

Transport
for NSW

Transport Sustainability Report 2021-22





Acknowledgement of Country

Transport for NSW acknowledges Aboriginal people as the traditional custodians of the lands and waterways on which we serve customers, build infrastructure and deliver projects, and we are grateful to Elders past and present for their continual leadership and care for Country.

Many of the transport routes of today follow traditional Songlines and pathways on Country that Aboriginal people have cared for and followed, for tens of thousands of years.

We respect Aboriginal peoples, cultures and traditions, acknowledging the past and a shared history, and we celebrate the world's oldest continuing culture.

Acknowledging the past and committing to improve outcomes for Aboriginal peoples means we take responsibility for the impact that Transport can have by connecting Aboriginal people economically and socially. We will be guided by Aboriginal people when developing Transport solutions.

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A message from Rob Sharp



Rob Sharp, Secretary
Transport for NSW

At Transport for NSW, our purpose is to make NSW a better place to live, work and visit, and we do this by putting our customers and communities at the centre of everything we do.

Guided by our strategic priorities, we are focused on delivering a safe, reliable and sustainable transport system; one that offers integrated multimodal options and innovative transport solutions that enhance customer experiences and deliver social, economic and environmental benefits.

This past year, with many areas across the state facing extreme weather, the challenges of climate change have been brought to the fore, highlighting the criticality of the transition to a low-carbon economy.

At Transport, we understand our responsibility to make good long-term decisions that will enable a resilient network, minimise our energy and carbon emissions, and help our communities and industry adapt and prosper. With the unprecedented investment in our transport network over recent years helping shape our

state for future generations, it is crucial we make sustainable choices that consider the direct and indirect social, economic and environmental benefits of our projects.

There is an increasing expectation from the global community to demonstrate how sustainability is factored into decision-making and at Transport we are committed to ongoing transparency around the work we are doing, from our operations to the delivery of our infrastructure projects.

We have made great progress in unifying our sustainability targets across our incredibly diverse portfolio, but we know there is much more to do. Each year, our Sustainability Report provides an opportunity to share how we are performing against our eight focus areas, highlight upcoming initiatives, and reflect on the challenges we face.

In the last year we saw major progress across our network including the transition of our Sydney Trains and NSW TrainLink electrified network to zero emissions, resulting in a 50 per cent reduction in Transport's overall

operational greenhouse gas emissions. This significant shift, achieved through a 100 per cent renewable electricity supply agreement, has catapulted our rail operations towards our operational target of net zero emissions, four years ahead of schedule.

The 2021/2022 financial year also brought many challenges for our communities across the state. From the ongoing impacts of COVID-19 to the many areas impacted by severe flooding, the resilience of our people, our network and our state have been tested. Throughout this report you'll find details and examples of our approach to improving climate resilience and delivering a climate resilient network.

With our significant infrastructure spend, Transport also has an important leadership role to play in enabling industry to make sustainable decisions and reduce its ongoing impact. Our success in this reporting period would not have been achieved without our delivery partners—and we continue to actively engage, collaborate and share knowledge

with our partners to drive an uplift in sustainability across the industry and identify innovative solutions that leverage new technologies to drive sustainable outcomes.

Our second annual Sustainability Report is evidence of our ongoing commitment to transparency, accountability and most importantly, progress, in this critical space. Our eight sustainability focus areas are aligned to and support the United Nations Sustainable Development Goals (SDGs) and we are proud to be making progress against these goals through the actions we are taking.

Across the globe we are seeing a strong acceleration towards a decarbonised economy and here at Transport we will remain focused on our commitment to reducing emissions across our network and showing leadership in tackling some of societies biggest challenges.

In the year ahead, we will continue to embed sustainability into our decision-making as we work towards our sustainability vision of a NSW where every journey is people and planet positive.

A message from George Shearer



George Shearer
Director Aboriginal Engagement

Transport for NSW is continuing our strong commitment of placing sustainability firmly within our business strategy. For Aboriginal people, sustainability is a holistic concept, and we believe that if you look after Country, Country will look after you. The infrastructure built, owned and managed by Transport has a large physical footprint across our country, but no matter what the infrastructure - be it road, rail or buildings - it starts with Country.

