

Public Environment Report

Chapter 12

Environmental outcomes

September 2019



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12.1 Introduction

This chapter describes the environmental outcomes that North East Link Project (NELP) proposes to achieve for Matters of National Environmental Significance (MNES) and the environment on Commonwealth land. This chapter responds to Section 2.8 of the PER Guidelines.

Environmental outcomes have been tailored to North East Link with consideration to the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* ('EPBC Act') *Outcomes-based Conditions Policy 2016* and *Outcomes-based Conditions Guidance 2016*.

Sections 12.2, 12.3 and 12.4 describe how the policy and guidance have been considered for each proposed outcome.

Environmental outcomes are proposed where North East Link would likely, without measures such as translocation or offsetting, have a significant impact on MNES or the environment of Commonwealth land, as defined in the EPBC Act Significant Impact Guidelines. The environmental outcomes define minimum outcomes that must be achieved to protect, mitigate or offset impacts on relevant MNES and the environment on Commonwealth land during the detailed design, construction and operation of North East Link.

Outcomes have been proposed that:

- Are adapted to the specific environmental risks and impacts of North East Link
- Are expressed in the form of a specific outcome
- Are able to be objectively measured and reported on
- Allow for timely identification and appropriate resolution of problems that may compromise the achievement of outcomes.

The following sections describe the environmental outcomes proposed for MNES and the environment on Commonwealth land and the reason for these. For each proposed outcome, information is provided on risks, measurability, baseline data, impacts addressed, NELP's willingness and capability to achieve the outcome, the proposed auditing regime, and proposed management measures.

12.2 Outcome 1: Matted Flax-lily

Up to 95 Matted Flax-lily *Dianella amoena* plants/patches from five sites were recorded within the North East Link project boundary. A description of Matted Flax-lily and its habitat is provided in Chapter 5 – Description of the environment. Relevant impacts are discussed in Chapter 7 – Impacts on listed threatened species and ecological communities, and on migratory species, as well as in Chapter 9 – Impacts on the whole of the environment on Commonwealth land.

The Matted Flax-lily population affected by North East Link would be translocated to suitable recipient sites in accordance with an approved Salvage and Translocation Plan (Appendix F to PER Technical Appendix A – Flora and fauna technical report) to minimise impacts, as agreed with the Department of Environment and Energy (DoEE) and Victoria's Department of Environment, Land, Water and Planning (DELWP). Translocation of Matted Flax-lily has been successfully completed for other major projects, and the method of success is well documented.

With successful translocation, the residual impact of North East Link on Matted Flax-lily is expected to be non-significant. On this basis, the following outcome is proposed for Matted Flax-lily. Table 12-1 describes the key factors considered in setting this outcome.

Outcome 1: Matted Flax-lily

Matted Flax-lily populations directly impacted by North East Link must be translocated in accordance with a Salvage and Translocation Plan prepared to the satisfaction of the Department of Environment and Energy. There must be a net gain in the number of Matted Flax Lily plants/patches due to North East Link, measured by comparing the pre-impact and 10-year post-impact number of Matted Flax-lily plants/patches within the North East Link project boundary and approved translocation recipient sites.

Purpose of proposed outcome

As direct impacts on Matted Flax-lily would be unavoidable, the purpose of this proposed outcome is to require that Matted Flax Lily impacted by North East Link are successfully translocated so there is no net loss in their overall numbers or decline in the species due to North East Link.

Table 12-1 Outcome 1: Matted Flax-lily

Factor	Description
Risks	<p>Translocation of Matted Flax-lily has been successfully completed for other major projects, with the National Recovery Plan for Matted Flax-lily (<i>Dianella amoena</i>) (Carter, 2010) indicating a success rate of 80 to 90 per cent up to 2009.</p> <p>Survival rates for Matted Flax-lily that have been translocated for other developments in the local area have also been high. The most relevant and recent examples are the South Morang Rail Extension Project and Melbourne Wholesale Markets. In addition, the South Morang Rail Extension Project has also been granted approval to translocate plants, although while these have been salvaged they are yet to be translocated. In more recent years, the Sugarloaf Pipeline Project (Yarra Glen) established a post-translocation 5-year monitoring program (Ecology Australia, 2014) which indicates 70–100% survivorship at each translocation subplot/site.</p> <p>The Matted Flax-lily Salvage and Translocation Plan would be developed with regard to the protocols and procedures outlined in the translocation plans prepared for the South Morang Rail Extension and other translocation plans prepared for recent projects in Victoria, and that have therefore been proven to be effective for the species in the local area. It would also require monitoring of translocation progress and success over time, and provision for contingency measures such as collection of multiple clones for each plant to enable replacement plantings to occur if needed.</p>
Measurability	<p>Compliance with this outcome would be measured through:</p> <ul style="list-style-type: none"> • A pre-translocation (and pre-construction) survey of the number of plants/patches within the project boundary • A 10-year monitoring plan implemented as part of the Matted Flax-lily Salvage and Translocation Plan to assess translocation progress and success over time, incorporating thresholds of plant condition and survivorship for which additional management action would be required.
Baseline data	<p>A number of previous studies into the populations of Matted Flax-lily at Simpson Barracks have been carried out by others and reviewed as part of this PER. These are described in PER Technical Appendix A – Flora and fauna. Targeted surveys for Matted Flax-lily were completed as part of this PER in October and December 2017.</p> <p>A pre-clearance survey would be carried out prior to translocation (and pre-construction) to confirm the number of plants/patches within the project boundary that would be impacted by North East Link. The method for this survey would be documented within the Matted Flax-lily Salvage and Translocation Plan.</p>

