



**NORTH
WESTERN**
PROGRAM ALLIANCE

NORTH WESTERN PROGRAM ALLIANCE

2021 Sustainability Report

OCTOBER 2022



levelcrossings.vic.gov.au

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Acknowledgment of Country

The Alliance acknowledges the Wurundjeri Woi Wurrung People and the Boon Wurrung people of the Kulin Nations who are the traditional custodians of the land on which we work.

The Alliance would like to pay its respect to Elders past, present and emerging.

Source: Artwork by Jordan Lovegrove, Ngarrindjeri, of Dreamtime Creative



Moreland station

ABOUT THIS REPORT


NWPA 2021 Sustainability Report


North Western Program Alliance’s (NWPA) 2021 Sustainability Report embodies the principles of the Global Reporting Index (GRI) to outline our sustainability performance to date.


This report will cover key environmental, economic, and social achievements of the entire NWPA program of works. Additionally, it will highlight a hero project completed in the 2021 calendar year – the Bell to Moreland (B2M) Level Crossing Removal Project (LXRP) . As one of the Alliance’s largest and most complex projects to date, B2M illustrates NWPA’s commitment to sustainability and delivering holistic, long-term benefits to the communities we serve.


NWPA’s sustainability vision includes LXRP’s five strategic objectives, which are known to the Alliance as ‘the Five Greats’. This report will be divided into sections that reflect these Five Greats.


The Five Greats include:

- 

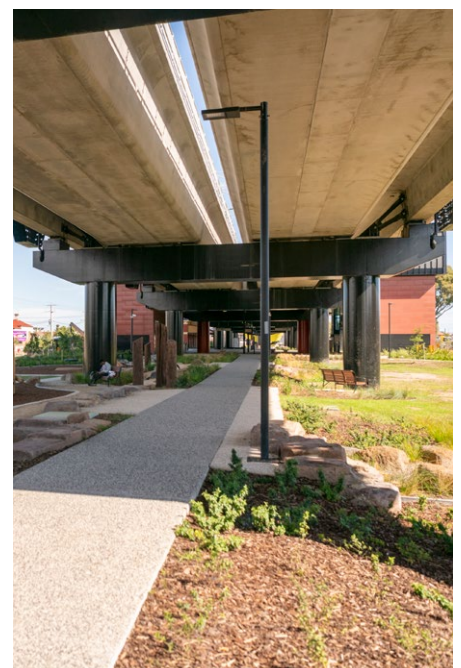
Great Places
(Environmental Sustainability and Urban Design)
- 

Great Partnerships
(Our Workforce)
- 

Great People
(Sustainable Procurement)
- 

Great Engagement
(Our Community)
- 

Great Network
(Innovations and Initiatives)



Moreland station underpass

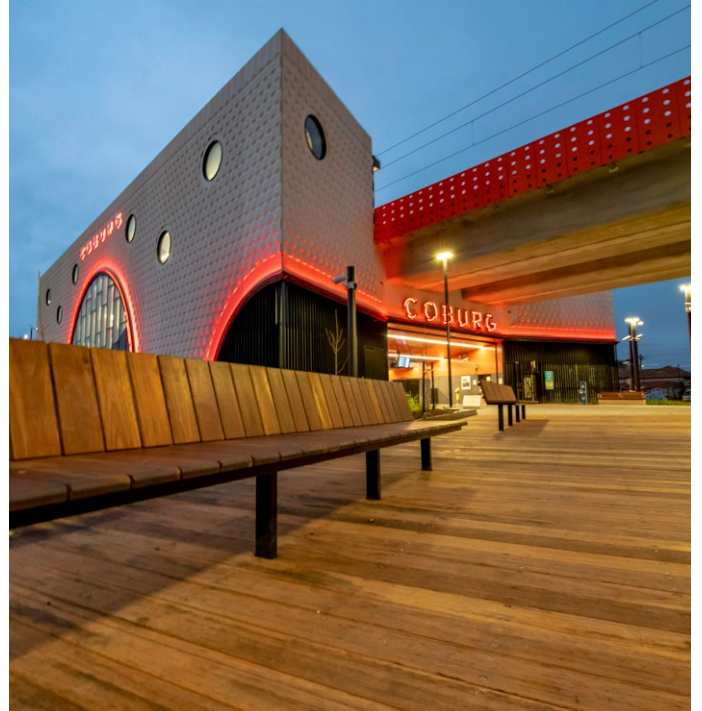
About Bell to Moreland

B2M saw the removal of four level crossings, the construction of a 2.5km elevated rail structure, and two new stations (Coburg and Moreland) in Melbourne's inner north.

The project delivered more than just built-to-standard infrastructure by using this opportunity to implement a place-based design approach to create a new, vibrant urban precinct in the corridor under the rail viaduct.

The overall result has transformed movement and place within the local area. Substantial new open and connected spaces along and adjacent to the rail corridor have been designed with key stakeholder and community needs and input at the forefront using collaborative design processes.

The new precinct benefits the wider community from both a health and environmental perspective, promoting active recreation, inclusion, and a sustainable connection to nature.



Bell to Moreland Level Crossing Removal Project





STEPHEN SHADDOCK

Message from the Alliance General Manager

Since 2017, the NWPA has been successfully removing some of the most dangerous and congested level crossings across metropolitan Melbourne. As at the end of 2021, our team has removed eight level crossings and constructed four new stations with a three further projects in delivery and two in development.

Given the major environmental challenges across the globe, sustainable methods and materials are only becoming more and more important when delivering new infrastructure.

It's not an over-statement to say NWPA is leading the industry in this regard. Our 'power of the program' governance framework is one key example – where we leverage our rolling program of works to target and adopt step-change innovations, continually improving and building on what we've learned.

Our sustainability outcomes and achievements speak for themselves. As a result of our growth mindset, multiple NWPA projects set new industry benchmarks in 2021. Early in the year Reservoir became the first train station in Australia to be awarded a 5 Star Green Star As Built rating from the Green Building Council of Australia (GBCA), only to be surpassed by Coburg Station as part of our Bell to Moreland project. Coburg Station raised the bar again by being awarded a 6 Star Green Star result – making it Australia's first ever 6 star As Built rated train station.

Adding to this list of firsts, Bell to Moreland has also been awarded the highest ever sustainability As-Built rating of 98 points by the Infrastructure Sustainability Council (ISC). This incredible outcome further cements our position as the leading Alliance when it comes to sustainability.

With these industry-recognised achievements under our sustainability belt, it certainly highlights that our team does not limit its thinking to what is possible on a single project, but rather, how we can make a positive impact on future projects and generations.

Our exceptional results reflect NWPA's ability to turn the innovations of today into the industry norms of tomorrow. Put simply, this Alliance continues to excel with every project through empowerment, collaboration and advocacy, to transform the lives of the communities we serve.

I am pleased to share with you some of our endeavours, highlights, and achievements from the year that was, here in 2021 Sustainability Annual Report.



COLM O'NEILL

Message from the Sustainability Team

General Manager (Development and Intelligence)

Sustainability is at the core of each of the NWPAs values of care, empowerment, creativity and excellence. It is through these values that NWPAs incorporates sustainability into all phases of the project life cycle from early development through to commissioning.

This year, sustainability excellence has been incorporated under the Development and Intelligence agenda; we recognised the opportunity to have an early influence on sustainability engagement in the development process. All team members are encouraged and empowered to seek sustainable outcomes in our projects, whether they be social, economic, or environmental.

Guided by LXP's Sustainability Plan and the United Nations' Sustainable Development Goals (SDGs), our 2021 Sustainability Strategy leverages the power of our ongoing program of works to continually advance sustainability outcomes for NWPAs, LXP and the wider construction community.

Our delivery approach ensures best practice sustainability initiatives implemented on a current project become standard business practice on subsequent projects. This 'Power of the Program' framework has been hugely successful not just for NWPAs but within the wider industry having won the Excellence in Governance Outcomes Award at this year's ISC Awards.

The award wins and achievements by NWPAs, such as B2M's 98 ISC rating and Coburg Station's 6 Star Green Star rating, are also a testament to the dedication of the entire team - including our suppliers and subcontractors who have committed to these efforts. I am proud that many initiatives have now been taken up by the broader industry, delivering benefits beyond NWPAs projects. Our results for 2021 serve as a positive indication that the team will continue to be a leader of sustainability within the level crossing program of works.



ABOUT THE LEVEL CROSSING REMOVAL PROJECT

LXRP was established by the Victorian Government to oversee one of the largest rail infrastructure projects in the state's history.

Central to the project is the elimination of 85 level crossings across metropolitan Melbourne by 2025, in addition to other rail network upgrades such as new train stations, track duplication, and new train stabling yards. Their vision of sustainability is to achieve excellent environmental, social, and economic outcomes across all phases of the program in order to deliver an integrated project that connects the community in an environmentally sustainable manner.

The 2019-2023 Sustainability Strategic Plan was developed to enable continuous improvement of the sustainability program and identifies key initiatives to enable LXRP to transition to a proactive approach. The framework that underpins this strategic plan is focused on three areas which align with eight United Nations Sustainable Development Goals (SDGs):

- **Climate Resilience:** Increasing climate resilience by using the best available data to consider climate risks in design, construction, and operation
- **Liveable Communities:** Contributing to a safe, reliable, and affordable transport network, promoting public health, and improving air quality by integrating with active transportation modes and making station precincts more attractive areas in which to live, work, and invest
- **Materials and Energy:** Reduce resource extraction and greenhouse gas emissions by minimising program-wide material and energy use.

LXRP 5 Year Goals



Climate Resilience



Liveable Communities



Materials and Energy



LXRP Sustainability Strategic Plan 2019 – 2023

Act now to create a sustainable and prosperous future

Focus on areas where we have the greatest impact and ability to influence



Materials and energy



Climate resilience



Liveable communities

Integrate sustainability into our core business

Measure performance to enable continuous improvement



Great People



Great Network



Great Engagement



Great Places



Great Partnerships

Delivering great change –

Transforming the way Victorians live, work and travel







ABOUT THE ALLIANCE

North Western Program Alliance

NWPA, consisting of John Holland Group (JHG), Kellogg Brown & Root (KBR), Metro Trains Melbourne (MTM) and LXP, is one of five Alliances delivering the LXP program works across Victoria.

NWPA was established in early 2017 to deliver level crossing removals predominately on the North-Western rail corridor (Craigieburn and Upfield lines) and additional works required to facilitate broader network upgrades.

Removing level crossings and providing alternatives not only reduces road congestion, but delivers significant safety improvements, increases capacity to run more trains on the network, and provides new precincts and open space for local communities to enjoy well into the future. The NWPA team seeks to achieve these outcomes by embodying four key organisational values: care, empowerment, creativity, and excellence, and apply them across all their projects.

