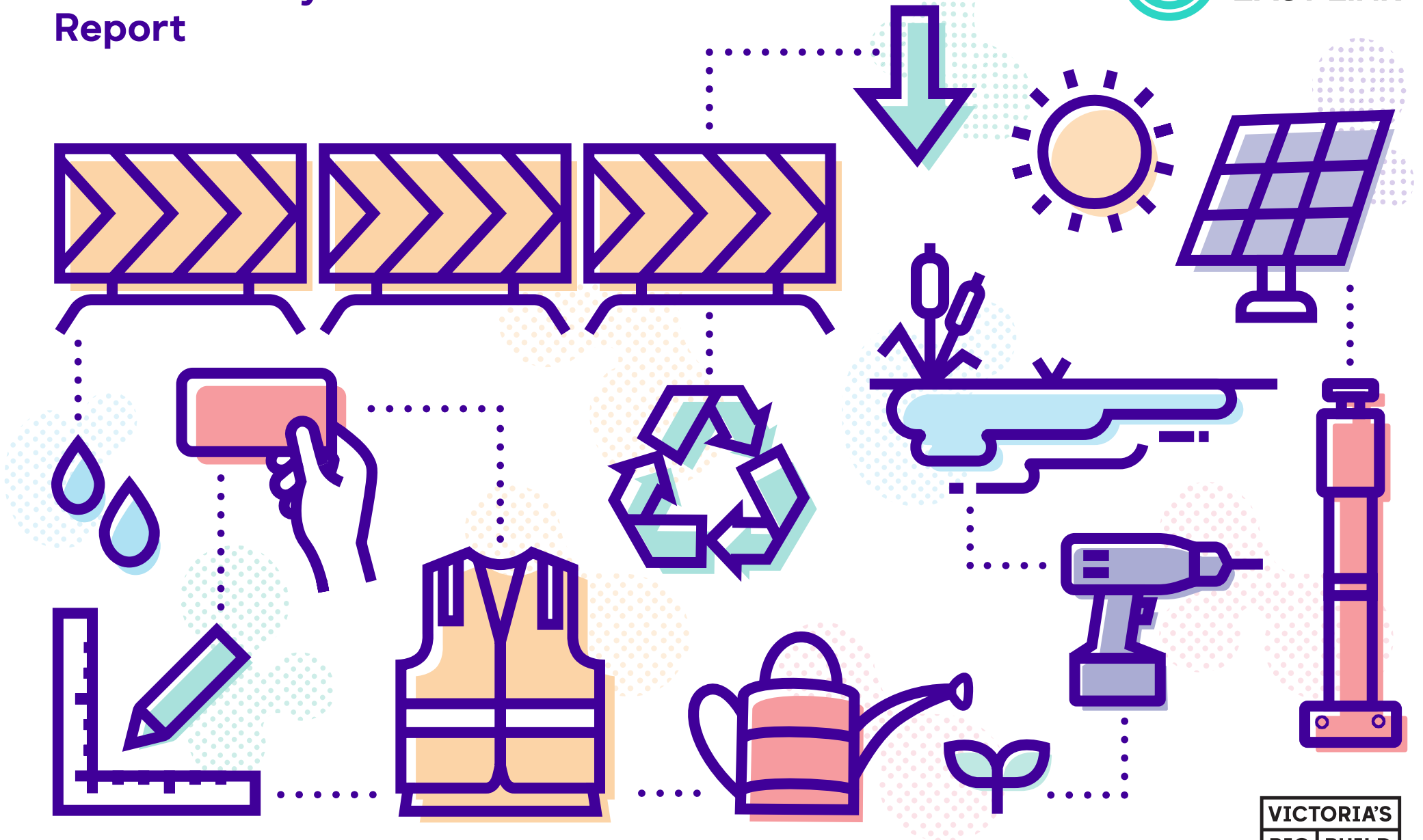


2023 Annual Sustainability Report



VICTORIA'S
BIG BUILD

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We at North East Link (NEL) acknowledge the Wurundjeri people as the traditional owners of the land on which the program stands, and respectfully recognise Elders past and present, and the ongoing living culture of Aboriginal people.

We also acknowledge the Traditional Custodians of lands across Australia where we conduct business, their Elders, Ancestors, cultures and heritage.

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Introduction

About this report



Artist's impression of cultural wetlands along the Yarra River, Bulleen

As part of our commitment to accountability, transparency and delivering positive community outcomes, North East Link is reporting on our sustainability performance annually.

This report covers the calendar year 1 January 2023 to 31 December 2023.

This document shows the progress we are making against our key sustainability objectives and targets, with this being our second annual sustainability report.

This report covers all packages of works which have been in delivery for more than six months in 2023. The status of sustainability performance presented in this report is cumulative and accurate as of December 2023. We aim to achieve all listed construction targets by the end of construction in 2028.

Early works status of progress was independently verified by the Infrastructure Sustainability Council in 2023.

North East Link status is based on our primary tunnelling contractor – Spark's – sustainability reporting submitted in January 2024.

Data is based on monitored, or estimated, construction and operational impacts. Estimates are calculated using the latest design or construction planning information.

Data has been independently audited by an Independent Environmental or Sustainability Auditor prior to the later IS verification process.

Internal controls have been established to ensure the accuracy of information gathered, such as internal audits.

The content and quality of this report has been independently reviewed against the below principles of the *Global Reporting Initiative*, an international standard for sustainability reporting:

- Accuracy
- Balance
- Clarity
- Comparability
- Completeness
- Sustainability context
- Timeliness
- Verifiability.

Infrastructure Sustainability (IS) Rating

The IS Rating Scheme is a comprehensive system to assess the sustainability performance of infrastructure. Throughout this report we identify the IS Rating credits and levels which we will use to independently verify our performance against our sustainability targets. Refer to the Appendix for more information.

Visit [iscouncil.org](https://www.iscouncil.org) to learn more.

United Nations (UN) Sustainable Development Goals

Throughout this report, we refer to North East Link's contributions to the UN Sustainable Development Goals, a set of global goals that frame our collective sustainability challenges and opportunities. **See page 7** for further detail.

Visit [sdgs.un.org](https://www.sdgs.un.org) to learn more.

2023 overview

2023 saw North East Link construction take huge steps forward in preparation for tunnelling. We completed the launch box in Watsonia for the Tunnel Boring Machines (TBMs) and commenced their assembly process.

Two delivery partners were selected for the first stage of the Eastern Freeway Busway and the M80 Ring Road Completion at Greensborough, with updated project designs released to the community.

Large pieces of the massive Tunnel Boring Machines were transported from the Port of Melbourne to Watsonia, with assembly of the first TBM starting. Other tunnelling infrastructure also took shape, including a large acoustic shed at Macleod to manage the dirt and rock from tunnelling.

Early works were completed in 2023, including works to relocate, modify and protect the power, gas, water, sewerage and communication utilities impacted by construction. The sports and facilities upgrades at Ford and Binnak Parks, and the Bulleen Park & Ride are included in these works. The Park & Ride opened to the public in April 2023 and is the first part of the Eastern Busway.

We have taken steps at every stage of the delivery process to embed sustainability outcomes into the design of North East Link.