Factor	Description
Relevant impacts	<p>Potential impacts on Matted Flax-lily have been assessed through this PER. Impacts addressed by this outcome would include:</p> <ul style="list-style-type: none"> • Removal of vegetation and habitat • Degradation of vegetation and terrestrial habitat through erosion, sedimentation, dust or contamination and soil compaction during construction • Introduction or spread of weeds, pest species or pathogens leading the reduction of ecological values.
Willingness and capability to achieve outcome	<p>NELP is willing to achieve this outcome and has engaged qualified ecologists to prepare and implement the Salvage and Translocation Plan. Currently, NELP is investigating potential recipient sites within the City of Whittlesea, City of Darebin and City of Banyule, as well as in the eastern section of Simpson Barracks. Some of these already support Matted Flax-lily; others do not support the species but contain appropriate habitat.</p> <p>The Matted Flax-lily Salvage and Translocation Plan would be submitted to DoEE and DELWP for approval.</p>
Auditing and reporting	<p>NELP would submit an initial report summarising the results of the salvage and nursery propagation to the DoEE and DELWP within three months after salvage. A report would also be provided after the initial translocation and again after the first three months of monitoring have occurred. Thereafter, a summary report would be prepared annually for 10 years.</p> <p>Compliance with the Matted Flax-lily Salvage and Translocation Plan would be required as a condition of project contracts. Compliance with environmental requirements in project contracts would be audited by an independent environmental auditor.</p>
Proposed management	<p>The Matted Flax-lily Salvage and Translocation Plan would describe in detail the methods to achieve this outcome in the desired timeframe. The Matted Flax-lily Salvage and Translocation Plan would include methods to support successful translocation and manage the recipient sites. This would include:</p> <ul style="list-style-type: none"> • Multiple clones to be taken for each plant removed from the ground to support persistence of the plants • Stock to be maintained in an approved nursery with experience in the management and handling native plants (and preferably with Matted Flax-lily) • Recipient sites to be selected based on an approved process. <p>In addition, weed control measures would be developed and outlined in the Construction Environmental Management Plan (CEMP) to control weeds and pathogens within Simpson Barracks adjacent to the eastern edge of the project boundary in the area where Matted Flax-lily would be retained. The CEMP and its sub plans would also contain requirements for best practice sediment and erosion control and measures to minimise impacts from dust, contamination and soil compaction during construction.</p>

12.3 Outcome 2: Native vegetation on Commonwealth land

Simpson Barracks contains significant flora values including 52.5 hectares of remnant native vegetation and 192 recorded flora species, including 92 indigenous and 100 exotic species. The area within Simpson Barracks that intersects with the project boundary largely comprises Plains Grassy Woodland (EVC 55), dominated by River Red Gum. A description of native vegetation on Commonwealth land is provided in Chapter 5 – Description of the environment and relevant impacts are discussed in Chapter 9 – Impacts on the whole of the environment on Commonwealth land.

Native vegetation impacted directly through vegetation clearance or predicted to be impacted indirectly due to groundwater drawdown would be offset along with the rest of the vegetation being lost due to the action (that is outside Commonwealth land) under the State process, meeting the assessment and offset requirements of the *Victorian Guidelines for the removal destruction and lopping of native vegetation* (DELWP, 2017).

On this basis, the following outcome is proposed for remnant native vegetation on Commonwealth land. Table 12-2 describes the key factors considered in setting this outcome.

Outcome 2: Remnant native vegetation on Commonwealth land

Remnant native vegetation removal on Commonwealth land must be minimised to the extent practical. All remnant native vegetation removed from Commonwealth land due to North East Link must be offset in accordance with the principles of the EPBC Act Offsets Policy and the assessment and offset requirements of *Victorian Guidelines for the removal, destruction or lopping of native vegetation* (DELWP, 2017). Offset sites for vegetation removed from Commonwealth land must be secured to the satisfaction of the Department of Environment and Energy and Victoria's Department of Environment, Land, Water and Planning before vegetation removal on Commonwealth land starts.

