ^}o\*be)åÁ &[}•^¦çæaj}}Á\*c]^¦cãe^Ájã@Áso@ÁsDÙYÁP^¦ãæ±^ÁÖãçãrāj}Ás^āj\*Ás@Áj]^¦æaj}}ækáse{Áj,Ásó@ÁÔ[`}&äjÈÁ

V@ÁP^¦ãæ≛^ÁÖãçãrá[}}Á;¦[çãå^•Á\*`ãå^|ð]^•Á[¦Á&[}å\*&cð]\*Áæ•^••{ ^}œÁ[-Á@¦ãæ±\*^Á\*ðt}}ã&æð}&^ÈA/@ÁFJJÎÁ P^¦ãæ±\*^ÁTæ}`æ‡Á9&[\*å^•Á]^&ãã&Á&jä\*¦ãæ4{[¦Áæåå¦^••ð]\*Á©©Á\*ðt}ã&æð}&^Á;-Áæ}Áær{ Áæ}åÅ∞ô\*Áæ•^••{ ^}o^ĆœeÁ à^^}Á&[{ ]|^c\*åÁ9jÁæ&&[¦åæ)&^Á;ã@Á©Q•^Á\*`ãå^|ã]^•ÈÁ

# National Parks and Wildlife Act 1974

V@ ÁNational Parks and Wildlife Act 1974 ዐ>ÚY ÁOB&OÁ, ¦[ ෆ &o ÁOBa[ ¦ ฮੈ ฮิ ạ‡Á@ ¦ãæ≛ ^ÁG ¦æ& • Ék ãr • Áæ) å Á, àb &o DÁ ¸ãoB, Áp ÙY ĚOEoQ \* ®Á@ ¦ ^Áæ^ Á, c@ ¦ÁOBo Á, ¦[ ෆ &o3 \* Áæ) å Á, æ) æ ฮิ ³ \* Á& `|c` ¦æA@ ¦ãæ≛ ^Á§, Áp ^, ÁÙ[ čo2Á æ† • Ék c@ Áå` ^ Áåāðā ^} &^Á, ¦[ &^ å` ¦ ^ Áæ, Æi µ] ^ Áæçæājæà |^Át[ Á, ¦[ b &or Áæ] ] ¦[ ] ¦ãæe^ Át[ Áo3ě ÁOB&dĚÚ ¦[ ෆ &o3i] } Á, ÁOEa[ ¦ ฮੈ ฮิ æ†Á @ ¦ãæ≛ ^Æi Á; ʿdā ^ å Á§ Á Ì Ì Á, Á∞ Áp ÚY ÁOB∞dÉæ Át[ ∬[ , • Ká

 $= \hat{A} \quad \text{SE}_{A}^{\dagger} = [ \hat{A}_{A}^{\dagger} = o\hat{A}_{A}^{\dagger} [ o\hat{A}_{A}^{\dagger} = \hat{A}_{A}^{\dagger} \hat{A}_{A}^{\dagger} = \hat{A}_{A}^{\dagger} \hat{A}$ 

■Á %GZÁ,^¦•[}Á,č•OÁ,[OÁ, æk\Á;Á&^•^&¦æe^Áe)ÁOEa[¦ãtājæ4Á,|æeA+ÁìÌĴÇDEĂ

$$\begin{split} & (\Delta^{+}) = (\Delta^{+}) +$$



W) å^¦Á^&caį} JOEĄ Á@ÁÞÚY ÁDBOÁDEa[¦ã jā ædĄ àb/&orÁQa) åÁ ãor•DĄ č•ó/a^Á/][¦c^å/Aţ Ás@ ÁÖā^&ct ¦EŐ^}^¦ædÁ Q [, ÁÔ@A\*ÁÒ¢^&č cãç^Dฎ Áœ ÁU~ã&A Á ÁÒ}çā[]{ { ^} ó/aa) åÁ?^¦ãæ² ^ÁQUÒPDÁ ão@já Áœ Á^æe[}ææi/^Áaj ^ÁÇ}|^••/ãaÁ @æ Á¦^çājč•|^Áa^^}Á^&[¦å^å/aa) åÁčà{ ãoc^å/At ÁOEPQT ÙDÀÚ/^}ædo?•Át ÁÅFFÊEEEÁt[¦Áaa) Át åãçãačæk/aa åÁbOCÊEEEÁ -{¦ÁæA&[¦][¦æaāt]}Át æô Áaa]]|^Át[¦Á\*æ&@Atàb/&oA^][ó/a][¦c^åÈĂ

# Ü^|^çæ); ó%&[}•^¦çæaā[}}Áj[|&&^Á

Q ÁÐ EEL Á © ÁÕ[ç^¦}{ ^} o ÁÐEL& @zer & aqu Áu ~ 38 ^ Át, Á to @ Á @ } ÁP ÙY ÁÖ ^] æt d ^} o Át, ÁÔ[{ { ^ \ &^ Á ^ \ ^ Á } \* æt ^ å Át Á ] \^] æt^ Á æt Á [ ] \* ^ \ ; cæat } ÁT æ) æt ^{ { ^} o Áu] æj Á ÇÔT ÚDÁY; \ Á © ÁÔ[ } ç 38 o ÁŬ ` å å ä \* • Áæj å ÁÜ ^{ æt j \* A \* } ÁÔ[ & at [ Á @ |æ) å É ÁQ Ár æt ^ Á ^ æt É Õ[ å å ^ } ÁT æ& æt Å [ \* æ) Á æt Å } \* æt ^ å Át Át Á \ / A \* æt ^ å Át [ Å : A \* æt Å \* æt å \* æt Å \* æt å \* æt Å \* æt å \* æt Å \* æt å \* æt å \* æt Å

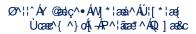
Q ÁGEF€ÁÙ^ å}^^ ÁP æsà[`¦ÁØ^å^¦ææãį}Á/¦`•oÁ&[{ { ã•ãį}}^åÁæÁT æ)æt^{ ^}oÁÚ|æ)Á[¦ÁÔ[&\æti[[ÁQ|æ)åÈÁV@Á Tæ)æt^{ ^}oÁÚ|æ)Á§ &|`å^•Á&[}•^¦çææãį}Á∫[|&&&\*A\*/ææ3]\*Át[Á@!ãæt\*^Át]Å@@!ãæt\*^Át]Å@@~Áši/@\*Aši/[\^}Á§ d[Á \*^}^¦æ¢Á[[]&&&\*É\$æeÁ,^||ÁseÁ]^&ãã&A,[]&&ä&\*Á^|ææ3]\*Át[Áse&@æ\*[|[\*^ÈA/@[•^Á^|^çæ)óAt[Ác@á\*Á,![b\*&óAse^Á å^cæãA\*åÅa^[[\_ÉÁ

No.	Policies	Supporting policies
FÁ	V@Á⊃æaā[}æakÁæ)åÁÔ[{{[}},^æ¢c@Á@¦ãæe*^Áçæa;*^•Áæ)åÁ ][c^}cãækÁY[¦ åÁP^¦ãæe*^Áçæa;*^•Á;4Ô[&\æa[[Á® æ)åÁæ)åÁæ)åÁæ ^ ^{^}s^Ace*A&@Aaæe*ãA{[¦Á&[}•^¦çā]*Áæ)åÁ(æ)æ*ä]*Ás@Áæà¦&&Á [-Ás@Á]æ&^Á	æbĂ Ô[}•ãā^¦Áo@Áā[]æ&oA[-Áaa)^Áaæ&cā[}Á [-Áo@Á¤æaā[}æhÁaa)åÁ Ô[{{[}, ^æho@A?^¦ãæe*^Áçæaa*^•Á [-Áo@Á] æ&^bÁá
		à Ă W ^ Ás@ ÁSignificant Impact Guidelines 1.1 and 1.2, Department of Environment and Heritage, May 2006Át Áæ • ā مُهْعَ Á ¦^æ&@] * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى إ^ç^ الْمَرْ الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْنَى * الْمَعْ
GÁ	Ôæł¦^ Á; `oko@ Á; č¦^ Á&[}•^¦çææā]} Áæjå Áæåæå ææā]; A á, Áko@ Áæà¦ & A [-Áko@ Á; æ&^ ÁşiÁæ&&[¦åæ); &^A;ãc@ko@ Á;¦āj&a] ^• A á, Áko@ ÁCE•dæa#aA ©ÔUTUÙÁO`¦¦æAÔ@eedc¦⊞EXÁ	æbĂ Ò}•`¦^Ás@ ÁÓ`¦¦æAÔ@eetor¦ÁarÁ [à•^¦ç^åA\$ajÁse‡ Ářč'!^Á,[!\•Á &æe¦ā∿åAî,`oAî,}As@ Áar æajåDéA
ÍÁ	Y@}Á&[}•ãā^¦āj*Áj¦[][•憕Á{¦Á&@enj*^Ásaj憰•^Áj[ơ};œãedÁ ā[]æ∨Á;}Á@Áæaj*ãa ^ÁsajåÁsjœaj*ãa ^Á@iłãæ#^Áşæ‡`^•Á;Á@Á ã* æ)åÈÉY@i^ç^¦Áj¦[][•憕Áse^Áá^Aj^Á{á[j]æ&oA}Á@iłãæ#^Á çætj`^•ÉseefP^¦ãæ#^ÁQ]æ&oAUcæer{{ ^}o4,ã]Ása^Áj¦^]æ^åÉseejåÁ ,@i'^Á^`čã^åÁ^~}i!^åÁ`}å^iÁceÁOUÓOÁOB&oÁ	åÈÁ P^¦ãaæt*^ÁQ;]æ&oÁÙcææ^{^}œ, ÁjáļÁ à^Áj¦^]æ{^å&î^á±eá/^ ^çæ}oÁ @°¦ãaæt*^Áj¦[-^•∙āj}æ†ÈÁÁ Á
ΪÁ	T^æe*`¦^∙ÁţĨÁ`]*¦æå^Áàĭā¦åāj*•Áa)åÁrd`&cĭ¦^•ÁţĨÁæ&@a∿ç^ÁÓÔOZÁ &[{] ãaa)&^Áa)åÁţ^^oÁUPÙÁræa)åæå•Áæ∀ÁţÁţájā[ãrÁá@A ¦^{[çæ4Á]¦Áæåæ];œæaĵ}}Áţ~Ás@Ár¢ãrœ]*Á?ä}ã&æa)óÁæà¦ã&Á	Á

Table 1 Ü^|^ça) o∱[|3&a) • Á¦[{ÂÛPØVÁTa) a≛ ^{ ^} A∫|a) ÁÇGEF€DÁ



Á		
No.	Policies	Supporting policies
ÌÁ	Ŏ}•`¦^Ác@eeeÁeej^Á,^,Áa`ąláðj*•ÊAcd`&č¦^•ÊÁee&&qládð*•Á;¦Á&@eej*^Á æh^Á^{{]}aæ@rca&ÁqiÁ;¦Á;¦Á*}@eej&^Ác@rláde#^Áçaqi`^•Á;~Ác@rÁ ] æ&^Á	æbĂ Y @¦^Á,^, Áàĭā¦åā],*●ÉA(d`&c'¦^●Á æ)åÁæ&ajānā?●Ásc^Ásc]]¦[]¦ãaee^Ásc@ālÁ å^●ãt}Á; `●dA
		■Áà^Á*^{] æn@ cã&Át[Áx@ Á@ ¦ãæet^Á çætĭ^•Át_Áx@ Ásia  ætjà å Ê5k@ Á&@eetæsec*¦Á [Á@ Ájæ cã&ĭ  ætAj¦^&ãj &oÁsej å Á ^¢ã cãj *Ásiĩ ã åãj *•Ásej å Áã¢cč¦^•ÁsjÁs@ Á çã&ãjãc Ásej å Áx@ ãlÁ*^ccāj *LÁ
		■Áæe•ãrcý,ãn0¢ho@Á\$j;c\]¦^cæaāj}⁄t,-Á @\¦ãæe*^Ási`å¦å3j*•Á;¦Áã¢c`¦^•Ás@æeÁ @æç^Á;¦^çā[`• ^Ásh^}Á^{{ [ç^å]A
		●Á¦^cæaā)Ás@Á5)å`●dãadeÁ4&&ad^Áaa)åÁ[¦{Á [-Á^¢ārcā)*Ásìšalåāj*●Á5)Ás@Á(æláāāāį^Á ]¦^&ā)&daÃ
		●Á@æç^Áæá[à`●Ó&&@eba&ck¦ÁæjåÁ;æaājæá ājÁ^^]āj*Ájão@ó&á{¦{ ^¦Ásjå`●dãæjá ●^ccāj*ÁsjÁj@a&@ko@^Áech^Á{&&æ*åÈÁ
FÍ Á	Ü^&[*}ã^^kəə) å Á^cæaā) Á ãt}ã&eaa) o%çār, •k4[Ê£4 [{ kea) å Á, ãrc@aj Arc@o Á ã+ æa) å Aāj Aãor Á@eebà[`¦Á^ccāj*L4j^¦{ ãrcāj * A^æor Á^&[*}ãrāj}Aea) å Á āj c^¦]¦^cæaāj}Af <sub>i</sub> -Áaičājaåāj*•E4aa) å•&eaaj^Á^a∞aač¦^•E4aa9 å/&alaa)^•EA	&ŻĂ Ô[}•ãā^¦Ás@Á,[ơ^}cãæ‡Áặi]æ&o4í,Á ,[¦\•Á;}kÁ
		■ÁOBB&^••Á[Á:ð]}ãaBaa)okçaa)cæ≛^Á][ð];o•Á [}Ác®/Áai aa)åLÁaa)åÁ
		■ÁXa³,●Á;-Áo@Áãa  a3) åÁ¦[{Áo@Á, aae^¦Á a3) åÁ`¦¦[`}åāj*Á @[¦^ āj^●ÈÁ
FÎ Á	Ú¦[c^&cAæy)åÁ&[}•^¦ç^Áæq Áæd&@æe^[ [*a&æqA^{ æng}•Át}ÁÔ[&\æq[[Á Qe æn)åÁ	à ÈÁ W•^Áse&@ee*[ [*38æ¢Á^}•ãñaçãc Á {æ}•Á\[{Áx@ ÁÔ[}•^\¦çæaãa]}Á Tæ)æ*^{ ^}o¥Ú æ)Áse Áse4* ĭãa^Á ,@}Á, æ}}ð;*Á,[¦\•Á(}Ás@ Á ã  æ)åÈÁ
G€Á	Ò}&[`¦æt^⁄∱`à ã&Áæ&&^∙∙Át[Áo@/Æi æ)}åÁ	æbĂ Ò}&[ĭ¦æ*^Áæ)åÁą[]¦[ç^ÁA¦¦^Á ●^¦ça&^●Á[Ác@Áær æ)åLÁÁ
		& EÁ W ⊧^Áoc@ Á&[}d[ Á;-Áaa&&^••Át[Áaa)åÁ c@[`*@Áoc@ Á ãc^ÁrQ * Á^caaaa)ā]*Á Ô[&\aati [Áqe]aa)åÁY@aa±-Áae-Áoc@ Á {aaaajÁ][ā]oA[-ÁA}}d^DÁt[Á@e]]Á ā]c°¦]¦^ÓAoc@ Á@e¦ãaæ≛^Áoçaaa¥`^•Át]-Á c@ Á; aa&^EAÁ
<b>GFÁ</b>	OBB&A∿••Át[Ánc@/Áas aa)åÁasÁt[Ána^Á¦¦ā[a⇔áāîÁna^Á∧¦¦^Bo&@ea+ov- Á aa)åÁniaa)•][loÁjãnc@bjÁÔ[&\aae[[Áno aa)åÁasÁt[Ána^Á¦¦ā[a⇔áāîÁ ]^å^•dãaa)Á	æÈĂ Ú¦[çãã^ÁæÁ^*č æáÁ^!!^Á^!çã&^ÁţÁ c@?Áãr æ)åÊĂ∙ē]*ÁeóA\$[{àē]æãaţ}∱ţÁ ]`à ã&Áæ)åÅ;lãçæcrÁr^!çã&r•ÈÁ
GGÁ	Q,] ^{ ^} ơ¼ ^æĕ ¦^• Á⊈ Á@ ]Á ^&č ¦^ÁÔ[&\æa[[ÁQe æ)å Áset ænang • ơÁ c@ -oĐÂýcæ)å ænanæ { Áse)å Á‡ c@ ¦Ásiār č ¦àæ)&^• Á	&ÈĂ Ô[}•ãâ^¦Á§j•cæq ææāţ}Áţ-Á& [•^åÁ &ã& ãÁ∞ ^çãaţ}ÁţÁ[Á][]ãt[¦Á •ãt}ãa&aa)óAs ă¢â∄*•Áæ)åÁ c@q¦[`* @æd^•Áţ}Ác@/Ása aa)åÈÁ
I FÁ	Ò¢ãrcāj*Áj@eel-æet^ÁasÁqtÁa∿ÁA∿cæangt^åÁæ)jåÁA^ĭ∙^åÁj@el^ç^lÁ ][••ãal ^Á	æÈĂ Ò¢ãrcāj*Áj @eet-æt^ÁsarÁtjÁsa^Á ¦^cæaāj^åÅeetjåÁn`∙^åÁj@e'/A ]¦æ&ca&æaai ^Êftãç^}Ás@Áj@•a&æa4Á ¦^``ãl^{^}œA[,45b]c^}å^åÁ`•^LÁ
		à ĐÁ Ò ¢ã cã) * Á @et ç^• Á æ Áta^Áada å Á q[Áad) å Ár¢ cr} å^å Áta) å Á, ^ Á g@et ç^• Á, æ Áta^Á^ Èr• cæad jã @ å Á g@: ¦^ Á{ ; { ^: Á @et ç^• Ár¢ã crå ĐÁ





# 1.4 Authorship and acknowledgement

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V@&rÁ^][¦oÁ, ærÁ, ¦ãoc^}Ásô^ÁÜÚÙÁ?^¦ãoz#^ÁTæ); æ\*^¦ÁÖ^à[¦æ@Á2æ4ā); æ4, ão@Áær•ãræa); &^Á¦[{ÁÜÚÙÁÙ^}ā[¦ÁÕ@ÙÁ OEjæ (\*oÆ)?æ{ãaÁSæ4ã[ãÈV@Á^][¦oÁ, ærÁ^çã?, ^åÁsô^ÁÜÚÙÁÙ^}ã[¦ÁÔ¢^&`cãç^Á ÁÔ}çã[]}{^}óAs); åA?^¦ãoz#^ÁÔ¦ājÁ Yājlãe{•ÈÁ

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Table 2 OB& } [	, ^å*^{ ^}♂Á
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Name	Position	Organisation
Úæĭ  ÁÓ æãÁ	Ù^}ā[¦ÁÖ^∙ā"}ÁTaa)ae"^¦Á	Pæ}∙^}ÁŸ`}&\^}Á
Ú^&\¦ÁT æ}*^ •Á	ÜÒØÁÚ¦[b^&oATæ)æ*^¦Á	ÜÚÙÁ
Sæda Á0#[&@¦&@Á	ÜÒØÁÚ¦[b∿&oÁTæ)æ*^¦Á	ÜÚÙÁ
Óæ¦^ ÁÕ`} c@∿¦Á	Ù^}āį¦ÁÔč 覿‡Á??^¦ãaæ≛^ÁO2åçãa[¦Á	ÜT ÙÁ

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# GÁ Œa[¦ãtājæ‡Á@\¦ãuæt^Á

# 2.1 Local environment

# Õ^[|[\*^ Áæ) å Á [ã• Á

V@Á^[|[\*^Á, ÁÔ[&\æqi[ÁQ|æ)åÆiÁā[āædÁ[Á@A`;![`}}åā]\*Á[;^•@;!^•ÁyÁ@ædÆiÆ&@?-;<sup>†</sup>Æ[{];ã^•A Pæ, \^•à`;'ÂÛæ)å•d[}^ĚPæ, \^•à`;'ÂUæ)å•d[}^ÆiA;æå^Á]Á, æå^Á]Á, Áæ)å•d[}^Ásajå•d[}^Æse Á, ~||Æe Á`æc ĚV@Á ]!^•^}&^Á; Áæ)å•d[}^ÆjA@ÁUčå^ÁOE^æÆiÆi[][;œ) óÁ[;ÅOEa[;ãā]ædÁ[&&`]æaā]}Á; Á@Ase^æÆi^æÆi^&&`æc ĚV@Á ]'^•Á; Áā&ããðaåáK`~ÆsjåA`æc Á@æç^Æi^^}Ái][;œ) óÁ[;ÅOEa[;äā]ædÁ[&&`]æaā]}Á; Á@Ase^æÆi^&&` c`]^•Á; Áā&ããðaåáK`~ÆsjåA`æc Á@æç^Æi^^}Á` &\*^å&Asjå•d[}^Á;æA`\*åAd[;A`;ājåā]\*Á;[[ç^•Ê&e ÆseÁ[;{{A;~A@}c';AGAA[&\A@;C';Aj;^•^}dDEsejåÆse {^åã { Á[;A}\*;\*;æçā]\*•ÁsjåÆseEEset[]\*\*•Ó;c@;A`\*^EA

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Ô[&\æq[[Á@[æ]åÁārÁæÁ[&\^Áar[æ]ååÁrãčæe\*åÁ9jÁæÁ @|c\*¦^åÁ[&ææa]}}Ájão@ÁY[[|, &&@A,^}]ð]•`|æÁq[Á@A,[¦c@Á Óã&@¦[ç^Á,^}ð]ð]•`|æÁq[Á@A[`c@Á\*ærdÉÖ|`{{[^}^Áq[Ác@A,0^4]åÅÖ|^^}, &&@ÁV[[], &&@Á\[]ð]oÁq[Ác@A,[¦c@Á\*ærdÉÁV@A ã\*|æ)åÁāær^|~ÁarÁ\*¢c\*}•ãç^|[]^åÁæ}åÁ\*`;![`}å^åÁa`ÁôZat@?Á,[]`|æe\*åÁ&[{{ ^!&&æ4Ás}åÁ^•ãa^}cædÉÁ @ÁarÁær[Á]&æe\*åÁsjÁæás`•^Á,æe\*;, æÁjão@Á^;;?\*E%&æ\*[Á;^ã@e\*;•ÁsajåÁ,|^æ\*;^Á&;æoÁse]Á,æ•ð]\*ÁsaÁ ;^\*`;æÁsæ?ãÆÁ

# Ø[[¦æÁse);åÁæě}æÁ

V@^Á,`¦][•^Á;Á&@^Á{||[\_]ā]\*Á`{{æ}^ÁseÁt[Á,¦[çãe^Áse)Áse]Áseäta]}Á;Á&@Ac]^•Á;ÁA(¦¦æakee)åÁæ}}æá,@&&@4;æá @æç¢Ása^^}Áseçæasjææi|^Át[ÁOEa[¦ātā]æaká,^[]|^ÁsejÁs@•Á;æ•ó4{¦Á`•c^}æ)&^Áse}åÁæ;á;æe^¦ãæaká^•[`¦&^•È4/@siÁ^&cat]}Á å[^•Á,[cá/^]|æ&^á([¦^Ása^cæat}^åá\*&[|[\*a&æakáčåa?•ÈÁ



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# Ú¦^çā[`•Áæ)åÁ •^Áæ)åÁåã č¦àæ)&^Á



#### Ç¢4[{ÂÛPØVÁÔTÚÁG€F€KL€DDĂ

RPS

# Ù^} c@•ã Ą{ ↔} çã[ } { ^} c\$¢Á

 $V @ \hat{A} U \check{c} a^{A} (\Delta E^{A} a A \oplus A^{A}) A^{A} \phi c^{A} + a \check{c}^{A} A \check{a} ] a B C^{A} a^{A} A^{A$ 

# 2.2 Archaeological context

# Ò c@; [\* ¦ æ]; @ & Á & [} c^¢ ¢ Á

 $\begin{aligned} Cl{p}cq{}^* @{A} | ask^a A_{a}^{c} <^{A} A_{a} & A_{a}^{c} | coe_{i} \} A_{a} & A_{a}^{c} coe_{i} \} A_{a} & Q_{i}^{c} A_{a}$ 

Q ÁrīJFÁÕ[ç^\}[¦ÁÚ@aja]Á^&[¦å^åÁs@eenÁ@ÁYæ)\*æjÁ;æ{^Á[¦ÁÔ[&\æe[[Á@|æ)åÁ;æ ÁYæ^Ae[æ®e2eAA@fæ;Á][oÁ}[,}Á @{, Ás@ Áæ|æ)åÁ;æ Á•^åÁs^Ás@ ÁYæ)\*æjÉå;c@\¦Ás@e)Á[¦Áãr@3]\*Áse)åÁj[••ãa|^Á[¦Á\*•3]\*Ás@ Ás¦^•Á[¦Ásæ)[^Á {æ}3]\*Á©2/~c&@\¦ÁGEFFKÏÍDEĂ

Šæl\*^ÁQEa[¦āťājæļÁ'¦[˘]•Á`&@kæe Áx@, •^Á @, Áãç^å Áxæà[˘xÂ\^å}^Á@edà[˘¦Á ^¦^Áazæ-^åAţ}Áāj•@ajÉĂjã@lé@ \*^Á ãt][¦cæ)&^Á;|æ&^åAţ}Á\*¢c\*}å^åAæatet āîÁ';[č]•Á;¦Ákaja)•Éka@alÁ&[}}^&@atA&[} \*&atationalise\* Šã^Áţc@¦Áæ)\*`æ\*^Á';[č]•Éka@Áxæ}\*æ‡Áţ]^¦æx\*åáţ}ÁxæA`à•ã:c\*}&^Á\*&{[{^kazæ-^åáţ}}Á@}; \*æz@¦āj\*Ébæ)åÅkaxÁa; Áçãa^}cÁ;[{ Áx@Áxe&@ev\*[|[\*a8æ4Á^&[¦åÁxææká@árÁxe^æ4,[č]åÁ@æç^Á@æåÁxæà`}åæ)cÁt[åá !^•[č]&^•Á5jÁx@Át&^æ}Ék@æbà[č]EÁt{¦^•o:cáæ)åÁ;[åæ}å=A`~a8æ}cÁt{Áz]][¦cÁxaÆ\*\*\*AKDE[¦á\*ā;æ4Á[]]č]\*æata}EÁA