Recycling initiatives were a highlight for the year. We rolled out approximately 10 tonnes of rubber to date from recycled car tyres in our crash barriers on the worksite. We're also using Eco T-Top Bollards – the first Australian-made 100% recycled plastic bollards.

The community contributed towards us meeting our sustainability targets. The Greener North East Program has seen local schools, kindergartens and childcare centres planting gardens and supporting social enterprise Yarra View and Bushland Flora Nursery.

With the deadline for our sustainability targets set for the end of construction in 2028, it's pleasing to see such momentum already. We look forward to continuing to share the results in sustainability reports in the years to come.



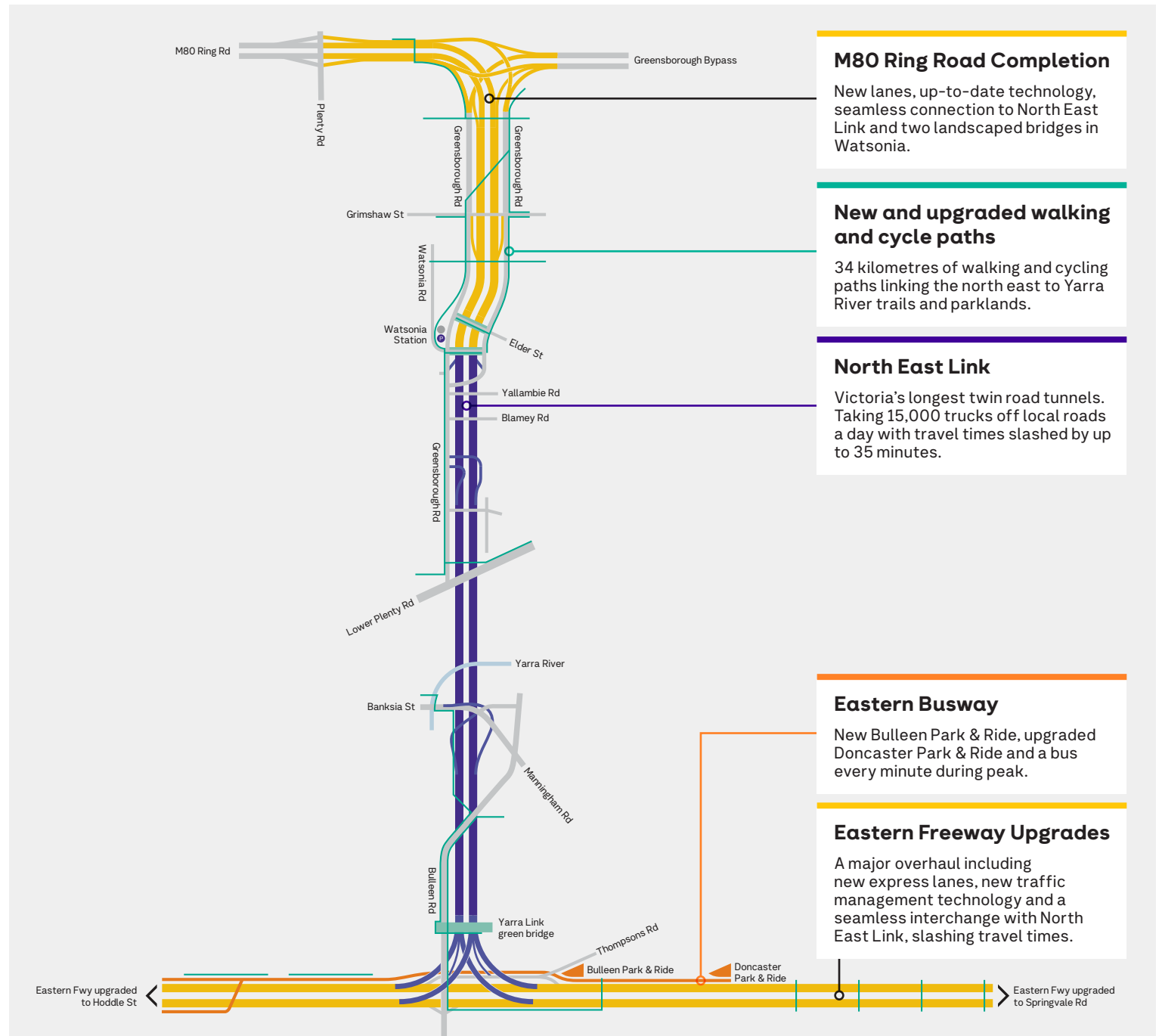
Progress on the TBM launch box in Watsonia

What we're building

We're delivering three major road projects to change the way people move around Melbourne's north east by road, bus and bike.

Victoria's longest road tunnels will complete the missing link in Melbourne's freeway network. We'll also complete the M80 Ring Road in Greensborough, and upgrade the Eastern Freeway. As part of all of this, we'll also deliver Melbourne's first dedicated busway and create more than 34km of walking and cycling paths.

Program schematic is for illustrative purposes only. This diagram is simplified and not to scale. Visit northeastlink.vic.gov.au to learn more about what we're building.



M80 Ring Road Completion

New lanes, up-to-date technology, seamless connection to North East Link and two landscaped bridges in Watsonia.

New and upgraded walking and cycle paths

34 kilometres of walking and cycling paths linking the north east to Yarra River trails and parklands.

North East Link

Victoria's longest twin road tunnels. Taking 15,000 trucks off local roads a day with travel times slashed by up to 35 minutes.

Eastern Busway

New Bulleen Park & Ride, upgraded Doncaster Park & Ride and a bus every minute during peak.

Eastern Freeway Upgrades

A major overhaul including new express lanes, new traffic management technology and a seamless interchange with North East Link, slashing travel times.

Our sustainability targets

This report presents the status of North East Link's performance against our sustainability objectives and targets in 2023.

We set our ambitious targets back in 2019 based on input from stakeholders and the community, as well as technical sustainability assessments.

Key milestones in developing our Sustainability Objectives and Targets

2017–2018

Community feedback surveys on North East Link priorities and objectives. [Learn more.](#)

December 2018

Sustainability workshop with councils and state government agencies. [Learn more.](#)

March 2019

Sustainability workshop with community environment groups.

April 2019

Technical assessments of greenhouse gas footprint and renewable energy options.

April–June 2019

NEL Environment Effects Statement on public exhibition. This included our Sustainability Approach which details our local, regional, and global sustainability context. [Learn more.](#)

July 2019

Published sustainability objectives and targets on NEL website. [Learn more.](#)

2019–2021

Incorporated sustainability targets into delivery partner contracts.

December 2021

Published 2021 Sustainability Snapshot. [Learn more.](#)

July 2022

Sustainability targets briefing with Wurundjeri Woi-Wurrung Aboriginal Cultural Heritage Corporation (the Wurundjeri).

June 2023

Published 2022 Annual Sustainability Report. [Learn more.](#)

2024 (We are here)

Published 2023 Annual Sustainability Report.

2028

North East Link opens.

UN Sustainable Development Goals

Our targets seek to both minimise our negative impacts and maximise our positive impacts as we procure, design, build and operate North East Link.




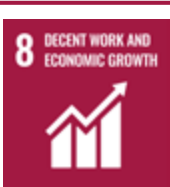


This diagram demonstrates how our targets address both positive and negative impacts and maps these against the UN Sustainable Development Goals (SDGs).

