

Moorebank Precinct West Intermodal Terminal Facility - Modification

Biodiversity Assessment

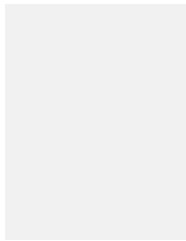


SIMTA

SYDNEY INTERMODAL TERMINAL ALLIANCE

Part 4, Division 4.1, State Significant
Development

CONTACT



JANE RODD
Senior Ecologist

T 02 8907 8266
E jane.rod@arcadis.com

Arcadis
Level 5/141 Walker Street
North Sydney NSW 2060

MOOREBANK PRECINCT WEST CONCEPT PLAN AND EARLY WORKS MODIFICATION

Biodiversity Impact Assessment

Author Jane Rodd



Checker Shannon Blackmore



Approver Westley Owers



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REVISIONS

Revision	Date	Description	Prepared by	Approved by
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1 INTRODUCTION

The Moorebank Intermodal Company (MIC) has received Concept Plan Approval, under Part 4, Division 4.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), to develop the Moorebank Precinct West Terminal Project (MPW Project) on the western side of Moorebank Avenue, Moorebank, in south-western Sydney (the MPW site).

On 4 June 2015, the MIC, with the approval of the Commonwealth Government, entered an agreement with the Sydney Intermodal Terminal Alliance (SIMTA) under which SIMTA will obtain approvals, build and operate all stages of the MPW Project at Moorebank. SIMTA is seeking approval to modify the Moorebank Intermodal Company (MIC) Concept Proposal and Early Works (Stage 1) approval (SSD_5066) (MPW Concept Plan Approval).

The Environmental Impact Assessment (EIS) prepared for the Concept Plan Approval identified that fill material required for the development of the MPW site would be largely sourced from excavations within the MPW site and hence imported fill volumes for the project would be small. Subsequent civil design development for the MPW Project has identified that fill required to be imported to the MPW site is estimated at 1,600,000 cubic metres (m³). It is proposed to undertake additional site preparatory works, including the import, placement and stockpiling of clean fill, as a modification to the approved Stage 1 (Early Works).

This biodiversity assessment has been prepared to support an application made under section (s) 96(2) of the EP&A Act to modify the MPW Concept Plan Approval (SSD_5066).

1.1 Proposed works

It is proposed to undertake additional site preparatory works, including the import, placement and stockpiling of clean fill, as a modification to the approved Early Works. The proposed modification would result in an intensification of activity associated with the approved Early Works. The works, for which a modification is sought (the Modification Proposal), include the following:

- Minor vegetation removal (not Endangered Ecological Communities, slightly above that provided within Early Works)
- Import, by truck, of approximately 1,600,000m³ of fill (from offsite locations)
- Crushing and screening of oversized materials and demolition materials stockpiled during Early Works, for direct placement on site
- Stripping and stockpiling of topsoil within the area of impact, cut and fill (within the primary earthworks areas) and stockpiling of clean fill within the primary earthworks areas (see Figure 1)
- Temporary sediment and erosion control works, including onsite detention basins (greater than those envisaged within the Early Works)
- Establishment of temporary internal haulage routes, construction compounds (including, but not limited to, a materials crusher and other plant and equipment) (additional to those included within Early Works).

Figure 1 shows the location and extent of the Modification Proposal, which would occur largely within the footprint of the approved Early Works.



- Materials crushing
- Construction parking area
- Earthworks Compound
- Offices
- Pre-construction & bulk earthworks stockpiling
- Truck marshalling area

LEGEND

- Area of impact (modification subject)
- Temporary construction sediment basins
- Primary earthworks areas (modification subject)
- Northern access
- Southern access
- Watercourse
- Existing railway
- Primary haul road

ARCADIS AUSTRALIA PACIFIC PTY LTD
 ABN 76 104 485 209
 Level 15, 141 Walker St | North Sydney, NSW 2060
 P: +61 (0) 2 8907 9000 | F: +61 (0) 2 8907 9001

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Figure 1 Location and extent of Modification Proposal

It is anticipated that the Modification Proposal works would be undertaken during the hours identified in Table 1. These hours extend those identified in the MPW Concept Plan documentation to include the evening period between 6pm-10pm on weekdays and Saturday afternoons between 1pm and 6pm.