For tens of thousands of years, Aboriginal people have cared for and been connected to Country and our knowledge and practices have refined our sustainability strategies. Our connection is not just to the natural environment, but the world around us, the world we live in and also the world within ourselves, so when we take care of Country we are also taking care of ourselves and future generations.

Aboriginal people and communities play vital roles when it comes to how we respond to climate change. I am pleased to see that at Transport we are

continuing our work with Aboriginal communities to learn and incorporate traditional knowledge and practices to assist us in climate adaptation and resilience.

Over the reporting period, we have embedded our Aboriginal Engagement Principles and Consultation Framework, Aboriginal Culture and Heritage Framework, Aboriginal Participation Strategy, Aboriginal Arts Strategy and Aboriginal Cultural Protocol. We are bringing diverse people and disciplines from across the organisation to work together and set the direction for how Transport will support Aboriginal social wellbeing, economic activity and prosperity as well as environmental responsibilities.

Language strengthens connections with culture and identity and improves the wellbeing of people. Our teams working on the Nelson Bay Road Duplication project in Worimi Country have optimised the importance of storytelling by working with the local community to compose a song in the Gathang language and an

accompanying choreographed dance. This partnership with the Worimi Aboriginal community has supported their aspiration for language and culture to be passed down to future generations. It also supported the NSW Aboriginal Languages Act which seeks to promote, reawaken, nurture and grow Aboriginal languages across NSW.

It is important that we listen to Aboriginal people and communities and embrace their knowledge and learnings. We have actively looked for opportunities to integrate the deep knowledge, stories and best practice examples from Aboriginal peoples as we strive to improve the sustainability of our operations.

Transport is spending billions of dollars delivering infrastructure and procuring goods and services. Using this procurement strength is the most significant opportunity to support Aboriginal employment, Aboriginal businesses and develop capability building programs. By partnering with the Aboriginal business sector,

we grow the market and enable the ongoing process of choices for Aboriginal people, helping them meet their social, cultural and economic needs - their way. We still have work to do, but our initiatives over the reporting period have increased Aboriginal participation through procurement contracts, strengthened our community engagement opportunities and supported our First Nations economy.

Transport has continued to drive action and improve outcomes for Aboriginal people and the environment. We must continue to involve Aboriginal people in decision making at the earliest opportunity and ensure Aboriginal people have a voice about Aboriginal business, and that Aboriginal people's rights and their culture are respected and upheld. By embedding the value of starting with Country and continuing our commitment to supporting storytelling, reconciliation and enabling self-determination we will continue to look after Country, so that Country will look after us.

A message from Julie Morgan



Julie Morgan
Executive Director
Environment & Sustainability

I am extremely proud of the work across Transport against the goals in our Sustainability Plan. Our inaugural sustainability report and plan was released at the end of 2021 and through this reporting period we have set up the frameworks, systems and processes to ensure we can deliver against our goals as a collective.

Transport has always done well in delivering against the sustainability targets within our projects, and over the past year we have focused on coming together and unifying our collective commitments. Our second Sustainability Report provides evidence of our progress so far and commits to ongoing transparency and accountability as we aspire to lead by example.

Sustainability has always been part of what we do at Transport, but we're committed to increasing our efforts across the board. Our transport networks stretch the breadth of NSW and connect

communities and their people. It's critical that we are considering the long-term environmental, economic and social outcomes and setting ambitious targets to improve our sustainability performance.

Our annual report provides a clear sustainability vision for our customers, our community and our people at Transport, and enables us to reflect on the achievements and benchmark our success.

From partnering with local Aboriginal communities, to constructing roads using recycled glass bottles, and creating corridors that provide a safe passage for our fauna – there are some amazing, and in some cases – industry leading – initiatives being led by our people.