The performance snapshots on the following pages show how North East Link has sought to maximise our positive contributions and minimise our negative contributions to our key sustainability issues and the UN SDGs in accordance with the diagram.







Our aim is to work with our construction partners to exceed the ambitious sustainability targets across the design, construction and operation of North East Link.

Refer to the performance snapshots for more information about our targets.

Maximise positive contribution

Supply chain		Design	Construction	Operations	
 <p>Theme Leadership</p> <p>Target Implement initiatives for sharing sustainability knowledge gained from the program</p>	 <p>Theme Economic opportunities</p> <p>Target Implement a social and sustainable procurement strategy that delivers on relevant legislative and policy frameworks, including Victoria's Social Procurement Framework</p>	 <p>Theme Communities</p> <p>Target Create a dedicated Busway and provide accessible and amenable Park & Ride facilities connected to shared use paths</p>	 <p>Theme Economic opportunities</p> <p>Target Implement a social and sustainable procurement strategy that delivers on relevant legislative and policy frameworks, including Victoria's Social Procurement Framework</p>	 <p>Theme Communities</p> <p>Target Implement initiatives that generate positive social and/or environmental outcomes and enhance community wellbeing</p>	 <p>Theme Communities</p> <p>Target Achieve at least a 10% increase (or greater) in cyclist numbers travelling the North East Link corridor after 3 years of operation</p>

Minimise negative contribution

Supply chain		Design	Construction	Operations	
 <p>Theme Resource efficiency</p> <p>Target Maximise use of reclaimed asphalt pavement and other recycled materials in the program</p>	 <p>Theme Climate change</p> <p>Target Achieve a minimum 15% reduction in materials lifecycle impacts</p>	 <p>Theme Resource efficiency</p> <p>Target Maximise harvest and reuse of rainwater, stormwater, wastewater, groundwater and tunnel inflow water</p>	 <p>Theme Resource efficiency</p> <p>Target Achieve landfill diversion rates of at least 90% by volume of inert and non-hazardous construction waste and 60% by volume of office waste</p>	 <p>Theme Urban ecosystems</p> <p>Target Achieve a net gain in canopy cover by 2045</p>	 <p>Theme Climate change</p> <p>Target Achieve net zero emissions in the operation and maintenance of North East Link</p>

Leadership

PERFORMANCE SNAPSHOT

Achieve excellent environmental, social and economic outcomes across all phases of North East Link.



Seek opportunities to share knowledge and collaborate with stakeholders and industry peers

TARGET	STATUS 2022	STATUS 2023
Implement innovative and pioneering initiatives in sustainable design, process or advocacy considered a first in Victoria and/or Australia IS v1.2 Inn-1 IS v2.1 Inn-1 Find out more about IS ratings here: Appendix	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.
Implement initiatives for sharing sustainability knowledge gained from the program IS v1.2 Man-6 Level 2 IS v2.1 Lea-3 Level 2 Find out more about IS ratings here: Appendix	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.

Use sustainability rating schemes to set benchmarks and track and report performance

TARGET	STATUS 2022	STATUS 2023
Achieve a minimum 74 points for the program rating for early works (under IS rating tool v1.2), and 60 points for North East Link (v2.1)	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.
Achieve a minimum Excellent rating (or equivalent) for Operations rating type under the IS rating tool v1.2 or equivalent	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Progressing.	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Progressing.
Achieve a minimum five-star Green Star rating for the Motorway Control Centre	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.
Publicly report sustainability performance on an annual basis	Early works: Complete. North East Link: Complete.	Early works: Well progressed. North East Link: Well progressed.

Recycled road safety barriers

CASE STUDY

TARGET

Implement innovative and pioneering initiatives in sustainable design, process or advocacy considered a first in Victoria and/or Australia

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

North East Link has rolled out an Australian-first initiative at our Yallambie and Bulleen sites, using road safety barriers made from recycled materials.

The temporary crash barriers – an essential safety measure for an active construction site – contain recycled crumbed rubber from waste tyres.

Stockpiled waste tyres represent a risk to communities and the environment and are a reportable priority waste by the Environmental Protection Authority (EPA) Victoria. They have the potential to cause tyre fires, which are notoriously difficult to put out and can negatively impact health through the inhalation of chemicals and particles.

In using these barriers, NEL is helping to redirect this dangerous waste from landfill as well as contributing to workers' safety on site.

The barriers are the result of a joint venture between SafeRoads, Melbourne University and Tyre Stewardship Australia and demonstrates industry leadership in the traffic safety space.

The barriers use over 1600 car tyres. The tyres are crumbed and then used to replace a portion of the coarse aggregate in the mix, which is over 10 tonnes of recycled rubber.

228 of these barriers have been delivered, with 59 more on the way.



Rubber T-Lok Barriers, made from recycled crumb rubber from end-of-life tyres

1600+

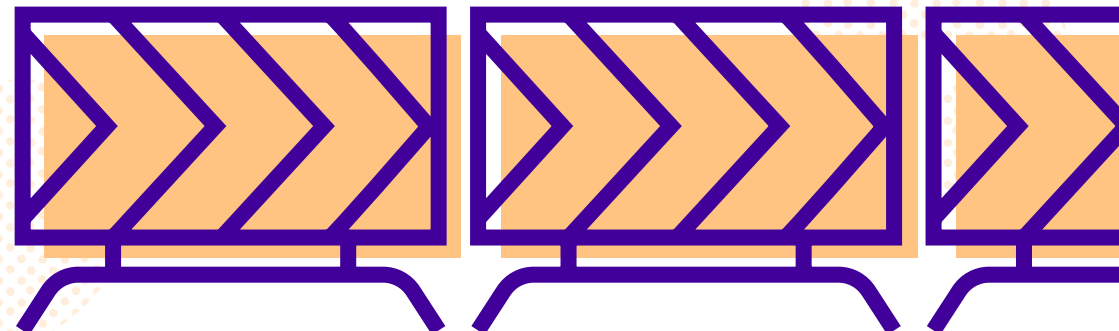
car tyres saved from landfill

10

tonnes of rubber recycled

228

T-Lok barriers delivered to date



Improving leadership for sustainability teams

CASE STUDY

TARGET

Implement initiatives for sharing sustainability knowledge gained from the program

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

The Make Your Spark program was developed by the North East Link Central Package contractor, Spark, to upskill its Sustainability and Social Outcomes teams as construction of North East Link progressed.

Spark partnered with a leadership specialist after recognising that positive sustainability outcomes often require organisational change. To enable these outcomes, sustainability professionals must become effective influencers.

The Make Your Spark program aimed to increase participants' leadership skills, allowing them to exercise greater influence in achieving positive sustainability and social outcomes for the project. Participants identified and defined personal values before aligning these with their work in order to inform their individual styles of leadership.

The training resulted in an increased capacity within the teams to drive and promote sustainable outcomes – introducing them to fundamental leadership concepts, leadership developments, and training the ability to effectively exercise what power and influence they have in the delivery of the project.

Initiatives like the Make Your Spark program represent one way to leverage the skills of key individuals and teams in order to bolster the construction industry – both on the North East Link and on future projects.