Table 1 Proposed working hours

Activity	Weekdays	Saturdays
Material Delivery	6am-10pm	7am-6pm
Direct placement	7am-10pm	8am -6pm
Stockpiling	6am-10pm	7am-6pm
Crushing	7am-6pm	8am-1pm

1.2 Assessment purpose

This biodiversity impact assessment has been prepared to provide further information on, and environmental assessment of, the Modification Proposal. The Modification Proposal has been reviewed against the documentation prepared for the MPW Concept Plan Approval, the Secretary's Environmental Assessment Requirements (SEARs) issued for the MPW Concept Plan (SSD_5066) and applicable legislation and guidelines to determine whether the works and associated impacts of the Modification Proposal are 'substantially the same development' as that proposed under the MPW Concept Plan Approval.

2 MPW CONCEPT PLAN APPROVAL

The technical papers prepared for the MPW Concept Plan EIS addressed the biodiversity values and potential impacts across the entire MPW site, however only the Early Works component of the proposal is approved under the MPW Concept Plan Approval.

2.1.1 MPW Concept Plan EIS

The Ecological Assessment prepared to support the MPW Concept Plan EIS (PB 2014) considered and assessed the impacts of the Full Build at 2030, encompassing the entire MPW site. The assessment identified significant biodiversity values on the MPW site, including three threatened ecological communities, two threatened flora species and potential habitat for 25 threatened fauna species.

PB (2014) states that the Early Works are unlikely to result in the clearing of any native vegetation communities. They are likely to result in the removal of scattered native and introduced trees and shrubs within the highly modified, park-like grounds in the east of the MPW site, associated with the built-up areas of the MPW site. The vegetation to be cleared for Early Works does not constitute any threatened ecological community or contain any recorded locations of threatened plants, and has relatively poor habitat values for threatened species.

It was considered that the establishment of construction facilities and demolition or relocation of existing buildings and structures are also likely to result in increased dust and noise during construction. Given the relatively poor habitat values and highly disturbed nature of the area associated with the Early Works, PB (2014) concluded that these activities are unlikely to result in a significant adverse impact on biodiversity. The potential biodiversity impacts of the Early Works were not considered further in the technical paper.

The Early Works would also include the commencement of restoration works in the large area of bare land in the central portion of the proposed conservation area in the west of the MPW site, including re-contouring, topsoil spreading and revegetation with native species consistent with the natural vegetation of the site.

2.1.2 MPW Concept Plan Response to Submissions

The Response to Submissions (RtS) for the MPW Concept Plan EIS included assessment of the impacts of project amendments on biodiversity values. These were largely focused on changes to the rail alignment and biodiversity offset areas, and revised calculation of impacts and offsets for Riparian Forest.

In addition, the revised biodiversity assessment took account of changes in biodiversity assessment and offsetting requirements under the NSW Framework for Biodiversity Assessment (FBA). The FBA Assessment in Appendix C of the RtS addresses impacts to native vegetation communities, and does not consider the impacts of the Early Works as these areas are exempt from further assessment under the FBA.

2.1.3 MPW Concept Plan Supplementary Response to Submissions

The Supplementary Response to Submissions (SRtS) included a revised Biodiversity Offset Strategy to incorporate changes made in response to submissions received during the EIS exhibition phase, as well as the results of additional surveys conducted within the proposed offset lands. None of the amendments to biodiversity assessment in the SRtS are applicable to the Early Works.