The Alliance operates by strengthening existing community engagement and usage of the site beyond simply

transport functionality by actively involving Victorian communities. NWPA simultaneously aims to be both resilient and adaptive to climate change, beneficial to biodiversity, and to enhance the historic character of each project site. LXP and NWPA have a 5-year strategy to deliver transport infrastructure that is climate resilient, promotes human wellbeing and inclusivity, and increases our resource use efficiency. These goals connect to eight of the United Nations Sustainable Development Goals (SDGs) and are measured through performance metrics that are tracked to drive improvement for each project.

Our Purpose

We make a real difference to the lives of people on the project and in the communities in which we work.

Our Vision

We strive to be the most creative, engaged and enthusiastic team, building better places for Victorian to live, work and enjoy.

Our Values



Care
We care about each other



Empowerment
We trust each other



Creativity
We are curious and optimistic






Excellence
We own our roles

2021 Awards

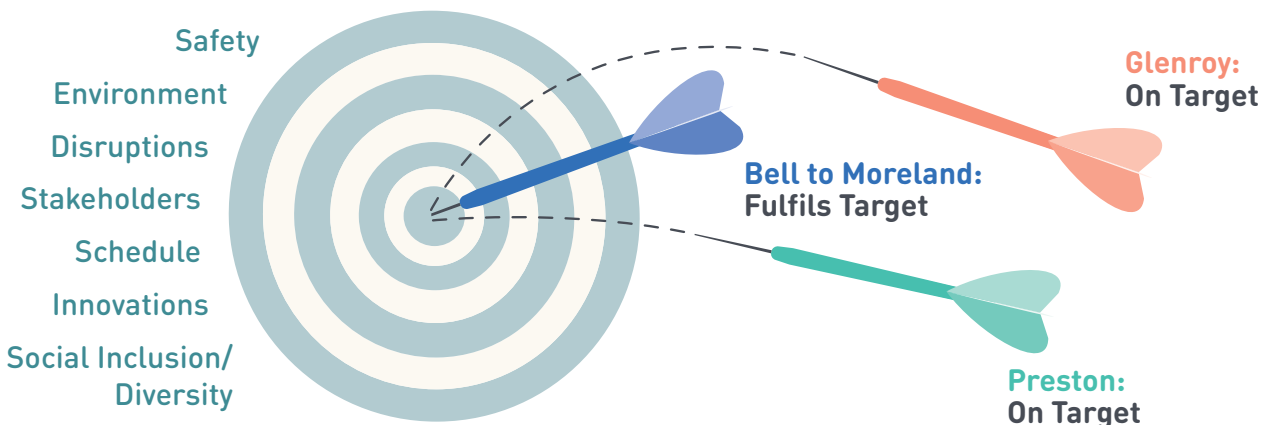
Winning Entries

- 
NWPA
 Excellence in Governance Outcomes, 2021 Infrastructure Sustainability Council Award (Power of the Program)
- 
Reservoir Station
 Sustainability Award, Australasian Railway Industry Awards
- 
Reservoir Station
 Architecture Award (Transport category), GOV Design Awards
- 
NWPA
 Innovation Award, 2021 John Holland Awards (SpoilTRAC innovation)
- 
Reservoir Station
 Urban Design Award, GOV Design Awards
- 
Reservoir Station
 Winner Accolade for Architectural Design, Good Design Awards
- 
Reservoir Station
 Silver Medal for Public & Institutional Architecture, DRIVENxDESIGN Melbourne Design Awards
- 
Reservoir Station
 Silver Medal for Urban Design, DRIVENxDESIGN Melbourne Design Awards

Finalists/Short Listed

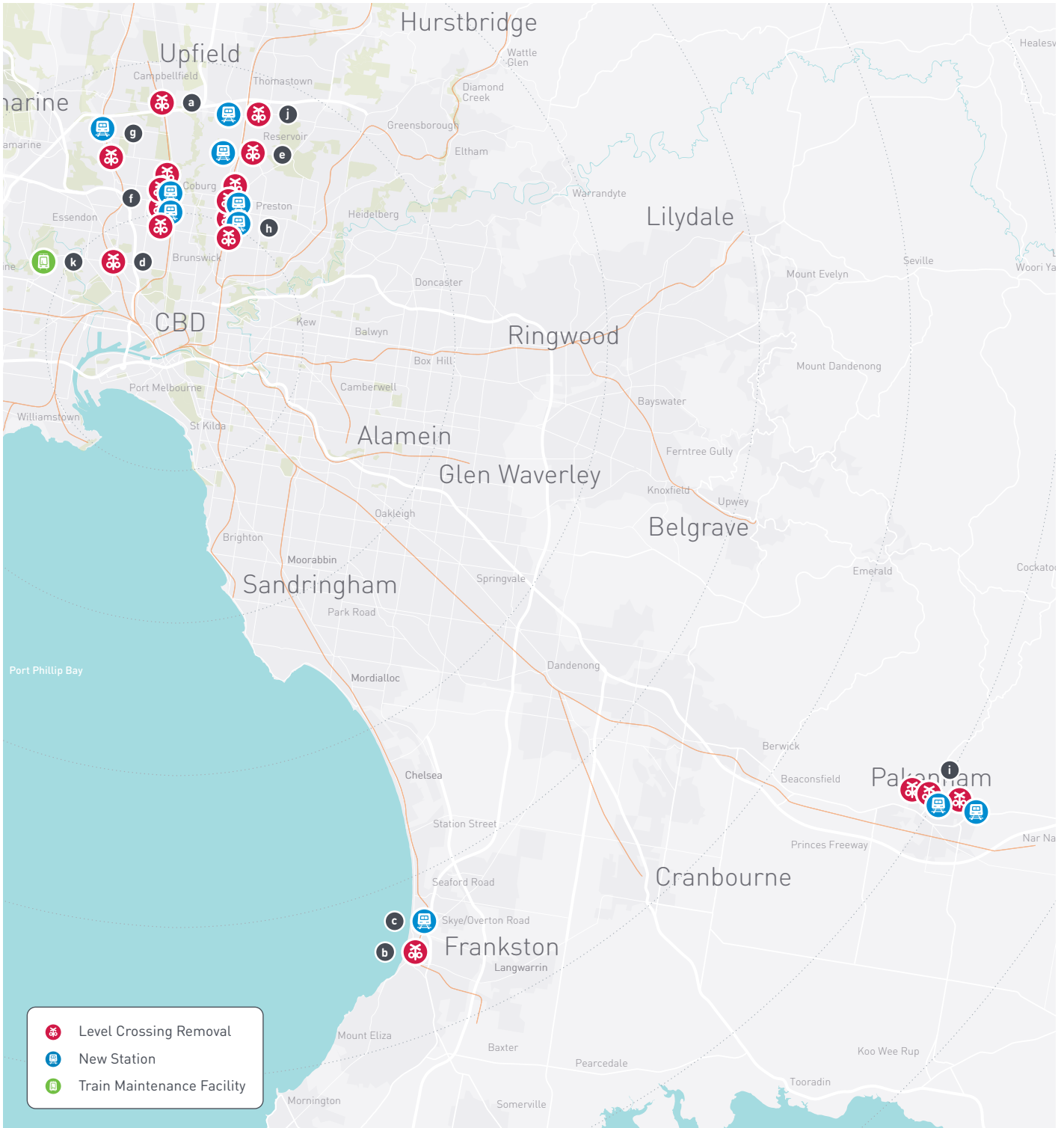
- 
Reservoir Station
 Prix Versailles (awarded 'Special Prize Exterior' for Passenger Stations)
- 
Reservoir Station
 Superior Sustainability Award, Consult Australia Awards
- 
Reservoir Station
 Public Architecture, Sustainable Architecture and Urban Design, Victorian Architecture Awards

Key Result Areas



Key Result Areas	Bell to Moreland	Glenroy	Preston
Safety, Environment, Disruptions, Stakeholders, Schedule, Innovations, and Social Inclusion/Diversity	Fulfils Target	On Target	On Target

NWPA Project Map



-  Level Crossing Removal
-  New Station
-  Train Maintenance Facility

- | | | |
|-----------------------------------|---------------------------------|------------------------|
| a Camp Road | e High Street, Reservoir | i Pakenham |
| b Skye/Overton Road | f Bell to Moreland | j Keon Parade |
| c New Frankston Station | g Glenroy Road | k Maidstone TMF |
| d Buckley Street, Essendon | h Preston | |

Project Timeline

The timeline below showcases NWPA's projects in order of their completion dates.