Tæ)^Á, Ás@ÁDEa[¦ātājæ¢Ks[{{`}ānā\*•Ánāçāj\*Áse[`}åÂÛ^å}^^Áœeaà[`¦Ē£sj&|`åāj\*Ás@ÁYæ)\*æ¢Á,[]`|æanā;}Ē4, ^!^Á å^çæreæe\*åÅå^Ás@Á,`cà!^æa\Á, Á{ æ¢|][¢ÆsjÁFÏÌ]Ĕ4QA5a Ás@2\*æ@Asea[`}åÁœekæ[`}åÁœekæ[`}å |ãçāj\*ÆsjÁÙ^å}^^ÁseeAs@eexAsa[^Á, ^!^Á;ä∥^åÆs`Ás@Æsäa^æe^ĔATæ)^Á;Ás@ÂÙ^å}^^Æs|æ)•Á, ^!^Æsa^&a¢AsejåÁ {[ç^åÁs[Á;c@:!&se4^æeÆsjc\*}åäj\*Ás[Á\*•&æaj^Ásc@Æsäa^æe^EA

# Ú¦^çāį`•|^Á^&[¦å^åÁŒa[¦ã†ājæ‡Áãz^•Á

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Site type	Frequency	Per cent
Ù@~ c^¦Á,ão@4(,ããå^})Á	ÌÁ	HÃÁ
Tãåå^}Á	ÎÁ	GĨĂÁ
Ù@\@\¦Ájão@\$&^][•ãaÁ	FÁ	IÃÁ
Ó`¦ãæ¢ÉÂ*@⊘ c^¦Á,ão©4≬,ããå^}Á	FÁ	IÃÁ
Ü[&\Á^}*¦æçāj*ÊA;@r ơ∿¦Ájão@Á å^][●ãnÁ	FÁ	IÃÁ
Ü[&\Á^}*¦æçā)*ÉAr@r ơ∖¦Ájão@Á {ããå^}Á	FÁ	IÃÁ
Tãåå^}ÊÁ⇔ec∿-æ&oÁ-&æec∿¦Á	FÁ	IÃÁ
Œ¢^Á*¦ājåāj*Á*¦[[ç^ÊÁ,æe^¦Á@; ^ÊÁ ,^∥Á	FÁ	IÃÁ
Ù@ &¦Á,ão@\$aad£#;@ &¦Á,ão@\$a^][•ãA	FÁ	IÃÁ
Ù@ &¦Á ão dáta	FÁ	IÃÁ
Tãåå^}ÊA(@\ c^\¦Ájãc@ÁaekoÁ	FÁ	IÃÁ
Ù@ c^¦Á,ão@kaddĂn@ c^¦Á,ão@k(,ãåå^}Á	FÁ	IÃÁ

Table 3 Ù `{ { æ' Á; -Á0EP QT Ù ÂUãx^• Á; ãc@3; Áx@ Á ^ æ&@ å Á&[ [ ¦å ∄; æx^• Á



Site type	Frequency	Per cent
Total	24	100%

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# OE&@ee^[|[\*a&aek/Áaex^¦æeč¦^Á^ça?\_ Á

Õãç^}Ác@Á¢c^}•ãç^Á;aa)åÁ;[åãã&ææãi}Áæ)åÁ•^Á;—ÁÔ[&\æe[[Á@|æ)åÊ&c@¦^Áæ+^Á^, Áæ+&@æe'[|[\*ã&æ‡Á^][¦o•Á å^æ‡3;\*Á;ão@k@Æi|æ)åq×ÁDā[¦ãtā]æ‡Á@ěiq[¦^Á§jÁæ)^Á^æ‡A&^]c@ÈA/@Á{[||[,ā]\*Á^][¦o•Á&^æ‡Á;ão@ko@Áæ+&@æe'[|[\*^Á [Áæ+^æ=Á`¦¦[`}åā]\*ÁÔ[&\æe[[Á@|æ)åÊ#§j-{|¦{æeãi}}Á;-Á;@&&@A&æ)Á&^Á¢cdæ][|æe^åÁ{[Áæ]]]^Á{[Ác@AÛcčå^ÁDE^æ#Á

# Australian Archaeological Survey Consultants Pty Ltd, 1995. Archaeological Assessment of Callan Park and Yurulbin Point

 $\begin{array}{l} & \forall \mathfrak{Gr} \ \texttt{Ase} \bullet ^\bullet \bullet \cdot \{ \ ^ \} \ \texttt{G} \ \texttt{C}$ 

#### Tanner Architects, 2011. Callan Park Conservation Management Plan, Volume 1

 $\begin{array}{l} & \bigvee ( \widehat{A} \cap \widehat{A} ) \xrightarrow{A} ( \widehat{A} ) \xrightarrow{$ 

$$\begin{split} & \bigvee (A_{1} - A_{2} \otimes A_{2} \otimes A_{1} \otimes A_{2} \otimes A_{4} \otimes A_{2$$

# Ù^} c@•ã/Á ÁŒa[¦ã ã) ækkek&@æ^[∥[\*ã&ækka[} c^¢cÁ

CEpcoQ\*\*@ÁU[¦c/ARæ&&\•[}Á, ærá,}&^ÁQ}{^A&i^AQ} {^A&i^A} {^A&i^AQ} {^A&i^A} {^A&i^AQ} {^A&i^A} {^A&i^AQ} {^A&i^A} {^A&i^AQ} {^A&i^A&i^A} {^A&i^A&i^A} {^A&i^A&i^A} {^A&i^A&i^A} {^A&i^A&i^A} {^A&i^A&i^A} {^A&i^

V@Á^•č|œÁ;-Á;¦^çā[č•Áæ&&@ee^[|[\*ã&æa¢Aş;ç^•cātææaā;}•ÁşiÁc@ÁÚ[¦cÁRæa&\•[}Áæc^æaAč\*\*\*^•óAs@æa¢OEa[¦ätājæ4A;^[]|^Á \_@/Áşi@æajāc^åÁs@Áæ^æAşiÁc@Á;æ•óA;æåoÁ;•^Á;-ÁxáAæ}\*^Á;-Á[&æa|^Áæçæaajæai|^Á^•[č¦&^•Áşi&|čåāj\*Á@||-ãt@ÉAã;@ÉA



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# RPS

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#### 3.1 Broad historical context

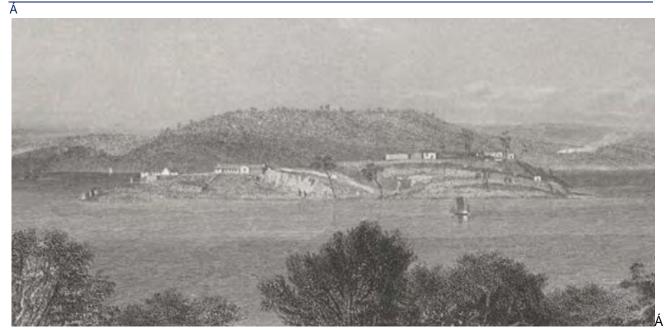
Ô[&\æq[[Á@()a3)åÁ@æeÁ@æåÁ(a3)^Á•^•Áāj&^Áāj•oÁ,[•dēi^cq^{ ^}oÁ\*•^ÁæeÁæá,¦ã;[}Á§jÁFÌHJÈÁ/@Á[||[¸āj\*Á cā[^]āj^Á\*áç^•Áæás¦ãv-Á}a3j•@[oA[-Ás@\*•^Á]^¦ā[å•Á[]•dč &cā[}ÁæjåÁ\*•^kÁ

- FÌHJËFÌÍ€Á Á Ú¦ãa[}Á
- FÌÍ€ËFÌÏ€Á Á Øãc¦[^ÁÖ[&∖Áæ);åÁγ[¦\•@2]ÊÁ@3jÁsìĭā¦åãj\*Á
- FÌÏ€ËFÌÌ€Á Á Óã[[^|æáQ,å`•dãæ4ÁÛ&@[[|Á{[¦ÁÕã|•Áæ);åÁÜ^-{[¦{ æ[[¦^ A
- FÌÌ€ËFÌJ€ÁÁÁ Ù@ājàĭājååāj\*ÁsejåÁ^]æãiÁse&cañçãaã∿•LÁÙĭc@°¦|æ)åÁÖ[&∖Á
- FJJ€ËEJH€Á Á Ô[{{[},^æ¢@4xpæçæ¢4Ö[&\^æ¢åÁ
- FJHEËFJIÍÁ Ù@3, à ˘ąåą¯,\* Áa), å Ás[&\, ^ æ¦å Át[\*ÁÙ[` o@ÁY ^•oÁÚæ&ãã&Ás`¦āj,\* ÁY [¦|å ÁY æ¦ÁCÁt[||[¸āj,\* Áæ|A[,-Á Ùāj,\* æ][¦^Á
- FJIÍËFJĨÍÁ ÓEā áñāā;}æ¢Á@ājà čājåāj\*ÁæjåÁ^]æālÁ^-āñĄ(-Á/Ёk]æ•Á`à{ækāj^•Áæ)åÁ⊳æç^Áå^•d[^^¦•ÁçÈÈÁ HMAS VoyagerÁæ)åÁHMAS VampireDÁ
- FJÎ Í ËFJJCÁ LÁN^kça&^Áæ) åÁ^-año[,-ÁUà^\[}Á&|æe•Á[,-Á\*`à{ ædā],^•Áæ) åÁ&[}•d`&aā[}∱(-ÁHMAS Success.Á Ö[&\^æ\åÁ&|[•^•ÁajÁFJJOEA[,æ&@3]^\^Á+[|åÁ[-Áæ] åÁæai[ĭoÁl€Áaš ā]dåā]\*•Áæ) åÁ^ç^\æ‡Á@eekç^•Á æ^Aå^{[]ã@obáÁ
- GEEFË,¦^•^}ơÁ kểrâ}^^Á?æàà[`¦Áơ^å^¦æa‡i}Á/¦`•ơ£æ••`{^•Á&[}d[|Áį.4‰@Ášar|æ);åÁ[||[,ā]:\*Áæáå^&æáå^Áį.-Á ā]æ&cāçāĉ ÈÁQ|æ);åÁ^[]^}^åÁţiÁc@Á,`à|ã&Á§iÁGEEÏÁ[||[,ā]:\*Á\*¢c?}•ãç^Á^{ ^åãæa‡i}Áœ);åÁ ¦^@æàāfãææa‡i}ÈÁ

# Ú¦ã[}Á

Q ÁRÌ HJÉÁ 㢠Ć Á, ¦ãr[}^\+ Á, ^\^Ásk|[`\*@ÓÁ'[{ Á¤[+-[|\Á@|aa) å Át[ÁÔ[& \æt[[Á@|aa) å ÈÁŠã ^Á, ^Aæa' ÁÕ[ææA@|aa) å ÉÁ • ^å Á ær ÁæÁ, |æ&^Á, Á@æå Áæai[`|Át[¦Á&[}çã&or Á āj & ^ÁRÌ Ge= ÉÉÔ[&\æt[[Á@|aa) å Á@æå Áæt]]^Á`]]|ã∿ Á, Áa) å• d[}^ÉÄ ]¦[çãa ā] \*Á∞ Á, ^] |^Áæ¦ãç^å Á&[}çã&or Á, ãr@Á, [|\ÈÁ\@^Â, ^\^Á&@æ\* ^å Á, ãr@Á&[}•d`&aa] \*Á∞ Á&[}çã&orÁ d[&\æå ] ār@Á%[[Á5] å`|\*^} & ^Ásk^î[} å Ás@ Á dã&oŕÕ[ç^¦}{ ^}oÁæaā]} +ÁÇÙ^å}^^ÁÕæ ^cc^Áæ) å Á¤^, ÁÙ[`c@ÁV æ†^•ÁOãç^¦œ\*^¦Á ā fÃÕ[åå^} ÁT æ&\^ÁŠ[\*æ) Á⊖€€JKFÍ DĚÁ





 $\begin{array}{l} \textbf{Plate 3} \ddot{O}^{\alpha} a \ddot{a} \dot{A}_{\gamma} & \dot{A}_{\gamma}$ 

V@:Áāl•oÁsǐāpåāj\*Áj@ze•^Áį}ÁÔ[&\ze[[Á@(|ze)åÁq[[\Áj|ze3x^Ás^ç\_^}}ÁFÌHJÁze)åÁrÌIFÈÁVzeà|^Á.Ái^o•ÁjĭoÁs@:Á &[}•dĭ&cāj}•Ášĭ¦āj\*Ás@žiÁj@ze•hÁ

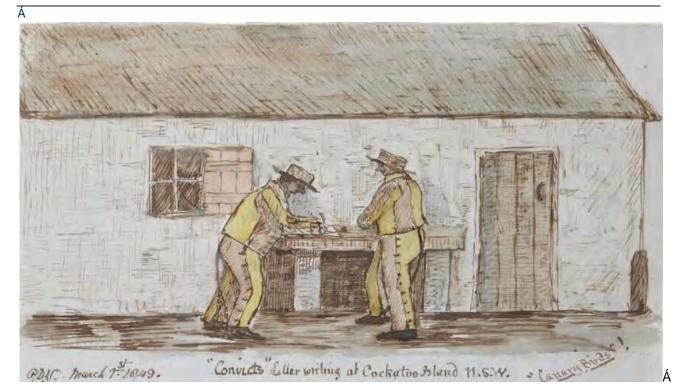
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Date	Constructions
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FÌ I €ЁÌ I FÁ	Op.c^¦āj¦Áāncāj*Áj,-Áj,^••Á;@°åÉÁQ[•]ãnca‡Á,[ĚÁHÁ, cebåÉáseb&@Aj,ç^¦Ánca}∖ÉÉ\¢c^}•āj}Ág[Á, @eeb-ÉÁ cebååãnāj}a‡Á^ã:@cÁ;āj[•Á

#### Á

Ø| &čæaā} ) •Áşi Á @æaÁ, ¦æð^ Áşi ÁFÌ HJÁ, ![{] chả Ác@ Ár¢&æçæaā} ) Á, -Á ¦æaji Áā[ •Áşi ḍ Ác@ Ási^å¦[&k Á, -Ác@ Ær |æ)i å Át[ Á •q[ ¦^Ás@æ]i | Ás[ \* @Á'; æsi ÈZ/@ Á [ |\ Á; } Ác@ Á ā][ •Ási^\* æ)i Áşi ÁFÌ HJÊşi ãr@Á; āj ^Á ā][ •Ási[ 4] / å Åsi ÁFÌ I FÈZÖæ&@Á •a][ Á( ^æ ` ¦^å ÁGEÁ^ ^dý; ÈEJ Á( ^d^ • DÁ; ãa^Áse)i å ÁFÎ Á^^ dý; È Ï Á( ^d^ • Dás^] ] ÉÅi ãr@Á; ãtá ā][ •Áā]/ å Å; ãr@Á; @æafæi i FÈZÖæ&@Á •a][ Á( ^æ ` ¦^å ÁGEÁ^ ^dý; ÈEJ Á( ^d^ • DÁ; ãa^Áse)i å ÁFÎ Á^^ dý; È Ï Á( ^d^ • Dás^]] ÉÅi ãr@Á; ãtá Aā][ •Áā]/ å Å; ãr@Á; @æafæi i A •a][ Á( ^æ ` ¦^å ÁGEÁ^ ^dý; ÈEJ Á( ^d^ • DÁ; ãa^Áse)i å ÁFÎ Á^^ dý; È Ï Á( ^d^ • Dás^]] ÉÅi ãr@Á; ãtá Aā[[ •Áā]/ åÅ; âr@Á •a][ Á( ^æ ` ¦^å ÁGEÁ^ ^dý; æá ^ÉÅU ) & A ^ aa ^ à ÉŠc@ Á ā][ •Á][ c^&c å Ác@ Á ‡] æi A[ { á Cd^ - Dás^] EÅi i e Áā]/ åÅ; âr@Á; är áA •a][ •Á]/ åÁ; ãr@Á( æã ^ÉÅU ) & A ^ aa ^ à ÉŠc@ Á ā][ •Á][ c^&c å Ác@ Á ‡][ e Áse)i å Ác@ ÁA][ •Áa]/ åÅ, & Cd^ + [ a Áse)i å Á •a][ •ÁO[ ç^\}][ ¦ÁÕā]] • Á^]] [ !c^à Áti ÁŠ[ } å[ ] Åc@ Á \* & & • • Á; -Ás@ Á ā][ •Áæ]i Å æð Åa@ Á, `E[ ` } à Á^ & ` i âr Á; -Á[ [ å Á[ ` !&^A - { !Ác@ Ás[ |[ } `ÉÔ[ |[ ] ãæHÁU ^& ^œi ÂÜ ` • ^ ||Ác^ !• ^ | Â^]] |ð å Ás@æfái (ā [ !ā] \* Ác@ Á !æa]i ÉÕã]] • Áœi Ási c', - A' ^ å Á - q[ •Á, ^ !^A, [ œá( { ] |/~c'| Á{ ] œi åÁ; æi Át] ( æi áf æi ási Á; ^ Ar [ !aæi ási ´A, 'A]] ] æi å ás@ Á ` Ar ` !æai j Á/i ` • œi Æ]] ) •Á - a` a` â´ ( A ^ | / Áz) ] æi å´A; æi át Á; @á Aœi Át] ( e ÁQU à ) ^ Ar æi ái ` A/A [ æi } A´A'] æi • a][ •Á, ^ !^A, [ ó&[ { ] |/~c'| Å{ ] æi å´A; æi át Á; ` a` A´A; æi ási ´A, 'A]] • a` a` A' ^ A [ æi â´A; æi A´A; æi ât Á; æi át ` A´A'] æi • a` ( ·Á, ^ !^A, [ ó&] { ] / c'| ´A` ] æi å´A; æi ási ` A´A'] æi • a` ( ·Á, ^ !^A, [ ó&] ] A´A'] æi å´A @á A´A ` æi á` A´A'] æi • a` ( ·Á, ^ !^A, [ ó&] ] A´A'] æi â´A @á A´A ` æi • a` ( ·Á, ^ !^A, [ ` AC]] ] · A´A'] æi • a` ( ·A ^ !^A, [ ` AC]] ] · A´A'] æi • a` ( ·A ^ !~ A´A ` A´A'] æi • a` ( ·A ^ !~ A´A'] @á A´A ` æi • a` ( ·A ^ !~ A´A'] ` A´A ` A´A`] æi • a` ( ·A ^ !~ A´A'] ` A´A ` A´A`] æi • a` ( ·A ^ !~ A´A'] ` A´A ` A´A`] æi • a` ( ·A ^ !~ A´A']









# V@•ÁØãc:¦[^ÁÖ[&∖Á

V@狥o^{1} | [b%&o^{1}[ k‰ Á2āc: | [^ÁÖ[ &\ Å æ Á@ Á; ç^ \ @eĕ |ā] \* Á; -Á@ Á; æçæk/si ä ÁPT Ù ÁHerald Ás Á&[ } ç& co ÈáOÁ •`à•^``^} d^Á^] æā^å Áça å Ázi ä å A^ ; ç& as ági \* ÁÜ[ ^æk/A æçæk/A @g] • ĚÓ[ } ç& co Áct+ [ Ás`āo Ác@ ÁÒ} \* ā] ^^ !• of kaj å Á Ó |æ&\ •{ ã@ of A@] Æsi Åze •[ &ãæeāt] } Á ão éx @ Á2āc: | [^ÁÖ[ &\ Ê\$, @&A@, æ Ás`āo Áct Ázi Åo?} \* ā] ^^ !• of kaj å Á Ó |æ&\ •{ ã@ of A@] Æsi Åze •[ &ãæeāt] } Á ão éx @ Á2āc: | [^ÁÖ[ &\ Ê\$, @&A@, æ Ás`āo Áct Ázi Åo?} \* ā] ^^ !• of kaj å Á Ó |æ&\ •{ ã@ of A@] / Åsi Áze •[ &ãæeāt] } Á ão éx @ Á2āc: | [^ÁÖ] &\ Ê\$, @&A@, æ Ás`āo Áct Ázi [ ^ æAÔ} \* ] Åze Å àæ ^å Át] Ác@ ÁÚ[ !o { [` o@ÂU c æt ÁZæ&q: | ^ Ási ÁÒ} \* |æ] å ÈÁOEH Át æ&@t ^! ^ Ási Ác@ Á; [ !\ • @] Á æ Á c æt Át] ^ !æc å Á } œh FJ€FÁQÙ å } ^ Áz æa à [` ! ÁZO å^ !ææt] } Á/!` • of QEF€KFÌ ÉFJ DĚA



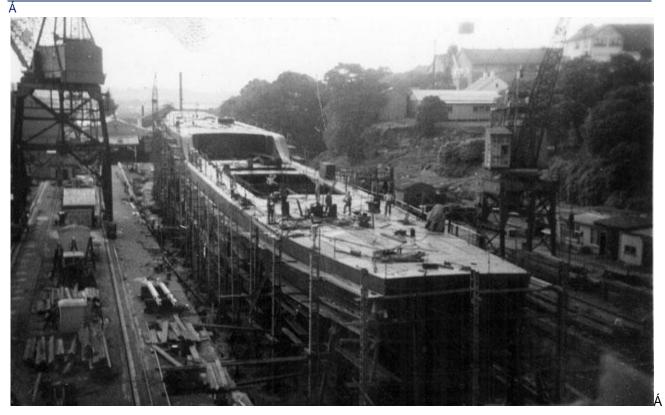


Plate 6 PT OÈÙÁX æ{ ]ã^^Á§ ÁØãc ¦[^ÁÖ[&\É&&ÈA

# Ò}åĄ[,~ÁÚ¦ã;[}Á,ÁÓ^\*ã]}ãj\*Ą[,~ÁQ}å`•dãæqÁæ)åÁÜ^-{;¦{ æ;[¦^ÂÙ&@?[|•Á

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Plate 7 Óã[ ^ |æÁ^, ∄ \* Á[ [ { Á&ÈÈÌ Ï €• ÁÇÔ[ č ¦ c∿• ˆ ÁÙ å } ^ ^ Á? æàà[ č ¦ ÁØ^å^¦æãã] } Á/¦č• dĎÁ



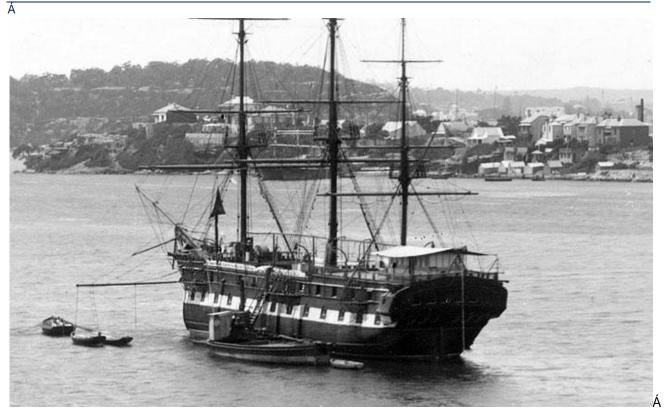


Plate 8 *HMS Vernon* { [[¦^å/ų ⊶ÁÔ[&\æa[[Á@|æ]åÉ&ÈÈÌÏ €ÁÇÔ[˘¦ơ∿•ˆÁÙ^å}^^Á?æàà[˘¦Áơ⁄\å^¦æaã[} } Á/¦˘•đĐĂ

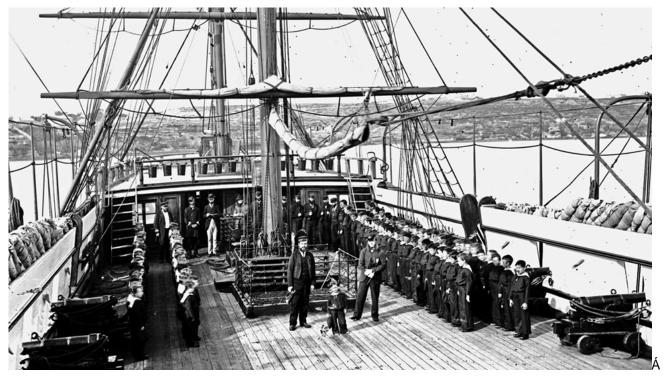


Plate 9 Ø[[ ó/‰¦ ǎ]|Áæà[ æ¦åÁs@/ ÁHMS Vernon É&Fì ï €• ÁÇÔ[ č ¦ c^• ^ ÁÖ38cā[ } æ' Á[ ÁÙ \* å} ^^ DĚA

# Ü^č¦}Á§[Á∞áÚ¦ãa[}Á

Q[ ||[, ā] \* Áx@ Á∧{ [çæ‡Á, Áx@ ÁÓā][^|æÁ\*ā]•ÊÂÔ[&\æt[[Á@[æ] åÁ;} &^ Ázë æāj Áå^&æ{ ^Á@[ { ^Át[ Ásæå `|o∱, lǎr[}^!•Ê&@ă Á cãt ^Áb[ c@Áx] \* Åk@ Á [ { ^} ÈÅu ç^\¦ÁC€€Á, lãr[ } ^!•Êåu[ c@Áx@[ •^ Átj &æd &^ læt å Åæ Åk@ Á [ { ^} ÈÅu ç^\¦ÁC€€Á, lãr[ } ^!•Êåu[ c@Áx@[ •^ Átj &æd &^ læt å Åæ Åk@ Á [ { ^} Åk]æ • Á A { ^d[] [ Ĩaæ} Áşæ læj o +Áæj å Åx@ Á; ç^\¦-[] Ál[ { ÄÖæljã] \* @ !• AŐāt[ IÉÅ, ^\^Ász&&[ { [ åæze åÁ; } Áx@ Áz [ æ] æ] æ] Åx@ Áz [ A



ੁ^!^Á@Ų`•^åÆÿÁs@Á[;¦{^¦Æs[}ç38oÆv||•ÊÅ,@≱roÁ,[{^}Å,^¦^Á@Ų`•^åÆÿÁseA,^\_Áa|[&\Á,^æAs@Æs[}ç38oÁ |`{à^¦^æåÅÇÕ[åå^}ÁTæ&\æÂĞ[\*æ}ÁG€€JK(€DDĂ