3 IMPACT ASSESSMENT

The Modification Proposal has been sited to avoid impacts on native vegetation, particularly areas mapped as threatened ecological communities (TECs) and threatened species habitat. A 10 metre setback was applied to all areas of mapped native vegetation to determine the maximum limits of the Modification Proposal (Figure 2). The area to be impacted by the Modification Proposal (area of impact) is greater than that defined for Early Works, however the vegetation of the additional areas is similar to that within the Early Works boundary, comprising scattered native and introduced trees and shrubs over mown grassland and developed areas.

No native plant community types (PCTs) were mapped within the area of impact of the Modification Proposal. Potential impacts of the Modification Proposal on threatened species, populations and communities would be largely limited to indirect impacts on adjoining areas.

The clearing of additional scattered native and introduced trees which would be required for the Modification Proposal could result in a slightly increased risk of fauna injury or mortality. PB (2014) considered that while some mobile species, such as birds, have the potential to move away from the path of clearing, other species that are less mobile, or those that are nocturnal and restricted to tree hollows, may have difficulty moving over relatively large distances. Threatened species that may be affected by vegetation clearing include microchiropteran bats, arboreal mammals and nesting birds. A variety of other non-threatened species of animal, including reptiles, frogs, microchiropteran bats, birds and arboreal mammals are also at risk of injury or mortality during construction works.

In accordance with the Revised Environmental Management Measures (REMMs) in the SRtS, as approved under the MPW Concept Plan Approval, a clearing protocol would be implemented to minimise fauna injury and mortality as part of mitigation measures for the Modification Proposal (Table 2).

Following vegetation clearing, the increased number of truck movements and extended working hours required for the Modification Proposal could also potentially result in an increased risk of fauna injury or mortality. This would likely be minimal given that the works would take place across already cleared areas.

A number of indirect impacts on biodiversity values, particularly in adjoining areas of native vegetation, could potentially arise as a result of the Modification Proposal. These are considered below.

Edge effects

Edge effects are zones of changed environmental conditions occurring along the edges of habitat fragments. Edge effects include alterations in humidity, light, moisture, wind, temperature and noise and soil profile conditions. These effects impact on the adjoining native vegetation by affecting seed germination, flora and fauna species composition and weed establishment.

PB (2014) noted that edge effects in the riparian vegetation on site are already quite severe, and that any additional edge effects resulting from the MPW Project are therefore unlikely to significantly alter the present edge effects on this habitat.

Weed invasion

The existing stands of riparian vegetation on the MPW site have a moderate to high level of weed invasion, particularly of woody and vine weeds. PB (2014) considered that the greatest potential for weed dispersal and establishment would include works within these stands of vegetation. These areas will not be disturbed by the Modification Proposal.