This establishes legacy of change that will outlive NEL's construction.



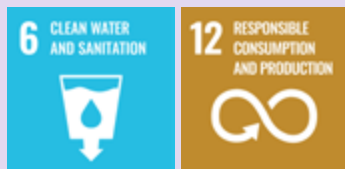
Spark's Sustainability Coordinator, Mia Deans



Resource efficiency

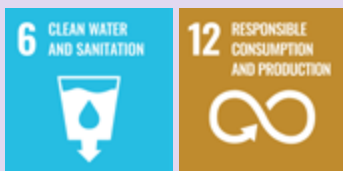
PERFORMANCE SNAPSHOT

Embedding energy, water, material and waste reduction initiatives into the design, construction and operation of the program



Reduce the use and the lifecycle impacts of all materials, like concrete, asphalt and steel

TARGET	STATUS 2022	STATUS 2023
Develop a Resource Efficiency Strategy and Action Plan IS v2.1 Rso-1 Level 2 Find out more about IS ratings here: Appendix	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.
Achieve a minimum 15% reduction in materials lifecycle impacts (measured by the materials lifecycle calculator) below the base case IS v1.2 Mat-1 Level 1.3 IS v2.1 Rso-6 Level 1 Find out more about IS ratings here: Appendix	Early works: Well progressed, 5.3%. The early works target is 5%, due to the nature and scope of the works. North East Link: Progressing, 12%.	Early works: Well progressed, 5.7%. The early works target is 5%, due to the nature and scope of the works. North East Link: Well progressed, 33.5%.
Reduce the amount of Portland Cement content in concrete across the program by a minimum of 30% (against Green Building Council of Australia reference mix design levels)	Early works: Well progressed, 36%. North East Link: Well progressed, 40%.	Early works: Well progressed, 30%. North East Link: Well progressed, 48%.
Maximise use of reclaimed asphalt pavement and other recycled materials in the program	Early works: Well progressed, 4.5%. North East Link: Well progressed, 27% asphalt, 38% other.	Early works: Well progressed, 4.2%. North East Link: Well progressed, 13% asphalt, 29% other.
Maximise local steel by volume sourced from fabricators or contractors who are accredited suppliers for the Environment Sustainability Charter of Australian Steel Institute or similar international association	Early works: Well progressed, 7.8%. North East Link: Well progressed, 50%.	Early works: Well progressed, 9.2%. North East Link: Well progressed, 83%.
Implement a sustainable procurement policy to ensure that major materials have environmental labels or are from sustainable supply chains in accordance with the IS Materials credit	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.



Reduce water use and maximise the use of alternatives to potable water

TARGET	STATUS 2022	STATUS 2023
Maximise harvest and reuse of rainwater, stormwater, wastewater, groundwater and tunnel inflow water	<p>Early works: Well progressed, 6.1%. Calculation is for the life cycle of the asset, including construction and operations.</p> <p>North East Link: Progressing, 12%. Figure indicates amount reused as a percentage of total water used.</p>	<p>Early works: Well progressed, 19%. Calculation is for the life cycle of the asset, including construction and operations.</p> <p>North East Link: Well progressed, 29%. Figure indicates amount reused as a percentage of total water used.</p>
Develop Integrated Water Management projects to supply construction and post-construction uses	<p>Early works: Due to the nature and scope of the early works packages this target is not applicable.</p> <p>North East Link: Progressing.</p>	<p>Early works: Due to the nature and scope of the early works packages this target is not applicable.</p> <p>North East Link: Well progressed.</p>
Develop a water usage and sourcing strategy that includes potable and non-potable water needs, volumes and sources that would be used and generated during construction and operation. Identify opportunities to reduce water use and maximise reuse	<p>Early works: Due to the nature and scope of the early works packages this target is not applicable.</p> <p>North East Link: Progressing.</p>	<p>Early works: Due to the nature and scope of the early works packages this target is not applicable.</p> <p>North East Link: Well progressed.</p>

Reduce waste and maximise the sustainable reuse of excavated material

TARGET	STATUS 2022	STATUS 2023
Implement initiatives to reduce spoil quantities and maximise the beneficial reuse of uncontaminated spoil	<p>Early works: Well progressed, 97.4%.</p> <p>North East Link: Well progressed, 94%.</p>	<p>Early works: Well progressed, 100%.</p> <p>North East Link: Well progressed, 97%.</p>
Maximise waste diverted from landfill and achieve landfill diversion rates of at least 90% by volume of inert and non-hazardous construction waste	<p>Early works: Progressing, 81.3%.</p> <p>North East Link: Well progressed, 98%.</p>	<p>Early works: Well progressed, 92%.</p> <p>North East Link: Well progressed, 98%.</p>
Maximise waste diverted from landfill and achieve landfill diversion rates of at least 60% by volume of office waste	<p>Early works: Well progressed, 63.7%.</p> <p>North East Link: Progressing, 32%.</p>	<p>Early works: Well progressed, 80%.</p> <p>North East Link: Progressing, 27%.</p>

Smart design cutting carbon footprint

CASE STUDY

TARGET

Achieve a minimum 15% reduction in materials lifecycle impacts

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

The Motorway Control Centre (MCC) design has been developed to reduce the amount of concrete and steel required for its construction.

The MCC is an essential part of the operation of the completed North East Link. The centre will house the technology and personnel responsible for monitoring and managing the tunnel.

The original MCC design included a basement level, which would have been used to house the facility's car park and a number of service amenities.

An opportunity to modify the design was identified, removing the need for a basement level. These design improvements retained the same functionality of the building, but reduced the use of concrete by 370 cubic metres and will save over 55 tonnes of steel.

This is in addition to the estimated 730 tonnes reduced in the initial design by using a mass timber structure (instead of steel), and further 8700 tonnes reduced from other Energy Efficiency Measures.

The same number of car spaces will be kept with utilities included across the remaining floors of the centre.

The architect-designed building will also accommodate solar panels and will include landscaping with local plants that provide habitat for the neighbouring Birrarung (Yarra River) Parklands. This planting will include species which are culturally significant to the Wurundjeri.

These and other initiatives will help the building reach its target of a five-star Green Star rating. [Find out more about Green Star ratings here.](#)



Artist's impression of the Motorway Control Centre, Bulleen

1360

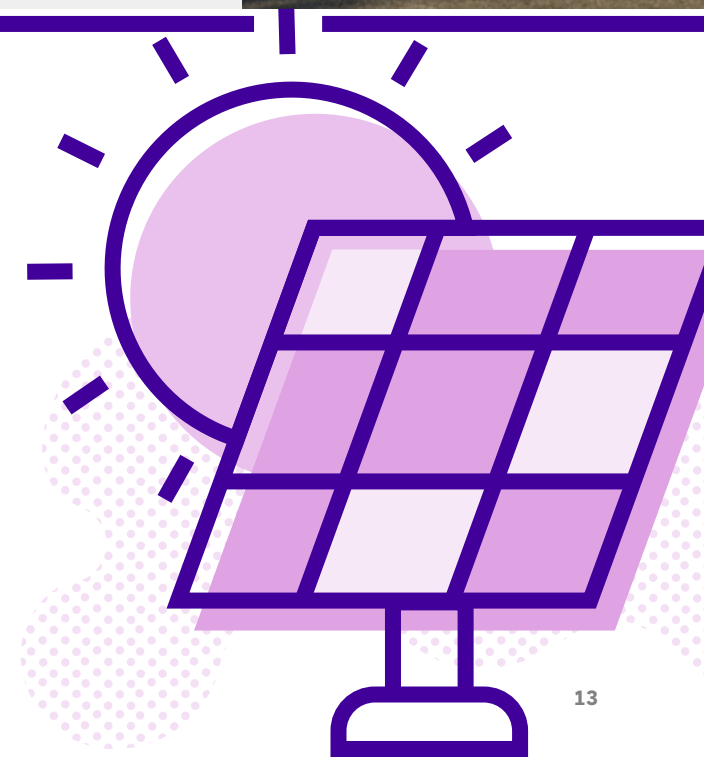
tonnes of embodied carbon saved in design