Purpose of proposed outcome

The purpose of this proposed outcome is to require that unavoidable removal of native vegetation from Commonwealth land as a result of North East Link is appropriately offset.

Table 12-2 Outcome 2: Remnant native vegetation on Commonwealth land

Factor	Description
Risks	A Native Vegetation Removal (NVR) report has been completed that identifies general offset units and species offset units required for the vegetation removals. Enquiries have been made with offset brokers and NELP has received assurance that sites are currently available on the market to offset the removal of 10.976 ha of Plains Grassy Woodland.
Measurability	Native vegetation requiring removal would be mapped and offset requirements calculated in accordance with the <i>Victorian Guidelines for the removal, destruction or lopping of native vegetation</i> (DELWP, 2017).
Baseline data	Baseline data on the nature and extent of native vegetation on Commonwealth land was assessed through desktop and field assessment as part of this PER. The area of native vegetation to be removed, and potential for large trees to be potentially impacted as a result of changes in groundwater levels, would be confirmed for the detailed design prior to commencing construction.
Relevant impacts	<p>North East Link's potential impacts on native vegetation are generally well understood. Where there is some uncertainty around potential indirect impacts associated with groundwater drawdown on large trees outside the project boundary within Simpson Barracks, a conservative approach has been adopted to assessing potential loss of native vegetation. Impacts assessed in this PER and addressed by this outcome would include:</p> <ul style="list-style-type: none"> • Removal of vegetation and habitat (construction) • Drawdown of groundwater resulting in degradation of terrestrial or aquatic ecosystems (construction and operation) • Loss or degradation of terrestrial or aquatic habitat through shading (operation).
Willingness and capability to achieve outcome	<p>NELP is willing to achieve this outcome and has engaged qualified ecologists to assist with assessment of offset requirements. In addition, NELP has engaged with DELWP in relation to offset requirements.</p> <p>Offset sites for vegetation removed from Commonwealth land would be secured to the satisfaction of the DoEE and DELWP before vegetation removal on Commonwealth land starts.</p>
Auditing and reporting	<p>Project contracts would require contractors to avoid and minimise vegetation removal, and implement measures to protect vegetation to be retained. Compliance with environmental requirements in project contracts would be audited by an independent environmental auditor.</p> <p>NELP would submit reports on compliance as required by the Victorian Minister for Planning and DoEE.</p>

Factor	Description
Proposed management	<p>The measures proposed to manage impacts on native vegetation are consistent with those that have been adopted for other recent Victorian major transport projects.</p> <p>The actual construction footprint of North East Link would be refined at the detailed design stage to minimise removal of native vegetation and habitat where possible. In addition the design of the tunnels and the selection of construction methods would be informed by groundwater modelling and monitoring and required to minimise impacts on groundwater dependent ecosystems (including terrestrial ecosystems) to the extent practicable.</p> <p>Construction environmental management measures would be implemented to protect native vegetation to be retained such as no-go zones, a Tree Protection Plan and weed management measures.</p> <p>Offsets would be secured in accordance with the Victorian Guidelines for the removal, destruction or lopping of native vegetation (DELWP, 2017).</p>

12.4 Outcome 3: Studley Park Gum on Commonwealth land

Studley Park Gum *Eucalyptus X studleyensis* individuals within Simpson Barracks have the potential to be impacted directly or indirectly by North East Link. The DELWP Advisory List of Rare or Threatened Plants in Victoria classifies Studley Park Gum as endangered. A description of Studley Park Gum is provided in Chapter 5 – Description of the environment. Relevant impacts are discussed in Chapter 9 – Impacts on the whole of the environment on Commonwealth land.

To mitigate potential impacts of groundwater drawdown on Studley Park Gums at Simpson Barracks, a Studley Park Gum Groundwater Dependent Ecosystem Monitoring and Mitigation Strategy (GDEMMS) would be implemented as part of the Project. However, as this mitigation would not avoid or mitigate the predicted loss of 47 Studley Park Gum individuals, it is expected that the residual impact on plants on Commonwealth land would be significant. In accordance with the EPBC Act *Environmental Offsets Policy*, this would trigger a requirement for offsets for impacts to Studley Park Gum on Commonwealth land.

NELP proposes to contribute to the conservation of Studley Park Gum by establishing new habitat through the implementation of the Studley Park Gum Management Framework (see PER Technical Appendix A – Flora and fauna). This approach is expected to result in a viable outcome noting that the creation of new habitat for a protected matter is a type of direct offset under the EPBC Act *Environmental Offsets Policy*.

On this basis, the following outcome is proposed for Studley Park Gum on Commonwealth land. Table 12-3 describes the key factors considered in setting this outcome.