Buckley Street



Frankston Station



Reservoir Station



Coburg Station



Moreland Station



Glenroy Station



Bell Station

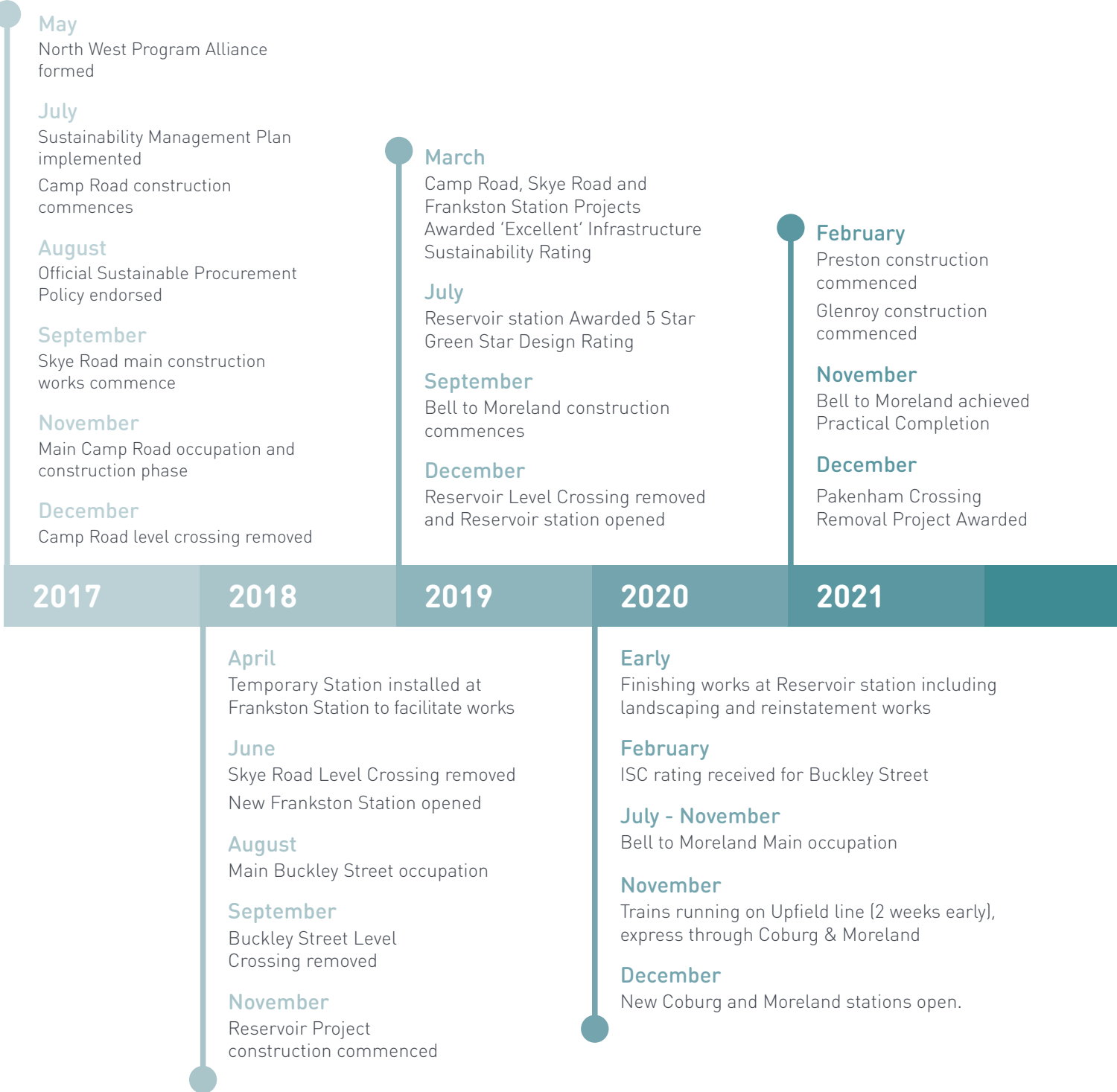


Preston Station



Pakenham Station

Our History



Governance - 'Power of the Program'

In 2020, NWPA rolled out its Sustainability Strategy with the strategic vision to use the power of its rolling program to drive innovation with a focus on governance and knowledge-management.

Through empowerment, collaboration, and passionate advocacy, NWPA is committed to delivering great sustainability results and industry-wide change. Fundamental to this is the application of the 'Power of the Program' framework, which continually improves methods of implementation, builds long-term partnerships and targets step-change innovations.

The Alliance's governance framework is designed to analyse trends every six months to develop innovations that address emerging priorities on each new project. This has resulted in identified opportunities such as recycled materials optimisation, piloting of new ISC rating tool credits, innovation challenges, and the implementation of circular economy principles. From a governance perspective, NWPA's approach contributes to many of the United Nations SDGs. During 2020-2021, specific contributions have been achieved in SDGs 5-13, 15, and 17. Looking ahead, the Power of the Program approach could be used to achieve any SDG suited to the challenges of a particular project.

NWPA's Sustainability Team does not limit its thinking to what is possible on a single project, but rather how they can improve generations of projects, and furthermore peoples' lives. This approach has been recognised by industry bodies, with the NWPA's Power of the Program awarded the ISC Excellence in Governance Outcomes award for 2021. ISC Awards advance leadership by celebrating best practice across the Australia and New Zealand infrastructure sector, with the ISC Excellence in Governance Outcomes award acknowledging how project governance processes deliver outstanding sustainability outcomes across priority issues.

NWPA's Sustainability team is passionate about their Power of the Program initiative, sharing learnings and knowledge captured with the wider industry.



United Nations SDG's achieved through NWPA's sustainability approach throughout 2020-2021

CASE STUDY:

Sustainability Metrics

In 2021, NWPAs introduced an innovation to use the long-term cost of carbon metric (of \$60 per tonne of greenhouse gas emissions) into the decision-making processes of early planning phases for projects.

The tool enhances understanding of the monetary impact of project emission reductions, to easily communicate this impact in the context of other project priorities. This metric considers the long term social and economic impacts of greenhouse gas emissions into the atmosphere (e.g. damage, adaptation, human health). Due to this costing system, emissions have reduced steadily with each NWPAs project, reflecting our continued improvements in governance, value engineering, energy efficient design, smart selection, and use of materials.



Moreland Station

Over the course of completed NWPAs projects to date, we have delivered

76,000 tonnes (CO₂e-) of emissions savings.



NWPAs emission reductions equate to an externalised monetary saving of

\$4,548,000

to the Victorian community.

Program Benefits

NWPAs has delivered \$10 million in sustainability benefits across our Reservoir and Bell to Moreland projects. This is thanks to significant operational energy and water savings over the next 50 years (\$7m) as well as avoided social and economic costs of climate change (\$3m). This metric is calculated through pricing the long-term impacts of climate change at \$60/tonne.

NWPAs has delivered a net sustainability benefit of \$6.2 million on the Bell to Moreland Level Crossing Removal Project, when considering only three benefit parameters (energy, water, cost of carbon). The unquantifiable benefit is significantly more.



Moreland Station

Sustainability Approach

Sustainability has been integral to the development and delivery of NWPA's projects over the past five years, which has seen the removal of eight level crossings and the construction of four new rail stations, with a further three projects underway at the end of 2021.

The sustainability field is never static, with constantly emerging trends, opportunities, and priorities. By embedding sustainability into existing processes and working with key project interfaces, the team have streamlined day-to-day activities. This allows the Sustainability Team to focus on initiatives and innovation. Most importantly, the LXP rolling program of work allows NWPA to continuously improve its performance by applying lessons learnt from past projects to current and future projects almost immediately.

Development and design phases are critical for embedding effective sustainability initiatives. Therefore, NWPA focuses on both using a governance framework underpinned by sustainability and establishing a high-performing team early. This enables the early implementation of innovations and industry-leading outcomes. NWPA is excited at the prospect of continuing to transfer lessons learnt and implementing new initiatives on additional projects currently in the development phase. This enables NWPA to continue to raise industry sustainability benchmarks and drive change.





Bell Street, part of the B2M level crossing removal project

MEASURING SUSTAINABILITY PERFORMANCE

Our commitment














NWPA is committed to integrating economic prosperity, social progress, and environmental benefit as balanced priorities into decision-making at every level of the business and throughout the project lifecycle.

The team aspires to create long-term value for the communities by supporting the objectives of the United Nations SDGs as well as benchmarking against leading sustainable rating tools, notably from Green Building Council of Australia (GBCA) and Infrastructure Sustainability Council (ISC). For more detail on NWPA's performance against sustainability objectives and targets, see Appendix 1.



Moreland Station Separated Use Path

Objectives

 <p>Governance</p> <ul style="list-style-type: none"> • Embedding sustainability into decision making • Demonstrate performance against industry benchmarks • Being accountable and transparent 	 <p>Carbon and Energy Management</p> <ul style="list-style-type: none"> • Strive for reduced carbon footprint • Increase energy efficiency over asset life cycles 	 <p>Environmental Performance</p> <ul style="list-style-type: none"> • Minimise pollution and environmental nuisance
 <p>Water Efficiency</p> <ul style="list-style-type: none"> • Design for climate resilience i.e. Water Sensitive Urban Design • Reuse rainwater, stormwater, wastewater and groundwater 	 <p>Waste</p> <ul style="list-style-type: none"> • Lower waste throughout project lifecycle • Maximise reuse of spoil 	 <p>Materials</p> <ul style="list-style-type: none"> • Reuse materials i.e. Australian made steel products • Substitute traditional materials with sustainable alternatives
 <p>Biodiversity</p> <ul style="list-style-type: none"> • Protect and create biodiversity through: planning, management and financial controls 	 <p>Heritage</p> <ul style="list-style-type: none"> • Protect and promote heritage through design, planning and management controls 	 <p>Liveability</p> <ul style="list-style-type: none"> • Enable and encourage walking, cycling and public transport use • Deliver an inclusive space that facilitates positive interactions • Enhance network reliability
 <p>Community</p> <ul style="list-style-type: none"> • Positively contribute to community health and well-being • Ensure local community engagement in project development 	 <p>Sustainable Procurement</p> <ul style="list-style-type: none"> • Encourage contractors to adopt sustainable procurement practices 	 <p>Workforce Development</p> <ul style="list-style-type: none"> • Support local businesses and employ local people
 <p>Innovation</p> <ul style="list-style-type: none"> • Share learnings and proposals at the Joint Coordination Committee 		

Moreland Station, Separated Cycle Path



Assessment

Infrastructure Sustainability Rating

The Infrastructure Sustainability (IS) rating scheme, developed and administered by ISC, evaluates the sustainability, environmental, social, and economic impacts of infrastructure projects. The rating scheme is applied across design, construction, and operational phases. The rating scheme aims to provide a common language for sustainability in infrastructure across Australia, New Zealand, and beyond. It assists in scoping whole-of-life sustainability risks for projects. IS encourages smarter solutions that foster resource efficiency, waste reduction, and innovative outcomes. This helps build organisational sustainability credentials and reputation.



Green Star

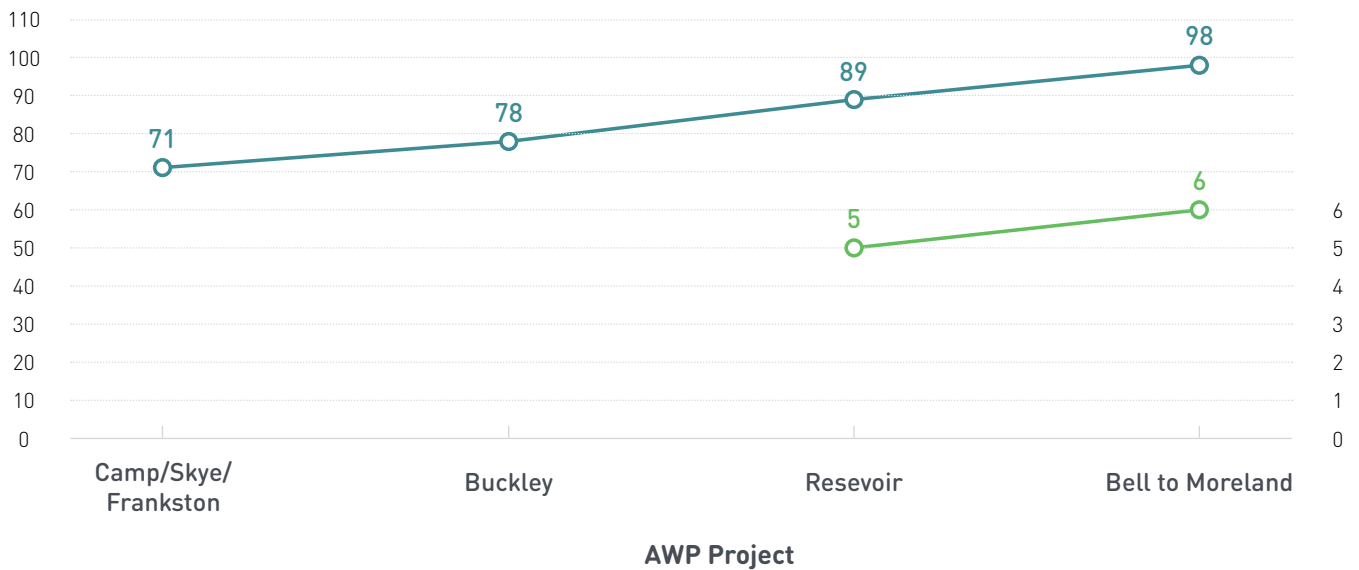
Green Star is an internationally recognised sustainability rating system by GBCA. It assesses the sustainability outcomes from the design and construction of new buildings and major refurbishments. The association promotes sustainable transformation of the built environment by encouraging and rewarding practices that: reduce the impact of climate change, enhance health and quality of life, restore, and protect the planet's biodiversity and ecosystems, drive resilient outcomes for buildings, communities, and homes, and contribute to a sustainable economy.