I am very proud of the commitment to sustainability demonstrated across our organisation and some of our highlights include:

- shifted our rail operations to a secure cost-effective low emissions energy supply by procuring electricity for the Sydney Train network from renewable sources. We reached this goal four years ahead of target.
- implementing sustainable practices during the construction and operational phases of our new Mindyarra Maintenance Centre in Dubbo which support an overall reduction in environmental impacts for the centre's duration.
- partnering with UNSW, John Holland CPB joint venture and the Environment Protection Agency to research and trial a new geopolymer concrete mix that will significantly reduce the emissions associated with concrete.
- sharing Aboriginal cultural heritage through an innovative partnership with the Worimi Local Aboriginal Council and Saretta Art and Design from our people on the Nelson Bay road upgrade project.

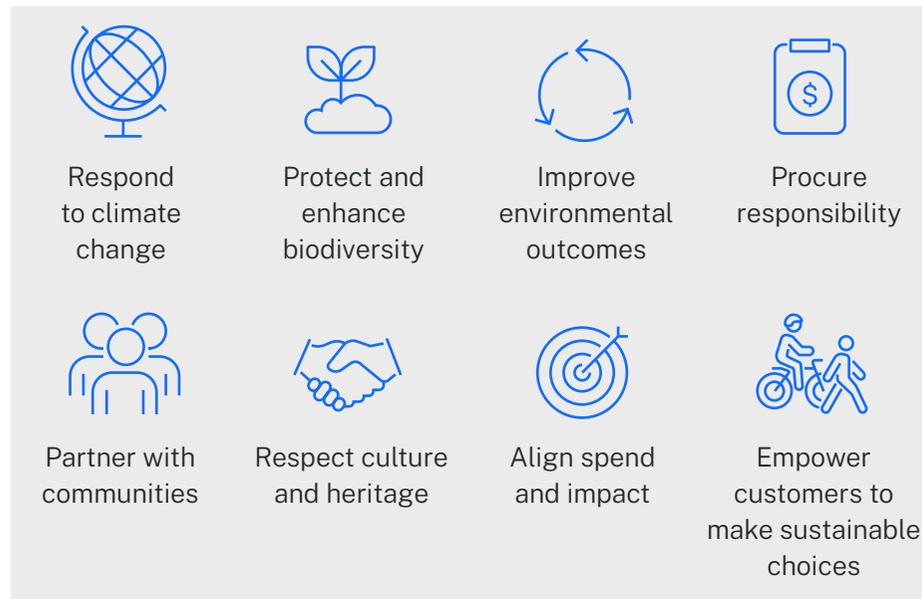
The talent and ingenuity of our people never ceases to amaze me, and I was proud to see our people and teams recognised during the past 12 months. Some of these acknowledgements include: winners of the NSW Sustainability Awards – Banksia Foundation in the NSW Clean Energy Technology category for Como Station and a finalist in the NSW Net Zero Action category for our Sydney Trains initiative, Outstanding Achievement IS Design Rating for the Rooty Hill Station upgrade and multi-storey car park, to name just a few.

This Sustainability Report shows we have made great progress, but we know that there is still significant work ahead to realise our ambitions. We will continue to empower our people and customers to make sustainable decisions and to find innovative solutions so that we can live in a NSW where every journey is people and planet positive.

About this report

At Transport for NSW (Transport), sustainability is a critical factor in our decision making.

We are also committed to transparency around the work that we do. This report is published annually and aligned to the financial year 1 July 2021–30 June 2022. This is our second report, and the structure follows our eight sustainability focus areas:



These focus areas align with and support the United Nations Sustainable Development Goals (SDGs). The aim of the SDGs is to resolve the major global challenges we face and provide a better and more sustainable future for us all.

Over the coming years, we aim to improve our reporting framework, establishing and reporting on consistent performance data annually. We strive to ensure our reporting ability enables us to provide accurate, high quality and transparent sustainability reporting.

How to read this report

Transport has used a range of international best practice reporting frameworks for guidance in the development of this report. It should be read in conjunction with:

- Transport for NSW Annual Report
- Transport Sustainability Plan
- Sydney Metro Sustainability Report.

In this report, the terms ‘Transport’, ‘our business’, ‘us’, ‘we’, ‘our’ all refer to Transport for NSW and exclude Transport and Infrastructure Cluster entities that are not part of Transport for NSW.¹ Unless otherwise stated, the data in this report relates to all parts of Transport including Sydney Trains, NSW TrainLink and Sydney Metro.