CEpcqU<sup>\*</sup>\*@A[}|^ÁBjc^}å^åÁt[Áa^Ác^{[][¦æð\*Ê5&@^Áj¦ãr[}Áræê^åA[}ÁÔ[&\æt[[Áqe|æ)}åÁ+[[{ÁrìììÁ}dā/ÁrJeÌÈÁ/@A č'}[ç^¦Á;æðÁ@ãt@ÉAjãt@Áæj]¦[¢ā[æt\*/°Á+HEEİ€Áj¦ãr[}^!•Á\*}c^¦ā]\*Áræ&@Áj^^\ÊAjãt@ÁæÁ^æ+|^Átč'}[ç^¦Á[-Á æ]]¦[¢ā[æt\*/°ÁHĒÉ€EÁÇÕ[åå^}ÁTæ&\æâÁõ[\*æ)ÁG€€JKIFDDĂ

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Ö`¦ā)\*ÁY[¦¦åÁYækÁFÉAţç^¦ÁLÉE∈€Áţ^}Áş^!^Á?(]|[^^åAţ}Áv@A≆|æ)åÉ&Q[}•d`&ca]\*ÉA^-aaca]\*Áţ¦Á&[}ç^¦ca]\*Á;@3]•Á q[Á&æe¦^Ád;[]]•Áæ)åÁ@;¦•^•Áq[Áv@;Á;æHÉA2[||[\_]ā]\*ÁY[¦¦åÁYækÁFÉEæaA?ā1@AÔ[``¦c4å^&a=ā]}Á,¦^ç^}c^åÁv@;Áa;[&\^æ+åÁ --{[{Áxe&&^]ca]\*Á;[¦\Á¦[{Áæ}^[]}^Áşc@;!Áv@ea)Áx@;Áõ[ç^¦}{^}cA}cEA;

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 $\begin{aligned} & \mathsf{Cee^{A}} \left[ \mathbf{A} \otimes \mathbf{A} \right] \left[ \mathbf{A} \otimes$ 



V@:Á;ææ^Á;FJJ€•Ë\*æ}|^ÁGEE€•Á;@AÛ^å}^^Á;#æà`[`¦ÁØ^å^¦ææ‡i}`}Á/¦`•oÁ;æ•Á\*•cæà|ã\*@åÁ{[Áæå{ ājārc\*¦Á;@AÖ^-^}&^A Šæjå•Á\$JÁÛ^å}^^Á;#æà`[`¦É\$Bj&{`åāj\*ÁÔ[&\æt[[Á@]æ)åĚ¥@%Æs[æ)åA;æ•Á;]^}^åÁ{[Á]`à]&A&&&A\*({ÁC})

#### 3.2 Historical development of Cockatoo Island wharf

Ó^āj\*ÁæÁų[¦{^¦Á`@aj^ælåÉko@¦^Á@eç^Áa\^}}Á;æ)^Á;@ed-ç^•Á;}ÁÔ[&\æt[[Á@|æ)åÁ`āj&^ÁÒ`¦[]^æ)Á^cd^{{ ^}&ÉÁ V@Á&`;¦^}oÓÔ[&\æt[[Á@|æ)åÁv @ed-ÁarÁæÁsA^|ætãç^|^Á^&^}oKs[}•d`&cā;}ÈŹv@Á\*ælå\*•oÁ^&[¦åÁ;Áæ4Å;æ••^}\*^¦Á 、@ed-ÁæeÁÔ[&\æt[[Á@|æ)åÁarÁæÁsA,、•]æ}^¦Áedcã&|^Á¦[{ ÁFJ€ÌÉŹ,@3&@Á\*cæe\*•ÁxœexÁá

%adý,^, Á, @ad-Á@ae,Áà^^}Á\'^&c^å,Á;}Ás@^Á,[¦c@E\*æ;d%s[¦}^¦Á;ÁÔ[&\æe[[Á@;|æ);åÊbeedÁ, @a&@A;@A;c^æ{^¦•Á ]|^ā]\*Á;}Ás@AÚæl;æ{æcæaŰã;c^¦Á;^¦çã&^Á;ã]|Á&æd|Át;Áæ);åÁ;æ•^}\*^¦•+Á\$QÒç^}ā]\*Á⊳^、•ÁFJ€ÌKHDÁ

V@ Áţ¦ātāja a¢ ÁÔæţà^¦ÁY @ad-Á, æs Á&[}•d`&c^åÁ, @}Ás@ Á ãc^Á, æs ÁsadÔ[{ { [}, ^ado@AraaçadAÖ[&\^ædåÉ&a^ç^^}A FJFHÁsajå ÁFJHHÉX/@ Áã¢^åÁ, @ad-Á\|^{ ^}cAţ ÁÔ[&\ad[[Á@q]aðåÁY @ad-Á, æs Á&[}•d`&c^åAů`¦āj\*Ás@ Áx&3\^¦•Á Ô[&\ad[[Á\ada{, ~Åå^ç^|[] { ^}cÁsædá@ Ása|ajåÉ&a^ç^^}AfrJIÌÁsajåÁFJÌÎÁQÙPØVÁGEFFKAFJDÉACE;Áse'¦ãadAá[æt^Áţ Á Ô[&\add[[Á@q]aðåÁ+[{ Ás@ Árad] ÁFJÍ€A @q, •Ás@ Á, @ad-Áaj&]`åãj\*Áãç^åÁ, @ad-Á\|^{ ^}cA[c^A;ÅcÆ]Č

Y @‡•ok@/≨i|æ)åÁ, æ Á\*•^å/æi Aæ/ @3j^æåÉA^¦¦^Á^¦ç3&^•Á[¦Á [¦\^¦•Á]^!æ&\*å/AæA^@ão/&@@e)\*^A&ã ^•Ě4/@Á , @ed-Á, æ /åæa{ æ\*^å/\$j/ÁQEEI Á§j/Áæ&&[||ã\*ã]}Á, ão@Áæ&ç^••^|/Åi`^Át[/Áæ/æi|cî/Árcæ+à[æ+å/A}\*ð]^É&e)å/A@/\*æ)\*, æ Á æ)å/A[}d[]{d[]}Aæ/A[/A@eç^Aa^}/&]/&[]•d`&c\*å/A3]&^Ao@exAã[^AÉA

Q ÁGEEÏÁÔ[&\æt[[Á@|æ)}åÁ^[]^}^åÁse Ásaki[č¦ãróksed;æskati]}ÊÅ,ãrókho@Å,@ed-Ásap+[Á^[]^}ā)\*Át[¦Åjčà|a&Á^¦¦^Á •^¦ça&^•È&DaÁs@Ásä[^Á;-Á,¦ãaä)\*Éko@a;Á^¦¦^Á.^¦ça&^Á;]^¦æx^•Áse Á;ækA;Ás@Áúæk]æt;ætæææækŰãç^¦Ákülãç^¦&æekÁ^¦ça&^ÈÁ





#### 3.3 Recorded Non Aboriginal Heritage

CB&\}[, |^å\*^åÁ@`¦ãæ±\*^Áaz^{ • Áaz}åÁ;|æ&^• Áaz^ÁA\*&[¦å^åÁajÁ cæzč (;¦^Áaz)åÁ;[}Ёcæzč (;¦^Á^\*ã c^¦• Á@ |åÁæzÁs@ Á -^å^¦ædÉ4cæz^Áaz)åÁ[&æd4Á^ç^|Áa^] ^}å∄ \* Á;}Ás@ ãA^ç^|Á;-Á\*ã }ã&32æz)&^ÈQpc';}æzā;}æd†^Á\*ã }ã&32æz)oA\*ãx•A;A -{čocæz}å∄ \* Á}ãç^¦•æd4çæzi^odaz-Áaj•&;äa^åÁ;}Ás@ ÁY [¦|åÁP^¦ãæz\*^ÁŠã\*oÁzz)åÁajÁč;¦}ÉA\*`&@Á\*ãx•Aź+Á\*\*æd†^Á -{%[\*}ã^åAx@[\*\*@ks@ ãÆaj&]a]\*Á;}Á^å^å^¦æd4æz)åÁ cæz\*Árç~|Á^\*ã co!•ÈÁ

 $\mathcal{O}^{a^{+}} = \frac{\partial h^{a^{+}}}{\partial h^{a^{+}}} = \frac{\partial h^{a^{+}}}{\partial h$ 

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### Y[¦|åÁP^¦ãæð\*^Á

Ô[&\æq[[Á@|æ)åÅ,æ Á^\*ãro\'^åÁse Áse∱,æoló,Ás@ ÁY[¦|åÁP^¦ãæe\*^Áãro‡)\*Á;Á^A|^ç^}Aãro+Áse[`}åÁOE•dæ)äæÉÂ &[||^&oãç^|^Á}[]}Áse ÁGE•dæ)äæ)ÁÔ[}çã&oAJãr∿+ÈÁÔ[&\æq[[Á@|æ)åÁārÁ5,&]\*á^åÅ5,Ås@eenÁäro‡)\*ÁsA&ee\*•^Á;ÁserÁ |æ\*\*\|^Á5jcæ&oÁ^{ æ5j•Á\_Ac@Á&[}çã&oÁ;¦ãr[}Ási\*ājåj\*•ÁsejåÁ;c@¦Á&[}çã&däi\*ājoA\*d\*&č¦^•ÈÁ

Table 5 Á⁄ [¦|åÁP^¦ãæť^Ájã cậł \* ÁÁ

Item	Address	Description of protected area
CE•dæ¢ææ)ÁÔ[}çæ3oÁ Ùãe∿∙Á	Ô[&\æt[[Á@ æ)åÁ	Œa[čo/FrìÁ@aa£abb,ÁÙ^å}^^ÁPaetà[č¦Ébbà^ç,^^}ÁÓã&@l[ç^ÁÚ[ājo5beojåÁ Y[[[,ā&@ÁÚ[ājdÉb&[{]¦ãaj*Ás@Á,@tļ^Á[-Ás@Á@e aojåÁq[Á[,Á,æes\běA

# $e = \frac{1}{2}$

Table 6 Þæcāj}æļÁæ)åÁÔ[{ { [}, ^æ)c@Á@e¦ãæe\*^Ájã:cāj\*•ÁÁ

Item Address	Description of Protected Area	Significance	Approximate distance from Cockatoo Wharf
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Ô[&\æq[[Á@()æ))åÁ	Ü[∶^  ^Ê£pÙYÁ	Œa[čóÆrÌÁ@eebɧjÁÙ^å}^^Á	Þæaaj}æ	Yão@a≱ÁÛcǎå^Á
		Pælà[`¦Ásh∧c,^^}ÁÓã&@'¦[ç^Á Ú[ā)oÁæ)åÁY[[ ,ā&@ÁÚ[ā)dÉÅ &[{]¦ã:ā]*Ás@Á,@[ ^Á[→Áœ)Á @( aa)åÁt[Á[,Á;aæ^¦ÈĂ		Œ!^æÁ
Óæ¦æ&∖•ÁÓ∥&∖Á	Ô[&\æt[[Á@q æ)åÁ	Úæida[-Ás@∘ÁÚ¦ã[}ÁÓæ¦æ&∖•Á Ú¦^&&j&dÊÔ[&∖æq[[ÁQ æ)åÊÂ Ù^å}^^APæià[č¦Á	Ô[{{[}, ^æ¢o@Á	HH€Á(^d^∙Á ∙[čo@Á,^•oÁ
Ó≱^[ ǽЮ́¦[`]Á	Ô[&\æt[[Áqe æ)åÁ	Ô[{]¦ã^^ ÁÔā[^]æÉ4[¦{^!Å Ù`]^!ā c}åa; cq Á`æc'!•Á æj å Á ¢c'}•ā] •ÉÁ c[}^Á &[ ccæ!^Á! Á ^• ch - ÁÔā[^]æÉA U^{ æ3; ā + Á} å^!*![`}åÁ •ā[ •Á! Á[`cœE`æ ch - ÁÔā[^]æÁ æj å A[['cœE`æ ch - ÁÔā[^]æÁ æj å A[['cœE`æ ch - ÁÔā[^]æÁ æj å 4[]^/&[ cœE` & ch - ÁÔā[^]eÁ (cœE ^ AÔá[^]eÆ0 + Á8[ cœE ^ A ^æ ch - ÁÔā[^]eÆ0 + Á8[ cœE ^ DÉA Ô[ & æ![ Á@]a; åÊÛ^ å}^^ Á	Ô[{{[}, ^æ¢c@Á	FI €⁄[ ^d^•Á •[čœý ^•ơÁ
Ô[&\æq[[ÁQe æ)åÁ Qaå`∙dãæd,Á Ô[}•^¦çææa[}Á DEI^æA,	Ô[&\æt[[Á@q æ);åÁ	Œa[`onFÌÁ@eeb£ajÁÙ^å}^^Á Pælà[`¦Êbà^ç,^^}Á Óã&@':[ç^ÁÚ[ậ]obajåÁ Y[[ ,ã&@ÁÚ[ậ]dÊb&[{]¦ãrậ]*Á c@Á,@[ ^Á,Aố@Áas aa)åÁq[Á  [,Á,aeer^¦Á	Ô[{{[}, ^æ¢o@Á	Yão@3)ÁÙc*å^Á CEE^æÁ
Øãc¦[^ÁÖ[&∖Á	Ô[&\æt[[Á@( æ))åÁ	Ù[`O@È`æ• &\} &{] }^!A;A Ô[&\æt[[Á@]æ) å ĎÁÖi^Ås[&\A ã Á[, ÁsÈI Í Á; ^d^•Áş Á  ^}* O@Ás) å Áse•Á ãå^•Ás4^Á • c^]]^ å Á; ã @Á æ) å • (} ^Á à  [&\•ĎÁU   ã āj æ) Ås[ ]æ) å • Á à  [&\•ĎÁU   ã āj æ) Ås[]   æ) å • Á Ç ¢ Ё CA;[`} å^!Ásæ) } [] • Á^ A ā (Át]] Á; -Á@ Ás[[&\DÁs4^A CA] ā (Át]] Á; -Á@ Ás[[&\DÁs4^A CA] A ā (Át]] Á; -Á@ Ás[[&\DÁs4^A CA] A [ 2 æ3 * Ásæs • [] } Á; ær Át Ás@ Á a lî Ás[[&\DÁœ Ás4 à a^!Á;] ^ ÈÁ	Ô[{{[}, ^æ¢o@Á	ΗF€Á[^d^•Á •[čα9Á
T ^•• <i>Á</i> ?æ∥Á	Ô[&\æt[[Á@q æ]åÁ	Úæidų[-ÁÚ¦ã[]}ÁÓæi¦æ&∖●Á Ú¦^&ãj&dÊÔ[&∖æt[[Á@( æ)åÁ	Ô[{{[], ^a‡o@Á	HH€Á[^d^•Á •[čœ∯,^•ơÁ
Tápãæas <sup>^</sup> AÕ≚æslåÁ Ü[[{Á	Ô[&∖æ[[ÁQe aa)åÁ	Úæidų́-ÁÚ¦ã[}ÁÓæi¦æ&∖●Á Ú¦^&ãj&d∄Ô[&∖æq[[Á@ æ)åÁ	Ô[{{[}, ^æ¢@Á	HH€Á,^d^∙Á •[čo@Á,^•oÁ
Ú[,^¦Á P[`•^ÐÚ`{]Á P[`•^Á	Ô[&\æt[[Á@()æ)åÁ	Y^•oÁN}åÁį,⊸ÁÔ[&\æa[[Á Qe æ)åÊÂÙ^å}^^ÁPælà[č¦Á	Ô[{{[}, ^æ¢@Á	I€ÍÁ(^d^•Á •[čc@Á,^•oÁ



A				
Ú¦ãr[}ÁÓæs¦æ&∖∙Á Ú¦^&ðj&oÁ	Ô[&\æt[[Á@( æ))åÁ	Ô[{] ¦ã ĝ * Ásæ¦æ& + Á &[{]  ^¢ Á, Á ¦ã [} Ás à Å @ •] ãæ Á æ å E& [ \ ÁQ * - A æ å Á ^ • • Á @ å Ás à Å ^ & [ • ^ å Æ ' & å Å E Å ^ & [ • ^ å Æ ' & å Å E Å [ - Æ ^ ! o Å Æ ] '   d Á !   { ^ ! Á [ - Æ ^ ! o Å A @ Å Å ] [ { L Á ! { ^ ! Á [ ~ Æ ^ ! o Å Å ] [ { L Á ! { ^ ! Á { ã ã æ ^ Å * æ å Å [ [ { L Á ! { ^ ! Á { ã ã æ ^ Å * æ å Å [ [ { L Á : } A { ã ã æ • ^ å Å } & [ • ` ! ^ L Á { ã ã æ • ^ å Å } & [ • ` ] ^ L Á { ã ã æ • ^ å Å } & [ • ` ] ^ L Á { ã ã æ • ^ å Å } & [ • ` ] ^ L Á { ã ã æ • ^ å Å ] & [ • ] ^ A { a å Å ! æ • ^ å Å } & [ • ` ] ^ L Á { a å Å ! æ • ^ å Å } & [ • ` ] ^ A { a &  A : } & A :	Ô[{{[}, ^æ¢@Á	HH€Ą́ ^d^•Á •[čœý́ ^•œ́
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W}å^\*¦[`}åÁ Õ¦æa∄ÁÙa∦[∙Á	Ô[&\æt[[Á@( æ))åÁ	O£a[`oÂİİÁ; ^d^•A;[`o@Á\æəoÁ [-ÁÓā[^ æÁeb)åÁā[{ ^åãæet^ ^Á à^ç, ^^}Á@(A&[cccet*A4; æ4\^åÁ Ü[ààÁçÔ ^\\A; AÚ^cc`Á Ù^••ā[}•ÁÔ[cccet*DÁeb)åÁ@A &[ã-ĒÃÔ[&\æe[[Á@e]ab)åĒÁ Ù^å}^Á?æda][`¦Á	Ô[{{[}, ^a¢o@Á	FI€A[^d^•Á •[čœý,^•dÁ

### Ùcæe^Á₽^¦ãæe≛^Á

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# Ù^&cāį} ĂFÏ€ÁÜ^\*ãc^¦∙Á

Ù^&cāt,}Árï€Át, Ás@∘ÁHeritage Act 1977Á^˘`ã^•ÁÙcæe^ÁÕ[ç^¦}{^}ơÁOE\*^}&ð+ Át[Á^^]Á^&t|\*å•Át, Á@¦ãæ\*^Áãr{•Á [,}^åÁt,¦Át]^¦æe^åÁs^ÁtaĒÁV@•^Á^\*ã=c\*¦•Á&æa}Ás^Át[\*}åÁt,}Ás@ ÁPÙYÁP^¦ãæ\*^ÁQţç^}d[¦^ÈAOE\*A&&@At, Ás@\*Á ĝ;ç^}d[¦^Á;æe Á&æd¦ð\*åÁt, ŏAt,}ÁGÆT|^ÁGEFÍÁsa}åÁt[Áser{•Át,}ÁÔ[&\ætt[[Áqe]æ}åÁ,^¦^Ása^}cãð\*åÁse Ás^ĝ\*Át[&æe\*åÁ ;ã@3;Ás@ Ácčå^Áse\*aÆĂ

# Š[&æ¢Á₽^¦ãæ≛^Á

OE Ás@ Ájæa) å Á ãå^ Áj ~ÁÔ[&\æt[[Á@|æ)) å Á¥r ÁsælÔ[{{[}} ^æ¢c@Aj,}}^å/¥r |æ)) å É¥rs/¥r Aj °or ãå^Ás@ Ási¦ār å ã&caj}}Át[¦ÁÙcææ^Á |æ; •Á^˘ ăā] \*ÁŠ[&æ¢AÔ}çā[]}{ ^} œ¢AÚ|æ) •Aj¦Áj c@ ¦ÁÙcææ^Áj|æ)}ā] \*Á§j •d `{ ^}or ÈÁ

# Tælānā[^Ásel&@ee^[|[\*^Á

CEÁ ^ æ&@Á, Ás@ Á>ÙY ÁT æiãā; ^ ÁP ^ ¦ãæ± ^ Ásæææàæ • Ásjå å 88ææ\* • Ás@æeÁ@ ¦ ^ Áæ' ^ Á; [ Á } [ ¸ } Á @āj ¸ ¦ ^ &\ • Á ^ &[ ¦å ^ å ÁsjÁ c@ Áş38ājā: Ấ, ÁÔ[ &\ æ[[ Á@ |æ) å ĚÁV@ Á@ |\ Ấ, Ấ, } ^ Á } [ ¸ } Áç^ • • ^ |ĔázÁst[ ¦] ^ å[ Ёā[ æeÁs ^ • d [ ^ \ ¦Ás@ ÁP T OÈÙÁWarregoÉÁ



• æ) \ Áser/sæý, @æi-Áser/Ô[&\ æ[[Á@|æ) å Ásj ÁFJHF Ásec^\ Ás^āj \* Ás|[]} Å] É<br/>É@[], ^ç^\ Ás@ Ásææaiæ ^ Á, [c\*• Ás@ær/s@ Á, \^&\ Á<br/>, æ Á`à•^``^} d^ Á^{ [c\*• Ás@ær/s@ Á, \^&\ Á<br/>P`\'ãæt ^ ÁÖææaiæ \* ^ Á) åær å DÉ<br/>A

#### 3.4 Potential Archaeological Resources

Õãç^}Ás@Á\*¢c\*}•ãç^Á\*•^Á; ÁÔ[&\ ඤ[[Á@|æ]åÁs@¦^Æi Ása4@ã @4;[c\*}ãæ4Á[¦Áse&@e\*[|[\*ā&e4Á^•[`¦&^•Á§,Á;[•Á æ\*^æ ÈÁP[, ^ç^¦Áse Ás@á Áse•^••{ ^} óÆi Át Áse•^••Æi] æ&c4;}Á@¦ãæ\* ^Áse Ása4^•`|c4; Ás@ Ás^{{ [ãã]}}Áse)åÁ &[}•d`&cāi}Á;Ás@ÁÔ[&\ ඤ[[Á@|æ]åÁY @et=Ése)Áse•^••{ ^}c4; 4][c\*}ɑãe4Áse&@e\*[|[\*ā&e4Á^•[`¦&^•Á;ā|Ás^Á &[}-ā]^åÁt Ás@Áç][Áse^æ Á;-Áse&cãçãĉ É4;æ; ^|^ÁÔ[&\ æt[[Á@|æ]åÁY @et=Áse]åÁ?@et=Ás

CE]]^}åã;kÁ Á; Ás@ÁÜPØVÁÔ[&\æt[[Á@|æ)åÁÔ[}•^\çæaā]}ÁTæ)æ\*^{^}ofú|æ)Á&[}œæi, Aæi, æ]Á; Ásæ&@e&[|[\*&&æiÁ •^}•ããā;ãîÊĂ;@B&@Áã;orÁà[c@ÁÔ[&\æt[[Á@|æ)åÁ;@eæi-Áæ)åÁs@AÔætjà^\ÁY@eæi-ÁæiÁa^3;\*Á;Á@tj@Áse&@e&[|[\*&&æiÁ ][c^}čãæpEÁM/}å^\ÁÔ\ãs^\ã]}ÁÔÁÇ\ü^+~æ&&@ÁÚ[c^}cãæpHDÁ;ÁOE]]^}åã;kÄÁQsaæaā]}æ/Á?^\ãæ±^ÁSã;cāj\*+DÉAsAácæ\*•KÁ

The surviving archaeological elements of now demolished or obscured structures and functions of the dockyard in particular the remains of docks, equipment, warehouse and industrial buildings and range of cranes, wharves, slipways and jetties, have potential to illustrate and reveal the materials, construction techniques and technical skills employed in the construction of shipbuilding and dockyard facilities that are no longer available through other sources in Australia".