NWPA Sustainability Assessment

ISCA As-Built

Green Star As-Built



United Nations Sustainable Development Goals

The United Nations SDGs, which came into effect in January 2016, form a blueprint to achieve a fairer and more sustainable future for all. They address global challenges including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice. NWPA is progressively incorporating the SDGs into relevant documentation, plans, and reports as a point of reference to deliver strong sustainability outcomes. The ISC and Green Star ratings also help deliver outcomes aligned with the SDGs.



United Nations 17 SDGs



Approaching Coburg Station

CASE STUDY:

Sustainability Success for Reservoir

Following its completion in 2020, Reservoir Station was the first train station in Australia to be awarded a 5 Star Green Star As-Built rating by GBCA. Using a custom (Melbourne Metro Rail Authority) rating tool, the GBCA encourages industry to create station buildings that are not just green, but healthy, liveable, productive, resilient and sustainable.

Five dedicated sustainability innovations were recognised as part of Reservoir Station's rating result, such as the building's remote energy-water metering and monitoring system - a Victorian-first innovation.

Additionally, at the time it was awarded one of the highest ISC scores in Victoria, receiving a top 'leading' certification. The project targeted an ISC score of 75 and achieved an As-Built score of 89 points, exceeding all expectations.



Reservoir Station

Sustainability Success for Reservoir:

41%



Reduction of electricity demand during peak times compared to a standard train station

Reduction in Portland cement through the inclusion of Fly Ash and Slag (both recycled waste products)

33%



100%



Use of responsibly sourced steel that aims to lower carbon dioxide emissions during production

100%

Reduction in operational water use compared to a standard building



92%



Low volatile organic compounds & low formaldehyde products used to improve the air quality inside the station

CASE STUDY:

Case Study – Bell to Moreland Sets New Sustainability Records

The sustainability bar was raised even higher, with Bell to Moreland (B2M) receiving the highest As Built rating ever to be awarded by ISC with 98 points. Additionally, GBCA awarded Coburg Station a 6-Star Green Star result – making it Australia’s first As Built 6- Star train station.

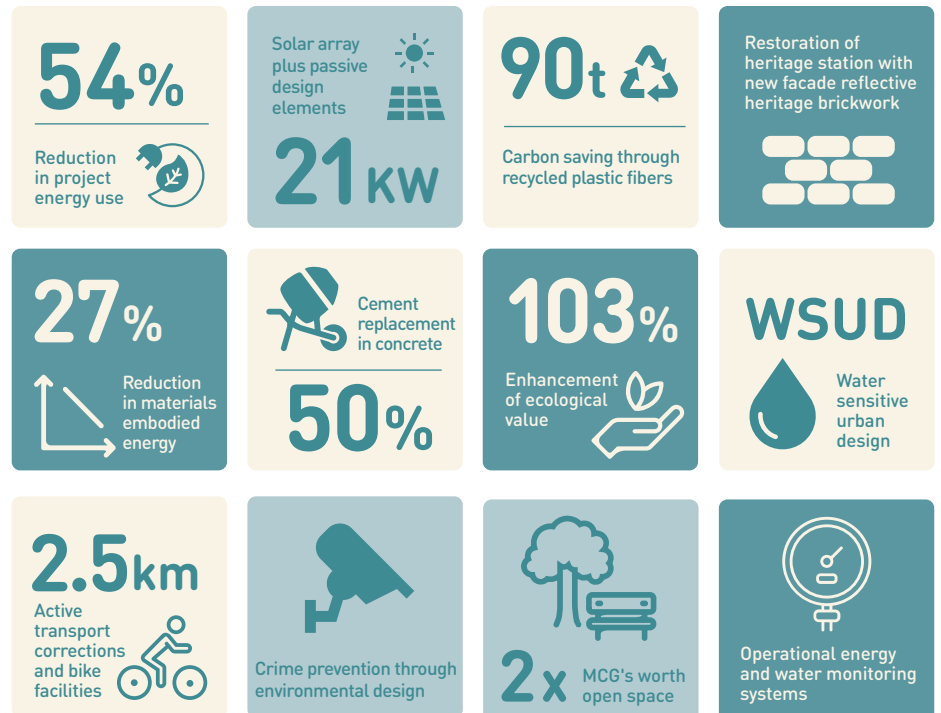
These ratings both supersede the Alliance's previous Australian first ratings for Reservoir Station, which earned an ISC As Built rating of 89 and a 5 Star rating.

B2M embodied sustainable outcomes across the project by integrating management systems, procurement practices, resource use, stakeholder participation, climate change resilience, community health and wellbeing, heritage protection, as well as urban and landscape designs throughout its delivery.



Reynard Street, part of the B2M level crossing removal project

Sustainability highlights on B2M:





Moreland Station Open Space

Strategic Objectives: The Five Greats

GREAT PLACES: ENVIRONMENTAL SUSTAINABILITY

The B2M Precinct not only provides benefits to people, but also provides significant benefits to the surrounding urban ecosystems. The ecological value of the project area increased by 103% compared to before construction, using the GBCA Ecological Calculator.

Tree planting was undertaken to establish a connected canopy across the corridor as well as enhanced habitat links for fauna and pollinators. The project used nature-based solutions as critical climate change resilience measures. Planting palettes, such as woody meadows, were selected to be climate resilient and reduce the urban heat island effect.

The landscaped areas incorporated Water Sensitive Urban Design (WSUD) through the incorporation of a series of planted drainage swales beneath the elevated rail structure. These were designed to collect and manage runoff from the viaducts to passively irrigate softscape areas. Further, NWPA reported an environmental injury frequency rate (EIFR) 0.14 out of 1.7 million hours worked in 2021 demonstrating the Alliance's strong commitment to prioritising environmental outcomes.



Energy and Carbon Emissions

SolarShed

Whilst solar panels are now readily available, their use on short-term site facilities is limited by the costs of installation and removal each time they are relocated.

NWPA found a solution to this problem by using SolarSheds on our sites. SolarShed provides an off-grid energy-efficient site accommodation able to be mobilised quickly. The SolarShed offers several benefits including running standard office equipment for up to eight hours per day and savings equating to \$12,000 per year on diesel, as well as reduced noise for the community at night.



SolarShed at Pakenham

100% Solar Traffic & Pedestrian Control System

NWPA successfully adopted the use of solar-powered portable traffic signals for B2M.

Their installation offered an array of advantages including being fully solar-powered, energy efficiency translating to greenhouse gas emission savings, low maintenance service life with easy operation and reliable, and providing a safe crossing for pedestrians.



Solar Powered Traffic Lights



Solar Powered Traffic Lights Installed at During Bell to Moreland

Resource Use Efficiency

Remote Energy and Water Monitoring

Reservoir Station was the first station in the Melbourne metropolitan train network to implement remote energy and water monitoring at the sub-metering level.

After its success at Reservoir, this remote capability was extended to Coburg and Moreland stations. Innovative metering & monitoring technology provides the asset owner, Metro Trains Melbourne (MTM), the capability to remotely monitor the water and energy performance of the stations in real-time. This allows MTM to track electricity and water usage and identify where usage is coming from, resulting in the ability to increase station resource efficiency and achieve greater economic and environmental outcomes.

Remote Switching

NWPA brought together a team of specialists to develop a 1500V Electrol Remote Isolation Switch to be used on B2M.

This Victorian first solution was deployed, offering ongoing safety, time and cost benefits to LXP and the industry more widely. The remote switch allowed Electrol (MTM's Electrical Systems Control Centre) to isolate power along sections of track, independent of the surrounding network. In the case of B2M, Electrol was able to remotely isolate a section of track to provide the functionality required for a turnback move. The Remote Switch requires far less material and plant to construct compared to tie stations and substations.

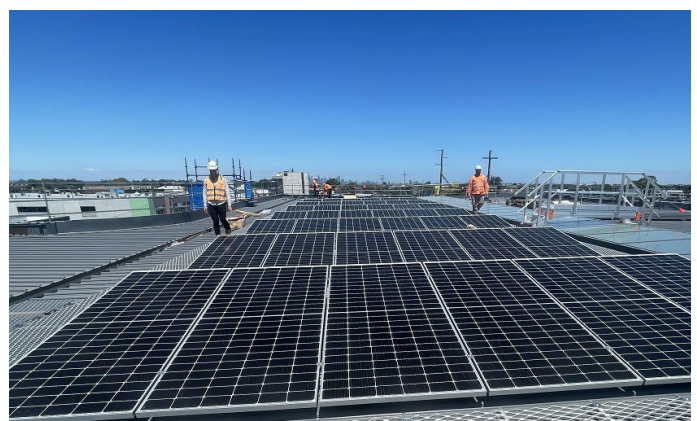
Moreover, the Remote Switch is attached directly to the overhead wiring structures and features a far smaller physical footprint than other alternatives.



Coburg Station



Solar Panel Installation on Concourse Roof



Remote Energy Monitoring through Solar Panels

Waste and Recycling

Waste Management

NWPA has been able to partner with Darebin and Pakenham-based social enterprise 'Outlook', which undertake waste removal service at their projects and site offices.

Outlook has been in the business of waste management for over 25 years and is one of Victoria's largest social enterprises.

They remove a large variety of items, including: concrete, metal, timber, plastic, cardboard, mixed waste and organic waste. The Alliance has worked with Outlook on past projects such as Skye Road - Frankston, Buckley Street - Essendon, High Street - Reservoir, and most recently on B2M, Preston and Glenroy.

Bulk waste from NWPA projects is transported to an Outlook site at either Reservoir or Hampton Park for sorting, where they can divert a significant quantity of material from ending up in landfills.

As an example, of the 1,161.15 tonnes of waste removed from the B2M project, 90% of construction and demolition waste was recycled and diverted from landfill.



Waste Management provider, 'Outlook'

Ecological Sustainability

Wildlife Conservation

Our Project Teams took great care to protect any native wildlife encountered during works, such as birds and possums nesting in tree hollows. The team came across several fauna-related challenges which involved relocating animals away from construction activities.