10,000

tonnes of carbon emissions saved in total compared to a business as usual approach

5 star

Green Star rating target



Recycled plastic bollards

CASE STUDY

TARGET

Maximise use of recycled asphalt pavement and other recycled materials in the program

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

We are using the first Australian-made 100 per cent recycled plastic bollards on North East Link work sites.

The Eco T-Top Bollards are the first Australian-made 100 per cent recycled plastic bollard made from other end-of-life bollards that are collected from construction sites across Victoria.

The bollards are produced by Oakleigh-based company OC Connections, which is a Social Traders certified social enterprise focused on providing employment opportunities to people with a disability.

\$10,000 worth of the bollards have been procured, which are made from a blend of low- and high-density polyethylene (LDPE/HDPE) and designed with longevity and durability in mind.

The bollards are benchmarked against leading bollards that are imported and do not contain any recycled material.

By salvaging and reusing bollards, the North East Link tunnelling sites have diverted 510 kilograms of plastic waste from landfill to date.

As a result, procuring these bollards has reduced the embodied carbon emissions on the project by approximately 840 kilograms.

100%

recycled plastic

510kg

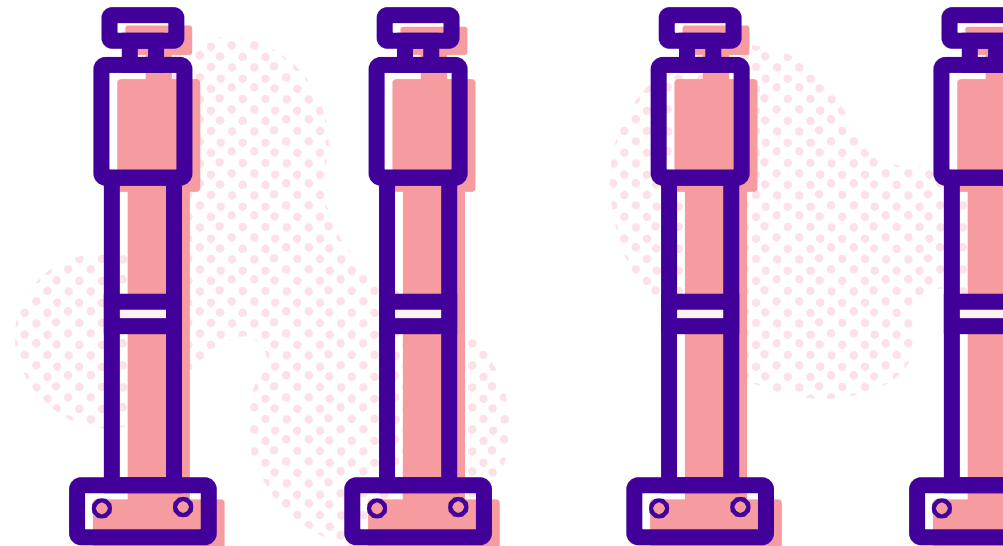
of plastic waste diverted to date

840kg

of embodied carbon saved



Eco T-top Bollards in situ



Urban ecosystems

PERFORMANCE SNAPSHOT

Protecting and seeking opportunities to enhance natural environments



Protect and enhance biodiversity and habitat links

TARGET	STATUS 2022	STATUS 2023
Reduce impacts to ecological communities by minimising the removal of native vegetation, fauna habitat and mature old trees	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.
Protect and enhance existing habitats, habitat connectivity and ecosystem function, where possible	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.
Seek opportunities to create new habitats and habitat links in consultation with local environmental and community groups	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Progressing.	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.
Apply best practice retention, responsible storage and reinstatement of topsoil to support growing conditions for local species	Early works: Well progressed. North East Link: Progressing.	Early works: Well progressed. North East Link: Well progressed.
Develop a Green Infrastructure Plan and incorporate Green infrastructure	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.

Seek opportunities to improve stormwater quality and contribute to improvements in waterway environments

TARGET	STATUS 2022	STATUS 2023
Identify opportunities to improve water quality and contribute to improved connectivity and enhancement of waterways	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.



Contribute to local urban forest outcomes

TARGET	STATUS 2022	STATUS 2023
Contribute to urban forest outcomes by replacing lost canopy and achieving a net gain in canopy cover by 2045	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>
Prioritise the retention and protection of existing vegetation	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>
Undertake new plantings early to optimise growth	<p>Early works: Well progressed.</p> <p>North East Link: Progressing.</p>	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>
Use indigenous species of local provenance where appropriate	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>
Replanting to occur within the project boundary wherever possible	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>

River Red Gum planting

CASE STUDY

TARGET

Use indigenous species of local provenance where appropriate

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

We're continuing the legacy of the iconic River Red Gum on the corner of Bridge Street and Manningham Road in Bulleen.

The wellbeing of the River Red Gum was highlighted by the community as a matter of concern for locals. The location and environment surrounding the tree has meant that it has been unable to drop seeds onto soil or groundcover that would allow them to naturally germinate.

To ensure the ongoing legacy of the tree, seeds from the River Red Gum were harvested and these were used to germinate 50 River Red Gum plants.

The saplings were germinated and raised at a local nursery in Eltham. They were then planted in Banksia Park, Yarra Flats Park and Westerfolds Park.

Some of the young trees – those planted at Banksia Park – are within eyeline of the original River Red Gum, which is estimated to be at least 300 years old.

As construction continues in the area, a management plan has also been established to support the original tree's survival through the life of the project, while the saplings will be monitored for 10 years from the time they were planted, ensuring they are able to become established.

300+

year-old Bridge Street River Red Gum

50

saplings raised and planted in nearby Yarra River parklands



Collecting seeds for propagation of the Bridge Street River Red Gum, 2019



Managing urban heat

CASE STUDY

TARGET

Contribute to urban forest outcomes by replacing lost canopy and achieving a net gain in canopy cover by 2045

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

North East Link has developed strategies to mitigate and manage Urban Heat Islands (UHI) to protect vulnerable communities from the phenomenon.

The design for the North East Link combats UHI, through the creation of open space and the planting of more than 30,000 trees.

Five MCGs of parklands will be created along Banyule Creek at Borlase Reserve, including an increase in water bodies – an effective way to mitigate UHI. Additionally, there will be a new, two kilometre tree-lined boulevard for Greensborough Road, two hectares of green space as part of the Yarra Link green bridge over Bulleen Road and three new wetlands along the Yarra River and Koonung Creek in Bulleen and Balwyn North.