Outcome 3: Studley Park Gum on Commonwealth land

The Studley Park Gum Management Framework must be implemented to support establishment of a new population of Studley Park Gum. A Studley Park Gum Groundwater Dependent Ecosystem Monitoring and Mitigation Strategy would be implemented to mitigate impacts on Studley Park Gum associated with groundwater drawdown.

Purpose of proposed outcome

The purpose of this proposed outcome is to mitigate impacts on Studley Park Gum on Commonwealth land as a result of North East Link and support the ongoing conservation of this species.

Table 12-3 Outcome 3: Studley Park Gum on Commonwealth land

Factor	Description
Risks	The Studley Park Gum Management Framework aims to establish a minimum of 98 Studley Park Gum trees in a recipient site(s) to support establishment of a new population. This is based on a replacement ratio of two Studley Park Gums established for each individual impacted by the project. A total of 288 Studley Park Gum saplings would be initially planted at the recipient site(s) to address the risk of unavoidable plant loss. A management plan would be developed for the recipient site(s) and contain site specific management requirements to support the successful establishment of the new population.
Measurability	The Studley Park Gum Management Framework describes management responsibilities, timeframes and monitoring and evaluation requirements. The Studley Park Gum Groundwater Dependent Ecosystem Monitoring and Mitigation Strategy would also describe responsibilities and monitoring requirements.
Baseline data	Baseline data on the presence of Studley Park Gum was assessed through desktop and field assessment as part of this PER. A targeted survey for Studley Park Gum within Simpson Barracks was carried out after the draft PER was exhibited. This survey is described in PER Technical Appendix A – Flora and fauna.
Relevant impacts	Potential impacts on Studley Park Gum have been assessed through this PER. Impacts addressed by this outcome include: <ul style="list-style-type: none"> • Removal of vegetation and habitat • Drawdown of groundwater resulting in degradation of terrestrial or aquatic ecosystems (construction and operation).
Willingness and capability to achieve outcome	NELP is willing to achieve this outcome and has engaged qualified ecologists to prepare the Studley Park Gum Management Framework as part of the EES process and to support this PER. A document outlining the proposed approach for addressing indirect impacts on Studley Park Gum through the Studley Park Gum GDEMMS.

Factor	Description
Auditing and reporting	<p>Project contracts would require contractors to avoid and minimise impacts on Studley Park Gum and to protect trees to be retained. Compliance with environmental requirements in project contracts would be audited by an independent environmental auditor.</p> <p>NELP would submit reports on compliance as required by the Victorian Minister for Planning and DoEE.</p>
Proposed management	<p>The project is expected to have a significant residual impact on Studley Park Gum as an element of the environment on Commonwealth land (noting that Studley Park Gum is not listed under the EPBC Act). In accordance with the EPBC Act <i>Environmental Offsets Policy</i>, this would trigger a requirement for offsets for impacts to Studley Park Gum on Commonwealth land.</p> <p>Under the EPBC Act <i>Environmental Offsets Policy</i>, offsets are defined as measures that compensate for the residual impacts of an action. Offsets can comprise a combination of direct offsets and other compensatory measures. NELP proposes to contribute to the conservation of Studley Park Gum by establishing new habitat through the implementation of the Studley Park Gum Management Framework.</p> <p>The Studley Park Gum Management Framework has been developed as the proposed offset measure for the impacts to Studley Park Gum on Commonwealth land. The Studley Park Gum Management Framework commits to the following measures:</p> <ul style="list-style-type: none"> • Developing and implementing a 'seed collection and propagation plan', which provides detailed methods for the collection, storage and propagation of Studley Park Gum seeds • Identifying a recipient site with appropriate conditions to enable establishment of a self-sustaining Studley Park Gum population • Planting 288 Studley Park Gum saplings at the recipient site to achieve the establishment goal of a minimum of 98 Studley Park Gum plants after three years • Developing and implementing a management plan for the recipient site, which includes detailed site-specific actions. <p>Nine of the large Studley Park Gums at Simpson Barracks are modelled to be impacted due to groundwater drawdown (six trees are predicted to be impacted during construction only, three trees are predicted to be impacted during operation). The project proposes to implement the Studley Park Gum GDEMMS to monitor the health of those trees and implement mitigation measures (such as watering) throughout the construction phase of the Project to maintain their health, thus avoiding and mitigating impacts.</p> <p>In addition to the above, at the State level native vegetation offsets would be provided based on the Victorian Guidelines (DELWP 2017a) to offset for the removal of native vegetation (which Studley Park Gum trees form part of) directly impacted by the project, and three Studley Park Gum trees expected to experience premature mortality due to long term groundwater drawdown.</p> <p>Refer to PER Chapter 11 – Offsets for further detail.</p>