Any trees where there were signs of fauna were marked-up and flagged-off accordingly, for fauna retrieval on the day of the removal. Across the B2M Project, 10 ringtail possums were collected and relocated to suitable habitats identified by a project ecologist. The trees selected for the possums to inhabit were a suitable distance to maximise their successful integration into a new environment.



Ringtail possums located along B2M project sites

Sustainable Landscaping and Gardening

B2M achieved an outstanding environmental result with 41,000 m² of replanted soft landscaping. This included 1,536 new trees and over 140,000 plants, of which 90,107 were planted in the green spaces below the viaduct. 20,248 of these were planted within the Coburg Station precinct, and 27,780 within the Moreland Station precinct.

The selected plants are drought tolerant, low maintenance, and predominantly native species appropriate to the conditions, which include dry shade, water inundation and partial-full sun. To manage runoff in certain areas, a series of planted drainage swales were implemented beneath the elevated rail structure to collect and manage water from the viaducts and passively irrigate new softscape areas.



Woody meadows planting plot at B2M

Biodiversity

Woody Meadows Project

On B2M, NWPA partnered with the University of Melbourne in a research project trialling the implementation of Woody Meadows, a sustainable landscaping approach comprising indigenous plants with increased climate resilience and biodiversity. Woody Meadows is featured along various parts of the open space corridor of the B2M project corridor

The overall result is low maintenance, drought tolerant plants, attracting local birds and wildlife whilst maintaining an aesthetically pleasing appearance that encourages community connection and enjoyment of the local landscape. Maintenance inputs are also reduced by increasing plant density and coppicing treatments (hard pruning of stems close to the ground) every two to four years which maintains dense canopies, reduces weeds and promotes flowering.

Rare Geraniums

Glenroy's project team discovered a unique large-flowered Crane's bill (Geranium), a type of native Geranium only found in Victoria and once thought to be extinct, amongst the rail line well before construction of the project began. The Geraniums are a native herb with some of the plants near Glenroy estimated to be up to 50 years old.

As the rare species are protected under the Flora and Fauna Guarantee Act 1988, the discovery of Geraniums at Glenroy presented an opportunity to increase the size of their population. Through revegetation, weed management and protecting the biosite with fencing. Seeds were collected from the Geranium population and propagated by VINC (Victorian Indigenous Nurseries Co-Operative) in Fairfield. The process saw the creation of around 200 seedlings to be planted at a future date.



Woody Meadow plantings blossoming at B2M



Critically endangered Geraniums sighted beside Glenroy's rail line





'Community Intersections' by Indigenous artist Kent Morris at the Moreland Road basketball and recreational space.

GREAT PLACES: URBAN DESIGN

B2M's precinct design sought to celebrate and enhance the cultural, historical, and social heritage of the local area. An important aspect of every community, our First Peoples history and culture has been embedded into the precinct through Indigenous co-design.

Inclusivity

Indigenous Co-Design at B2M

NWPA worked collaboratively with Elders from the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation (Wurundjeri Woi Wurrung), with support from WSP (Indigenous Specialist Services) to create and implement a strategy for Indigenous co-design on B2M. The process at B2M resulted in creative and culturally rich elements integrated into the landscape, structures, and art.

Pavement markings installed at the B2M precinct were designed by Barkindji artist, Kent Morris, titled 'Community Intersections', and conveys the importance of coming together and reconnecting with Country. The design was endorsed by Wurundjeri Woi Wurrung and references traditional tools, the clapstick and Tarnuk [Coolamon]. Clapsticks are used as musical instruments and ceremonial aids, whilst the Tarnuk is a vessel for collecting and carrying small items and babies. A central oval shape represents a Koorong [canoe], signifying travel and trade, and the convergence of people coming together along the adjacent Merri Creek.

Wurundjeri Woi Wurrung heritage was also incorporated in the landscape design through a newly created Yarning Circle. Significant consideration went into the design of the yarning circle and relocation of an existing memorial within the new landscaping, which was achieved through the Indigenous Co-Design process. The Wurundjeri Woi Wurrung take their name from the wurun [Manna Gum tree] and djeri [a grub found in or near the Manna Gum]. An existing memorial at Moreland Station honours an old wurun located at the site, from which a Koorong was believed to have been cut. The tree was removed, in 1968, after it became diseased, and a cast was taken of the trunk, which was encased in cement and a plaque placed atop. The memorial has been relocated as the focal point for the Yarning Circle, with wurun saplings planted around its border. This new space continues the custom of utilising yarning circles to reconnect with Country, enable learning as a collective group, to build respectful relationships, and to pass on Traditional Knowledge.



Canoe Tree cast within the Yarning Circle at Moreland Station



Coburg Station

Historical Heritage

The project worked with key stakeholders to preserve and restore the original Coburg and Moreland stations which had served the local community since 1884.

The refurbishment of the stations was a focal point for B2M, with the new design celebrating the existing heritage railway stations by bringing them back to their former glory as spaces for community use. Working alongside Heritage Victoria, Moreland City Council, and other interested parties to discuss issues, concerns, ideas and opportunities, the team systematically worked to determine the best outcome for the heritage stations and their sympathetic integration with the new stations.

Key heritage outcomes include:

- Both stations were repurposed with significant portions restored
- Original internal features were restored
- Windows and doors were replaced with period features
- Chimneys were rebuilt on both buildings
- Both stations were repainted with heritage colours
- Landscaping design and heritage interpretations aimed at integrating the two stations.

Moreland

The design of the Moreland Station precinct was conceived as a large parkland setting containing a contemporary small-scale station building. The design aims to strengthen the historic character of the site, enhancing existing community engagement and usage of the site beyond its transport functionality. The layout of the site seeks to celebrate the historical heritage of Brunswick, enabled through facilitation and engagement with the NWP project team's specialist Heritage Consultant. Outside the heritage Moreland Station building, the original platform tracks have been enhanced with surrounding planting to remind the community of their original utility.

Coburg

Coburg's precinct landscaping seeks to complement the identity of the heritage station and platform. The space between the new and old station buildings is prioritised as an area of public activation, thus reducing the isolation of the heritage building. The retention of the heritage station forecourt and the platform allows events to spill out beyond the building, further increasing activation of the precinct. The placement gives station users an immediate opportunity to engage with the heritage features of the former building whilst approaching the new station.

Cultural Heritage

A key driver for the landscape design of the Coburg Station precinct is the area's significant cultural diversity. The formal linear landscape design aims to establish a connection to the built form that references the relationship between the historic landscapes that surround important cultural and civic buildings in Europe, the Mediterranean, and the Middle East. This design seeks to celebrate and enhance the cultural, historical, and social heritage of Coburg. The cultural significance of this area is interpreted and reinforced through a repetitive ground plane motif across the station.



A piece of the original railway, outside Moreland's original station, has been incorporated into the modern station precinct

CASE STUDY

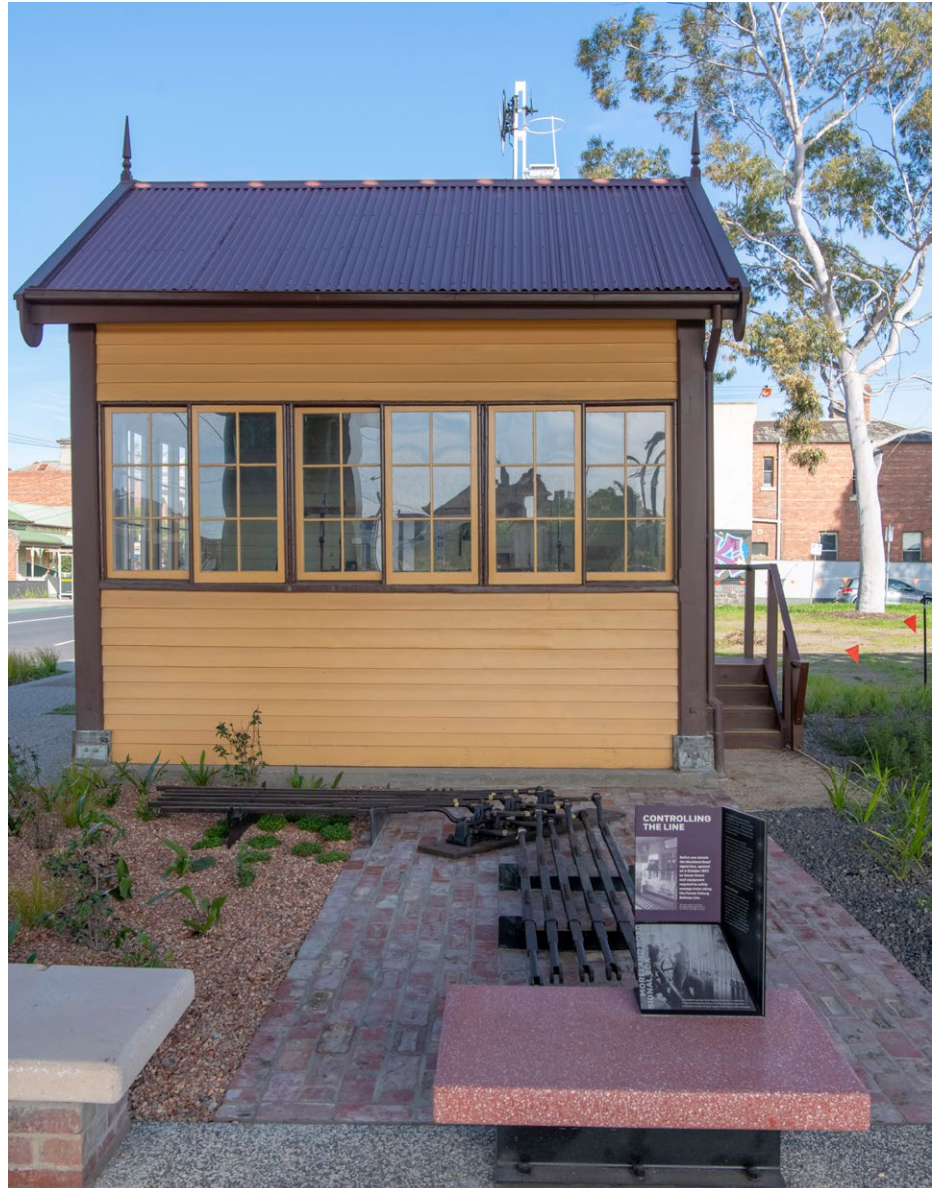
Moreland Station's Signal Hut

A key feature of the Moreland historical precinct is the original signal hut. The signal hut was built around 1889 and formed part of the signalling infrastructure on the Former Coburg Railway Line. Signal huts were used to manage train access to sidings at locations along the track which connected local businesses with the rail network.

To preserve the Moreland Signal Hut, it was removed during the three-month occupation and returned post occupation to its original location where restoration works commenced.