UHI is a phenomenon where urban temperatures exceed a non-urban baseline. A number of factors contribute to the generation of UHI, including reduction of greenspace in a given area and an increase in hardscapes – roads, footpaths and parking lots, for example – which trap heat.

Construction in and around urban environments, especially those using concrete and steel structures, can result in UHI.

Management of this phenomenon is important, as its impact can range from an increase in heat-related illness to increasing energy consumption for heating and cooling.

Analysis of the project area identified the northern regions of the project as an area of high-temperature and vulnerability.

Tree canopy cover is key to mitigating the UHI effect and will serve to boost the resilience of the community.

30,000

trees will be replanted



Artist's impression of new Borlase Reserve parklands, Yallambie



Enhance open space, active transport opportunities and community facilities

TARGET	STATUS 2022	STATUS 2023
Implement initiatives that generate positive social and/or environmental outcomes and enhance community wellbeing IS v1.2 Hea-1 Level 2 IS v2.1 Leg-1 Level 2 Find out more about IS ratings here: Appendix	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.
Achieve at least a 10% increase (or greater) in cyclist numbers travelling the North East Link corridor after 3 years of operation	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.
Increase the number of homes within 500m of a connected shared use path	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Progressing.	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.
Create a dedicated Busway and provide accessible and amenable Park & Ride facilities connected to shared use paths, as guided by the Urban Design Strategy	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.
Seek opportunities to improve bus priority measures and facilities across the North East Link corridor	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.
Achieve a high level of improvement in recreational facility standards when compared with pre-North East Link facilities	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.

Communities

PERFORMANCE SNAPSHOT

Making a positive contribution to social, cultural and community health and wellbeing





New sports facilities at Ford Park

Respect and promote cultural and historical heritage values

TARGET	STATUS 2022	STATUS 2023
Demonstrate a design philosophy and approach that recognises, protects and promotes Indigenous cultural heritage values and celebrates and interprets places and objects of historical heritage importance	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>
Seek opportunities to represent Wurundjeri people's knowledge, insights and Connections to Country via a meaningful, authentic and collaborative process	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>

Helping schools and local residents green the north east

CASE STUDY

TARGET

Implement initiatives that generate positive social and/or environmental outcomes and enhance community wellbeing

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

As part of the Greener North East program, the project has supported more than 20 local schools and learning centres to green the local area.

Part of this program involved providing over 20 schools and early learning centres – including Lower Plenty Primary School, Happy Valley Early Learning and Rosanna Primary School – with a total of \$50,000 in vouchers for the Yarra View and Bushland Flora Nursery.

Yarra View and Bushland Flora Nursery is Australia's largest social enterprise nursery, providing meaningful employment to 85 adults with a disability across their sites.

By using the vouchers to purchase trees, plants and gardening supplies, these educational facilities are increasing the green area in their grounds and increasing the number of plants in the overall area.

As part of this program, North East Link arboriculture specialists worked with the participating schools to ensure that they were able to make informed decisions

about suitable species of trees, and appropriate locations so that the plants can flourish.

In addition to the school vouchers, North East Link has provided 1000 trees in a backyard tree planting program for residents highly impacted by tunnelling in Watsonia, Macleod, Yallambie, Rosanna, Viewbank and Bulleen.

Eight native species were available: Red Flowering Ironbark, Honey Pots Gum, Red Box Gum, White Leaved Mallee, Lightwood Wattle, Sweet Bursaria, Dwarf Sugar Gum and Kings Park Special.



Plants at Yarra View Nursery, ready for distribution to schools

\$50,000

in nursery vouchers

20+

schools participating

1000

trees given away in our backyard tree planting program



Economic opportunities

PERFORMANCE SNAPSHOT

Facilitating opportunities for economic development, provide a skilled local workforce and promote diversity and inclusion



Participants in the Foundations in Civil Skills pilot program

Achieve social value and sustainability outcomes through procurement

TARGET	STATUS 2022	STATUS 2023
Implement a social and sustainable procurement strategy that delivers on relevant legislative and policy frameworks, including Victoria's Social Procurement Framework	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>

Promote sustainability capabilities within industry

TARGET	STATUS 2022	STATUS 2023
Require relevant contractors and suppliers to adopt and implement recognised and accredited sustainability training for staff	<p>Early works: Due to the nature and scope of the early works packages this target is not applicable.</p> <p>North East Link: Well progressed.</p>	<p>Early works: Due to the nature and scope of the early works packages this target is not applicable.</p> <p>North East Link: Well progressed.</p>
Promote sustainability awareness among staff and contractors	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>	<p>Early works: Well progressed.</p> <p>North East Link: Well progressed.</p>



Building Aboriginal engagement and careers

CASE STUDY

TARGET

Implement a social and sustainable procurement strategy that delivers on relevant legislative and policy frameworks, including Victoria's Social Procurement Framework

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

We are working to increase Aboriginal engagement and career opportunities in construction for young Aboriginal people as we build North East Link.

Candidates selected for the Willan Program come from backgrounds of generational unemployment. They underwent 10 weeks of pre-employment training provided by Aboriginal business Pathway Plumbing, where they took master classes in communication and practical skills, including interviewing skills and how to handle contract agreements.

Killara Foundation has been enlisted to provide housing and transport, while the Victorian Aboriginal Health Service has provided additional support.

With a view to gaining and maintaining full-time employment in construction, all of the successful participants from the Willan Program obtained a Certificate II in Construction Pathways.

In 2023, 118,000 hours were worked by Aboriginal people across North East Link which constitutes 2.5% of the hours over the entire workforce. We are on track to meet the target over the combined design and construction phase of the project.

The project has also engaged 48 Aboriginal businesses in 2023 – including Pathway Plumbing, Cable Containment Services and Chilcorp Metal Recycling – for a variety of functions across the business.



Trainers and participants in the Willan Program

10

weeks of training provided by the Willan Program

118,000

hours worked by Aboriginal people in 2023

48

Aboriginal businesses engaged in 2023



Providing equal employment opportunities

CASE STUDY

TARGET

Implement a social and sustainable procurement strategy that delivers on relevant legislative and policy frameworks, including Victoria's Social Procurement Framework

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

We are making sure that disadvantaged people and priority job seekers have equal opportunities and can be part of North East Link.

The Foundations in Civil Skills pilot program aims to break down barriers for women entering the construction industry by incorporating industry-first, best practice support and training.

The program recruited young women with an interest in long-term careers in construction with training, and guaranteed employment as a general labourer for one year on North East Link.

The participants were recruited from both internal referrals and advertising through inclusive employment platforms.

Applicants were given a clear outline of the program and the required commitment, ensuring genuine engagement.

The paid, 18-day training course was designed to give participants the skills and confidence to work as a general labourer on site.

In providing equal opportunities on North East Link, the project has seen 1.1 million hours worked by priority job seekers in 2023, including refugees, people experiencing long-term unemployment, and people with disability.

Career opportunities are also being provided for the next generation of construction workers, with 311,000 hours worked by apprentices, trainees and cadets in 2023.