 $\begin{aligned} & (A_{a} = A_{a} =$ 

Q45a Ác@¦^-{¦^ÁS(} • ãå^¦^åÁ'} |ã^|^Ác@ecA\*ão@¦Ác@ÁÔ[&\æt[[Á@|æt)åÁY @et=4,\'ÁÔæt{à^\ÁY @et=4,`ä|Áā\*|åÁet)^Á ~`¦c@;¦Átj-{¦{ætt]}}Á;[cAeti^ætå^ÁS[||^&c^åÈQA^|ætt]}Át[Ác@A,[c^}cāte44(Asãa`c`¦àÁt ætiāta\*^Ás@&[[[\*^Ês@A,\]^Á ;[¦\•Á,ão@Ac@A,[c^}cāte44(Asãa`c`¦àÁst&@ev[|[\*ã&et4A^{ ætt]}•Áte^Ás@A,`ā^•A\*Akt Á cæta‡ãa^Ás@A,[}d[]}d[]}A,[¦ct]}•Á [Ác@;Á;@et=AÇ[¦Á\*¦c@;¦Áte\*•^••{^}d,As@a\*Át]]ætcÉ4\*^AQA&ta\*]}ÂÈ!As^[];DÉA

V@ ÁÔ[& \æt[[Á@|æ)åÁT æ)æ\*^{ ^} ÁÚ|æ)ÁOEF€Á cæe^ Ác@ez4, }^Á, Ás@ Á, |ā[¦āč Ázæ \•Á[¦Á^bč ç^} æð] \* Ás@ Ási |æ)åÁ , æ Ás@ Ák6āj•cæe^{ ^} c4, ÁÔæ{ à^¦ÁY @æt-Ásej åÅ][}d[[}d[[]+ÉÅ(æk\^åÅæ Á&[{]|^c^ Áse Á, Ás@ Ásiæe^A, Ás@ Á T æ)æ\*^{ ^} cÁÚ|æ)ÁÇÙ å}^^ ÁPæà[`¦ÁØ^å^!ææå] }Á/i`•cÁOEF€KFFCDĚÁ/@stÁ[{]|^c^ Áse Ásiæe^As@ez4s@A !^&^} cÁÚ[æ]ÁQÙ å}^^ ÁPæà[`¦ÁØ^å^!ææå] }Á/i`•cÁOEF€KFFCDĚÁ/@stÁ[{] åÅsjå å&æe^As@ez4s@A !^&^} cÁQã { ^åãæe^|^Â, !^AOEF€DÁ&[}•d`&cā] }ÈÁQÁsej^Ásæ ^És@etÁ, @et-Á, ä|Å,[cÁ@eç^Ásej^Â, åt, Åsjd[Ás@ Á \*^åã ^} cÁse Ásej, æc4, Ás@ •^Á,[¦\•Áse]åÁs@ !^-{!^A&sej Ás^A\*¢&]č å^åÁ'[{ Ásej^Áč !c@ !Áse&@ete[][\*&sedÁ æ•^••{ ^} dĚ

Á



# IÁ Xãa ča‡Á§)•]^&cāį}}Á

Œkşãa čapkāj•]^&cāta]}Át,⊸Ás@AÙčå^ÁŒE^æký,æe Át,æå^Át,}ÁFIÁRť|^ÁC€EFÍÁsà^ÁÜÚÚÙÁP^¦ãaæt^ÁTæ)æt^¦ÁÙ^å}^^ÉA Ö^à[¦æ@Áz@ætājækæjåÄÜÚÙÙÁÚ|æ}}^\!ÉESææ3∿ÁCE[&@¦&@ÉÁV@Át[||[¸ā]\*Ájæ}æt¦æ]j@Ásj&|ĭå^Áæásåã&č••āta]}Át,Ás@Á \*^}^!æpÁj@•38æpÁ&[}c^¢cAt,Ás@Ácčå^ÁseAzÉæ)åÁt[[¦^Áså^cæatAsAbe)æt°•^•Át,Ás@Á@¦ãæt^Áse/{eHÁ

- A Otable aj aj \* Ás@ ÁUč å ÁOE^ antáce) åÁ
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#### 4.1 General physical context

U}Ás@Áār|æ)åqÁærc^l}Ásej![}Ás[Ás@Á[čo@Á,Ás@Á,@est-Ás@¦^ÁārÁseAjæst\*^ÉAjæsA[]æ&AA[¦{ ^||^Áj,&&č]ð\*åÁsi^Á &¦æ)^•ÁsejåÁ@å•Á •^åA[¦Á @3]àčāj\*ĚÁÁ

#### 4.2 Cockatoo Island Wharf

OEÁ, @eet-Áng Ás@entÁ[&æeentā}}Á@eer Ása^}Át•^å Árāj&^ÁFJ€ÌÁæejåÆng or¦{ãacv}d^Át, [åãæ3råÁt,ç^¦Ás@/Áng or¦ç^}āj\*Át,^¦āt,åÈA V@Á, @eet-Áng[{]¦ã^• ÁzeAñap^å Ár@[¦^à¦ãña\*^Á, @ans@Ang Árá} oråÆng ÁzeAf[¦c@Ée[č@4&sāna\*Ascāt]}Át[{Ás@/Áns|aat)å -{¦{ ^¦ÁOč}å^ÁJ-~aas^ÉÁ, @{!^Á;[¦\^¦•Á\*•^å Áseenkabč}}å^+Asu[&\Áset¦ãçāj\*Áse)åÁt^æeçāj\*Ás@/Áns|aat)å áÉAnse ÁseA zanañaj\*Áset^æakenjåÁs2[}cæanj•ÁJ]æekAseetåÁr^æaå^!•ÁsenjåÁt@|or¦Át;¦Á;æanañaj\*Ás2[{{čr¦•Át©/ÁnsecAnse AseA

V@ Á&`;¦^}oÁ, @eet-Á&[{]¦ã^• ÁxaÁ,[}d[[}d[[}Á;¦ã\*}c\*åÁş, Áxae dË; ^• oAsiã^ & caj;}Á; --Áx@ Á,[¦c@A\*xee c\*¦}Á,[j]d[[}Á;¦ã\*}c\*åAş, Áxæe dË; ^• oAsiã^ & caj;}Á; --Áx@ Á,[¦c@A\*xee c\*¦}Á,[j]d[[]Afi Afi@ Á ã\*|æjåÈÁŠæjå•ãa^Axæ&A\*• Ási ÁxaAãr^åAáqi à^¦Á; aħåÁ; @eet-Á;ão@Axa48[]&¦^c Asi^& AxæAåÅ;ão@Axa4; Á V!æj•][¦oÁUæ^c ÁQ;ç^• catæqaj;}ÁGEEIKFÍ DÁXDB&A\*• Ási^ç, ^^}Áx@ Áxãr^åÁ; @eet-Áxa3;åÁ;[}d[[}Æsi ÁçãæAxa4\*æ]\*, æÂ QÚ|ær ÁFGDDÁÁ



### Legend

# Commonwealth Heritage Areas

- 1 Prison Barracks
- 2 "Biloela" complex
- 3 Cockatoo Island Industrial Conservation Area
- 4 Fitzroy Dock
- 5 Mess Hall (former)
- 6 Military Guard Room
- 7 Power House/Pump House
- 8 Prison Barracks Precinct
- 9 Sutherland Dock

CLIENT: RMS

10 Underground Grain Silos

Figure 3: Commonwealth Heritage Elements

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762) 241 DENISON STREET BROADMEADOW PO BOX 428 HAMILTON NSW 2303 T: 02 4940 4200 F: 02 4961 6794 www.rpsgroup.com.au

JOB NO.: **PR119759** PURPOSE: HERITAGE

150

LOCATION

250

DATUM: GDA94

Data Sources: RPS OEH

PROJECTION: MGA Zone 56

200

Cockatoo Island Wharf

50

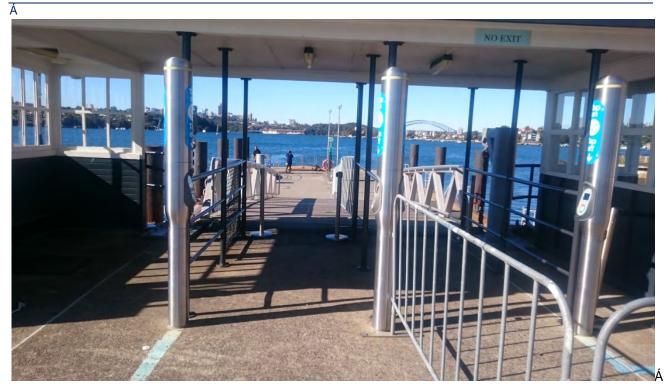
25

100

SCALE 1:4,000 AT A4 SIZE



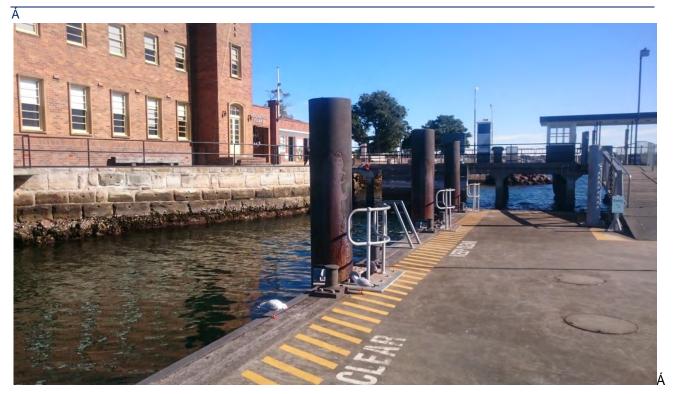




 $\begin{array}{l} \textbf{Plate 11} & \mathcal{Q} \mid \{ \land \mid \acute{A} \land \& ` \mid \widetilde{a} \widetilde{c} \land \& \mid c \widetilde{E} A \} \mid \ , \ \} \land \& e \land \& (c \widetilde{C} A ) \mid \ , \ & A \$ 







#### 4.3 Camber Wharf

V@ ÁÔæ{ à^¦ÁY @ed-ÆarÁ&`¦!^}d^Á •^åÁ{ ¦Ás@ Á{ [[¦ā]\*Á¦-Á]¦ãçæe^Áç^••^|•Áçãããā]\*ÁÔ[&\æ{[[Á@|æ]åÅæ]åÁ;æ Á `]\*¦æå^åÁ§iÁOEEI ËGEEÍÁÇÔ[¦å^||ÁÔ[}•d`&aãį}ÁÚ¦[b^&orÁÚc´ÁŠcåÁOEEÍDĚÁÁ/@ãrÁ, @ed-Á,ā|Áa^Á;}|^Áa^Á •^åÁ{ ¦Á &[{ { č°¦Á^¦¦ð•Áå`¦ā]\*Ás@Á^å^ç^|[]{ ^}ơh[-Ás@AÔ[&\æ{[[Á@|æ]åÅ⁄@ed-ĚÅ



# Á ÍÁ Ùã\*}ãã&æ}&∧Áæ••••{ ^}ơÁ

V@^Áðjåðj\*•Áį~Ás@·ÁĮ ||[, ðj\*Á@\¦ãæ\*^Áse•^••{ ^}œfse^^Á`{ { æbār^å ŧjÁsaÁÙœæ^{ ^}o∱i\_AÛði }ãã&æ}&^Ás^|[, ĔÁ

#### 5.1 Historical themes in evidence

Australian Theme	NSW Theme	Notes
FÁ/¦æ&aj*Áv@-Ájæc覿þÁ∿ç[ čqāj}AjÁ CE∙dæþãæÁ	Ò}çã[}{ ^}oÁÁ,æe覿∯^Á∿ç[ ç^åÁ	V@`¦^Áæ'^Áç [Áæ]^∨ Át Át@ă Á c@`{ ^hÁÇFDÁO'æč`¦^•Á,&&`¦!3]*Á }æč`!æ\f^ÁşIÁt@^A;@`•38æ4Á ^}çã[}{ ^}oÅ;@38@A@aç^Á •ã'}ãã&æ)&^Áşiå^]^}å^}oÅ;~Á ã c°\ç^}cã;}L&e}åÅÇCDÁO'æč`!^•Á [&&`!!3]*Á;æč`!æ\f^ÁşIÁc@^A;@`•38æ4Á ^}çã[}{ ^}oÅ;@38@A@aç^Á;@34Å;!Á 3)-{`^}&^åÁ@{ æ)Áã^^ée}åÁs`ic`!^•Á
GÁÚ^[] āj*ÁCE∙dæ ãæÁ	Ô[}çã&oÁ	OE&cāçāaā∿•Á^ æeāj*Át[Á5j&æe3&^¦æeāj}ÊÁ dæ)•][¦ÓEÃ^-{¦{ ÉÁme&&{[{ [åæeāj}}Á æ)åÁ,[¦\āj*Ásiĭ¦āj*Ás@A&[}ça3koÁ ]^¦ājåÁ5jÁpÙYÁQFĨÌÌİËFÌÍ€DEÁ
HÁÖ^ç^ []ā]*Á[&æ‡ÉÁ^*ā[}æ‡Áæ)åÁ }æaā[}æ‡Á%&[}[{ā∿•Á	Ô[ { { ^\&^Á	O58cāçāā?•Á^ æa∄*ÁţÁs`^∄*Ê4*∧  ∄*Á æ)åÁ*¢&@e)*∄*Á*[[å•Áæ)åÁ •^¦çã&^•Á
HÁÖ^ç^ []ā]*Á[&æ‡ÉÁ^*ā[}æ‡Áæ)åÁ }æaā[}æ‡Á%&[}[{ā?∙Á	Ò}çã[}{ ^}oÁ.Á&č 覿¢4/æ)å∙&æ3j^Á	CB3Caãçãa2ð•Áæ••[&ãaaæ∿åÁ,ãc@Áx@A ājc^¦æ&Caã}•Áà∧ç,^^}Á@{æ)•ÉÁ @{æ)Á[&ã?cã•Áæ)åÁc@Á(@æ)ā)*Á(-Á c@ãAj@•ã&æ)Á`¦¦[`}åā)*•Á
HÁÖ^ç^ []ā]*Á[&æ‡ÉĂ^*ā[}æ‡Áæ)åÁ }æaā[}æ‡Á%8[}[{ã∿∙Á	Òç^} œ Á	OE8cā;āā?+Áaajå∱¦[&^++^+Ás@een∜,aa\Á c@/Á&[}+^``^}&^+Á;-Ajaeč¦aa/AaajåÁ &` c`¦aaµÁ;&&`¦!^}&^+Á
HÁÖ^ç^ []ā]*Á[&æ‡Éấ∧*ā[}æ‡Áœ)åÁ }æaā[}æ‡Á%&[}[{ā∿•Á	P^æ¢0@Á	CB3Ccāpānā?●Áee●[&ānnee^åÁjān©Aj¦^]ædāj*Á æ)åAj¦[çãåāj*Ái^^å&3&æd∳ee●ārcæ)&^Á æ)åED¦Aj¦[{[cāj*Áj¦Ái;ænājcænājāj*Áo@A j^  Áa^āj*Áj-Á@{æ}●Á
HÁÖ^ç^∥[]āj*Á[&aa‡Éá^*āj}aáÁ }aacāj}aa‡Á∿&[}[{ā∿∙Á	V^&@;[  [ *^Á	CB3Caäçãa3№ Áæ) å Áj.¦[&^••^•Áæ••[&ãææ^åÁ ¸ãc@Ác@Á•^AjÁj. A&@æ) ã8æ4Áætor Áæ) å Á æ]] a?å Ái&&a?}&^•Á

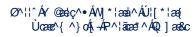
Table 7 0 E • d aqáaa) Ása) å Áp Ù Y Á O ár († ¦ a & a q k k (\*) • á k (\*) • á k (\*) \* á k (\* Á k \* A k (\*) \* A k (\* A k \* A k



Australian Theme	NSW Theme	Notes
HÁÖ^ç^ []ā]*Á[&æ¢ÉÂ^*ā[}æ¢Áæ)åÁ }ææã[}æ¢Á%a[}[{ā?∙Á	V¦æj•][¦ơÁ	CBXcā;āā?•Áse•[&āæe*åÅjāc@Á@Á {[çā]*Áj-Áj^[] ^ÁsejåÅ[[å•Á![{Á [}^Á; æ&^Á[Áse][c@:¦ÁsejåÅ^•c°{•Á -{¦Ás@Aj: [çā:ā]}Áj-Á*&@Á {[ç^{ ^}œÁ
lÁÓٽą̃åa]*Ár∧cq^{^}orÉát[,}∙Áæ)åÁ &ããã∿∙Á	V[,}●ÉA`à`¦à•Áæ)åÁçã∥æ≛^∙Á	OB&cā;āa?)•Áse•[&ãæe*\åÁ;ão@%k¦^æa3;)*ÉÁ ] æ}}3;*Áse)åÁ;æ}æ*3;*Á'¦àæ}Á ~}&cã;}•Éáæ)å^&*&æ3;^•Áse)åÁjã^•c° ^•Á 3;Á{;}}•Éá`à`¦à•Áse)åÁçã æ*^•Á
lÁÓٽāإåāj*Ár∧cq^{^}orĒ&t[,}●Áæ)åÁ &ãaā∿∙ÁÁ	Wtaaar•Á	O5&cājāā?•Áæ••[&āææ^åÁjāc@Á ]¦[çā:āj}Aj~Ár^¦çā&^•ÉÅ•]^&āæaþ ^Aj}Á æÁ&[{{č}}adAsæ:āEĂ
lÁÓٽāإåāj*Ár∧cq^{^}orĒ&t[,}●Áæ)åÁ &ãaā∿∙Á	088&8[{{[åæsaā[}Á	OB&cā;āa?•Áæ••[&āææ^åÁ;āc@Á@Á ]¦[çā:ā]}Á;-Áæ&&[{{[åæaā]}Áæ}åÁ ]æ\ca&` æ6Ácî]^•Á;-Áæ&&[{{[åæaā]}ĚÁ
Í Ár [ ¦\ ą * Á	Šæà[č¦Á	O5&cāpānā*•Áæ••[&ānæ*\åÁjãn@Áj[¦\Á ]¦æ&cā&∿•Áæ)åÁ;¦*æ)ā*\åÁyàÁ `}[¦*æ)ā*\åÁjæà[`¦Á
ÎÁDåĭ&æazā)*Á	Òå šæaatij } Á	OB&cāpāāa∿-Áæ••[&ãaæe^åÁ;ão@kraæ&@a)*Á æ)åÁ(^æ}āj*Áki^Á&@aåi^}&æjåÁæå* o•ÉÃ -{¦{æ îÂæjåÁ§i-{¦{æ}jîÉĂ
Ϊ <b>ΆÕ[ ç^</b> ¦}ą̄*Á	Ö^-^} &^Á	O & C & & & & & & & & & & & & & & & & &
Ϊ <b>Ά</b> Õ[ ç^¦} āj * Á	Šæç Áæ) å4(́¦å^¦Á	CB&cā;āā?!•Áæ••[&āæe*åÅjār@Á {æ\$j;cæ3jā]*ÉŦ[{[c3]*Áæ)åÅ ā[] ^{^}čā]*Á&!ā[ā]æ∮Ææ)åÅ&ā;āÅæ; Á æ)åÅ^*æ4Ŧ[&^••^•ÈÅ
Ϊ <b>Ά</b> Õ[ ç^¦} āj * Á	Y^∣-æ!^Á	OB&cā;āā?•Áæ)åÁ;¦[&^••Áæ••[&ãæe^åÁ ,āc@Á@A;¦[çā*ā]}Á;-Á[&ãæ‡Á^^¦çā&^•Á à^Ác@Aùcæe^Á;¦Á;@aa)c@[]ā&Á [;*æ)ā*æaā]}•ÈÁ
ÌÁÖ^ç^ []ā]*ÁCE∙dæ ãæeqÁ&č 覿4Áã^Á	Ö[{^•ca&Áã^Á	OERcaājānā? • Áse• • [&āaner^ å Ájāc@4&kk ^ aeeaj * ÉÁ { aeaj caeajāj * ÉÁjājāj * Áse) å Áj [¦\āj * Á ael[ັ} å ÁQi č• ∧ • Áse) å Ásj• caāč caīj} • ÉÁ

#### 5.2 Significance assessment

 $\hat{O}[\& aet[[Ae]]a) a A fat A ado A A fat A fa$ 





Criterion	Assessment
GaĐÁ Òç^} œ Áaà åÁ¦ ¦[ & ^ • • ^ • ÁËÁ/@ Á jaæ^ Á@æ Á [ č œ æà åã] * Á@ ¦ãæð ^ Áçæi × Áξ Á@ Á } ææã } æbá * & @ ¦ãæð ^ Áçæi × Áξ Á@ Á } ææã } æbá * & @ jaæ * A ja	Ô[&\æq[[Á@[æ]åÁ;^^orÁc@irÁs\är\laī}ÈÁQQ,æAæA,`\][-^Ás`ajo&[}ça3oÁ •^cq^{ ^}o^K cajār^åAsh^&æi •^A,fi-AsorÁs [aeaa]}Á\[{Ás@A*}^}leA&[}ça3oÁ ]\[çaāa]*Ás[co@i^^&`lačÁt[kk@As[}caj`^åAsh8eæ8^\aeaa]}Á;A&[}ça3oAeaa ]\[çaāa]*Ás[co@i^^&`lačÁt[kk@As[}caj`^aÅsh8eæ8^\aeaa]}Á;A&As[}ca3oAeaaA -{!Kk@A*^}\aea4A[]]` asA^ÈÁQA;æAsa4, asA^A;Aæ8A^aaa[`!Asa}åA^aa] }{`}aa@(^}oA^c^}caa ^As^8[{ a}*As@A}[aaa^A;aaaA;aaa]`]aaa^A; }aaA^As[}ca3oAi,A`]&}aAa[{ a}*As@A}[aaa^A;aaaA;aaa] { aaA^As[}ça3oAi,A`}&`}aAa[{ ka}a][]
	Ô[&\æt[[Á@]æ)å Á&‡[Á&]}dãa` ơ å Át[Á@ Áå^ç^ []]ð]*Á, ÁŒ • dæ‡ãæÁ@[`*@Á ão Á • ^ Áæ Áæ£a[&\^ æðå Át[¦Á&]{ { { ^\&ã#4&} å/& ^>}& ^ A @] à ă å å 3 * ĚÁ\@ Á Øãc ![^Á&][&\^ æ Á&]}•d` & c å Á • ð] * Á&]}çã& A @] à ă å å 3 * ĚÁ\@ Á Øãc ![^Á&][&\ Á æ Á&]}•d` & c å Á • ð] * Á&]}çã& A @] à Å ^ ĚÁ\@ !^ Ás Á\ @ A @# * ^ • o & ] } çã& E':æ4,` à ] ã& Á [ !\ • Á ` ¦çãç ð] * Ás Á\ ^ å ^ ` ĚÁ\@ !^ Ás Á& (@ Á & * ^ • o & ] } çã& E':æ4,` à ] ã& Á [ !\ • Á ` ¦çãç ð] * Ás Á\ ^ å A ^ ĚÁ\@ !^ Ás Á& (@ Á & * ^ • o & ] } çã& E':æ4,` à ] ã& Á [ !\ • Á ` ¦çãç ð] * Ás Á\ ^ å ^ ` ĚÁ\@ !^ /s Á& (@ A & ] ; çã& A & A & A & [ !\ • Á ` ¦çãç ð] * Ás Á\ ^ à ^ ` ĚÁ\@ !^ /s Á& (@ A & ] ; çã& A & A & A & A & A & A & A & A & A & A
ĢaDÁÜæsäčÁkó@A, æsk∧Á@æaÁ,`orcæ)åä]*Á @¦ãæe*^Áçæ‡`^ÁqiÁv@A,æa‡i}Ás∿&æĕ•^A,i-Á c@A, æsk∧qA,[••^••ā]}Á;-Á}&[{ { [}ÊA ¦æh^Á;¦Á*}åæ)*^!^åAær]^∨Á;-Á CE•dæ‡ãæen,Á,æč¦æ4A,¦Á&č 覿4Á@åaqi¦îÈÁ	Ô[&\æq[[Á@]a)å/(^^o/k@i/&\är\i] EX/@ii/AQ[{]!ā^+áxá/a>/Áçæq[]/Á, ÁxáÁ ]`!][•^Ei ā/x&[}çãkoÁ^@[{^}dž, ã@A, @i/k@]/k@]/k@]/A&/A**********************************
(%DÁÜ^-^æt&@áÁ/@Á æ&^Á@ætáčorætáčorætášá @¦ãætá^Áçætč^Átá Ás@Á;ætát}Ås^&ætášá @%Á æ&^qÁ[c^}äætátá â;-{!{ætát}Åá@ætátá à![çãa^Á â;-{!{ætát}Åá@ætátá à: attive }ætát} }ætáti ][[ætátá à @%A[áætátá]][[ætátá &č]cč!^•áti !Ás@Á;ætč'!ætátá &č]cč!^•áti !Ás@Á;ætč'!ætátá á	q Ác@ Á } å^!• cæ) åðj * Á -ÁCE • dæjæær Ás^ç^[[] { ^} dĚMCEc@ * @Á; [• cá, -Ác@ Á ã  æ) åq Á&[ } çã&cá, æ cá^{ 255, 000 } æðj • ÊS@ !^ Ásc^ Á[ { ^Á, æto Ác@æv/@æç^ Á, [dã, !Ásc^ Á i [a• & ',  ^ åÉMJ} ^ Á * &@Á çæ; ]  ^ Ás Ác@ Á * } ã @ ^} of&   • ÊS, @&@ é, ^!^ Á \}[, } Át Á@æç^ Árçã cr å Ás ` of, }  ^ Á } ædo å Ås ÁCEEJEMÁ U c@ ! Ásch æ Ác@æcÁ cæj Åc@ Á, [ c² } cãæbÁt Á&] ACEEJEMÁ U c@ ! Ásch æ Ác@æcÁ cæj Åc@ Á, [ c² } cãæbÁt Á&] ACEEJEMÁ U c@ ! Ásch æ Ác@æcÁ cæj Åc@ Á, [ c² } cãæbÁt Á&] ACEEJEMÁ U c@ ! Ásch æ Ác@æcÁ cæj Åc@ Á, [ c² } cãæbÁt Á&] dãa * c Ást ] [ !cæj ofsj -{ !{ æst } Å å &] å^ Ac@ Ác@ac ![ ^ Ás[ & ^ æsl åÊA* * ä] { ^} cÉA æ^ @ * • Asbj å Æst å * cãæbÁ ä å å å å a * ác@ Ac@ac ![ ^ Ás[ & ^ æsl åÊA* * ä] { ^} cÉA æ^ @ * • Asbj å Ásj å * • cãæbÁ à * ä åå j * • Ê&!æj ^• eÊA @æ¢ ^• EA [a] , æ • Ásbj å Ás cæð • EÁV @• ^ Æ æbbA* Æst Åcæst Å ^ çãa^ } & Aá Ac@ A Æst } e d* & ast } Ár A @j à * å å å * Asbj å Ás & @ æst Å \ á]• Á ^ [ ] [[ ^ à Ásj Ác@ Á&[ } • d* & ast } Ár A @j à * äå j * Ásbj å Ásl & * æsl Åæst Åa Oãç^ } Áx@ Á[ } * Á@s d !^ Á, Á @j à * äå j * Ásbj å Åscæst [ Áæ]æst Å × Ås c@æst Á Å; '• ^ } ofs Æst ]^ Ást Æst ]^ Ér ¢cr } • äpå å Ås æsl å Åscæst ä ÈA
(ẩ DÁ Ú¦ảj &ảj ad A& @ ad a a a chi a că e Á, Á a á a á a á a á a á a á a á a á a á a	CE Á cær à Á§ Á@ Á Þæað } æ ÁR ^ ¦ãæð ^ KŠã cð * KÁ "Cockatoo Island represents some of the principal characteristics of Australian convict sites including: hard labour as a means of punishment and deterrence to the British "criminal class"; use of convict labour for the establishment of a colony through public works; and secondary punishment for re-offending convicts" (J)^^ ÁOE ] ^} åæÂ DĂ Ø ¦c@ ¦Éæ Á§ &]` • ð } Åæ Á æd Áæ Á& Å& Å A P^¦ãæ ^ KŠã cA çãa^} &^ • Á æd ( Á@ A& ] ção Á ã • Á Á Á & Á P^¦ãæ ^ KŠã cA çãa^} &^ • Á A @ Á@ Á !ð &] * • Å & A [^]  ^• ^} • Á@ Á !ð &] æd æd & & A [^]  ^• ^} • Á@ Á !ð &] æd æd & & A [^]  ^• ^} • Á@ Á !ð &] æd æd & & A [^]  ^• ^} • Á@ Á !ð &] æd æd & & A [^]  ^• ^]  ^• ^] # * A [^]  ^• * ] *