As with the stations, the signal hut underwent extensive restorative works to bring it back to the most optimal condition possible. It was repainted, received new gutters and down pipes, new windows and doors, and replacement weatherboards. The original mechanical levers and signal rods were reinstated in recognition of its past.

“I also love the way that the signal box has been brought back to life. It looks amazing and being able to look through the windows to see all the original machinery is more than I ever expected. I didn't have much confidence that the heritage items would be preserved well with elevated rail but seeing it all come back to life has made me really happy and relieved.”
- [local resident]



Signal Hut at Moreland Station



Interpretive signage of Signal Hut

Coburg's Urban Design

Coburg Station's landscaping design aimed to maximise usable green space by establishing grassy areas coupled with formal rows of tree planting. This provided comfortable shaded areas for residents and commuters.

The linear design supports connected tree canopies and strengthens the overall landscape. The location of garden beds, different pavement types, and seating across the site helps to indicate suggested uses of the space.

The softscape is comprised of garden bed planting, lawn, and rain garden planting associated with drainage requirements. At each of the forecourt spaces there is significant urban furniture including bicycle storage facilities and seating. Large station forecourts to both the north and south have been designed to limit potential conflict points with cyclists and pedestrians, locating both car park users and cyclists along the western edge.

Moreland's Urban Design

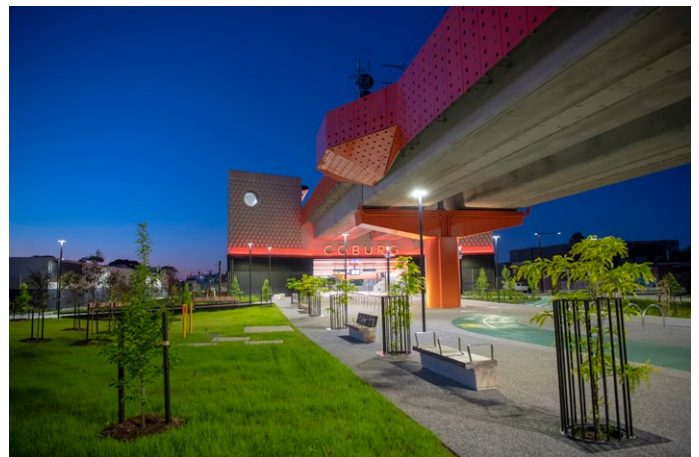
In Brunswick, the modern Moreland Station improves accessibility for commuters and provides sheltered seating on the platforms.

This precinct was envisaged as a community space that brings together nature and engagement through ample amenity and facilities.

Along the corridor, single piers support the dual viaduct design providing long-term benefits that include a small footprint allowing 42,000m² of new trees and plants, and all up 17,000m² of community space including exercise equipment, playable tennis tables, a dog park, rest and breakout areas and bike stations provided for the local community to use and enjoy.



Coburg Station's surrounding vegetation



Coburg Station's surrounding vegetation

Playground within Moreland Station's precinct







YMCA ReBuild Planting at Moreland Station

GREAT PARTNERSHIPS: PROCURING FOR A SUSTAINABLE FUTURE

Throughout 2021, NWPAA was able to continue to support longer-term partnerships with businesses such as: Outlook (waste removal), Clean Force (cleaning services), Local Transit (transportation) Brotherhood of St Laurence (employment services) and Fruit2Work (fruit and milk supply).

The Alliance also developed new partnerships, including: SOS Security (security services), Brite (plant and tree supply), Brunswick Industries (hand sanitiser) and Victorian YMCA Rebuild (labour/office fitout).

Throughout B2M, NWPAA built strong relationships with Aboriginal-owned businesses and proactively sought to include these businesses in the project supply chain. This enabled inclusive processes to be embedded into procurement. On B2M, the Alliance worked with a total of 20 Aboriginal businesses and 23 Social Enterprises.

The Alliance is a significant contributor in supporting pathways and opportunities to break the cycle of disadvantage for some of Australia's most vulnerable and marginalised people, spending \$2,499,363 with social enterprises throughout 2021. Through engaging with priority job seekers, the Alliance displayed the construction industry's ability to be a force for good in the community and play an active role in combatting employment inequalities.



Social Procurement

Social procurement drives positive economic and community outcomes, while providing a benefit to the environment through reduced resource usage and greenhouse gas emissions.

NWPA's social procurement objectives and targets are summarised as:

- Consideration of benefits to disadvantaged groups;
- Workforce development, including 2.5% of total labour hours being undertaken by Aboriginal or Torres Strait Islander People
- Maximise engagement with local industries.



NWPA's Engagement with Social Enterprises for Landscaping



Collaboration with Brunswick Industries for hand sanitisation goods



CASE STUDY:

YMCA Rebuild

YMCA rebuild is a social enterprise providing employment opportunities for disadvantaged youth and young offenders in the 18-25 age range. Working out of Ravenhall Prison, young offenders are trained in several trades, such as plastering, carpentry, painting, testing and tagging, ground maintenance, graffiti removal, and landscaping.

B2M has used services of YMCA Rebuild for its major landscaping efforts, planting around 100,000 trees and shrubs along the corridor in the open space areas.



Greenery planted by YMCA Rebuild

Brunswick Industries

B2M partnered with Brunswick Industries (BI) for the supply of high-grade hand sanitiser, with each bottle manually filled by its employees. The social enterprise organisation supports over 100 people living with a disability by providing them with training opportunities and meaningful part-time work.



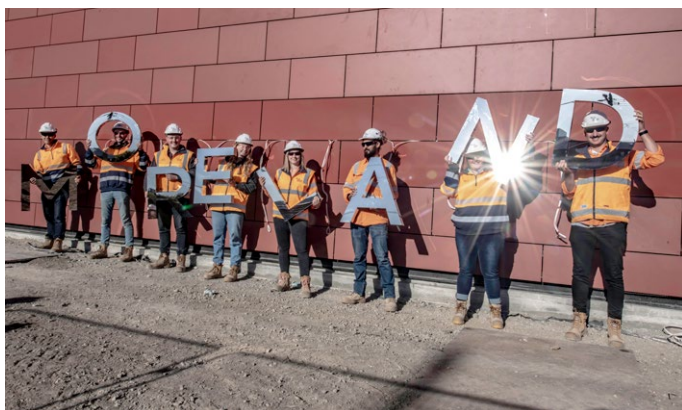
Collaboration with Brunswick Industries



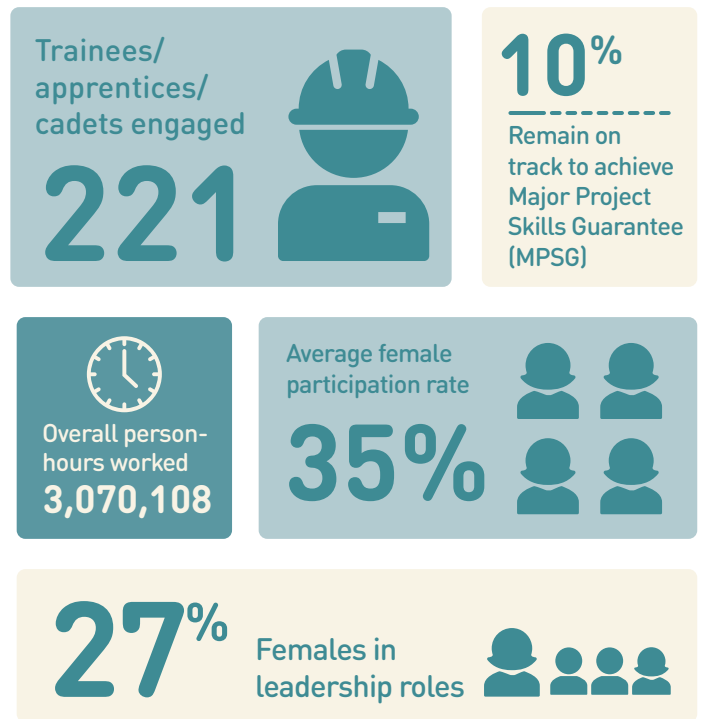
NWPA team at Coburg Station

GREAT PEOPLE: OUR WORKFORCE

NWPA is committed to creating a sustainable workforce which draws from the wonderfully diverse communities we serve. NWPA also continues to work with a network of industry specialists to support people who face barriers to employment and provide access to opportunities on projects.



NWPA team at Moreland Station



Wellbeing: Fatigue Management

Due to its extensive occupation, the risk of worker fatigue at B2M was identified from the outset.

The project implemented an Australian-first innovation to safeguard the mental and physical wellbeing of the workforce, where rostering arrangements went through external assessments to determine the best rostering pattern throughout its occupation.

A Fatigue Management Research Study was undertaken in conjunction with Deakin University to monitor fatigue on different shift patterns. A Fatigue Risk Management System was then rolled out which included an industry-first rostering software called AlertSafe that provided real-time fatigue-risk assessments. The selected rostering pattern reduced the number of hours and continuous night shifts worked by staff, and other benefits included increased flexibility to rotate staff through different disciplines, supporting coverage requirement, and reducing burnout for project personnel.



Site workers captured at Moreland Station

Wellbeing: Safety

B2M was delivered through a long, intense occupation within a tight rail corridor. For this reason, the project was heavily monitored from a safety perspective.

Extensive pre-work and planning, which included consultation with contractors and regulators, were central to ensuring the safety of both everyone onsite and the wider public. The project team implemented new innovative safety measures, while managing unique challenges specific to the project timeframe. This initiative led to a cumulative project total reported injury frequency rate (TRIFR) of 1.75 out of 1.7 million B2M hours worked.



The level crossing being removed at Bell Street



L-Beam Installation at Bell to Moreland



Morning tea set up at Glenroy to celebrate IWD 2021

Social Inclusion Events

NWPA ran numerous internal events throughout the 2021 calendar year to support our people and raise awareness of significant calendar events.