¹ Transport and Infrastructure Cluster independent entities are excluded from the scope of this report. Refer to page 9 for further details.

About Transport

Transport leads the development, delivery and operation of safe, integrated, efficient and sustainable transport systems for the people of NSW.

Our purpose is to connect customers and communities with a safe, reliable, sustainable and integrated transport system. Our focus continues to be on putting our customers and communities at the centre of everything we do, and we aim to deliver customer-focused services and projects.

We are making NSW a better place to live, work and visit by delivering sustainable outcomes as we work hand-in-hand with our operating agencies, private operators and industry partners.

We also lead the procurement of transport infrastructure and oversee delivery, through project delivery offices and industry delivery partners. Safety for our people and our customers is a key priority for us and our delivery partners.

With such a significant geographical reach and infrastructure investment, we have the ability and the capacity to influence, act and lead on a significant scale. We aim to leave a lasting environmental and social legacy for the people of NSW.

Infrastructure Investment

Delivered **\$15.9** billion¹ of road, public transport and freight infrastructure in NSW in 2021-22, with **\$76.7** billion expected to be invested over the next four years to 2024-25

25 major infrastructure projects opened in 2021-22, including **7** in regional NSW

¹ Including projects delivered on behalf of Transport Asset Holding Entity (TAHE)

Figure 1: Key Facts



Patronage on public transport

Train **167,623,671** Metro **10,982,530**

Bus **157,166,305** Ferry **7,296,571**

Light rail **17,993,260**



Roads and waterways

7,038,211 registered motor vehicles in NSW

239,704 recreational vessel registrations (including personal watercraft)