Participants in the Foundations in Civil Skills pilot program

18

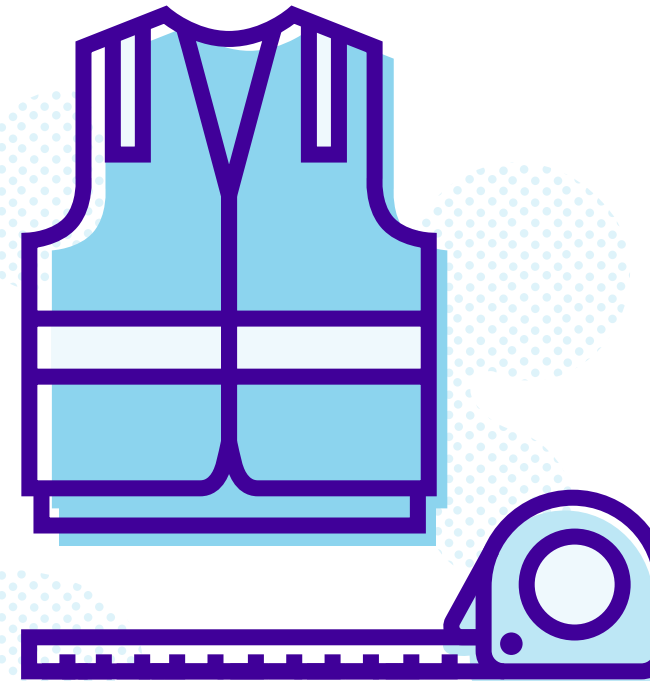
days of training provided through Foundations in Civil Skills program

1.1 million

hours worked by priority job seekers in 2023

311,000

hours worked by apprentices, trainees and cadets in 2023



Climate change

PERFORMANCE SNAPSHOT

Playing a part in Victoria achieving its emission reduction targets while preparing for the challenges presented by climate change



Reduce carbon emissions during construction and operation

TARGET	STATUS 2022	STATUS 2023
Analyse and implement all feasible opportunities to reduce energy use and greenhouse gas emissions from construction and operation of North East Link	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.
Achieve at least a 30% reduction in carbon emissions from the construction of North East Link against an ISC verified base case calculated in accordance with their independent standards IS v1.2 Ene-1 Level 3 IS v2.1 Ene-1 Level 3 Find out more about IS ratings here: Appendix	Early works: Well progressed, 36%. North East Link: Well progressed, 54%.	Early works: Well progressed, 32%. North East Link: Well progressed, 81%.
Use at least 50% of renewable energy for electricity used to construct North East Link IS v1.2 Ene-2 Level 1.5 IS v2.1 Ene-2 Level 1.5 Find out more about IS ratings here: Appendix	Early works: Well progressed, 60%. North East Link: Well progressed, 100%.	Early works: Well progressed, 73%. North East Link: Well progressed, 100%.
Achieve net zero emissions in the operation and maintenance of North East Link. Note this does not include emissions from traffic using North East Link. Residual emissions would be offset by renewable energy in favour of other offsets.	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.	Early works: Due to the nature and scope of the early works packages this target is not applicable. North East Link: Well progressed.

Design to be resilient to a changing climate

TARGET	STATUS 2022	STATUS 2023
Implement a Climate Resilience plan which addresses high and extreme climate change risks	Early works: Well progressed. North East Link: Well progressed.	Early works: Well progressed. North East Link: Well progressed.

Reducing lifecycle carbon

CASE STUDY

TARGET

Analyse and implement all feasible opportunities to reduce energy use and greenhouse gas emissions from construction and operation of North East Link

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

We're reducing the energy demands of North East Link once it is built by analysing energy efficiency and making changes now.

The majority of the project's energy footprint over the design life will come from the equipment required to ventilate the tunnels, and power tunnel lighting. Accordingly, making these systems as energy efficient as possible is a priority.

One such energy efficiency analysis investigated the impact of optimising the jet fans – a major part of the ventilation system – to respond to varying traffic conditions.

The resulting information revealed that this change would reduce the energy demand of the jet fans by approximately 15% over the life of the asset, without compromising the ventilation and air-quality inside the tunnel.

While one of the major contributors to the project's energy footprint, lighting in the tunnel is also essential to driver safety when it is in use.

The greatest energy demand for lighting is at the portals – the tunnel entrance and exit – where drivers' sight can be impacted by rapid changes in lighting conditions.

Accordingly, portal lighting demand reduces as daylight fades. To capitalise on this, a lighting control system is being incorporated into the design. By using photometer sensors at the tunnel portals, light levels in those areas can be adjusted in real time in response to lighting conditions outside the tunnel.

Making this change is expected to reduce the energy demand of the tunnel lighting by approximately 30%.



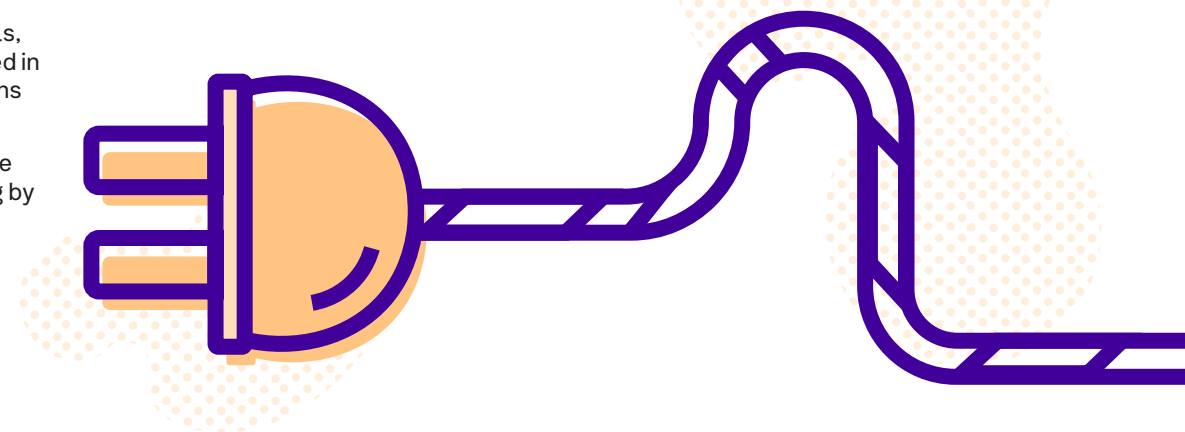
Artist's impression of northern tunnel portal and ramps, Watsonia

15%

reduction in jet fan energy demand

30%

reduction in tunnel lighting energy demand



Generator efficiency on construction sites

CASE STUDY

TARGET

Achieve at least a 30% reduction in carbon emissions from the construction of North East Link against an ISC verified base case calculated in accordance with their independent standards

PROJECT

North East Link

CURRENT PHASE

Construction

STATUS

Well progressed

We're taking a close look at generator use on site, choosing the most efficient option and reducing carbon emissions during construction.

Generators are a critical component of site establishment as they enable construction to proceed while connections to mains electricity are still being made.

Timely delivery of North East Link requires the use of generators large enough to power our clay plants which, in turn, enable the construction of our reinforced concrete walls, often known as D-walls – a critical part of our construction process.