- International Women’s Day (IWD): 8 March 2021 marked IWD with the theme ‘Choose to Challenge’, focusing on the individual responsibility to call out gender bias and inequity. Project teams hosted a morning tea for their onsite workers to enjoy and discuss topics surrounding the theme
- National Reconciliation Week: NWPA marked this week (7 May to 3 June 2021) with a number of different initiatives including offering staff the opportunity to dial into a panel discussion led by Indigenous Cultural Connections, a screening of ‘Living Black’ and a guided cultural tour called *The Scar Tree Walk*
- World Environment Day (WED): NWPA ordered 400 native tubes stock plants from Victorian Indigenous Nurseries Co-operative (VINC). Our project teams at Preston and Glenroy engaged with local gardening groups to regift the plants back into the community
- National Aborigines and Islanders Day Observance Committee. (NAIDOC) week: To celebrate Aboriginal and Torres Strait Islander histories, cultures and achievements, and to acknowledge our First Nations peoples for NAIDOC week (4 – 11 July 2021), NWPA hosted a virtual event with Anti-Racism and Indigenous Rights Activist Adam Goodes



Morning tea set up at Glenroy to celebrate IWD 2021

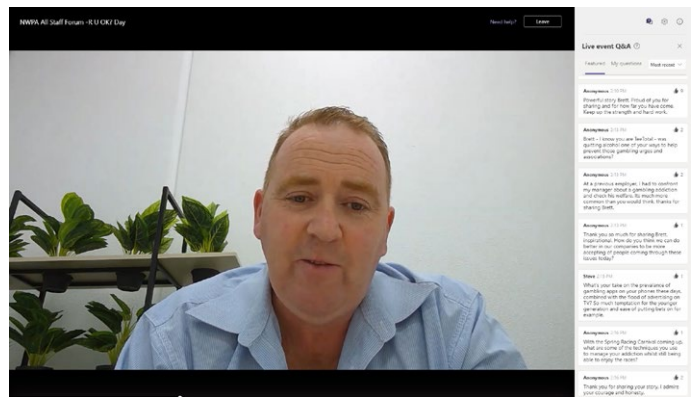


Native tubestock plants delivered to the community to promote WED

- R U OK? Day: NWPAs Health and Safety Manager, Brett Halls, shared his personal mental health journey on a virtual event to promote mental health awareness
- Wear it Purple Day: On 27 August, 2021 NWPAs hosted an online conversation with award-winning trans advocate and former Wear It Purple Board Member, Katherine Wolfgramme. The project teams hosted a Wear It Purple Day morning tea focused on the important and necessary conversations to have in everyday life that centre around sexual orientation and gender identity
- Movember: During the month of November, the team at NWPAs raised \$18,108 to help tackle prostate and testicular cancer, and support mental health and suicide prevention. A great number of people across the Alliance got involved in the cause whether it was through growing facial hair or partaking in adventure challenges such as walking, cycling, and swimming.



Wearit Purple Day celebrated on the Glenroy project



Brett Hall's Presenting at R U OK Day's All Staff Forum



Movember Celebrations at Glenroy



Upfield Separated User Path

GREAT ENGAGEMENT: COMMUNITY

Partnerships were undertaken with three key stakeholders across B2M’s design and planning phases including: local residents, Indigenous community leaders, and academics. Community members, both individually and as part of stakeholder collectives, provided input and direction to the design team.

Promoting Community Value

The original 2.5km Upfield Cycling Corridor, one of Melbourne’s busiest cycle paths, has been widened and separated from pedestrians with upgraded surfaces, additional lighting, and new bicycle repair stations. This dedicated commuter cycleway is the centerpiece of the corridor, promoting active transport and linking the enhanced Moreland and Coburg station precincts.

A fenced off-leash dog park provides a safe new open space for social interaction. Parks, playgrounds, and public sporting facilities accompanied by electric BBQ and shelter structure including urban furniture such as public benches and picnic tables were installed throughout the corridor for recreation, relaxation and exercise.

Public artwork provides landmarking identifiers and enhances the sense of place in the site’s neighbourhood environment. The unique and vibrant character of the local

area is also reflected and celebrated in a Wayfinding Strategy that uses coloured pylons as landmarking identifiers and highlights specific areas. New indoor community spaces are also provided in the restored former Coburg Station.

“This is to pass on my thanks to the designers and construction team for the level crossing work on the Upfield Line. The end results are truly amazing. I just love the cycling and walking paths as well as the new playgrounds. The landscaping is really beautiful and adds so much new green space”— Local Upfield Resident



Upfield Separated User Path

Building Great Connections

NWPA has been continuously demonstrating the importance of cultural diversity by identifying opportunities to improve engagement with Culturally and Linguistically Diverse (CALD) groups about the great work done in their local communities.

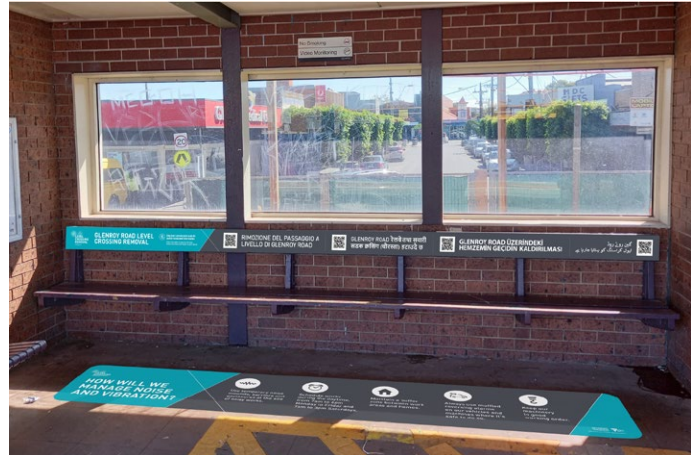
Providing this service is important to support all members of the community that may be impacted by NWPA's works. To help the project build trusting relationships, the team has been supporting CALD communities throughout construction via:

- Translated project signage at B2M, Glenroy and Preston
- All works notifications include a translation table reading 'For more information about this works notice call 9209 0147' in the top five CALD languages
- At Glenroy, the CALD community can find more about the project via translated audio messaging linked to QR codes.

Creating Liveable Cities

Pre-project community consultation was undertaken at B2M to ensure that outcomes surpassed expectations. Community feedback was encouraged for negotiable issues and enabled through surveys, public drop-in sessions, a project hotline, and meetings with local stakeholders.

Surveys were conducted during project development and focused on gathering ideas, desires, and opinions on shared open spaces. Moreover, the team took a holistic approach to design, seeking to create infrastructure that was both functional and socially beneficial.



QR codes displayed at Glenroy station for audio messaging



Screening and hoarding signage at Glenroy



Residents enjoying B2M's station surroundings

CASE STUDY:

Moreland Primary School

The students at Moreland Primary School created artwork for installation on B2M's hoardings during their school holidays. The objective was to reflect both the Australian landscape and future community gardens, with an underlying theme of 'life during lockdown.'

The resulting artwork was uplifting and added some vibrancy for the local residents as they passed by the site. Three sets of the chosen artworks were created, with two installed either side of the station precinct (along Cameron and Station streets in Brunswick).

"This art collaboration enabled students to express their take on life in lockdown, but also envision the future of their local environment. We're thrilled with the artworks." - Communications and Stakeholder Advisor Tim Pilgrim.

Isabel Henderson Kindergarden

NWPA's Preston team were able to perform a good deed for the community, when approached by a local kindergarden for some cut-off logs for their play area.

Isabel Henderson Kindergarden is a non-profit sustainable children's centre that has several initiatives and play areas to help the children connect with and learn about nature.

Situated in Melbourne's inner-north, the centre does their best to create a play area that mimics the bushland. Preston's Environmental team helped with gathering logs for the kindergarden which they then placed in the centre to incorporate into their landscaping.



Artwork from Moreland Primary School



Log donated to Isabel Henderson Kindergarden

CASE STUDY

NWPA's Community Engagement Program

Following the impact of COVID-19 restrictions on the Victorian community and the suspension of in-person engagement activities. In early 2021, the communications and stakeholder engagement team embarked on an expanded business and community engagement program for two of its key projects.

Taking place between March and May at Glenroy and Preston, the engagement program consisted of three key events: the Glenroy Easter Egg Hunt and Festival; the Preston Mother's Day shop local campaign; the Greek Cultural Mural at St John's College at Preston.

All three initiatives were designed to increase the vibrancy of local communities and support businesses surrounding their projects. All these events garnered significant appreciation from the community and traders, including unprompted calls to talk back radio praising the events. The lasting significance of this engagement cannot be understated, achieving a level of community decision-making rarely achieved in construction.

The reputation of NWPA has been significantly enhanced through the delivery of this legacy, cementing strong, positive relationships with highly impacted stakeholders early in the life of these projects. The combined result of all three engagement events has led directly to outstanding community satisfaction.



Glenroy's Easter Egg Hunt



Mother's Day at Preston Market



Moreland Station, Platform 1

GREAT NETWORK: INNOVATIONS

Using the LXP framework, NWPA had 22 approved innovations in 2021. Of these, 19 were rated either high or medium value by LXP and 16 alone were developed for B2M. Innovations across all our departments in 2021 included:

Knowledge Sharing

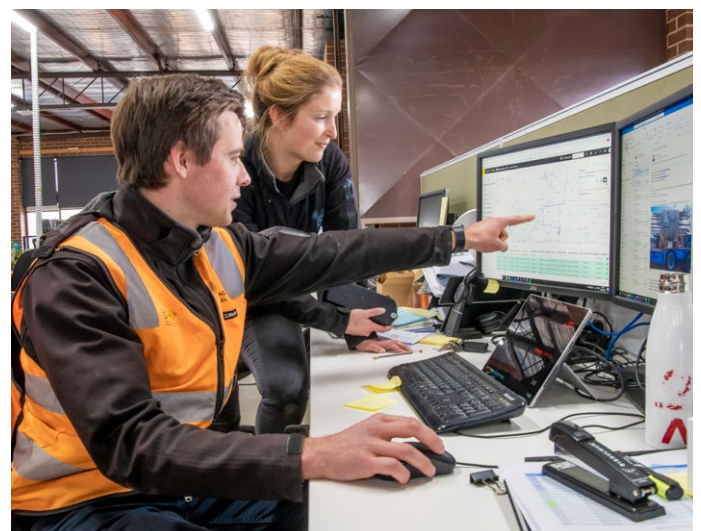
NWPA is passionate about communicating the 'Power of the Program' governance framework to the wider industry by sharing the learnings and knowledge captured throughout projects. The Alliance optimises the use of subcontractor forums to inspire strategic procurement and work with suppliers to encourage communication with their own networks.

For example, concrete subcontractor Fibercon promoted the achievements of its collaboration with NWPA in the 2021 ISC Impact Report. NWPA have also presented at multiple industry conferences including the Engineers Australia Climate Smart Engineering conference on rapid decarbonisation and the Environmental Institute of Australia and New Zealand conference on data use to drive sustainability performance.

\$16 million
Of direct savings for NWPA through innovations

Additional savings for LXP through sharing our innovations with other alliances

\$4 million



Monitoring of Spoil GPS tracking

Initiative: Updated Specifications to Recycled Glass Fines

Traditional concrete is made from a combination of cement, sand, and aggregate. Recycled glass can replace some fine aggregate in the concrete mix, which prevents virgin resources from being extracted and keeps kerbside waste out of the landfill. Victorian transport projects can now incorporate up to 10% unwashed recycled glass fines as aggregates in general paving concrete, due to a trial undertaken by the NWPA.

This follows a trial conducted in 2020 by the LXP on High Street, Reservoir by the University of Melbourne with Sustainability Victoria, Department of Transport (DoT), Hanson Concrete and others. The development is reflected in an update to the DoT Standard Section 703 for general concrete paving.