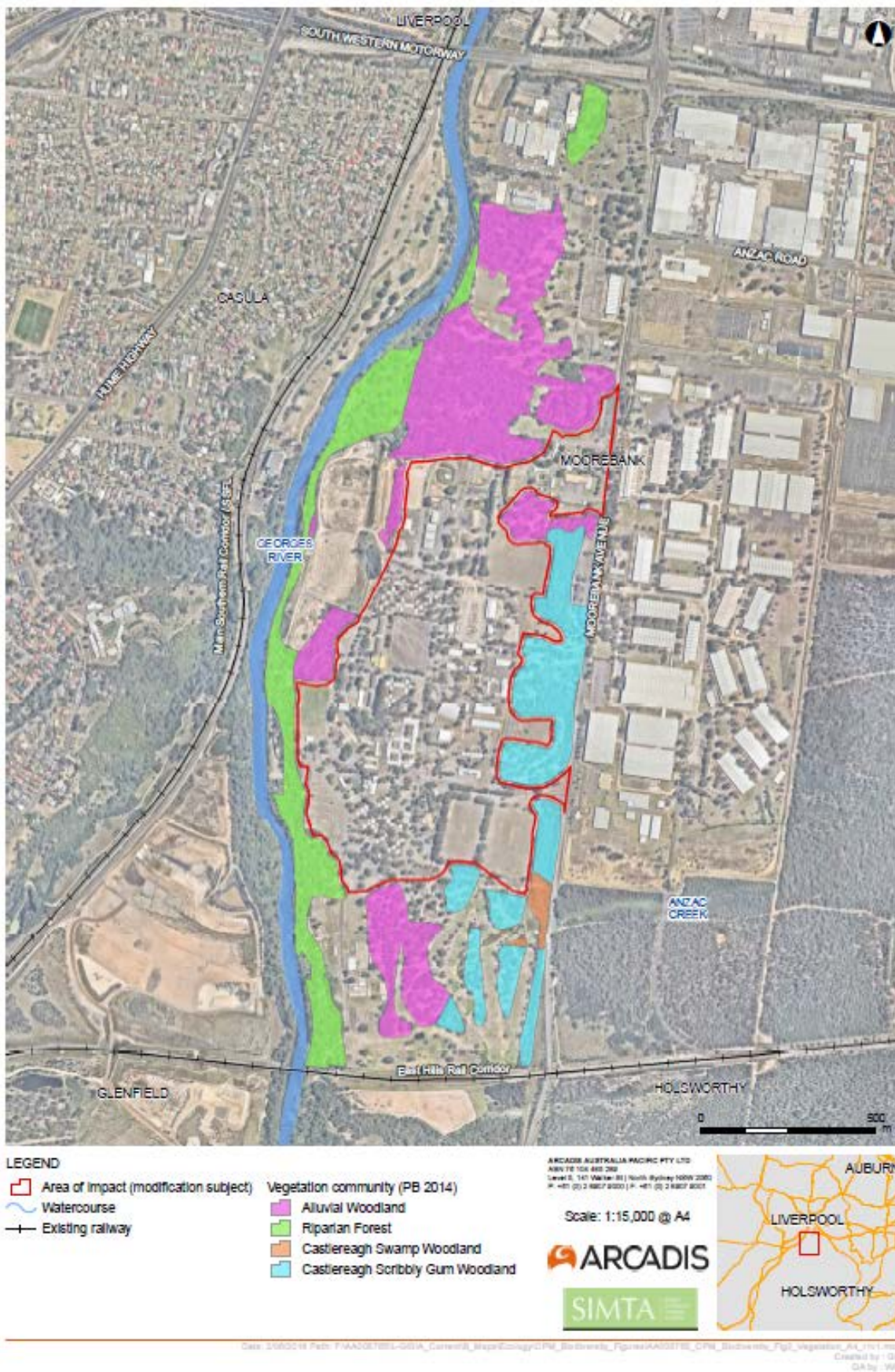


Figure 2 Areas of native vegetation mapped by PB (2014) in relation to the Modification Proposal

Clearing of additional areas of scattered trees and modified understorey for the Modification Proposal could result in a minor increase in the potential for further weed spread. Increased movement of people, vehicles, machinery, vegetation waste and soil may facilitate the introduction or spread of weeds in the adjoining areas of native vegetation.

Sedimentation and erosion

The Modification Proposal could result in increased sedimentation and changes to hydrology which could affect the health of adjacent native vegetation and threatened flora populations. Sedimentation and erosion impacts would be minimised through implementation of appropriate sediment controls, including sediment fencing around all work areas.

Stormwater runoff will be collected in onsite sediment basins to be discharged into the existing drainage network, and not into riparian vegetation adjoining the Georges River.

Noise impacts on fauna

The main impacts on wildlife associated with noise are behavioural. Vehicle noise has been shown, particularly in some species of birds and frogs, to interfere with communication essential for reproduction; however pedestrian activity may cause stronger behavioural reactions than people in vehicles. Noise may affect behaviour by causing animals to retreat from favourable habitat near noise sources, reducing time spent feeding and resulting in energy depletion and lower likelihood of survival and reproduction.