Á	
Criterion	Assessment
Ç DÁ OE*•c@ ca3k/&@eetæ&c^\ärca3e•Á Ás@ Á,  æ&A Á @ee Á,`orcæ) å ji * Á@ \äræt ^ Áşæt ^ Áş } æaā[} æh/a ^&æi • ^ Á; -Ás@ Á,  æ&A q Á ä[][\ca) &^ Áş Á¢@aaäaj * Á, ætca3c` æ ä[][\ca) &^ Áş Á¢@aaäaj * Á, ætca3c` æ á æ*•c@ ca3k/&@eetæ&c^\ärca3e•Áşæt ^ å/at ÁseA &[{ { ` } ãr Á;  Á\$c` c` æh/4\[`] Á Á	CE;cQ`*@kw@A^cc3;*A;4Ô[&\æt[A@ æ)åÅa*Aæ••c@c38æ# ^A; ^æ-3;*Êah^3;*A [}AÙ^å}^^A?æda[`:E3;3c@A;^^]3;*A;&;•A*æ-c4g;,æda•Ac@A&36;A;A Ù^å}^^A\^]3^Êac@AU^å}^A?æda[`:KÓ;ãa*^As+3;åA[`c@Ag;,ædaAc@AQ[}A Ô[ç^AÓ;ãa*^Êam A@;1äæ*^A#3;ã&2æ)&^Ara;A;[`cA^]āæ;d4;A&36;EÁV@AQ[}ç3&cA •^cq^{ ^}cA; æ:A*•cæah]ā@aA[;A0[&&;æt[[A@]æ)aA[*a;A;A**A@AA**;1äĉA [~~^!^åAs^As+3;Aam]a;@aA[;A0[&;aæ];A[A===================================
ÇDÁ Ô!^ææãç^Áţ! kár&@; 38æk/æ&@nç^{ ^} oñäk@ Á ]  æ&^Á@ee Áţ`o œa) å äj * Á@ ¦ãæet ^Áçæţ` ^Áţ Á c@ Á; ææãţ } Ás^&æč • ^Áţ -Ás@ Á  æ&^q Á ãţ ] [ ¦œa) &^Á§ Ás^{ [ } • clææ3j * Áæk/@t @Á å^* ¦^^ Áţ -Æs¦^ææãç^Áţ ! Ác &@; 38æk a&@nç^{ ^} oken/æðţ ælca3c`  æl⁄ŋ,^¦āţ å Á	
Ç DÁ Ù[ & and Ak Á/@ Á,   æ& Á@ e Á, `o œ) å ä, * Á @   and Ak Ak Ak Ak Ak Ak Ak Ak Ak Ak Ak Ak Ak	Ô[&\æq[[Á@(æ)åÅ@æ•Á]^&ãæ4Áæ••[&ãæa4j}+Ájão@kçæ3āj`•Á&[{{`}}ãa3v•ÉÁ @[_^ç^¦Áæ+ÁæA@æ•Á[[•q^Áa^^}&4x4]*}æ4&[[[}^Ê&[] ^Ê&[]!^&&ãç^Aæ&3jãc Áæ)åÁ 3)å`•dãæ4k&[{] ^¢É&a4&[^•A][ơ4(^^ok@æiA&;ãr\tā]}Á{[¦Á[&ãæ4É&; c`;æ4A[;A •]ããčæ4Áæ•[&ãæaāj}ÈĂ
Ç@DÁ Œ•[&ãæcā]}•Ák Á/@Ą aa&∧Á@æÁ [čoca)åā]*Á@¦ãæe!^Áşæ¥`^Át[Ás@Á }æaā]}a¢ha^&æ*•^Át[Ás@Á]aæ&^qÁ]^&ãæ‡Á æ•[&ãæcā]}Åjão@k@Áā^Át¦Åj[¦\•Át[ÁsáA ]^¦•[]}Át¦Á*![č]At[-A]*!•[]+ÉAt ā]][¦ca)&^ÁtJÁCE•da¢ãæe]Ajæč¦a¢At¦Å &č c¦a¢Á@ár(t¦^Á	CE;cQ`*@k@{&[}ç38o/A\;ækj,æqj,}[^kækj{æql/j,ædvf,-Ac@A@ard[!^/j,-AÔ[&&;æq[[Á Qe]æg å Ebbo%ar Aj[}^c@ ^••Aeg Ag]]['cæg o/j,ædvf,-Ab@A@ard[!^Aj,-AÔ[&&;æq[[Á Qe]æg å Ebbo%ar Aj]}^c@ ^••Aeg Ag]]['cæg o/j,ædvf,-Ab@A@ard[!^EAV@arAsa Aç^} { [ !^AA[A*āç^}ko@azAo@AÔ`\[]^ag A@ard[!^Aj,-AOE •d;ædæg As^*3]•Aj ac@boa A`ā]*Áedj,^}ædA[[]}^EAAV@!^Asa Ac@!^-{ !^Aéedj,^c*•Aba^c,^^}ko@A*ae]^Á &[}ç38ce Aeg å Abo@Aj,^}ædA*•c*{ Aeg å Abo@A*:[]_c@Aj,-Abo@Aj;ædæj}EA Á
ÇADÁ V@A, æ&∧Á@æa,Á`orcæ)åā]*Á@¦ãaæ*^Á çæ `^ÁgiÁc@A,æaaji}&ak^&æe`+^A,a{c@A ] æ&∧orAgi[¦ãā]æ4A clæaåãaji}Å	Ο Ξ Α̈́, [ ơ ʰåkæà] [ ç ʰĒkæá, æ À, [ ơ ʰåko@ændÔ[ & æt [ [Áo] æ) å Á, æ Á • ^å Àà Á CĒa[ ¦ātā] æda, ^[]   ʰkæako@ Aʿā] ^ Ái, ÁO` ¦[] ^ æ) Ã&[ } œasokæ Aʿæá, • [ ` ¦ & A *æc@ ¦ā] * Áiāơ Ēř@ , ^ ç ^¦ Aʿa ^ & e ^ Ái, Áo@ Áæà• ^} & A´i, Aʿaŝi /ā * Á, æơ \́A / Å ā   æ) å ḖA æ Aُ, ^ ç ^¦ Áæá,   æ& ^ Aí, -Á@æàāæaā] } ĒÁA @ē• ofs@ Â,   æ& ^ Å, æ Â, [ Aʿa[ ` à oÁ [ -Áā] ] [ ¦ œa) & Aát Aʿa, àā a * } [ ` • Aít æåāāā] } Ēbáa faa Â, [ ofsæ• ^•• ^ å Áæ• Aʿa ^ Å [ ` œ æa) å ā̄, * Á@ei āæa* ^ Áç æ≱ ` ^ Á¢i Ás@ Aُ æaā] } Áî, } Ás@æa āæ āē EÁ

### 5.3 Statement of significance

 $\begin{aligned} & G^{4}_{a} \dot{A}_{a} & \bullet \wedge \bullet \bullet \wedge \dot{A} \dot{A}_{a} & A^{2}_{a} & A$ 



## 5.4 Grading of site elements' significance

 $\label{eq:linear_lin$ 

Element	Integrity/Intactness	Contribution to the Significance of Cockatoo Island	Significance impacted by Proposal Y/N
Óæ¦æ&∖•ÁÓ[[&∖Á	O E • ^ • • ^ å Á;}ÁC E • d æ¢ãa)Á P^¦ão zª ^ ÁO æcaaà æ ^ ÁÇCP Ö DÁ æ Á; ^ ^ cā) * ÁÔ [{ { [}} ^ æ¢O A • ã }ãa Bæ)& ^ Á&iã^¦ãæ ÁO ÉÓ Á æ)å ÁP Á; Áæ Á@i @Á^ç^ ÈÁ Moderately intact, high integrityÈÁ	Ò¢&^] αįį́}æ¢Á	Þ[ Á
Óậ∧[ æứÕ¦[˘] Á	Oee•^••^å/ų́}ÁOEPÖÁæéÁ {^^cāj*ÁÔ[{{[},^a‡o@Á •ã}ã&æð}&^Á&ã~¦ãæ∕OEAOÉA ÒÉEØÆ⇔åÆPEAHighly intact, moderate integrityEÁ	Pã @Á	Þ[ Á
Ô[&\æq[[ÁQe æ)åÁQ0,å`•dãæ¢Á Ô[}•^¦çæqā]}ÁOE^^æAÉÄçæeðā[`•Á •ãe^•Á	Oe • • • • ^ å Á[} Á∞ ÁOP ÖÁæ Á { ^ ^ cā} * ÁÔ[{ { [ } , ^ æko@Á • ã } ãææ) & ^ Á&ã & \ãæÁOHÁÓHÁÓÁ æ) å ÁP ÈModerately intact, moderate integrityÉÁ	Pā @Á	Þ[ Á
Øãc¦[^ÁÖ[&∖Á	Oe • • • • ^ å Á[}ÁOEP ÖÁæÁ { ^ ^ cā} * ÁÔ[{ { [ } , ^ æ¢O9Á • ã }ãææ) & ^ Á&ãe^ ¦ãæÁOEAÓEÖEA ÒÆe) å ÁØEAModerately intact, high integrity.	P∄ @Á	Þ[ Á
T^•• <i>Á</i> ₽æ∥Á	Oe • • • • ^ å Á[}Á0EP Ö Áse Á { ^ ^ cā} * ÁÔ[{ { [ } , ^ a‡o@Á • ã }ãa3ca) & ^ Á&ião \ãa#OEAOÉAOÉA Ò Áse} å ÁCIÁMo derately intact, Mo derate integrity ĚÁ	Ò¢&^] αįį}æ¢Á	Þ[ Á
Tajaĩæh^ ÁÕč æhåÁÜ[[{Á	OE•^••^å/ų}ÁOEPÖÁæÁ {^^cā}*ÁÔ[{{[},^a¢o@Á •ã}ã&æ}&^Á&ãe^¦ãæÁOEAÓA æ}åÆPĚModerately intact, Moderate integrityĚA	Ò¢&^] αą̃}æ¢Á	Þ[ Á
Ú[,^¦Á?[`•^ÐÚ`{]Á?[`•^Á	Cee•^••^å/ų́}ÁCEPÖÁæÁ {^^ca}*ÁÔ[{{[}, ^a¢o@Á •ã}ã&æ}&^Á&ã~¦ãæ∕CEÓÓÉÖÉA ÒÆ;åÁ2DÈAModerately intact, Moderate integrityÈA	Pā @Á	Þ[ Á

Table 9 (0) cæ&c) ^•• / & a/\$ a/\$ c^\* ¦ãc / 4 / & [ { ] [ } ^ } o / 4 / Ô [ & æt [ / @ | a) a/A



A Element	Integrity/Intactness	Contribution to the Significance of	Significance impacted by Proposal Y/N
		Cockatoo Island	
Ú¦ãr[}ÁÓæs¦æs&∖∙ÁÚ¦^&ðj&oÁ	Œ:••••^å/ų́}ÁŒPÖÁæÁ {^^@j*ÁÔ[{{[},^œ¢@Á •ã*}ããæa)&^Á&iæÁŒÉÓÉÖÉA ÒÁæ)åÆÈÉModerately intact, Moderate integrity.	Ò¢&^]αįį}æļÁ	Þ[ Á
Ù″o@°¦ æ)åÁÖ[&∖∙Á	OE••^•^å/ų́}ÁOEPÖ/ See Á { ^^caj* ÁÔ[{ { [ } , ^ae)c@Á •ã*}ãã Baaj&^/sűszá OEEÓEÄÖEÄ Ò/ Sea à Á20EEModerately intact, Moderate integrityEĂ	Pã @Á	Þ[ Á
W}å^¦*¦[`}å <i>ĥ</i> Õ¦æ∯ÂÙą́[∙Á	OE••^••^å/ų́}ÁOEPÖ/seeÁ { ^^caj*ÁÔ[{ { [ } , ^aekc@Á •ãt}ãa3cea)&^/&siãea/DÉAOÁ æ)åÆPEÁHigh intactness, high integrity.	Ò¢&^] cąį}æ¢Á	Þ[ Á

Grading	Justification	Status
Exceptional	Üæl^Á¦¦Á,`o•cæ)åð)*Á≊c^{Á¦-Á [&æd4Á¦¦Á Ùcæe∿Árði}ãã&æ)&∿ÉÆPði@Ásh^*¦^^Á; ðjcæ&c}^••ÈÁ&cr{á&æ)ás^Ásjcr¦]¦^c∿åÁ ¦^ ææãç^ ^Á>æðiîÈĂ	Ø″  -ā]•Á&¦ãe^¦ãeeÁĮ¦Á[ &edÁ¦¦ÁÙceee^Áã;cā]*ÈĂ
High	Pāt@\$\$\$^*¦^^Á;_A;¦ātājæ‡Áæà¦a3dĚÁ Ö^{[}•dæe*•ÁæÁ^^Á^/A ^{ ^}@^Á ãe^{ qe/Áāt}ãa38æa}&^ĚÁOE‡ev¦ææāj}●Á\$a[Á,[cÁ å^dæ&eA4[{ Áāt}ãa38æa}&^ÈÁ	Øĭ  -ậ≢ Á&¦ãe^¦ãæÁĮ ¦ÁĮ &eq4́į¦ÁÛcæe∿Á?a cậ, * ÈĂ
Moderate	OĘc^¦^åĄ́i¦Ą́[åãðååÁʰ ^{^}oÞĚÁ Ò ^{^}oĄ`acoAjãcoAácd^Á©¦ãæở^Áçæ¥ັ^Ás`cÁ ,@38@Á&[}dãačc^Át[Ás@?Áţç^¦æ4 Á •ã*}ãã&æa}&^Ąí-Ás@Aác^{EĂ	Ø″  -ā]•Á&¦ãe^¦ãæÁų ¦Áį[&ed4į́¦ÅÛcæe^Áæicāj*ÈĂ
Little	OE‡c^¦æaāj}∙Ásh^dæ&oÁ¦[{Árâ*}ãa38æ)&∧ÈÁ Öã—a3&` oÁgi∕cv¦]¦∧dĚÁ	Ö[^•Á][ơÁĭ -āþá&iãơ\¦ãæÁţ¦¦Á[&æ‡4ţ¦Á Ùœæ^Áã-cā}*ÈÁ
Intrusive	Öæ; æ*^Á;[Ás@/Ása∿{qrÁrã*}ãa38æ;}&∧ĔÁ	Ö[^•Á][ơÁ*]-ālÁ&iãơ\¦ãæÁĮ¦¦Á[&æ‡4[¦Á Ùœæ^Ájã:cā]*ÈĂ

A Á

# ÎÁ Ù cæe^{ ^} o⁄ [ 4 4 @ \ azet ^ / 5] æ8 o Á

#### 6.1 Summary of proposed changes

 $\begin{aligned} \mathbf{Ce} \hat{A}_{i} \left[ c^{a} \hat{A}_{j} \hat{A}_{i} \otimes \mathbf{G}_{j} \right] \left[ \cdot a \mathbf{e} \hat{A}_{i} \left[ \cdot \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \right] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \left] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \left] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \left] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left[ \cdot a \mathbf{e} \hat{A}_{j} \left] \right] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left] \left[ \cdot a \mathbf{e} \hat{A}_{j} \left] \right] \left[ \cdot a \mathbf{e} \hat{A}$ 

Ö`¦ā)\*Ás@ Á&[}•d`&ca‡}Á;@æ•^Ébs@ Á\*¢ãrcaj\*ÁÔæ(à^¦ÁY@eb÷Á{[Ás@ Á[čc@4;Ás@ Áæ]|æb)åÁ;āļ|Ás^Á •^åÁ{[Á;æa5]cæa5)Á c@ Á\*¢ãrcaj\*Á^¦¦^Á^¦ça&^ÈÈV@ärÁ;@eb÷Á;ā]|Á^č`ă^Ác^{][¦æb^Á^|[&ææa‡]}Á;ÁA[{^Á\*``ā]{^}cÁeo}åÁe^{][¦æb^Á ;æ°-ā)åā]\*Á5j•cæa|ææa‡]}Á;¦a‡¦Á{[Á•^ÈÁ

V@^Áj.¦[][•a¢Á,[č|åÁ&[{]¦ã^^áx@^Á[||[, ð]\*Á^|^{ ^}@ kÁ

#### 6.2 The proposal

V@^Á,¦[][•æþÁ,[č|åÁ5)&|čå^Áo@A^]|æ&^{^}o4, Áo@A^¢ãro3)\*Á\*æð\*, æêÊÁ,[}q[[}Áæ)åÁo@A´]\*¦æå^A, Áo@Aãç^åA , @æ⊹Ádč&cč¦^ÈV@A&[}&^]o4å^•ã\*}A{[¦Áo@A;¦[][•æþÆa Ač||^Åa^•&¦ãa^åÁ∞aA^åA∞aA;}AFÈEÁ∞à[ç^ÈÁ

#### 6.3 Impact of proposal on physical fabric, attributes and setting

V@^Á,\[][•^åÁÔ[&\æt[[Á@|æ)åÁơ^\\^ÁY @æ+~Á]\*\æå^Á\$jç[|ç^•Á,[\\Á,ão@3j,ÁY[\|å/&e)åÁpætāj}æ4ÁP^\ãæe\*^ÁŠãróÁ &`\cājæe\*^•Áæ)åÁed[Á,[\\Ás^^[}å/x@]•^/&`\cājæe\*^•ĚÁ

Ú¦[][•^åÅ,[¦\•Áa^^[}å&@Á@¦ãæet^Á&`¦dajæt^•Áaj&|`å^Áo@Aáu^{{ [aŭa]}ÁæjåÁ^{{ [çæd, Áo@Á¢ārdaj\*Á\*æj\*, æÂ æjåÅ,[]d[]}ÁædÔ[&\æt[[Á@|æjåÁY @ed=ÉæjåÅ&@A&@Aá@Aát]}•d`&dāj}Å, Áæ∯,^, Áal;ãa\*^É\*æj\*, æÂæjåÅ,[]d[]}ÁæA Ô[&\æt[[Á@|æjåÁY @ed=È£Y[]\•Á`&@Áæe Ác@Áæ-ã¢aj\*Á; Ác@Á,^, Á\*æj\*, æÂkt[Ác@Á\*¢ārdaj\*Á, @ed=Á; ajlÅa^Á `}å^!cæa^}Å, @!^Ác@Á&`;!^}c\*æj\*, æÂ#a Át[&æeråÉbo@!^-{;^ÁajAæjAæ}æá, adki^a@A\*a; \*)^Aat]]æ&c\*åÅa`Ác@Á\*æ{ ^A ~}&dat}

V@A;¦[][•^åÁ;[¦\•Áæò^Á;āļlÁ\*}•`¦^Áœ@A;}\*[ā]\*Á•^A;AœA;@æd-Á[¦Áæ&&A••Ê;@aphA`]\*¦æåā]\*Áæ^ĉÊA æ&&^••āaājācîÁæjåÁ^&č¦ācîÁ[¦Á•^¦•Ě4/@ārÁārÁ&[}•ãrc\*}c4;āc@ÁÚ[|a&at•ÁƏEÉAƏFÉAƏCÁæ)åÁ;FA;A∞@ÁÔ[&\æt[[Á@|æ)åÁ Ô[}•^¦çæaā]}ÁTæ)æ\*^{ ^}c4)aÉ

## Ù^œ∄\*Á

 $\begin{aligned} & (25) a^{\circ} (26)$ 

#### 6.4 Impact of proposal on potential archaeological resources

Þ[}^Á; Ás@Á;¦[][•^åÅ; [¦\•Á; āļÁ^˘˘ā^Á\*æk c@;[¦\•ʾ; ãr@kh@A\*¢&^]cā‡}Á; Á\*áč\*Á;¦^]ækæaā‡}Ása}åÁsa[|cā]\*Á; Á U]æþÁÔækåÁ^æk^!•Á§; c[Å&[}&¦^c\*È4/@•^Á; [¦\•Ásk^Á;[oÁ\*¢]^&c\*åÁçiÁs!^æ&@ás^|[, Ás@Á\*¢ã;cā]\*Á&[}&!^c\*Ása}åÁsaÁ ãrÁs@!^-{¦^Á&[}•ãa^!^åÁsœexÁs@!^ÁsaÁ;[Ás@^æxÁ;Ása]]æ&oAçiÁsa^Â;[c\*]cætaÁsa&@és[|[\*ã&ætáA\*•[č\*¦&\*•ĚÁÁ

 $\begin{aligned} \mathbf{Ce} \hat{A}_{1} \left[ c^{a} \hat{A}_{3} \hat{A}_{1} \otimes \mathbf{Ca}_{1} \right] \hat{A}_{HE} \left[ \dot{A}_{Ca} \hat{A}_{0} \hat{A}_{1} \right] \hat{A}_{Ca} \hat{A}_{1} \left[ \dot{A}_{Ca} \hat{A}_{0} \hat{A}_{1} \right] \hat{A}_{Ca} \hat{A}_{1} \hat{A}_{0} \hat{A}_{1} \hat{A}_{1} \hat{A}_{0} \hat{A}_{1} \hat{A}_{1} \hat{A}_{0} \hat{A}_{1} \hat{A}_{1} \hat{A}_{0} \hat{A}_{1} \hat{A}_{1} \hat{A}_{0} \hat{A}_{1} \hat{A}_{1} \hat{A}_{0} \hat{A}_{1} \hat{A}_{1} \hat{A}_{1} \hat{A}_{0} \hat{A}_{1} \hat{A}_{1} \hat{A}_{1} \hat{A}_{0} \hat{A}_{1} \hat{A}_{$ 

Þ[}^c@·|^••Ē\$ee Á ão@áed|Á [¦\•Á }å^¦cæ\^} Ás ÁÜ[zæt+Áed)åÁT æbäãā (^Ês@ ã ÁV}^¢]^&c^åÁØ6jå•ÁÚ¦[d[&[|Á]ā|Á &[}cāj`^Áq[Á]^¦æe^Ási`¦āj\*Áo@•^Á [¦\•ÈÁADEA;¦^Ë [¦\•Ásåãç^Á,ã||Áed=[Ás^Á }å^¦cæ\^}Ás ÅsáÁeaÅ`ãæaà|^Á `ædããðåÁ {æbāj^Áæd&@ee'[|[\*ãróAq[Áræ^\*`æbåÁea)^Á,¦^çãj`•|^Á }¦^&[¦å^åA(æbããã] ^Á@'}äæt\*ČÁ

#### 6.5 Conclusion

Φάνκά&[}&|`å^åÅx@eexáx@:\^Á,āļlÁs:^Á,[Áāt}ã&æa)oÁs[]æ&oÁs[Áx@ÁY[¦|å/ξ¦Á>æeaāt}æ4⁄A?\ãæe\*^Á:ā}ã&æa)&^Á;-Á Ô[&\æst[[Á@|æa)å/ξ¦Ás[Áx@ÁÔ[{{[}, ^æko@4@:\ãæe\*^Á:āt}ã&æa}&^Á;-ÆavÆståā;ãačæa\*æ4⁄4\^{ ^}orEá Á Á



# ÏÁ Ô[}&|ĭ•ā[}•Áæ)åÁÜ^&[{{ ^}åæeā[}•Á

V@# A\$jç^•catacatil } Á@ee Ase•^••^å As@ A\$ta ^|a@[[å Aj -Asaciatati et ^ Asti As@ Azas | asAsay atD | A@ | atati ^ A tat } asasay & ^ Aj - A Ô[& \atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati et a Ô[& \atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati et a ô[&\atati et al atati atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati et al atati atati et al atati atati et al atati atati et al atati et al atati et al atati et

QÁ5a Á&[}&|`å^åÁx@eeetkÁ

- •Á V@Á;[][•^åÁ;[¦\•Á[¦Ás@Á,^, Á;@ed-Á;ā]/Ás^Ásed;ā]\*Á;|æ&^Ásed;ā]\*Á;|æ&^Ásed;åA;\*@:āa^Ásed;åA;\*@:āa^Á;-Ás@ÁY[;|åÁsed;åA;æaā];}ædÁ
- A VQ ^ A\ |^{ } o A, A @ A, |[][ ^ aA] \* | aab ^ A, [ |\ A @aax Aab A, | aab ^ A, | aab ^ A, | aab ^ A, | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a aab | ab a

 $\begin{array}{c} \mathbf{OE} \ \hat{\mathbf{A}} & \mathbf{A}^{\bullet$ 

### Ü^&[{ { ^}åæaā[}/kFÁ

QAFarÁ^&[{{ ^}å^åÁx@eenAfarÁ^&[}}æaã∙æ)&^Ásiãç^Ási^Á}å^¦cæei^}ÁeenAÔ[&\æat[Á@|æ)åÁY@eel-Afsi^ÁæArĭãææi|^Á ˘ĭæpää?åÁtæããããt^Áse&@eenE[[[\*ãro4);¦ãt¦ÁttÁs@A&[{{ ^}&^{ }}o4;-Å,[¦\•ÁttÁst[}-ã{Áx@eenA;[Átæ3ããāt^Á æb&@eenE[[\*ã&æplÁ^{æ3t+9; ãtlÁsi^Ástt]]æ&cråĚA

### Ü^&[{ { ^} åæaā[} ÁGÁ

 $\begin{aligned} & (A_{A} \otimes A_{A}$ 

#### Ü^&[{ { ^}åæeā[} ÁHÁ

CĦĂ [ |ææ • Á&[ } œ઼ ^ åÆ, Á@ ÁSydney Harbour Federation Trust Management Plan – Cockatoo Island [ ÁŒF€Á • @ ` |åÆ ^ Á{[ ||[ , ^ åÆ` ¦ ð \* Æ∉|Å œ़ • Á Áœ Á œe ^ A [ \* ¦æ \* Ě

#### Ü^&[{ { ^}åæeā[}ÁÁÁ

Ù@;`|åÁæ)^Á`}^¢]^&&^åÁajå•Áa^Á`}&[ç^!^åÁa`¦aj\*Ác@A&[覕^Á[,~Á&[}•d`&aa[}Éao@A(, ãa∄ aceat[}Áæ)åÁ {a)æ\*^{ ^}oÁ(,^æ•č¦^•Á^oÁ(,čá§)Ác@ÁÜTÙÁÜæ)åæååÁTæ)æ\*^{ ^}oÁÚ¦[&^åč¦^ÁÁN}^¢]^&&^åÁOE&@e%[|[\*ã&æ‡Á Øajå•Á@č[åÁa^Á[||[,^åÉA