The allowance for unwashed recycled glass fines will make the use of recycled glass in concrete a more accessible option for rail and road projects, as there are limited wash facilities for glass aggregate available at Victoria’s glass recycling plants.

Initiative: Wireless Concrete Maturity Monitoring

B2M provided an innovative way to assess concrete maturity. ConXEdge was engaged to produce a real-time monitoring device to provide actionable data relating to concrete maturity on site.

The solution came in the form of the ‘Digital ConXsensor’, a low-cost, low-power, wireless mesh network technology. This allowed concrete maturity to be assessed in near real-time and the program to progress at the fastest pace possible.

These sensors were installed in 250 structures, at approximately 400 locations across the project.



Recycled Glass Fines poured at Reservoir Station



Moreland Station paths

Initiative: Use of E-mesh Macro Synthetic Fibres

Steel used to reinforce concrete often has issues with corrosion. This has the potential to reduce the design life of the structure by as much as a few decades, which increases the cost of maintenance, repair, and eventual replacement. The significance of these problems in steel reinforcement have prompted NWPAA to seek alternative materials for the development of concrete pathways.

B2M incorporated recycled plastic, known as E-mesh, in its shared user path to control crack propagation in concrete. Utilising E-mesh mitigates corrosion whilst also being economically and environmentally beneficial. As E-mesh is comprised of 100% recycled macro synthetic fibres, industrial plastic is diverted from landfill and less maintenance over the product lifetime provides cost savings.



E-mesh used in shared user path

Initiative: SpoilTRAC

NWPAA has adopted SpoilTRAC, a smart spoil tracking system, which simplifies a manually intensive process across B2M, Glenroy and Preston. SpoilTRAC uses a sensor that attaches to vehicles using magnets, which then provides live data on its location and tilt position to cloud computing.

Cloud computing is used to attribute soil classification and disposal location information to the data, which is then displayed in real time on dashboards for simple viewing by the team.

Automation ensures data integrity which enhances our ability to manage spoil re-use and disposal. Eliminating the requirement of manually collecting the data saves time (more than four hours each week), costs, and resources.



SpoilTRAC innovation in action

LEGACY

Many of the initiatives first adopted on B2M are already being rolled out on other NWPAs projects Glenroy, Preston, and Pakenham. These initiatives are also being taken up by NWPAs parent companies (JHG, KBR and MTM) as well as other LXP projects.

The Alliance consistently targets step change innovations, while simultaneously embedding previous innovations into each new project until they become business as usual. The Sustainability Team also ensures NWPAs standards are communicated to colleagues, subcontractors, stakeholders, and the wider industry so that new benchmarks become standard practice across the industry.

During 2021, NWPAs accomplished some amazing sustainability outcomes for LXP, their stakeholders and the industry. Highlights include Leading ISC ratings, the first 6-star Green Star train station in Australia, and 76,000 tonnes (CO₂e-) of emissions savings over the course of NWPAs completed projects to date. Concrete trials have also resulted in updated technical specifications for the industry, co-design principles have been embedded into design processes, and costing the price of carbon has been implemented into decision-making and communication tools.

In the short and medium term, legacies include updated technical standards (e.g. The Department of Transport allowing glass fines in concrete), asset owner approval for use of more sustainable materials (e.g. MTM type approvals), and tools and methods to implement and communicate sustainability (e.g. costing the long-term price of carbon). In the longer term, NWPAs demonstrates the significant advantages and improvements to the industry that can be achieved through a strong program of works strategy.

The 'Power of the Program' model is being considered for application in multiple situations across the industry to deliver infrastructure that can overcome complex sustainability challenges. NWPAs's key legacy can be summarised as

'We work to make the innovations of today become the industry norms of tomorrow'.



UPCOMING AGENDA

What's Next?

There are some exciting times ahead for NWPA in 2022. Glenroy is nearing completion, Preston is in the works, and construction is commencing at Pakenham.

NWPA's sustainability goals for the year ahead are driven by three principles: passionate advocacy, empowerment, and excellence.

- Passionately advocate for and target sustainability initiatives in the development phase
- Empower and collaborate with key influencers, such as subcontractors, within each project for the incorporation of sustainability-related changes
- Achieve excellence refining systems, frameworks, and methodologies to assist with leading sustainability-driven outcomes

To achieve these goals, during 2022 our team will be focused on sharing knowledge throughout the industry through speaking engagements, enhancing the uptake of recycled materials and developing step-change innovations that will have industry wide impact.

Passionately
Advocate

Empower &
Collaborate

Achieve
Excellence

Through empowerment, collaboration, and passionate advocacy we will enable excellence in sustainability, which inspires the industry and delivers great change for our communities and LXRP





**LEVEL
CROSSING
REMOVAL**
PROJECT

**NORTH
WESTERN**
PROGRAM ALLIANCE

Appendix 1: Sustainability Performance



Complete



In progress

Theme	Objectives	Target	2021 Status			
			Bell to Moreland	Glenroy	Preston	Pakenham
Governance	Be accountable and transparent on sustainability performance	Be accountable and transparent on sustainability performance	✓	✓	✓	✓
	Have accreditation to ISO 14001 (Environment), ISO 9001 (Quality) and AS/NZS 4801 (OH&S) and will regularly monitor performance	Report sustainability performance quarterly to senior management	✓	✓	✓	✓
Energy and Carbon	Strive for lower carbon transport	Optimise integration with sustainable access modes including walking, cycling, bus and tram networks	✓	✓	✓	✓
	Reduce energy emissions and carbon footprint during both construction and operation	Design buildings to achieve at least a 10% improvement over performance requirements set out in the National Construction Code (NCC), Australia's primary set of technical design and construction provisions for buildings	✓	✓	✓	✓
		Design buildings to achieve at least a 10% improvement over performance requirements set out in the National Construction Code (NCC), Australia's primary set of technical design and construction provisions for buildings	✓	✓	✓	✓
	Support innovative and cost-effective approaches to energy efficiency, low carbon/renewable energy sources, and energy procurement	Investigate all avenues for renewable energy supply for both construction and operation	✓	✓	✓	✓
Environmental performance	Avoid, minimise and offset harm to the environment and loss of biodiversity	Minimise environmental impacts, sources of pollution and environmental nuisance during the works	✓	✓	✓	✓
	Protect and conserve the natural environment	Comply with or exceed environmental obligations for the project	✓	✓	✓	✓
Climate change	Infrastructure, operations and construction will be resilient to the impacts of climate change	Mitigate all extreme and high-priority climate change risks	✓	✓	✓	✓
		Treat a minimum of 50% of medium-priority risks	✓	✓	✓	✓

Theme	Objectives	Target	2021 Status			
			Bell to Moreland	Glenroy	Preston	Pakenham
Water efficiencies	Minimise potable water consumption	Reduce water consumption in construction and operation compared to BA	✓	✓	✓	✓
		Minimise potable water consumption in construction and operation compared to BAU	✓	✓	✓	✓
	Maximise opportunities for reuse of rainwater, stormwater, wastewater, groundwater	Investigate rainwater harvesting and reuse systems at construction sites and all stations	✓	✓	✓	✓
Waste	Minimise waste through project lifecycle and maximise beneficial reuse of spoil	Recycle or divert from landfill: <ul style="list-style-type: none"> 80-100% by volume of spoil; 50-90% by volume of inert and non-hazardous waste; and 40-60% by volume of office waste. 	✓	✓	✓	✓
Materials	Reduce materials impacts through sustainable materials selection	Maximise the use of Australian made steel products where possible in line with local content targets	✓	✓	✓	✓
		5% reduction in materials lifecycle environmental impacts compared to a base case footprint	✓	✓	✓	✓
		Aim to source materials with an ISCA-approved environmental label	✓	✓	✓	✓
		Procure concrete with high recycled content (supplementary cementitious material, aggregates) where practical and allowed by standards	✓	✓	✓	✓
Biodiversity	Protect and create biodiversity through appropriate planning, management and financial controls	Minimise vegetation clearing	✓	✓	✓	✓
		Maximise native landscaping	✓	✓	✓	✓
Heritage	Protect and promote heritage through appropriate design, planning and management controls	Maximise opportunities for archaeological research and future interpretation of archaeological finds	✓	✓	✓	✓
		Opportunities for heritage interpretation identified and implemented at appropriate station precincts	✓	✓	✓	✓

Theme	Objectives	Target	2021 Status			
			Bell to Moreland	Glenroy	Preston	Pakenham
Liveability	Promote improved public transport patronage by maximising connectivity and interchange capabilities	Stations and precincts designed in accordance with the LXP Urban Design Guidelines	✓	✓	✓	✓
	Provide well-designed stations and precincts that are comfortable, accessible, safe and attractive	Implement initiatives which will provide tangible benefits to local community groups during the construction period and beyond the construction period	✓	✓	✓	✓
Workforce	Increase opportunities for employment of local people, participation of local businesses	Utilise apprentices, trainees or engineering cadets for at least 10% of all hours worked	✓	✓	✓	✓
		Ensure that at least 2.5% of all hours worked are undertaken by Aboriginal or Torres Strait Island employees	✓	✓	✓	✓
Sustainable Procurement	Influence contractors, subcontractors and materials suppliers to adopt sustainability objectives in their works and procurement	All contractors to be requested to provide their sustainability policy and details of implementation	✓	✓	✓	✓
		All contractors to be requested to provide their sustainability policy and details of implementation	✓	✓	✓	✓
		Pre-award evaluation to be utilised to assess sustainable performance of contractors prior to contract award	✓	✓	✓	✓
		Subcontractors required to report against sustainability targets monthly	✓	✓	✓	✓
		Social procurement targets: Aboriginal and Torres Strait Islander engagement target is 2.5% of labour hours	✓	✓	✓	✓
		Major Project Skills Guarantee (MPSG) is 10% of deemed hours (MPSG is hours contributed by trainees, apprentices or cadets)	✓	✓	✓	✓
		Social procurement is a dollar target 3% of project budget which includes spends with social enterprises, aboriginal businesses and employment and training costs of marginalised and underrepresented groups	✓	✓	✓	✓

Theme	Objectives	Target	2021 Status			
			Bell to Moreland	Glenroy	Preston	Pakenham
Innovation	Encourage the pioneering of innovation in sustainable design, process or advocacy that seeks continuous improvement to promote new ideas and thinking	Provide positive and active contribution to all the Level Crossing Alliances	✓	✓	✓	✓
Community	Support and enhance social, cultural and community wellbeing	Ensure community and local stakeholder engagement and involvement in the development of the project	✓	✓	✓	✓
		Create opportunities for local business involvement during the delivery phase	✓	✓	✓	✓
		Minimise negative impact on the community and local businesses during construction and operation	✓	✓	✓	✓