PB (2014) considered it likely that the wildlife in the vicinity of the MPW site is habituated to frequent noise exposure from the existing land uses, including rail lines, vehicle movements, pedestrian activities, training activities and helicopter movements. As was concluded for the MPW Concept Plan assessment, while the Modification Proposal may cause temporary disturbance to animals, the impacts from noise emissions are likely to be localised close to the MPW site and are not likely to have a significant, long-term, impact on wildlife populations.

Dust pollution

Soil and particulate dust is likely to be generated by the works for the Modification Proposal. If this dust is deposited onto the foliage of vegetation, it has potential to reduce photosynthesis, which may reduce the overall health of the vegetation adjacent to the works through changes to vegetation structure and composition.

PB (2014) considered that there were existing dust impacts on site, and that with the implementation of mitigation measures to minimise dust generation, cessation of training activities and revegetation of areas of bare ground within the riparian zone, the overall dust-related impacts on biodiversity are unlikely to be significantly increased from existing conditions.

If unmanaged, the Modification Proposal may result in a higher level of dust emissions than the Early Works as a result of the increased area of clearing and the stockpiling of fill. Provided appropriate dust suppression measures are implemented as part of mitigation measures, there should be minimal increased impacts on the adjoining native vegetation.

Ecological light pollution

Artificial light that alters the natural patterns of light and dark in ecosystems is referred to as 'ecological light pollution'. Impacts of ecological light pollution on animals include increased orientation or disorientation from additional illumination and attraction or repulsion responses which may affect foraging, reproduction, communication, and other critical behaviours.

PB (2014) suggested that the impacts of ecological light pollution would be mitigated through proposed vegetation restoration within the Conservation Area on riparian corridor, and the Georges River. The proposed lighting for the site, once operational, which would be designed to minimise light spill (as explained in the main EIS document), thereby minimising ecological light pollution impacts.

The Modification Proposal will include use of mobile lighting towers to illuminate work areas during evening hours. Lights would be directed away from the riparian corridor as far as is practicable. The lighting may have temporary impacts on fauna behaviour within areas of adjacent habitat.

4 MITIGATION MEASURES

Mitigation measures identified within the SRtS and the MCoA for the MPW Concept Plan Approval that are applicable to the management of biodiversity impacts and would be implemented during the Modification Proposal are listed in Table 2.

Table 2 Mitigation measures within the REMMs and MCoAs applicable to biodiversity management for the Modification Proposal

REMM / MCoA No.	Mitigation measure
6A	<p>Following detailed design and before construction, detailed flora and fauna mitigation measures would be developed and presented as part of the CEMP. These detailed measures would incorporate the measures listed in 6B to 6W [Where relevant].</p> <p>The CEMP would address:</p> <ul style="list-style-type: none"> • general impact mitigation; • staff/contractor inductions; • vegetation clearing protocols; • pre-clearing surveys and fauna salvage/translocation; • rehabilitation and restitution of adjoining habitat; • weed control; • pest management; and • monitoring. <p>The plans would include clear objectives and actions for the Project including how to:</p> <ul style="list-style-type: none"> • minimise human interferences to flora and fauna; • minimise vegetation clearing/disturbance; • minimise impact to threatened species and communities; • minimise impacts to aquatic habitats and species; and • undertake flora and fauna monitoring at regular intervals.
6B	Vegetation clearing would be restricted to the construction footprint and sensitive areas would be clearly identified as exclusion zones.
6C	The exclusion zones would be marked on maps, which would be provided to contractors, and would also be marked on the ground using high visibility fencing (such as barrier mesh).
6D	A trained ecologist would accompany clearing crews to ensure disturbance is minimised and to assist in relocating any native fauna to adjacent habitat.
6E	<p>A staged habitat removal process would be developed and would include the identification and marking of all habitat trees in the area.</p> <p>Where reasonable and feasible, clearing of hollow-bearing trees would be undertaken in March and April when most microbats are likely to be active (not in torpor) but are unlikely to be breeding or caring for young, and when threatened hollow-dependent birds in the locality are also unlikely to be breeding.</p> <p>Pre-clearing surveys would be conducted 12 to 48 hours before vegetation clearing to search for native wildlife (e.g. reptiles, frogs,</p>