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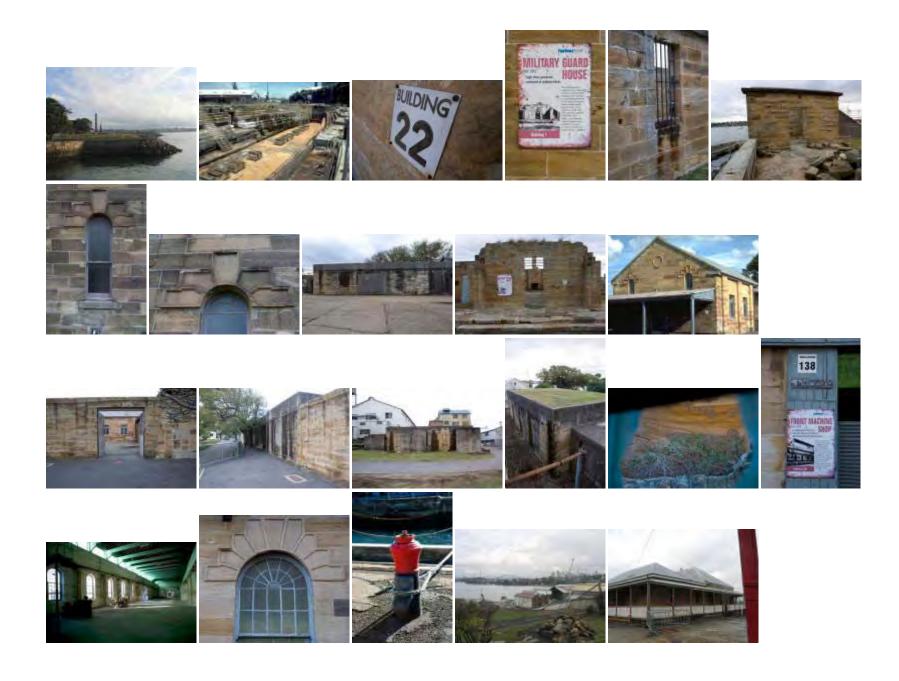
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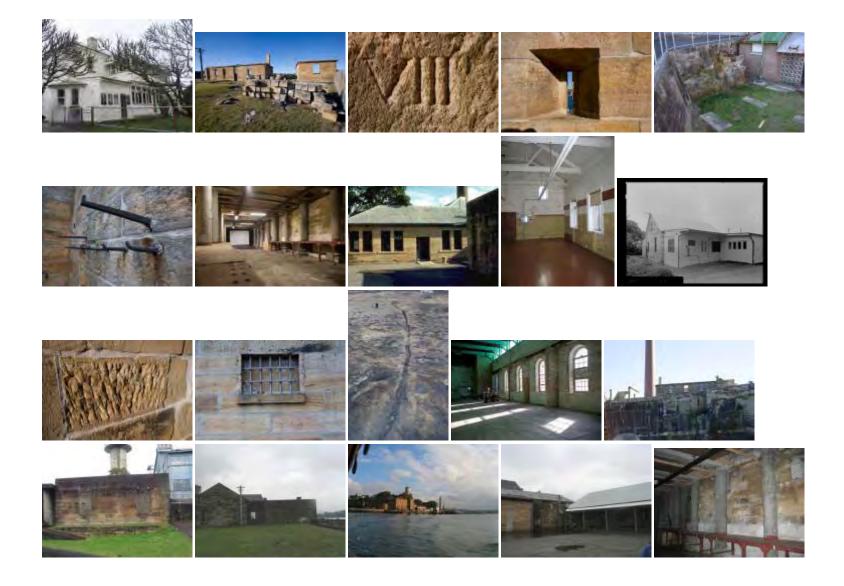
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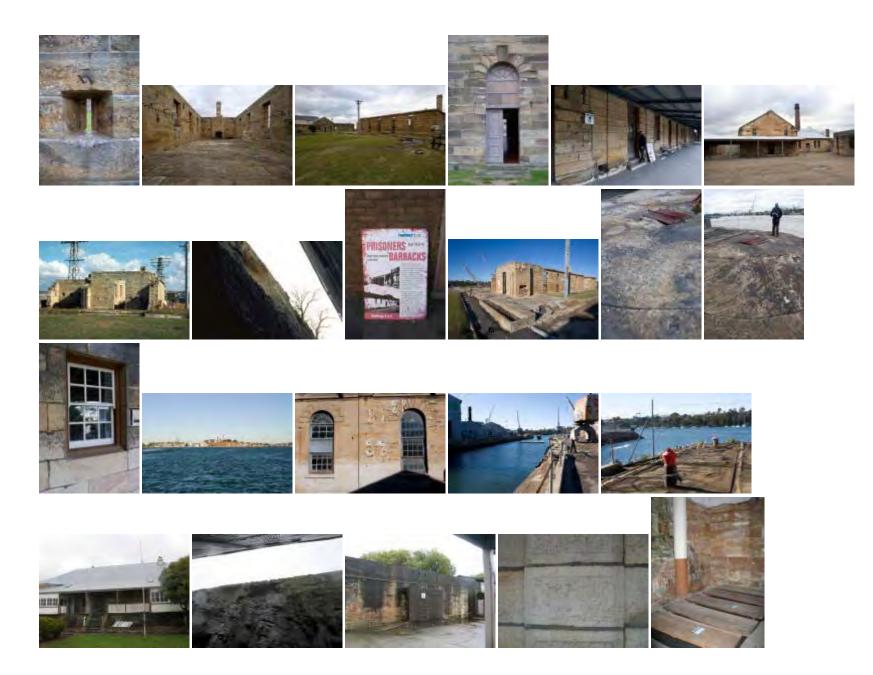
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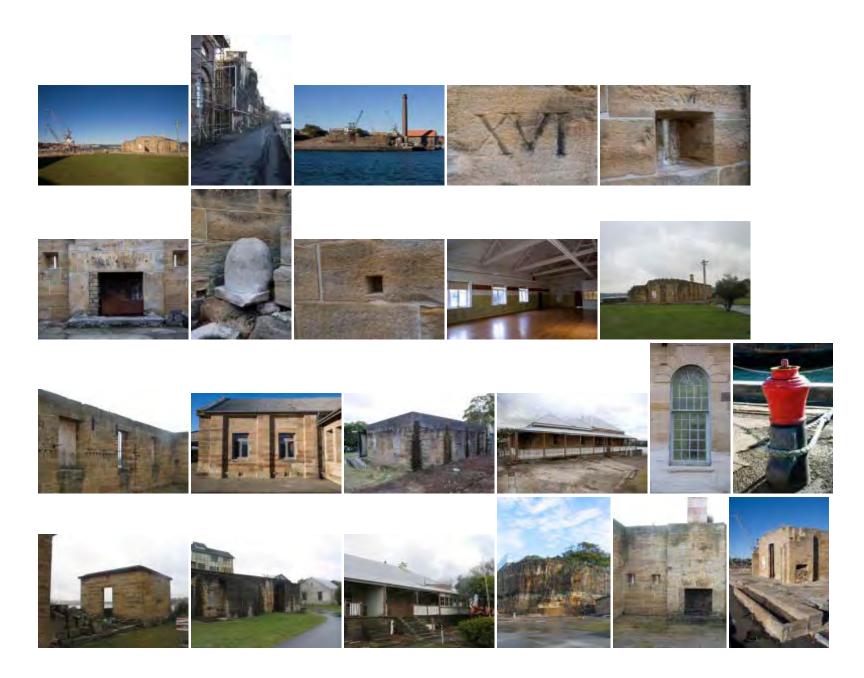


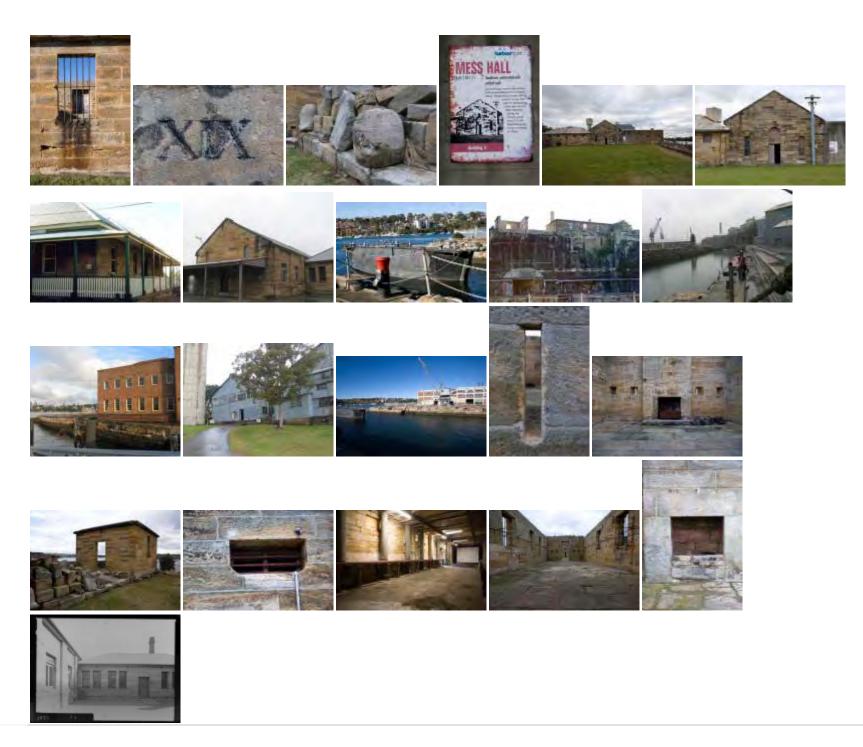












List	National Heritage List
Class	Historic
Legal Status	Listed place (01/08/2007)
Place ID	105928
Place File No	1/12/022/0089

### **Summary Statement of Significance**

Cockatoo Island is highly significant for its associations with convicts and the nature and extent of its remains demonstrate the principal characteristics of a dual use convict site where incarceration is combined with hard labour.

Cockatoo Island operated as a penal establishment from 1839-69, primarily as a place of secondary punishment for convicts who had reoffended in the colonies. Convicts sent to Cockatoo Island were subject to harsh living and working conditions and the place is outstanding as a site of severe punishment and labour. The main form of hard labour on the Island was quarrying, labouring and construction. Convicts excavated 580 000 cubic feet of rock creating 45 feet (14 metre) sandstone cliffs to prepare an area to construct a dock. The Fitzroy Dock was constructed between 1839-1847 and is the only remaining dry dock in Australia built using convict and prisoner labour. Fitzroy Dock was strategically situated on Cockatoo Island to provide services to the Royal Navy which at that time had no depot in the South Pacific.

Convicts also constructed impressive underground silos to store wheat. These were hand hewn in rock and averaged 19 feet (5.8 metres) deep and 20 feet (6 metres) in diameter. The silos were built in response to the severe drought of 1837-39 and were part of a strategy to reduce the colony's reliance on infrequent grain shipments.

Cockatoo Island contains an extensive suite of extant buildings and fabric related to the administration, incarceration and working conditions of convicts and has considerable potential to contribute to our understanding of the operation of a convict industrial site.

Cockatoo Island is also important to the nation as a pre and post Federation shipbuilding complex. It operated for 134 years between 1857-1991. It was Australia's primary shipbuilding facility for much of this time and contributed significantly to Australia's naval and maritime history. It was Australia's first naval dockyard for the Royal Australian Navy (1913-21) and continued to support and build ships for the Navy through two World Wars, Korea and Vietnam. It retains extensive fabric associated with ship building (including the Fitzroy and Sutherland docks). The place demonstrates the principal characteristics of a long running dockyard and ship building complex including evidence of key functions, structures and operational layout. Cockatoo Island contains the nation's most extensive and varied record of shipbuilding and has the potential to enhance our understanding of maritime and heavy industrial processes in Australia from the mid nineteenth century.

### **Official Values**

### **Criterion A Events, Processes**

Cockatoo Island is a convict industrial settlement and pre and post-federation shipbuilding complex. It is important in the course of Australia's cultural history for its use as a place of convict hard labour, secondary punishment and for public works, namely its history and contributions to the nation as a dockyard.

Fitzroy Dock is outstanding as the only remaining dry dock built using convict and prisoner labour and it is one of the largest convict-era public works surviving in Sydney. The dock was the earliest graving dock commenced in Australia and was one of the largest engineering projects completed in Australia to that time. Convicts excavated 580,000 cubic feet of rock creating 45 foot (14 metre) sandstone cliffs that extended around the site just to prepare the area for the dock, a huge technical achievement in itself.

The dockyard's lengthy 134 years of operation and its significance during both world wars, and in Australia's naval development and service as the Commonwealth dockyard all contribute to its outstanding value to the nation. It is the only surviving example of a 19th century dockyard in Australia to retain some of the original service buildings including the pump house and machine shop. The powerhouse, constructed in 1918, contains the most extensive collection of early Australian electrical, hydraulic power and pumping equipment in Australia.

The surviving fabric related to convict administration includes the prisoners' barracks, hospital, mess hall, military guard and officers' room, free overseers' quarters and the superintendent's cottage. Evidence of convict hard labour includes the sandstone buildings, quarried cliffs, the underground silos and the Fitzroy Dock.

Cockatoo Island's dockyard, through its contribution to Australia's naval and maritime history, demonstrates outstanding significance to the nation. Fitzroy Dock is the oldest surviving dry dock in Australia operating continuously for over 134 years (1857-1991). The dockyard has direct associations with the convict era, Australia's naval relationship with its allies (particularly Britain during the nineteenth and early twentieth centuries) and Australia's naval development, especially during the First and Second World Wars. Cockatoo Island's development into Australia's primary shipbuilding facility and Australia's first Naval Dockyard for the RAN (1913-21) further demonstrates its outstanding importance in the course of Australia's history.

## **Criterion C Research**

There has been considerable archaeological investigation on Cockatoo Island by the Sydney Harbour Federation Trust. This has indicated that it has significant research potential in terms of enhancing the knowledge of the operation of a convict industrial site and a long running dockyard.

The surviving archaeological elements of now demolished or obscured structures and functions of the dockyard, in particular the remains of docks, equipment, warehouse and industrial buildings and a range of cranes, wharves, slipways and jetties, have potential to illustrate and reveal the materials, construction techniques and technical skills employed in the construction of shipbuilding and dockyard facilities that are no longer available through other sources in Australia. The archaeological resources also have importance in demonstrating changes to maritime and heavy industrial processes and activities in Australia from the mid-nineteenth century.

The dockyard contains the earliest, most extensive and most varied record of shipbuilding, both commercial and naval, in Australia. This is supported by extensive documentary evidence in the National Archives.

### **Criterion D Principal characteristics of a class of places**

Cockatoo Island represents some of the principal characteristics of Australian convict sites including: hard labour as a means of punishment and deterrence to the British 'criminal class'; use of convict labour for the establishment of the colony through public works; and secondary punishment for re-offending convicts.

Cockatoo Island is of outstanding importance to the nation as a site of severe punishment. The level of severity is expressed through the policy to extend convicts with 'no indulgence beyond the strict Government ration'. The fundamental purpose of Cockatoo Island was to be the worst possible place imaginable and the ultimate deterrent and is a fine example as a symbol of the harsh treatment used to deter the 'criminal class' in Britain. Fitzroy Dock and its associated excavation and buildings are outstanding examples of the use of convict and prisoner labour for public works. The underground silos, remaining evidence from quarrying and the group of convict built structures on the island are also a testament to public works undertaken by the convicts. Although convicts under various sentences ended up at Cockatoo Island, it was established specifically as, and primarily was a place of secondary punishment for re-offending convicts.

Cockatoo Island critically represents the principal characteristics of a dual use convict site, one that both incarcerates convicts and provides them with hard labour.

The values expressed at Cockatoo Island are important for their ability to demonstrate the function, planning layout and architectural idiom and principal characteristics of an imperial convict public works establishment of the 1840s; and the functions, planning layout and architectural idiom and principal characteristics of a range of structures and facilities associated with the development and processes of the dockyard and shipbuilding industry over a period of 134 years.

### Description

In its original state it was 12.9 hectares in size, however it has been expanded to 17.9 hectares through cutting, filling and reclamation. Almost all of the original vegetation of the island has been removed, and the current vegetation includes plants growing on the quarried cliff faces and planting of exotic species in the garden areas. Its landscape is articulated by man made cliffs, stone walls and steps, docks, cranes, slipways and built forms (GAO CMP:2005:p2).

Cockatoo Island consists of a sandstone plateau up to 79 feet (24 metres) above water level that has been gradually reduced from its original extent by quarrying for sandstone building blocks and excavation for docks and buildings. Spoil from these activities over time has been used to help create the surrounding flat apron areas.

The plateau area can be divided into three main areas dictated by the convict era layout. The western end comprises the **prisoners barracks and hospital** (1839-42) form three sides of an open courtyard with the **mess hall** (1847-51) comprising the fourth side. West of the barracks a formal lawn encloses the roofless **military guard house** (1842), and the **military officers quarters** (1845-57).

The central part has the two **Free Overseers Quarters** and evidence of the Prison Quarry area. The latter has been built over by a group of six large dockyard buildings. The **Electrical shop** is built in the area excavated for the water cisterns. These large buildings plus two concrete elevated water tanks are part of the island's distinctive silhouette.

The eastern end of the plateau is the residential area comprising the remaining convict era structures of the **Superintendent's residence** substantially enlarged in 1860, the **Clerk of Petty Sessions** residence is adjacent to Biloela house. A second free overseers quarters was converted to an air raid shelter in 1942. The rock hewn **silos** are visible only as covers at ground level and two half silos are exposed from prior quarrying. The symmetrical silos are bottle shaped, and an incision on the surface of the rock indicates the diameter of the silo below ground, averaging 19 feet (5.8 metres) deep and 20 feet (6 metres) in diameter. Additions were made to three Federation style residences constructed by the dockyard in 1915-16.

The lower part of the island, which surrounds the central area, has been mostly levelled and developed for dockyard purposes and still accommodates over 80 industrial buildings, concrete pads from demolished buildings, cranes, dry docks and wharf related structures. Many buildings and wharves were demolished after the closure of the dockyard, and this has resulted in large open areas on the northern and eastern foreshores. A detailed description of the remaining buildings, machinery and equipment associated with the dockyard can be found in the Godden Mackay Logan Conservation Management Plan, February 2006.

The apron areas beneath the plateau can also be divided into distinct precincts.

The southern area with the two docks Fitzroy Dock and Sutherland Dock:

**Fitzroy Dock** is an excavated dry dock 472 feet (144 metres) in length and maximum beam of vessel which could be docked is 49 feet (14.8 metres). Its sides are lined and stepped with sandstone masonry blocks to facilitate shoring of ships and access to ships for maintenance and repair. The dock can be pumped out by the electrical pumping plant located in the Powerhouse building and is connected to the pump wells by a deep conduit alongside the Sutherland Dock. Twelve of the original 15 gun barrel bollards remain in place (three are held in storage). The present caisson was completed by the dockyard in July 1932.

The **Sutherland Dock** is an excavated dry dock lined with bluestone concrete blocks (partly replaced by new concrete in the late 20th century). The dock is 686 feet (209 metres) long when the caisson is in the inner fit, 89 feet (27 metres) in breadth and the depth of the water over the sill at high tide is 32 feet (9.75 metres). The lower altars are bluestone concrete, the broad altars and copings are granite and the upper altars sandstone ashlar. A sliding steel caisson was installed in 1975 to replace the original wrought iron caisson.

The eastern area with the large group of interconnected sheds abutting the convict built **Steam Workshop** built at the same time to support the Fitzroy Dock. The northern part of this apron has had its buildings demolished (1991) except for the **Administration Building** adjacent to the Parramatta wharf to the main point of entry to the island.

The northern apron is also devoid of its main buildings and is now a grassed area ending in the two concrete slipways. At the western end of the island is the brick **Powerhouse** with its landmark brick chimney.

History

Unless otherwise specified, the history is sourced from the Godden Mackay Logan and Government Architects Office CMPs, 2006.

In the early 1820s convict assignment was increased to provide cheap labour to free settlers and to relieve the burden on the British Treasury. For those who continued to offend, or whose crimes were such that they could not be assigned, life was often much harder. A report from Governor Bourke in 1837 on the overcrowded secondary punishment penal establishment at Norfolk Island stated the system of convict management produced 'no real reformation of heart'. This resulted in passing of '*An Act for the Conditional remission of Sentences of Convict transported to Norfolk Island and Moreton Bay and to enforce the conditions thereof*' (The Public General Statutes of New South Wales:1838-46). The Act substituting hard labour for transportation to a place of secondary punishment was introduced in June 1838. Secondary offenders 'of good conduct' who had been sentenced by the colonial courts to Norfolk Island or Moreton Bay could earn conditional remission of parts of their sentences by working in irons on the roads or other public works. The Act made labour available for public works where it was most needed, and remitting sentences reduced costs by removing men from the convict system early. In a climate of changing views about the object of punishment, it also provided a rather different opportunity for prisoner reform (2005 CMP: 2005:16). Cockatoo Island was selected by Governor George Gipps as the ideal location for a place of hard labour; isolated, easy to provision and secure, but not distant and so was 'under the very eye of authority'.

### Convict settlement of Cockatoo Island 1839 - 1841

In February 1839, under direction of Governor Sir George Gipps, an initial contingent of sixty commuted prisoners from Norfolk Island was sent to Cockatoo under military escort. The initial establishment was a convict stockade, worked by men in irons, with 'no indulgence beyond the strict Government ration' to construct the convict establishment. By May, convict numbers had increased to 167. The island had ample supply of sandstone for quarrying and more permanent prisoners barracks commenced. Convicts constructed a wharf to receive essential supplies of goods and provisions, extensive terraced gardens and walling and with no fresh source of water, cut water tanks in the rock above the escarpment. In response to drought, fluctuating wheat prices and infrequent shipments of grain to the colony, Governor Gipps ordered convicts to excavate up to 20 grain silos by hand in solid rock to store grain for future use in the colony. This was later (1841) seen by British Government as an interference with free market forces and all grain was ordered to be sold.

In 1840 transportation to New South Wales was suspended, but it was to be many years before all its convicts ceased to be a burden on the British Treasury. The majority of those who had been transported to New South Wales were assigned, or had tickets of leave, but there remained about 5 000 prisoners who were still under punishment, or who through illness or disability were still maintained by the government.

Governor Gipps responded to the considerable pressure for convict accommodation by gazetting Cockatoo Island in 1841 as a place for the reception of male offenders under sentence of transportation (GAO CMP p4(2.1.6)). Transportation to New South Wales had ended, but the worst offenders were now to housed much closer to the heart of the colony.

## The second building phase - 1841-44

With an increasing workforce, the second phase of building construction included permanent accommodation for the military guard and a combined guard house and barracks for 56 soldiers. Two cells under the cookhouse and a range of twelve solitary cells was completed in 1843. The cells were excavated out of solid rock and accessed by ladder through a trap door from above. By 1844 all of the major penal buildings on Cockatoo Island were complete.

In 1842 there were 342 prisoners on the island. With accommodation already overcrowded it was difficult to carry out the only form of classification that had been ordered by the Governor, to keep the Norfolk Island men separate from those who had been sentenced to transportation (State Records NSW in GAO CMP 2005: p20).

### The numbers decrease, and increase

Captain Alexander Maconochie's social experiment in penal reform on Norfolk Island meant that it solely received prisoners newly arrived from Britain. Those convicted in New South Wales of transportable offences were sent to Cockatoo Island. The experiment was abandoned in 1844 and all doubly convicted prisoners under sentence of transportation on Cockatoo Island were sent to Norfolk Island. As the remaining convict population of the colony decreased rapidly in the 1840s, the population on Cockatoo Island did likewise, to 85 by 1847. By this time there were no prisoners trustworthy enough to serve as overseers, an integral part of the system. In total, about 1 440 prisoners had been brought to Cockatoo Island from Norfolk Island, the majority of whom had their sentences commuted. Their conduct, Governor Gipps reported, 'both on the Island and after their release from it, has been such as fully to vindicate the Act, indeed to prove in a remarkable degree the policy no less than the mercy of it.' (GOA CMP:2005:21).

In October 1847 Earl Grey sent instructions for as many prisoners as possible to be given tickets of leave or conditional pardons, to relieve the government of the expense of their upkeep. Those who could not be released on such terms would be sent to Van Diemen's Land. Once again, insufficient accommodation for this in Van Diemen's Land resulted in the use of Cockatoo Island. Norfolk Island would be used for convicts still serving their original sentences and requiring strict coercion, while secondary offenders and those sentenced to punishment, deprived of their tickets of leave or returned from private service, would be placed on Cockatoo Island (2005 CMP: 21).

As Cockatoo Island changed from a British penal establishment to a colonial one, the number of civil officers employed in its administration increased. From 1839 to 1847 the island was run by the Superintendent and his assistant, with security maintained by the military guard and prison labour under the Engineer's Department. All other tasks necessary to run the penal establishment, including the supervision of labour, were carried out by prisoners (2005 CMP: 26).

## A dry dock to serve the British Navy

As the population of the colony grew, Governor Gipps among others hoped that Port Jackson might become a naval station for the British Fleet. Cockatoo Island was a sheltered, easily accessible but safe and defensible location surrounded by deep water with a workforce that had been sentenced to hard labour, and identified by Governor Gipps as a the best place in Sydney Harbour for a naval establishment (GAO CMP:2005:p22). Although not sanctioned until 1847, Governor Gipps directed convicts to begin clearing and preparing the island for construction of a dry dock in 1845 (Birmingham:1984:p20). Convicts removed large sandstone rock cliffs with an average height of 45 feet (15 metres), just to clear a level space large enough to accommodate the dock. Construction of the dock commenced in 1851 (Parker:1977:p13). As a distant and remote British settlement, shipping was a vital lifeline for the Australian colonies. The construction of a dry dock within the harbour of Port Jackson 'would be of great and permanent advantage to the Colony' and would be built using prisoner labour (2005 CMP: 22). The Royal Navy contributed to the cost of the dock on the condition the Royal Navy ships had preferential use rights (Jeremy:1998:p19). Gother Kerr Mann was responsible for the design and construction of the dockyard. Work on the dock progressed more slowly than anticipated, with a largely unskilled, and often unwilling prisoner workforce. A strong demand for labour in the Colony following the gold rush, combined with Cockatoo Island's penal status meant that free labour was not an option. The Resident Engineer, under pressure to have the dock completed promptly so it could receive vessels, pushed the prisoners hard, but some refused to work after hours. Alongside the dry dock were engine houses, a police barracks, offices a chapel and a mess room. The dock was finally completed in 1857 and the first ship to use the dock was the survey frigate HMS *Herald*, which docked on 1 December 1857 (Jeremy: 1998:p9). Of equal importance wi

dry dock was finished there were plans to extend it and by 1858 the work was under way. Like the original dock, this took a long time as more of the adjacent cliff had to be excavated.