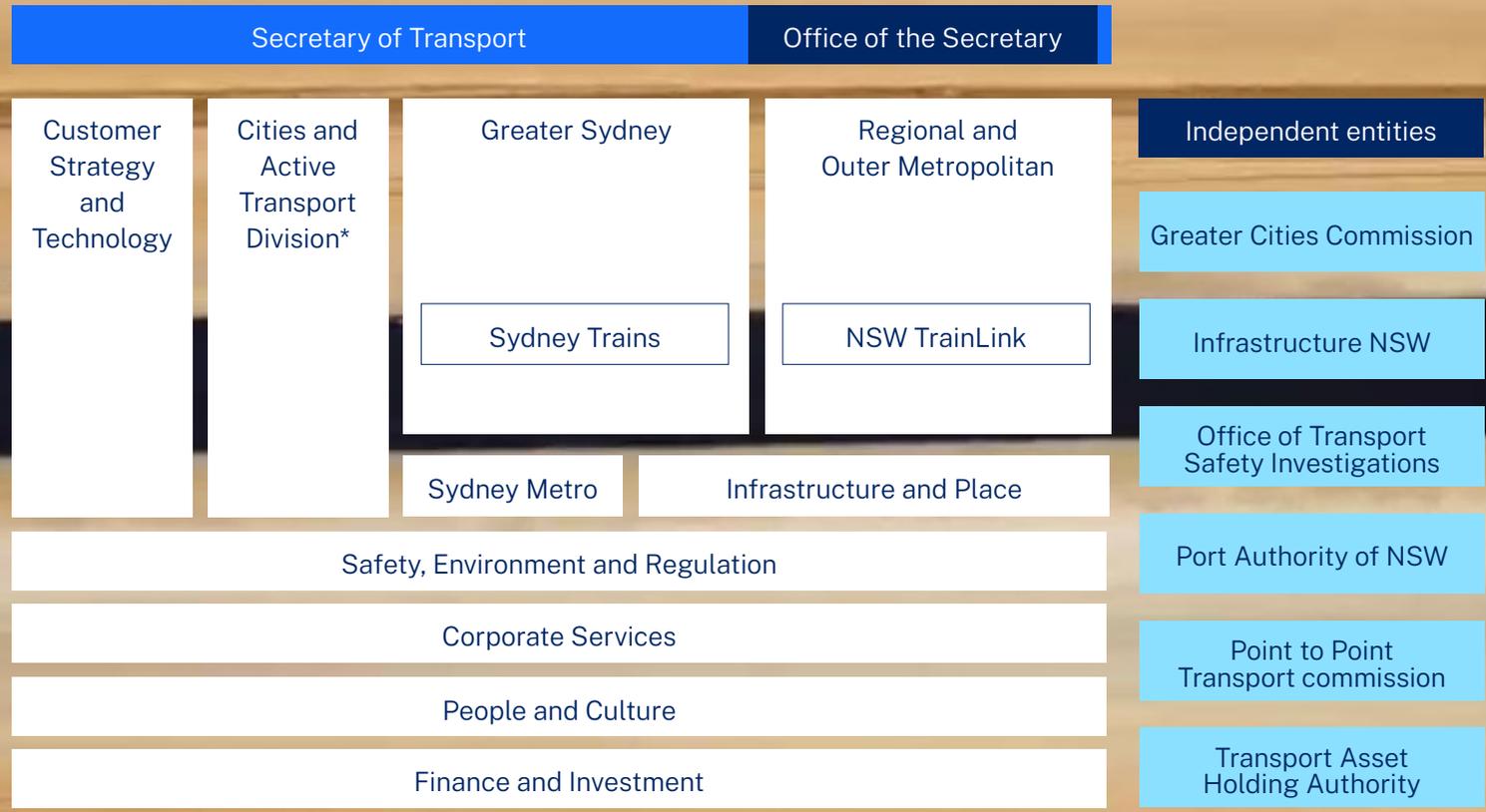


Our people

More than **28,790** people work for Transport for NSW, its operating agencies and partners

Our Structure

Transport's operating model



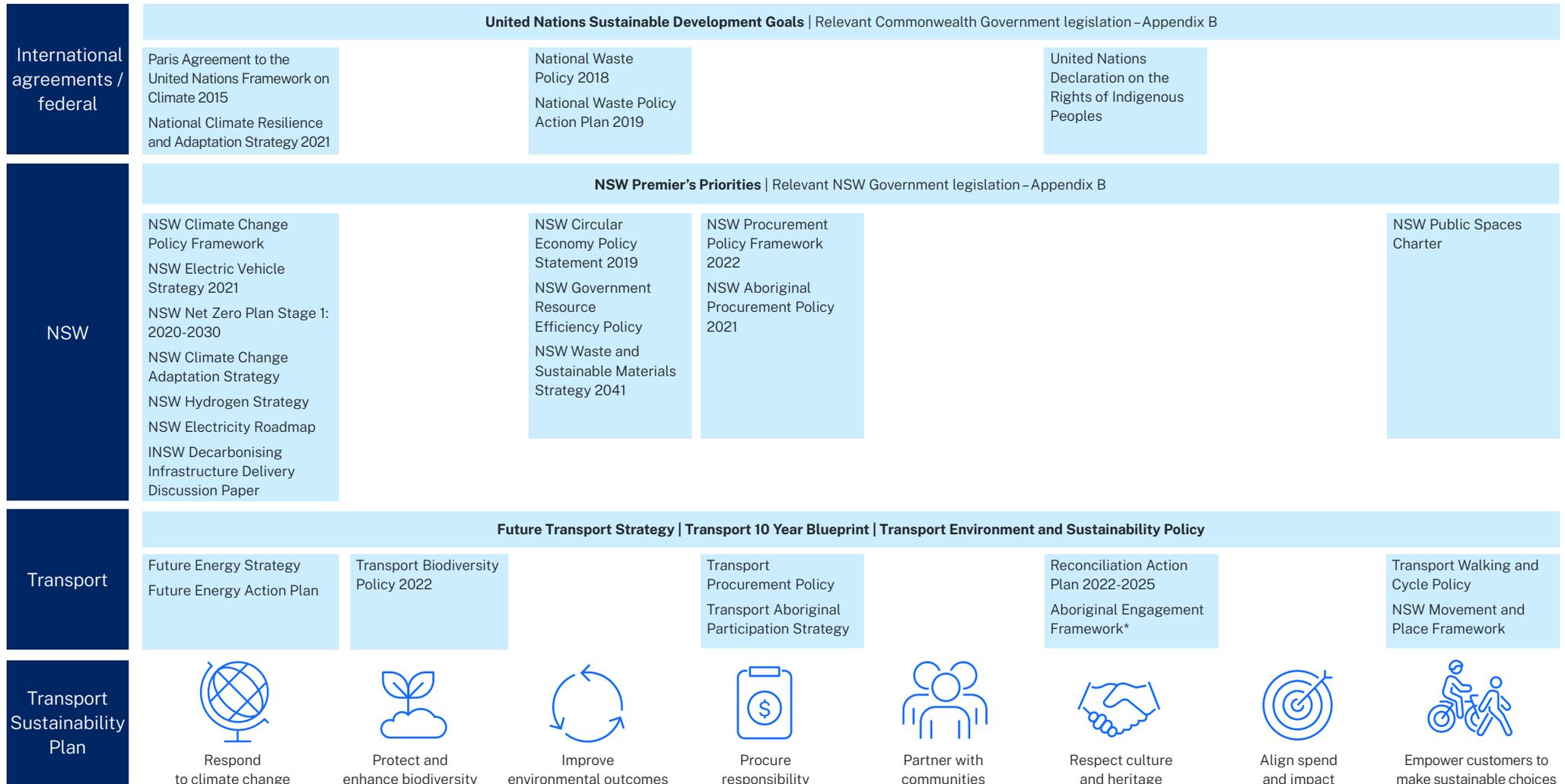
*Includes some staff employed by Department of Transport