REMM / MCoA No.	Mitigation measure
	<p>Cumberland Land Snail) that can be captured and relocated to the retained riparian vegetation of the Georges River corridor.</p> <p>Vegetation would be cleared from a 10 m radius around habitat trees to encourage animals roosting in hollows to leave the tree. A minimum 48 hour waiting period would allow animals to leave.</p> <p>After the waiting period, standing habitat trees would be shaken (where safe and practicable) under the supervision of an ecologist to encourage animals roosting in hollows to leave the trees, which may then be felled, commencing with the most distant trees from secure habitat.</p> <p>Felled habitat trees would either be immediately moved to the edge of retained vegetation, or left on the ground for a further 24 hours before being removed from the construction area, at the discretion of the supervising ecologist.</p> <p>All contractors would have the contact numbers of wildlife rescue groups and would be instructed to coordinate with these groups in relation to any animal injured or orphaned during clearing.</p> <p>Within areas of high quality intact native vegetation proposed to be removed:</p> <ul style="list-style-type: none"> • topsoil (and seedbank) is to be collected from native vegetation that are to be permanently cleared and used in the revegetation of riparian areas; and • Native plants in areas that are to be permanently cleared are to be relocated and transplanted in riparian areas identified for rehabilitation
6F	Relocation of fauna to adjacent retained habitat would be undertaken by an ecologist during the supervision of vegetation removal.
6G	An ecologist would supervise the drainage of any waterbodies on the Project site and would relocate native fish (e.g. eels), tortoises and frogs to the edge of the Georges River and/or the existing pond at the northern end of the IMT site.
6H	The design of site fencing and any overhead powerlines would consider the potential for collision by birds and bats and minimise this risk where practicable.
6O	Erosion and sediment control measures such as silt fencing and hay bales would be used to minimise sedimentation of streams and resultant impacts on aquatic habitats and water quality.
6R	The CEMP (or equivalent) would include detailed measures for minimising the risk of introducing weeds and pathogens.

Additional mitigation measures that are required to mitigate the impacts of the Modification Proposal on biodiversity include:

- Directional lighting will be used where lighting is required in the area of impact. Lights would be directed away from the riparian vegetation adjoining the Georges River as far as is practicable.

5 CONCLUSION

The Modification Proposal has been sited to avoid impacts on native vegetation, particularly areas mapped as threatened ecological communities (TECs) and threatened species habitat. The area to be impacted is greater than that defined for Early Works, however the vegetation of the additional areas is similar to that within the Early Works boundary, comprising scattered native and introduced trees and shrubs over mown grassland and developed areas.

No native plant community types (PCTs) were mapped within the area of the Modification Proposal. Potential impacts of the Modification Proposal on threatened species, populations and communities would be largely limited to indirect impacts on adjoining areas. Indirect impacts would be minimised through the implementation of the mitigation measures identified within the MPW Concept Plan Approval and REMMs.

An additional mitigation measure that would be adopted for the Modification Proposal is:

- Directional lighting will be used where lighting is required in the area of impact. Lights would be directed away from the riparian vegetation adjoining the Georges River as far as is practicable.

In summary, impacts on biodiversity associated with the Modification Proposal would result in a minor increase from those assessed for the Early Works under the MPW Concept Plan EIS, RtS and SRtS. Through the implementation of the mitigation measures approved for the MPW Concept Plan and the additional mitigation measure identified above, biodiversity impacts associated with the Modification Proposal are expected to be consistent with the impacts predicted within the MPW Concept Plan EIS.