Overcrowding in the penal establishment became a regular problem and by 1861 around 500 convicts were held in accommodation built for no more than 328 (Kerr:1984:p26). Overcrowded wards and lack of supervision also lead to physical suffering through lack of fresh air and practices 'grossly obscene' between the male prisoners (Kerr:1984:p26).

## **Dual use – Public Works and Social Institutions**

The period from 1869 saw the administration of the prison and dockyard split. The land above the escarpment remained in institutional use under the newly appointed NSW Department of Prisons and the foreshores became dedicated to dockyard use under the Public Works Department.

Disturbing reports concerning the harsh treatment of prisoners had caused considerable public concern for years and in 1869 the penal settlement was disbanded and prisoners were transferred to Darlinghurst. The name was changed to 'Biloela' (Aboriginal for cockatoo) in order to try to present a new image.

From 1871 to 1888 the prison barracks became an industrial school for girls and a separate reformatory for girls under 16 convicted of a crime (Kerr:1984:p9). In 1871 the wooden sailing ship, the NSS *Vernon* moored at Cockatoo Island for the training of delinquent, homeless or orphaned boys in seamanship. An initiative of Henry Parkes, the ship was administered by the Department of Education and housed up to 500 students (Kerr:1984:9). The boys were given an area on the island for recreation with swimming bathes and a vegetable garden to tend (Parker :1977:p8). The dilapidated *Vernon* was replaced in 1891 by the NSS *Sobraon* which remained until 1911. Although kept separate from the dock, later the more trustworthy students were given trade training in some of the dockyard workshops on ship building and repairs (Parker:1977: p8). The girls reformatory was relocated to Watson's Bay in 1879 and the industrial school for girls closed in early 1888.

By the time the last extension of the Fitzroy Dock was completed in 1880, the NSW Parliament, keen to see Australia capable of serving bigger vessels in the Royal Navy, decided to build a new dock (GML CMP:2006:2). Construction of the Sutherland Dock commenced in 1882 and was completed in 1890. It was built by free labour under the guidance of a young engineer, Louis Samuel, who died in 1887 at the age of 26. The work was completed under the supervision of his younger brother Edward. The new dock was a spectacular sight. It was a significant engineering achievement designed to be one of the most advanced docking facilities in the southern hemisphere and is reported to have been able to accommodate the largest ships then in service in the world (Jeremy:2006:1). In an official NSW Government publication in 1886, the Sutherland Dock is referred to: 'The dock is the largest single graving dock yet constructed, and will be capable of receiving the largest vessel afloat' (Docks, Slips and Engineering Establishments of Port Jackson:p5).

With closure of the prison, departure of the school ship and increased international shipping, the shipbuilding, ship repair and engineering activities expanded rapidly and dockyard facilities spread over the whole island. The dockyard at Cockatoo Island was the only one in Australian which was big enough to accommodate (after modification) the flagship of the new Australian Navy, the battle cruiser HMAS *Australia*. The preoccupation with keeping the Royal Navy engaged with the Colonies port facilities would continue into the new century.

## Return to a gaol 1888-1909

Overcrowding elsewhere in the colony forced the return of prisoners to Cockatoo Island on 8 June 1888 (Kerr:1984:p11). 'Biloela gaol' was a temporary establishment to hold habitual petty offenders, vagrants and prostitutes. Although considered 'unsuitable' and 'temporary' they were to remain in penal use for a further 20 years (Kerr:1984:p26). Men were accommodated in convict barracks and females housed in buildings in the lumber yard. By 1889, Biloela housed 85 male and 106 female prisoners, with approximately two thirds in some form of employment. By 1896 Biloela could claim to the be the oldest establishment reformatory in Australasia, with 560 prisoners.

Following Federation in 1901 the name returned back to and has since remained Cockatoo Island (Parker:1977:p5). The male prison section was closed in 1906 and prisoners were transferred to the new Long Bay Gaol. In 1909 female prisoners were similarly relocated to Long Bay. *NSS Sobraon* was relocated in 1911 by the Commonwealth Government for use as a naval training ship and the boys were moved to a boys farm at Gosford (Parker:1977:p5).

Between 1904 and 1908 extensions were made to the shops and yard plant, new slipways were built, and cranes and other machinery were acquired. The formation of the Australian Navy (the RAN from 1911) opened the way for local construction of warships. The first RAN warship built at Cockatoo Island was the destroyer HMAS *Warrego*, completed in 1912. *Warrego* was built in pieces in Scotland and re-assembled in Sydney.

## **Commonwealth-owned Dockyard**

In 1913, the Commonwealth Government purchased Cockatoo Island for the building of major naval vessels as well as for ship repair (Balint et al:1982:p47). It was the first Naval Dockyard for the Royal Australian Navy (RAN) and continued to support and build and service ships for the Navy for some 80 years through two World wars, Korea and Vietnam. In 1928, the Commonwealth Shipping Act 1923 stated that 'where possible, all repairs, construction etc. of Commonwealth vessels to be at Cockatoo Island' (Balint et al:1982:p49). The first steel warship to be wholly built in Australia, HMAS *Huon*, was completed on the island in 1916. Cockatoo dockyard also built the first steel ship ever built in Australia, the tug *Hinton*, in 1886, assembled from imported components.

The period from 1910-19 saw the greatest expansion of the facilities on Cockatoo Island since construction of the docks. Prior to World War One 800-900 men were employed on Cockatoo Island, by the end of the war this had increased to a maximum of 4 085 in December 1919 (Jeremy:1998: p250). In 1918 a large powerhouse and chimney was built to provide electricity to the island. The building housed steam-turbine generating plant, the dock pumping machinery and hydraulic pumps and air compressors for dockyard services.

With the outbreak of World War Two development of the dockyard increased dramatically. From 1933 the dockyard was leased from the Commonwealth by Cockatoo Docks and Engineering Co Ltd and during World War Two the workforce, which reached an average of 3 043 in 1942, was employed on the island fitting out troop ships, building naval vessels and repairing allied warships (Birmingham: 1984:p11,12). After the war the lessee company became a member of the world-wide Vickers Group and dockyard undertook a continuing programme of re-converting ships for commercial service, modernising warships and constructing warships for the RAN, including the construction of the first all-welded warships to be built in Australia. Cockatoo Island dockyard also built the propulsion machinery for most of these ships. Cockatoo Dockyard was the largest steam turbine builder and repairer in Australia, servicing turbines for ships, power plants, sugar mills, oil refineries and other industries throughout Australia.

For over a hundred years, since the late 19th century, Cockatoo Dockyard contributed to the development of Australia by producing products for power stations, bridges, dams, ports, mines and major projects including the Snowy Mountains Scheme. From 1960 to 1991 the dockyard undertook a long programme of submarine refitting for which special

facilities were built in 1969-71. For the last 20 years of operation the refit and maintenance of the RAN's Oberon-class submarines was the main role of the dockyard during which time it had one of the most advanced (non-nuclear) submarine refit facilities in the world.

In its 137 year history, Cockatoo Dockyard docked or slipped some 12 000 vessels, more than any other dockyard in Australia, it built Australia's first modern warship and the largest (at the time) roll on/roll off passenger ship in the world. Cockatoo Dockyard introduced the first formal quality control system in any Australian dockyard and trained many thousands of young Australians through the dockyard apprentice training scheme. The combination of such a wide range of work in one establishment reflects the strength of the position of Cockatoo Dockyard in the heavy engineering industry of the day.

In the run-down prior to closure of the dockyard at the end of 1992, most Commonwealth and company assets were sold, a number of buildings were sold and demolished for scrap, and the docks flooded. Sale of the island was proposed. 'Friends of Cockatoo Island' a group of mainly ex dockyard employees fought the sale and the island became vested in the Sydney Harbour Federation Trust (SHFT).

## **Condition and Integrity**

Cockatoo Island has been vacant from all industrial activity since 1992 and many buildings have deteriorated during this time. The various uses of the island since the convict era have resulted in the layering of fabric and some destruction and adaptation of original fabric. The Sydney Harbour Federation Trust commissioned a survey of all external penal settlement building stonework on the island and the results show that it is in good to reasonable condition with the main areas for remediation being mortar joints and some refacing with only minimum stone replacement needed. A program of stonework repairs is scheduled to commence in 2007. Decontamination works have been completed for all buildings.

The buildings and machinery such as cranes are subject to corrosion in the exposed maritime environment and require conservation and maintenance (GMLCMP 2006:134).

**The prisoner's barracks** was converted to an air raid shelter during World War Two which saw a concrete roof, supported on freestanding internal concrete columns, and blast walls added to the northern and eastern wings. The sequence of finishes and bed arrangements are only partly visible, obscured in many areas by later modifications. The two wards have both been subdivided and their original volumes are not evident. The eastern quarters building has good stonework, but the building's integrity was significantly reduced through partitioning for later dockyard uses. The southern wing of the barracks, which was used as the infirmary, is in good condition and was fitted out as offices and boardroom for the dockyard. The original roof framing may exist under the existing metal roofing. The courtyard has been covered in bitumen and large puddles are formed during rain. The central division walls largely survive as does evidence of the sequence of institutional colour schemes and plugs in the walls.

**The military guard room and kitchen** is roofless. Stonework is in sound condition and all external metalwork, for example the iron gun racks and window bars, were conserved in 2000. There is some weed and other vegetation growth.

**The mess hall** is substantially intact, and the stonework is in mainly good sound condition. Pine floor boards lie on top of original flagged stone flooring, the condition of which is not known. Windows have been elongated to suit dockyard use of the building.

The officers quarters has been added to substantially over time. It is in fair to good condition. The building is divided into two units.

**The free overseers' quarters** is in fair to good condition and will be the subject of major conservation works (2007-08). The other remaining structure of the three dwellings, has been significantly altered in its conversion to an air raid shelter with only its external and middle interior stone walls remaining.

**Biloela House** has been divided into two with a wall and is in good condition. It has been re-roofed losing the original separate curved veranda roof profile. This will be rectified when future conservation works take place (2007-08). Stonework of the north and south wings is in mainly good condition.

The clerk of petty sessions cottage The original stone cottage has been extended and the whole building is in fair to good condition.

One intact silo is able to be viewed and is in excellent condition. A grill covers the mouth of the silo and rain water has built up inside. No investigations have been done to date

to check the condition of the other silos.

**Dockyard buildings.** Over 80 buildings remain from the dockyard periods. A more detailed description can be found in the Godden Mackay Logan Conservation Management Plan 2006.

Two Dockyard Residences, two brick detailed cottages and a two storey semi detached have been conserved externally in 2001 and are in good condition.

**The Drawing Office** was the home of the embryonic Australian aircraft manufacturing business. The building is in fair condition and will be the subject of a program of conservation works (2007-08).

**The Powerhouse Building** brickwork is mostly in good condition. Repairs to windows have been completed and re-roofing will be completed in 2007 to fix current leaks. The basement area including the pumps has been pumped dry.

**The Mould Loft** is a steel-framed galvanized iron clad building dating from about 1910. It is possibly the only surviving full-size shipbuilding mould loft remaining in Australia, and is certainly the oldest. Recent cleaning of the floor by the SHFT has revealed the full-size body plans of the last ships lofted at the dockyard and there is evidence that lines scribed into the floor may date back to World War Two, although this is still to be confirmed. Conservation works will be completed during 2007.

**The Fitzroy Dock is** now filled with water. The sandstone dock has been extended and the floor reconfigured but the original stone altars and coping with gun barrel bollards remain intact. The caisson for Fitzroy dock is in excellent condition as are the 12 bollards. The stonework has been subject to extensive weathering and wear.

**The Sutherland Dock** stonework has been subject to extensive weathering and wear. Some of the dock's original equipment is still intact, including the steam travelling jib cranes. It is thought the condition of the Sutherland Dock caisson is good.

**The Engine House workshops and Pump house**, built in a number of stages suffers from rising damp (currently being treated with sacrificial render) and roof leaks. Otherwise this robust building is in fair to good condition.

**The Turbine Shop** group of steel framed sheds that abut the engine house workshops to the west are in fair to good condition.

The group of five buildings to the east of the engine house workshops varies from fair to good condition.

The group of buildings on the **southern apron** are mainly robust brick structures that are in good condition.

Many items of plant and machinery were sold in 1991. Demolition removed some forty buildings from the island. All slipways existing in the last decades of the dockyards operation are still present. Several other structures are no longer extant including Fitzroy Wharf, Destroyer Wharf, Plate Wharf, Coal Wharf and Cruiser Wharf. New sea walls were constructed at the site of the Cruiser, Destroyer and Plate Wharfs, and around the northern shipyard fill.

### Location

About 18ha, in Sydney Harbour, between Birchgrove Point and Woolwich Point, comprising the whole of the Island to low water.

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# Appendix H

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Australian Government Department of the Environment

# **EPBC** Act Protected Matters Report

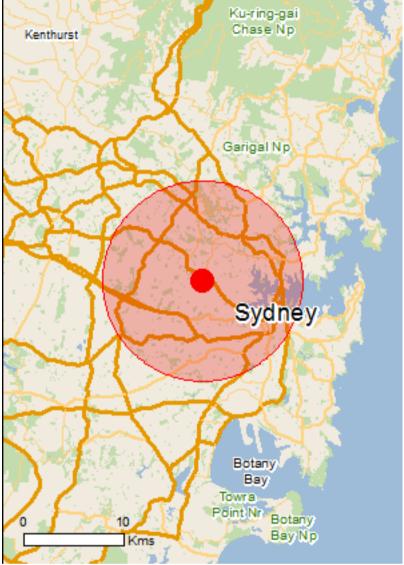
This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about <u>Environment Assessments</u> and the EPBC Act including significance guidelines, forms and application process details.

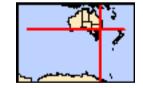
Report created: 22/10/15 14:22:30

Summary Details Matters of NES Other Matters Protected by the EPBC Act Extra Information Caveat Acknowledgements



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates Buffer: 10.0Km



# Summary

## Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the <u>Administrative Guidelines on Significance</u>.

World Heritage Properties:	6
National Heritage Places:	6
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	8
Listed Threatened Species:	74

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A <u>permit</u> may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	49
Commonwealth Heritage Places:	43
Listed Marine Species:	90
Whales and Other Cetaceans:	11
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

## **Extra Information**

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	7
Regional Forest Agreements:	None
Invasive Species:	50
Nationally Important Wetlands:	2
Key Ecological Features (Marine)	None

# Details

## Matters of National Environmental Significance

World Heritage Properties		[Resource Information]
Name	State	Status
Australian Convict Sites (Cockatoo Island Convict Site Buffer Zone)	NSW	Buffer zone
Australian Convict Sites (Hyde Park Barracks Buffer Zone)	NSW	Buffer zone
Sydney Opera House - Buffer Zone	NSW	Buffer zone
Australian Convict Sites (Cockatoo Island Convict Site)	NSW	Declared property
Australian Convict Sites (Hyde Park Barracks)	NSW	Declared property
Sydney Opera House	NSW	Declared property
National Heritage Properties		[Resource Information]
Name	State	Status
Indigenous		
Cyprus Hellene Club - Australian Hall	NSW	Listed place
Historic		
Cockatoo Island	NSW	Listed place
First Government House Site	NSW	Listed place
Hyde Park Barracks	NSW	Listed place
Sydney Harbour Bridge	NSW	Listed place
Sydney Opera House	NSW	Listed place
Wetlands of International Importance (Ramsar)		[Resource Information]
Name		Proximity
Towra point nature reserve		Within 10km of Ramsar

## Listed Threatened Ecological Communities

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Castlereagh Scribbly Gum and Agnes Banks	Endangered	Community may occur
Woodlands of the Sydney Basin Bioregion		within area
Coastal Upland Swamps in the Sydney Basin	Endangered	Community likely to occur
Bioregion		within area
Cooks River/Castlereagh Ironbark Forest of the	Critically Endangered	Community likely to occur

[Resource Information]

Sydney Basin Bioregion		within area
Cumberland Plain Shale Woodlands and Shale-Gravel	Critically Endangered	Community likely to occur
Transition Forest		within area
Shale Sandstone Transition Forest of the Sydney	Critically Endangered	Community likely to occur
Basin Bioregion		within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Turpentine-Ironbark Forest in the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area
Western Sydney Dry Rainforest and Moist Woodland	Critically Endangered	Community likely to occur
on Shale		within area
Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Anthochaera phrygia	Critically Endengered	Chapter of chapter habitat
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus		
Australasian Bittern [1001]	Endangered	Species or species habitat
		known to occur within area

Name	Status	Type of Presence
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Foraging, feeding or related behaviour known to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora epomophora Southern Royal Albatross [25996]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora sanfordi Northern Royal Albatross [82331]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans antipodensis Antipodean Albatross [82269]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans exulans Tristan Albatross [82337]	Endangered	Species or species habitat may occur within area
Diomedea exulans gibsoni Gibson's Albatross [82271]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<u>Diomedea exulans (sensu lato)</u> Wandering Albatross [1073]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White- bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
<u>Grantiella picta</u> Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
<u>Macronectes giganteus</u> Southern Giant Petrel [1060]	Endangered	Species or species habitat

Macronectes halli Northern Giant Petrel [1061]

Neophema chrysogaster Orange-bellied Parrot [747]

Numenius madagascariensis Eastern Curlew [847]

Pachyptila turtur subantarctica Fairy Prion (southern) [64445]

<u>Pterodroma leucoptera leucoptera</u> Gould's Petrel [26033]

Pterodroma neglecta neglecta Kermadec Petrel (western) [64450] may occur within area

Species or species habitat

Species or species habitat

Foraging, feeding or related behaviour known to occur

may occur within area

may occur within area

within area

Vulnerable

Critically Endangered

Critically Endangered

Vulnerable

Endangered

Vulnerable

Species or species habitat may occur within area

Species or species habitat known to occur within area

Foraging, feeding or related behaviour may occur within area

Name	Status	Type of Presence
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
<u>Sternula nereis nereis</u> Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
<u>Thalassarche bulleri</u> Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<u>Thalassarche cauta salvini</u> Salvin's Albatross [82343]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<u>Thalassarche eremita</u> Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<u>Thalassarche melanophris</u> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris impavida Campbell Albatross [82449]	Vulnerable	Species or species habitat may occur within area
Fish		
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area
<u>Litoria aurea</u> Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
<u>Mixophyes balbus</u> Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
<u>Balaenoptera musculus</u> Blue Whale [36]	Endangered	Species or species habitat may occur within area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland populati Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	<u>on)</u> Endangered	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Isoodon obesulus obesulus		
Southern Brown Bandicoot (Eastern) [68050]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Petrogale penicillata		
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld,	NSW and the ACT)	
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat likely to occur within area
<u>Pseudomys novaehollandiae</u>		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Other		
Pommerhelix duralensis		
Dural Land Snail [85268]	Endangered	Species or species habitat likely to occur within area
Plants		
Acacia bynoeana		
Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat likely to occur within area
Acacia pubescens		
Downy Wattle, Hairy Stemmed Wattle [18800]	Vulnerable	Species or species habitat likely to occur within area
Acacia terminalis subsp. terminalis MS		
Sunshine Wattle [64829]	Endangered	Species or species habitat known to occur within area
Allocasuarina glareicola		
[21932]	Endangered	Species or species habitat may occur within area

Asterolasia elegans [56780]	Endangered	Species or species habitat may occur within area
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area
Darwinia biflora [14619]	Vulnerable	Species or species habitat likely to occur within area
<u>Deyeuxia appressa</u> [7438]	Endangered	Species or species habitat likely to occur within area
Eucalyptus camfieldii Camfield's Stringybark [15460]	Vulnerable	Species or species habitat likely to occur within area
<u>Genoplesium baueri</u> Yellow Gnat-orchid [7528]	Endangered	Species or species habitat known to occur

Name	Status	Type of Presence
		within area
<u>Haloragodendron lucasii</u> Hal [6480]	Endangered	Species or species habitat likely to occur within area
<u>Melaleuca biconvexa</u> Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area
Melaleuca deanei		
Deane's Melaleuca [5818]	Vulnerable	Species or species habitat likely to occur within area
Pelargonium sp. Striatellum (G.W.Carr 10345) Omeo Stork's-bill [84065]	Endangered	Species or species habitat may occur within area
<u>Pimelea curviflora var. curviflora</u> [4182]	Vulnerable	Species or species habitat known to occur within area
Pimelea spicata Spiked Rice-flower [20834]	Endangered	Species or species habitat likely to occur within area
<u>Pterostylis saxicola</u> Sydney Plains Greenhood [64537]	Endangered	Species or species habitat may occur within area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Pocket-less Brush Cherry, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat likely to occur within area
<u>Thesium australe</u> Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
•	Vulnerable Endangered	• •
Green Turtle [1765]		known to occur within area Species or species habitat
Green Turtle [1765] Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] Eretmochelys imbricata	Endangered	known to occur within area Species or species habitat known to occur within area Species or species habitat
Green Turtle [1765] Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] Eretmochelys imbricata Hawksbill Turtle [1766] Hoplocephalus bungaroides	Endangered Vulnerable	known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area
Green Turtle [1765] Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] Eretmochelys imbricata Hawksbill Turtle [1766] Hoplocephalus bungaroides Broad-headed Snake [1182] Natator depressus	Endangered Vulnerable Vulnerable	known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Species or species habitat likely to occur within area
Green Turtle [1765] Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] Eretmochelys imbricata Hawksbill Turtle [1766] Hoplocephalus bungaroides Broad-headed Snake [1182] Natator depressus Flatback Turtle [59257]	Endangered Vulnerable Vulnerable	known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Species or species habitat likely to occur within area
Green Turtle [1765] Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] Eretmochelys imbricata Hawksbill Turtle [1766] Hoplocephalus bungaroides Broad-headed Snake [1182] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (east coast population)	Endangered Vulnerable Vulnerable	<ul> <li>known to occur within area</li> <li>Species or species habitat known to occur within area</li> <li>Species or species habitat known to occur within area</li> <li>Species or species habitat likely to occur within area</li> <li>Species or species habitat known to occur within area</li> </ul>

Name	Status	Type of Presence
		habitat may occur within
		area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the	he EPBC Act - Threatened	Species list.
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat
		likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable*	Foraging, feeding or related
	Vullerable	behaviour likely to occur within area
Diomedea dabbenena Triatan Albetraca (66471)	Endongorod*	Spacing or opening habitat
Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto)		
Southern Royal Albatross [1072]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans (sensu lato)	Vulnarabla	Foreging feeding or related
Wandering Albatross [1073]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<u>Diomedea gibsoni</u> Gibson's Albatross [64466]	Vulnerable*	Foraging, feeding or related
		behaviour likely to occur within area
<u>Diomedea sanfordi</u> Northern Royal Albatross [64456]	Endangered*	Foraging, feeding or related
Macronectes giganteus	Endangered	behaviour likely to occur within area
Southern Giant Petrel [1060]	Endangered	Species or species habitat
		may occur within area
Macronectes halli		
Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Sterna albifrons		
Little Tern [813]		Breeding likely to occur within area
Thalassarche bulleri		
Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto)	\/	
Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging fooding or related
Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<u>Thalassarche impavida</u> Campbell Albatross, Campbell Black-browed Albatross	Vulnerable*	Species or species habitat
[64459]		may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable*	Foraging, feeding or related behaviour likely

Name	Threatened	Type of Presence to occur within area
<u>Thalassarche steadi</u> White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharodon carcharias Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area

Lamna nasus Porbeagle, Mackerel Shark [83288] Species or species habitat likely to occur within area Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Species or species habitat Ray, Prince Alfred's Ray, Resident Manta Ray [84994] known to occur within area Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Species or species habitat Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995] may occur within area Megaptera novaeangliae Humpback Whale [38] Vulnerable Species or species habitat known to occur within area Natator depressus Flatback Turtle [59257] Vulnerable Species or species habitat known to occur within area Rhincodon typus Whale Shark [66680] Vulnerable Species or species habitat may occur within area Sousa chinensis Indo-Pacific Humpback Dolphin [50] Species or species habitat

likely to occur

Name	Threatened	Type of Presence
		within area
Migratory Terrestrial Species		
<u>Cuculus optatus</u> Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat
		known to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]		Species or species habitat known to occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Species or species habitat
		known to occur within area
Monarcha trivirgatus		
Spectacled Monarch [610]		Species or species habitat
		known to occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat known to occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat
		known to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat
		known to occur within area
Migratory Wetlands Species		
Ardea alba		<b>.</b>
Great Egret, White Egret [59541]		Species or species habitat known to occur within area
<u>Ardea ibis</u>		
Cattle Egret [59542]		Species or species habitat

Arenaria interpres Ruddy Turnstone [872]

Foraging, feeding or related behaviour known to occur within area

may occur within area

Calidris acuminata Sharp-tailed Sandpiper [874]

Calidris canutus Red Knot, Knot [855]

Calidris ferruginea Curlew Sandpiper [856]

<u>Calidris melanotos</u> Pectoral Sandpiper [858]

Calidris ruficollis Red-necked Stint [860]

Calidris tenuirostris Great Knot [862]

<u>Charadrius bicinctus</u> Double-banded Plover [895] Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or related behaviour known to occur within area

**Critically Endangered** 

Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or

Name	Threatened	Type of Presence
		related behaviour known to
Charadrius leschenaultii		occur within area
Greater Sand Plover, Large Sand Plover [877]		Foraging, feeding or related
		behaviour known to occur within area
<u>Charadrius mongolus</u>		Esperais of the discourse set of
Lesser Sand Plover, Mongolian Plover [879] Gallinago hardwickii		Foraging, feeding or related behaviour known to occur within area
Latham's Snipe, Japanese Snipe [863]		Foraging, feeding or related
		behaviour known to occur within area
Gallinago megala		Fore sizes for discussion relates
Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area
Gallinago stenura		
Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area
Heteroscelus brevipes		
Grey-tailed Tattler [59311]		Foraging, feeding or related behaviour known to occur within area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<u>Limosa limosa</u>		
Black-tailed Godwit [845]		Foraging, feeding or related behaviour known to occur within area
Numenius madagascariensis		
Eastern Curlew [847]	Critically Endangered	Foraging, feeding or related behaviour known to occur within area
Numenius minutus		
Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area
Numenius phaeopus		
Whimbrel [849]		Foraging, feeding or related behaviour known to occur