In order to ensure the power demands of these sites are met, generators are often oversized. The size of these generators means that they require more diesel fuel to run, increasing the carbon footprint of the project.

By conducting generator efficiency assessments on site we're making sure we're using the most efficient generator options.

At Bulleen, an assessment of three large generators revealed that they were only operating between 25–30% of their capacity.

By identifying smaller generators that could be used on site and were still able to power the clay plants and other major equipment, the project will save approximately 38 tonnes of carbon per year.

These assessments will continue across the project sites to identify further opportunities for carbon reduction.

38 tonnes

of carbon saved per year through generator optimisation



Generator located at Bulleen construction site



Glossary

ADDITIONAL RESOURCES

Terms used in this report

Carbon footprint

The greenhouse gas emissions impact associated with a product or activity.

Embodied carbon

The greenhouse gas emissions impact associated with all activities involved in the production of a finished material (e.g. activities include: raw material extraction, transport to manufacturing facilities, manufacturing).

Fabricators

A skilled tradesperson who creates value-added products from semi-finished or raw materials, such as the creation of custom steel products from coils or bars of steel.

Green Star rating

A comprehensive system to assess the sustainability performance of buildings. Visit gbca.org.au to learn more.

Inert and non-hazardous construction waste

Materials resulting from construction and demolition activities, including concrete, bricks, paper, plastics, glass, metal, timber, asphalt, and used, rejected or unwanted tyres.

Infrastructure Sustainability (IS) Rating

A comprehensive system to assess the sustainability performance of infrastructure. Visit iscouncil.org to learn more.

Mass timber

An engineered timber product that can replace the steel or concrete structural components of buildings.

Non-potable water

Lower quality water suitable for purposes other than domestic consumption (see potable water), such as toilet flushing or dust suppression.

Potable water

High quality water that is suitable, safe, and approved for domestic consumption as set and regulated by national health and water quality standards. This is the standard supplied by water utilities which is sometimes called town water or reticulated water.

Reinstatement

To restore a material to its original state and/or former location.

Shared use path

A pathway that can be used for both walking and cycling.

Sustainable Development Goals (SDGs)

A set of global goals that frame our collective sustainability challenges and opportunities. Visit sdgs.un.org to learn more.

Topsoil

The uppermost layer of soil, distinguished from other layers of soil for its rich nutrient content and high levels of organic matter.

Tunnel boring machine (TBM)

A machine that excavates soil and rock. TBMs are being used to dig the tunnels for North East Link.

Tunnel inflow water

Groundwater which naturally flows into tunnels as a result of surrounding aquifer systems.

Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation

Visit wurundjeri.com.au to learn more.

Appendix

ADDITIONAL RESOURCES

About IS Ratings

North East Link is committed to using sustainability rating schemes to set benchmarks and track and report performance.

Two versions of the Infrastructure Sustainability Rating are used by North East Link to independently verify our sustainability performance:

- V1.2 was released in 2016 and is used on North East Link early works.
- V2.1 was released in 2021 and is used on North East Link tunnels, Ring Road Completion and Eastern Freeway Upgrades.

The IS Rating consists of:

- Credits which address a specific sustainability challenge or opportunity.
- Levels which set incremental performance requirements.

This table outlines the IS Rating version, credits and levels incorporated into the North East Link sustainability objectives and targets.

THEME	IS RATING VERSION	IS RATING CREDIT	INTENT OF THE CREDIT	IS RATING LEVEL	PERFORMANCE LEVEL REQUIREMENT
Leadership	v1.2	Inn-1	Rewards pioneering initiatives in sustainable design, process or advocacy	N/A	N/A
	v2.1	Inn-1	Rewards innovative initiatives and outcomes in delivering sustainable infrastructure	N/A	N/A
	v1.2	Man-6	Rewards sustainability knowledge sharing initiatives	Level 2	One example of sustainability knowledge shared within the project One example of sustainability knowledge shared beyond project boundary One example of sustainability knowledge shared from outside the project onto the project
	v2.1	Lea-3	Rewards new or updated knowledge on issues and outcomes important to infrastructure sustainability shared between projects and more widely within industry	Level 2	Two examples of sustainability knowledge shared beyond the project boundary, resulting in competency improvement or specific action Two examples of sustainability knowledge shared from outside the project and has been utilised on the project Two examples of sustainability knowledge shared beyond the project boundary to the wider industry
Resource efficiency	v2.1	Rso-1	Rewards the identification, implementation and management of resource efficiency expectations for each phase of the infrastructure life cycle and the achievement of positive circular economy outcomes	Level 2	A Resource Efficiency Strategy and Resource Efficiency Action Plan have been developed Resource efficiency opportunities have been identified and assessed for feasibility Performance targets for circular economy outcomes have been reviewed with external stakeholders and proactively communicated to the market
	v1.2	Mat-1	Rewards design and practice that reduces lifecycle environmental impacts of materials	Level 1.3	Monitor and model materials life cycle impacts across the infrastructure lifecycle Monitoring and modelling demonstrate a 5% reduction in materials life cycle impacts compared to a base case footprint
	v2.1	Rso-6	Rewards the design and construction of the project in ways that reduce the environmental impacts of materials across the life cycle of the infrastructure asset	Level 1	Monitor and model of materials life cycle impacts across the infrastructure life cycle Monitoring and modelling demonstrates a 15% reduction in materials life cycle impacts compared to a base case footprint

THEME	IS RATING VERSION	IS RATING CREDIT	INTENT OF THE CREDIT	IS RATING LEVEL	PERFORMANCE LEVEL REQUIREMENT
Communities	v1.2	Hea-1	To reward a positive contribution to community health and wellbeing	Level 2	Measures to positively contribute to community health and wellbeing for three priority issues has been identified and implemented Monitoring of community health and wellbeing indicators related to the priority issues is undertaken at appropriate intervals during construction of the asset
	v2.1	Leg-1	To reward the delivery of initiatives that contribute pronounced and long-lasting societal or environmental outcomes outside of the project scope already addressed by IS credits	Level 2	Initiatives have been implemented to contribute positively to society or the environment for three priority issues or opportunities Monitoring has been established to demonstrate the success of the legacy initiatives
Climate change	v1.2	Ene-1	To reward monitoring and minimising of energy use and GHG emissions across the infrastructure lifecycle	Level 3	Monitor and model energy use and greenhouse gas emissions across the infrastructure life cycle Monitoring and modelling demonstrates a 30% reduction in greenhouse gas emissions compared to a base case footprint
	v2.1	Ene-1	To reward the reduction of energy use and carbon emissions across the infrastructure life cycle and drive towards net zero carbon	Level 3	Monitor and model energy use and carbon emissions for capital and operational carbon Energy and carbon emissions reduction opportunities have been investigated across the infrastructure life cycle and included in design and construction planning Monitoring and modelling demonstrates a 30% reduction in energy use and carbon emissions for capital and operational carbon compared to a base case footprint
	v1.2	Ene-2	To reward investigation of, and use of, renewable energy	Level 1.5	Opportunities for use of renewable energy are fully investigated Achieve a 20% substitution of energy from renewable sources
	v2.1	Ene-2	To drive towards net zero carbon by increasing the development and use of renewable energy	Level 1.5	Achieve a 50% substitution of capital and operational non-renewable energy use

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