Pandion haliaetus Osprey [952]

Philomachus pugnax Ruff (Reeve) [850]

Pluvialis fulva Pacific Golden Plover [25545]

Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833] within area

Species or species habitat known to occur within area

Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or related behaviour known to occur within area

## Other Matters Protected by the EPBC Act

## Commonwealth Land

[Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

## Name

Commonwealth Land -Commonwealth Land - Airservices Australia Commonwealth Land - Australia Post Commonwealth Land - Australian & Overseas Telecommunications Corporation Commonwealth Land - Australian Broadcasting Commission Commonwealth Land - Australian Broadcasting Corporation Commonwealth Land - Australian National University Commonwealth Land - Australian Postal Commission Commonwealth Land - Australian Postal Corporation Commonwealth Land - Australian Telecommunications Commission Commonwealth Land - Australian Telecommunications Corporation Commonwealth Land - Commonwealth Bank of Australia Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation Commonwealth Land - Commonwealth Trading Bank of Australia Commonwealth Land - Defence Housing Authority Commonwealth Land - Defence Service Homes Corporation Commonwealth Land - Director of War Service Homes Commonwealth Land - Reserve Bank of Australia Commonwealth Land - Telstra Corporation Limited Commonwealth Land - War Service Homes Commissioner Defence - 21 CONST REGT - HABERFIELD DEPOT Defence - COCKATOO ISLAND DOCKYARD Defence - CONCORD OFFICE ACCN Defence - DEFENCE PLAZA SYDNEY Defence - DSTO PYRMONT - (SEE SITE 1177) Defence - FLEET BASE WHARVES Defence - FOREST LODGE (SYDNEY) TRG DEP **Defence - GARDEN ISLAND** Defence - GLADESVILLE TRAINING DEPOT Defence - HMAS KUTTABUL (AC 30/5 Lot4 DP218946) Defence - HMAS PLATYPUS - SPDU FOR DISPOSAL **Defence - HMAS WATERHEN Defence - JENNER BUILDING** Defence - KISMET/HMAS KUTTABUL-POTTS PT Defence - LEICHHARDT STORES DEPOT Defence - MARITIME COMD CTRE-POTTS POINT ; BOMERAH/TARANA **Defence - MARITIME HEADQUARTERS Defence - MATERIAL RESEARCH LAB** Defence - MILLER'S POINT TRAINING DEPOT **Defence - NEWINGTON** Defence - NORTH SYDNEY - HYDRO OFFICE Defence - OXFORD ST SYDNEY Defence - PARKVIEW BUILDING - SYDNEY **Defence - SPECTACLE ISLAND Defence - SYDNEY UNIVERSITY REGIMENT - DARLINGTON Defence - VICTORIA BARRACKS - PADDINGTON** Defence - WILLOUGHBY TRG DEP Defence - WOOLLOOMOOLOO CARPARK Defence - ZETLAND NAVY SUPPLY CENTRE

Commonwealth Heritage Places		[Resource Information]
Name	State	Status
Historic		
Admiralty House Garden and Fortifications	NSW	Listed place
Admiralty House and Lodge	NSW	Listed place
Barracks Block	NSW	Listed place
Biloela Group	NSW	Listed place
Building VB1 and Parade Ground	NSW	Listed place
Building VB2 Guard House	NSW	Listed place

Name	State	Status
Buildings 31 and 32	NSW	Listed place
Buildings MQVB16 and VB56	NSW	Listed place
Buildings VB41, 45 & 53	NSW	Listed place
Buildings VB60 and VB62	NSW	Listed place
Buildings VB69, 75 & 76 including Garden	NSW	Listed place
<u>Buildings VB83, 84, 85, 87 &amp; 89</u>	NSW	Listed place
<u>Buildings VB90, 91, 91A &amp; 92</u>	NSW	Listed place
Chain and Anchor Store (former)	NSW	Listed place
Cockatoo Island Industrial Conservation Area	NSW	Listed place
Customs Marine Centre	NSW	Listed place
<u>Factory</u>	NSW	Listed place
Fitzroy Dock	NSW	Listed place
Garden Island Precinct	NSW	Listed place
Gazebo	NSW	Listed place
General Post Office	NSW	Listed place
Kirribilli House	NSW	Listed place
<u>Kirribilli House Garden &amp; Grounds</u>	NSW	Listed place
Marrickville Post Office	NSW	Listed place
Mess Hall (former)	NSW	Listed place
Military Guard Room	NSW	Listed place
Naval Store	NSW	Listed place
North Sydney Post Office	NSW	Listed place
Office Building	NSW	Listed place
<u>Power House / Pump House</u>	NSW	Listed place
Prison Barracks Precinct	NSW	Listed place
Pyrmont Post Office	NSW	Listed place
Reserve Bank	NSW	Listed place
Residences Group	NSW	Listed place
Rigging Shed and Chapel	NSW	Listed place
Snapper Island	NSW	Listed place
Spectacle Island Explosives Complex	NSW	Listed place
Sutherland Dock	NSW	Listed place
Sydney Customs House (former)	NSW	Listed place
Underground Grain Silos	NSW	Listed place
Victoria Barracks Perimeter Wall and Gates	NSW	Listed place
Victoria Barracks Precinct	NSW	Listed place
Woolwich Dock	NSW	Listed place
Listed Marine Species		[Resource Information]

Species is listed under a different scientific name on the EPBC Act - Threatened Species list. Name Threatened

Type of Presence

**Birds** 

Apus pacificus Fork-tailed Swift [678]

Ardea alba Great Egret, White Egret [59541]

Ardea ibis Cattle Egret [59542]

Arenaria interpres Ruddy Turnstone [872]

Calidris acuminata Sharp-tailed Sandpiper [874]

Calidris canutus Red Knot, Knot [855]

Calidris ferruginea Curlew Sandpiper [856]

Species or species habitat likely to occur within area

Species or species habitat known to occur within area

Species or species habitat may occur within area

Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or related behaviour known to occur within area

Critically Endangered

Foraging, feeding or related behaviour known

Name	Threatened	Type of Presence
		to occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Foraging, feeding or related behaviour known to occur within area
Calidris ruficollis		
Red-necked Stint [860]		Foraging, feeding or related behaviour known to occur within area
Calidris tenuirostris		
Great Knot [862]		Foraging, feeding or related behaviour known to occur within area
Charadrius bicinctus		
Double-banded Plover [895]		Foraging, feeding or related behaviour known to occur within area
Charadrius leschenaultii		
Greater Sand Plover, Large Sand Plover [877]		Foraging, feeding or related behaviour known to occur within area
Charadrius mongolus		
Lesser Sand Plover, Mongolian Plover [879]		Foraging, feeding or related behaviour known to occur within area
Charadrius ruficapillus		
Red-capped Plover [881]		Foraging, feeding or related behaviour known to occur within area
Cuculus saturatus		
Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat known to occur within area
Diomedea antipodensis		
Antipodean Albatross [64458]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
<u>Diomedea dabbenena</u>		
Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto)		
Southern Royal Albatross [1072]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans (sensu lato)		

Wandering Albatross [1073]

Diomedea gibsoni Gibson's Albatross [64466]

Diomedea sanfordi Northern Royal Albatross [64456]

Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]

<u>Gallinago megala</u> Swinhoe's Snipe [864]

Gallinago stenura Pin-tailed Snipe [841]

Haliaeetus leucogaster White-bellied Sea-Eagle [943] Vulnerable

Vulnerable\*

Endangered\*

Foraging, feeding or related behaviour likely to occur within area

Foraging, feeding or related behaviour likely to occur within area

Foraging, feeding or related behaviour likely to occur within area

Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or related behaviour likely to occur within area

Foraging, feeding or related behaviour likely to occur within area

Breeding known to occur within area

Name	Threatened	Type of Presence
Heteroscelus brevipes Grey-tailed Tattler [59311]		Foraging, feeding or related behaviour known to occur within area
Himantopus himantopus Black-winged Stilt [870]		Foraging, feeding or related behaviour known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Foraging, feeding or related behaviour known to occur within area
Macronectes giganteus Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<u>Merops ornatus</u> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<u>Monarcha melanopsis</u> Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
<u>Motacilla flava</u> Yellow Wagtail [644]		Species or species habitat

Yellow Wagtail [644]

Myiagra cyanoleuca Satin Flycatcher [612]

Neophema chrysogaster Orange-bellied Parrot [747]

Numenius madagascariensis Eastern Curlew [847]

Numenius minutus Little Curlew, Little Whimbrel [848]

Numenius phaeopus Whimbrel [849]

Pachyptila turtur Fairy Prion [1066] Species or species habitat known to occur within area

Species or species habitat known to occur within area

Critically Endangered

Species or species habitat may occur within area

Critically Endangered

Foraging, feeding or related behaviour known to occur within area

Foraging, feeding or related behaviour likely to occur within area

Foraging, feeding or related behaviour known to occur within area

Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Pandion haliaetus		
Osprey [952]		Species or species habitat known to occur within area
Philomachus pugnax		
Ruff (Reeve) [850]		Foraging, feeding or related behaviour known to occur within area
<u>Pluvialis fulva</u> Regific Colden Player [25545]		Earoning fooding or related
Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area
Puffinus carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Recurvirostra novaehollandiae		
Red-necked Avocet [871]		Foraging, feeding or related behaviour known to occur within area
Rhipidura rufifrons		Onacion er encoine hebitet
Rufous Fantail [592]		Species or species habitat known to occur within area
<u>Rostratula benghalensis (sensu lato)</u>		
Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Sterna albifrons		
Little Tern [813]		Breeding likely to occur within area
Thalassarche bulleri	. <i>.</i>	
Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
<u>Thalassarche cauta (sensu stricto)</u>		
Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita		
Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida	\/ulporabla*	Spacios or spacios habitat
Campbell Albatross, Campbell Black-browed Albatross [64459]	vullerable	Species or species habitat may occur within area

Thalassarche melanophris Black-browed Albatross [66472]

Thalassarche salvini Salvin's Albatross [64463]

Thalassarche steadi White-capped Albatross [64462]

Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]

Fish Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]

**Festucalex cinctus** Girdled Pipefish [66214] Vulnerable

Vulnerable\*

Vulnerable\*

Species or species habitat may occur within area

Foraging, feeding or related behaviour likely to occur within area

Foraging, feeding or related behaviour likely to occur within area

Foraging, feeding or related behaviour known to occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Name	Threatened	Type of Presence
Filicampus tigris		Opening an extended with the
Tiger Pipefish [66217]		Species or species habitat may occur within area
Heraldia nocturna		
Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippichthys penicillus		
Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus abdominalis		
Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus whitei		
White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]		Species or species habitat may occur within area
Histiogamphelus briggsii		
Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Lissocampus runa		
Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata		
Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Notiocampus ruber		
Red Pipefish [66265]		Species or species habitat may occur within area
Phyllopteryx taeniolatus		
Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Solegnathus spinosissimus		
Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus		

Robust Ghostpipefish, Blue-finned Ghost Pipefish,

Species or species habitat may occur within area

[66183]

Solenostomus paegnius Rough-snout Ghost Pipefish [68425]

Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]

Stigmatopora argus Spotted Pipefish, Gulf Pipefish [66276]

<u>Stigmatopora nigra</u> Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]

Stigmatopora olivacea a pipefish [74966]

<u>Syngnathoides biaculeatus</u> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279] Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Name	Threatened	Type of Presence
Trachyrhamphus bicoarctatus		
Bentstick Pipefish, Bend Stick Pipefish, Short-tailed		Species or species habitat
Pipefish [66280]		may occur within area
Urocampus carinirostris		Spacing or appairs habitat
Hairy Pipefish [66282]		Species or species habitat may occur within area
		may occur within area
Vanacampus margaritifer		
Mother-of-pearl Pipefish [66283]		Species or species habitat
		may occur within area
Mammals		
Arctocephalus forsteri		
Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat
<b>5</b> <i>i</i> <b>i i</b>		may occur within area
A water and a base of the		
Arctocephalus pusillus		Province or oneside bability
Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
		may occur within area
Reptiles		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat
		known to occur within area
<u>Chelonia mydas</u>		
Green Turtle [1765]	Vulnerable	Species or species habitat
		known to occur within area
Dermochelys coriacea	Endongorod	Spacing or appeign herbitet
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat
		known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat
		known to occur within area
Pelamis platurus		<b>2</b> • • • • • •
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata		
Pygmy Right Whale [39]		Species or species habitat may occur within area
Delphinus delphis		
Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Lagenorhynchus obscurus		
Dusky Dolphin [43]		Species or species habitat may occur within

Name	Status	Type of Presence
		area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<u>Sousa chinensis</u> Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<u>Tursiops aduncus</u> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
<u>Tursiops truncatus s. str.</u> Bottlenose Dolphin [68417]		Species or species habitat may occur within area

#### Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Garigal	NSW
Lane Cove	NSW
Newington	NSW
Parramatta River	NSW
Sydney Harbour	NSW
Wallumatta	NSW
Wolli Creek	NSW

## Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis		
Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis		
Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos		
Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis		
European Goldfinch [403]		Species or species habitat likely to occur within area
Carduelis chloris		
European Greenfinch [404]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803	3]	Species or species habitat likely to occur within area
Lonchura punctulata		
Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus		
House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus		
Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Pycnonotus jocosus		
Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis		
Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris		
Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula		
Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina		
Cane Toad [83218]		Species or species habitat likely to occur within area

Mammals

Bos taurus Domestic Cattle [16]

Canis lupus familiaris Domestic Dog [82654]

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Felis catus Cat, House Cat, Domestic Cat [19]

Lepus capensis Brown Hare [127]

Mus musculus House Mouse [120]

Oryctolagus cuniculus Rabbit, European Rabbit [128]

Rattus norvegicus Brown Rat, Norway Rat [83]

Rattus rattus Black Rat, Ship Rat [84]

Vulpes vulpes Red Fox, Fox [18] Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur

Name	Status	Type of Presence within area
Plants		
Alternanthera philoxeroides		
Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia		
Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine Potato Vine [2643] Asparagus aethiopicus		Species or species habitat likely to occur within area
Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Aspara [62425] Asparagus asparagoides		Species or species habitat likely to occur within area
Bridal Creeper, Bridal Veil Creeper, Smilax, Florist Smilax, Smilax Asparagus [22473]	S	Species or species habitat likely to occur within area
Asparagus plumosus		
Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Asparagus scandens		
Asparagus Fern, Climbing Asparagus Fern [23255	]	Species or species habitat likely to occur within area
Cabomba caroliniana		
Cabomba, Fanwort, Carolina Watershield, Fish Gra Washington Grass, Watershield, Carolina Fanwort Common Cabomba [5171] Chrysanthemoides monilifera		Species or species habitat likely to occur within area
Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Cytisus scoparius		

Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]

Species or species habitat likely to occur within area

Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]

Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]

Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]

Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]

Genista sp. X Genista monspessulana Broom [67538]

#### Lantana camara

Lantana, Common Lantana, Kamara Lantana, Largeleaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] Lycium ferocissimum African Boxthorn, Boxthorn [19235] Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat may occur within area

Species or species habitat likely to occur within area

Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Opuntia spp.		
Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata		
Radiata Pine Monterey Pine, Insignis Pine, Wildin Pine [20780]	g	Species or species habitat may occur within area
Protasparagus densiflorus		
Asparagus Fern, Plume Asparagus [5015]		Species or species habitat likely to occur within area
Protasparagus plumosus		
Climbing Asparagus-fern, Ferny Asparagus [1174	7]	Species or species habitat likely to occur within area
Rubus fruticosus aggregate		
Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla		
Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron &	& S.x reichardtii	
Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]	d	Species or species habitat likely to occur within area
Salvinia molesta		
Salvinia, Giant Salvinia, Aquarium Watermoss, Ka Weed [13665]	ariba	Species or species habitat likely to occur within area
Senecio madagascariensis		
Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Nationally Important Wetlands		[Resource Information]
Name		State
Bicentennial Park		NSW
Newington Wetlands		NSW

### Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

# Coordinates

-33.84564 151.14146

#### Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales

-Department of Environment and Primary Industries, Victoria

-Department of Primary Industries, Parks, Water and Environment, Tasmania

-Department of Environment, Water and Natural Resources, South Australia

-Parks and Wildlife Commission NT, Northern Territory Government

-Department of Environmental and Heritage Protection, Queensland

-Department of Parks and Wildlife, Western Australia

-Environment and Planning Directorate, ACT

-Birdlife Australia

-Australian Bird and Bat Banding Scheme

-Australian National Wildlife Collection

-Natural history museums of Australia

-Museum Victoria

-Australian Museum

-South Australian Museum

-Queensland Museum

-Online Zoological Collections of Australian Museums

-Queensland Herbarium

-National Herbarium of NSW

-Royal Botanic Gardens and National Herbarium of Victoria

-Tasmanian Herbarium

-State Herbarium of South Australia

-Northern Territory Herbarium

-Western Australian Herbarium

-Australian National Herbarium, Atherton and Canberra

-University of New England

-Ocean Biogeographic Information System

-Australian Government, Department of Defence

Forestry Corporation, NSW

-Geoscience Australia

-CSIRO

-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the <u>Contact Us</u> page.

© Commonwealth of Australia Department of the Environment GPO Box 787 Canberra ACT 2601 Australia +61 2 6274 1111 Data from the BioNet Atlas of NSW Wildlife website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to  $0.1\hat{A}^{\circ}$ ; ^^ rounded to  $0.01\hat{A}^{\circ}$ ). Copyright the State of NSW through the Office of Environment and Heritage. Search criteria : Public Report of all Valid Records of Threatened (listed on TSC Act 1995) Animals in selected area [North: -33.79 West: 151.079999999998 East: 151.1799999999998 South: -33.89] returned a total of 232 records of 30 species.

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Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Amphibia	Myobatrachida e	3116	Pseudophryne australis		Red-crowned Toadlet	V,P		14	i
Animalia	Amphibia	Hylidae	3166	Litoria aurea		Green and Golden Bell Frog	E1,P	V	1	i
Animalia	Aves	Anatidae	0200	Nettapus coromandelianus		Cotton Pygmy-Goose	E1,P		4	i
Animalia	Aves	Columbidae	0023	Ptilinopus superbus		Superb Fruit-Dove	V,P		2	1
Animalia	Aves	Ardeidae	0197	Botaurus poiciloptilus		Australasian Bittern	E1,P	Е	2	1
Animalia	Aves	Ardeidae	0196	Ixobrychus flavicollis		Black Bittern	V,P		2	1
Animalia	Aves	Accipitridae	0225	Hieraaetus morphnoides		Little Eagle	V,P		1	•1•1•1
Animalia	Aves	Accipitridae	8739	^^Pandion cristatus		Eastern Osprey	V,P,3		1	1
Animalia	Aves	Falconidae	0238	Falco subniger		Black Falcon	V,P		1	•
Animalia	Aves	Burhinidae	0174	Burhinus grallarius		Bush Stone-curlew	E1,P		3	
Animalia	Aves	Haematopodida e	0130	Haematopus longirostris		Pied Oystercatcher	E1,P		1	i
Animalia	Aves	Charadriidae	0141	Charadrius leschenaultii		Greater Sand-plover	V,P	С,Ј,К	1	i
Animalia	Aves	Scolopacidae	0161	Calidris ferruginea		Curlew Sandpiper	E1,P	CE,C,J,K	26	i
Animalia	Aves	Scolopacidae	0152	Limosa limosa		Black-tailed Godwit	V,P	C,J,K	3	•
Animalia	Aves	Laridae	0117	Sternula albifrons		Little Tern	E1,P	C,J,K	1	1
Animalia	Aves	Psittacidae	0260	Glossopsitta pusilla		Little Lorikeet	V,P		2	що що що що що
Animalia	Aves	Strigidae	0246	^^Ninox connivens		Barking Owl	V,P,3		3	1
Animalia	Aves	Strigidae	0248	^^Ninox strenua		Powerful Owl	V,P,3		102	1
Animalia	Aves	Meliphagidae	0603	Anthochaera phrygia		Regent Honeyeater	E4A,P	CE	1	1
Animalia	Aves	Meliphagidae	0448	Epthianura albifrons		White-fronted Chat population in the Sydney Metropolitan Catchment Management Area	E2,V,P		3	i
Animalia	Aves	Meliphagidae	0448	Epthianura albifrons		White-fronted Chat	V,P		3	i
Animalia	Aves	Neosittidae	0549	Daphoenositta chrysoptera		Varied Sittella	V,P		1	i
Animalia	Aves	Petroicidae	0380	Petroica boodang		Scarlet Robin	V,P		1	1
Animalia	Mammalia	Dasyuridae	1009	Dasyurus viverrinus		Eastern Quoll	E1,P		1	Ĭ
Animalia	Mammalia	Peramelidae	1097	Perameles nasuta		Long-nosed Bandicoot population in inner western Sydney	E2,P		3	1
Animalia	Mammalia	Burramyidae	1150	Cercartetus nanus		Eastern Pygmy-possum	V,P		1	1
Animalia	Mammalia	Petauridae	1136	Petaurus australis		Yellow-bellied Glider	V,P		1	•1•1•1
Animalia	Mammalia	Pteropodidae	1280	Pteropus poliocephalus		Grey-headed Flying-fox	V,P	V	38	i
Animalia	Mammalia	Vespertilionida e	1346	Miniopterus australis		Little Bentwing-bat	V <i>,</i> P		1	i
Animalia	Mammalia	Vespertilionida	1834	Miniopterus schreibersii		Eastern Bentwing-bat	V,P		8	i

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Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Community				Blue Gum High Forest in the Sydney Basin Bioregion		Blue Gum High Forest in the Sydney Basin Bioregion	E4B	CE	К	i
Community				Castlereagh Scribbly Gum Woodland in the Sydney Basin Bioregion		Castlereagh Scribbly Gum Woodland in the Sydney Basin Bioregion	V2	E	К	i
Community				Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions		Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	V	к	1
Community				Coastal Upland Swamp in the Sydney Basin Bioregion		Coastal Upland Swamp in the Sydney Basin Bioregion	E3	E	К	i
Community				Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion		Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion	E3	CE	К	i
Community				Cumberland Plain Woodland in the Sydney Basin Bioregion		Cumberland Plain Woodland in the Sydney Basin Bioregion	E4B	CE	К	i
Community				Duffys Forest Ecological Community in the Sydney Basin Bioregion		Duffys Forest Ecological Community in the Sydney Basin Bioregion	E3		к	1
Community				Eastern Suburbs Banksia Scrub in the Sydney Basin Bioregion		Eastern Suburbs Banksia Scrub in the Sydney Basin Bioregion	E3	E	к	i
Community				Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions		Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		К	i
Community				Hygrocybeae Community of Lane Cove Bushland Park in the Sydney Basin Bioregion		Hygrocybeae Community of Lane Cove Bushland Park in the Sydney Basin Bioregion	E4B		К	1
Community				Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions		Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	CE	к	i
Community				Moist Shale Woodland in the Sydney Basin Bioregion		Moist Shale Woodland in the Sydney Basin Bioregion	E3	CE	К	i
Community				River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions		River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		К	1
Community				Shale Gravel Transition Forest in the Sydney Basin Bioregion		Shale Gravel Transition Forest in the Sydney Basin Bioregion	E3	CE	к	1

Community	Shale Sandstone Transition Forest in the Sydney Basin Bioregion	Shale Sandstone Transition Forest in the Sydney Basin Bioregion	E4B	CE	К	i
Community	Southern Sydney sheltered forest on transitional sandstone soils in the Sydney Basin Bioregion	Southern Sydney sheltered forest on transitional sandstone soils in the Sydney Basin Bioregion	E3		К	i
Community	Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		К	i
Community	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		К	i
Community	Sydney Freshwater Wetlands in the Sydney Basin Bioregion	Sydney Freshwater Wetlands in the Sydney Basin Bioregion	E3		К	i
Community	Sydney Turpentine- Ironbark Forest	Sydney Turpentine-Ironbark Forest	E3	CE	К	i
Community	Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions	Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions	E3		К	1
Community	Western Sydney Dry Rainforest in the Sydney Basin Bioregion	Western Sydney Dry Rainforest in the Sydney Basin Bioregion	E3	CE	К	i

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Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Plantae	Flora	Convolvulaceae	2234	Wilsonia backhousei		Narrow-leafed Wilsonia	V,P		9	i
Plantae	Flora	Dilleniaceae	14589	^^Hibbertia sp. Turramurra		Julian's Hibbertia	E4A,P,3		1	i
Plantae	Flora	Elaeocarpaceae	6205	Tetratheca glandulosa			V,P		1	i
Plantae	Flora	Elaeocarpaceae	6206	Tetratheca juncea		Black-eyed Susan	V,P	V	3	i
Plantae	Flora	Ericaceae	7752	Epacris purpurascens var. purpurascens			V,P		8	i
Plantae	Flora	Fabaceae (Mimosoideae)	9672	Acacia terminalis subsp. terminalis		Sunshine Wattle	E1,P	E	1	i
Plantae	Flora	Lamiaceae	3418	^^Prostanthera marifolia		Seaforth Mintbush	E4A,P,3	CE	2	i
Plantae	Flora	Myrtaceae	4007	^^Callistemon linearifolius		Netted Bottle Brush	V,P,3		4	i
Plantae	Flora	Myrtaceae	4024	Darwinia biflora			V,P	V	12	1
Plantae	Flora	Myrtaceae	4134	Eucalyptus nicholii		Narrow-leaved Black Peppermint	V,P	V	7	i
Plantae	Flora	Myrtaceae	8314	Leptospermum deanei			V,P	V	2	1
Plantae	Flora	Myrtaceae	4248	Melaleuca deanei		Deane's Paperbark	V,P	V	7	1
Plantae	Flora	Myrtaceae	4293	Syzygium paniculatum		Magenta Lilly Pilly	E1,P	V	5	1
Plantae	Flora	Orchidaceae	4464	^Genoplesium baueri		Bauer's Midge Orchid	E1,P,2	E	10	1
Plantae	Flora	Proteaceae	5458	^^Persoonia hirsuta		Hairy Geebung	E1,P,3	E	2	1
Plantae	Flora	Thymelaeaceae	6965	Pimelea curviflora var. curviflora			V,P	V	6	i



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