Sustainability at Transport

Our approach to sustainability is guided by the policy context in which we operate and responds to a number of key strategic and regulatory drivers.

At Transport, sustainability means enabling, delivering and operating a transport system that meets the needs of the present whilst safeguarding the future by optimising environmental, social and economic outcomes.



*Aboriginal Engagement Framework – Ngiyani Winagaybuwan Bunmay and associated frameworks and protocols

Transport is steadfast in our commitment to being environmentally and socially responsible in the way we work, and in embedding economic sustainability into our decision making. We are committed to ensuring our transport system benefits our customers, the community and the economy, while being resilient now and into the future.

This is reflected in our triple bottom line approach to sustainability and will ensure we achieve our sustainability vision of a NSW where every journey is people and planet positive.

Our Vision

NSW where every journey is people and planet positive.

Underpinning this vision, our Sustainability Plan 2021 outlines eight key focus areas and associated goals which guide our activities.

Our **eight sustainability focus areas** are:



Respond to climate change



Protect and enhance biodiversity



Improve environmental outcomes



Procure responsibly



Partner with communities



Respect culture and heritage



Align spend and impact



Empower customers to make sustainable choices

The plan further identifies five key sustainability initiatives which require concentrated effort to enable us to deliver against our focus areas and goals. These **five key initiatives** include:

- Pathway to net zero
- Implementing a circular economy
- Sustainability reporting and data
- Engaging and empowering our people
- Continuous improvement and ambition.

Figure 2: Our five key initiatives



Pathway to net zero

- Sydney Trains and NSW TrainLink operating using zero emission electricity
- Greenhouse gas emissions inventory completed for Transport operations, providing a clear view of emissions sources
- Working toward transitioning our bus and coach fleet to zero emissions technology in line with our net zero targets.



Implementing a circular economy

- Sustainable Procurement in Infrastructure Initiative being trialled across projects worth approximately \$5.4 billion
- Launch of an industry engagement campaign for the Sustainable Procurement in Infrastructure Initiative, with 40 unique submissions received representing hundreds of industry partners.



Sustainability reporting and data

- Sustainability Report published to Transport Sustainability portal
- Work commenced on centralised sustainability reporting systems
- Participation in transport sector knowledge sharing forums.



Engaging and empowering people

- Commenced roll out of sustainability reset training and sustainability culture benchmarking
- Commenced development of integrated mode agnostic sustainability tools.



Continuous improvement and ambition

- Active collaboration across government and industry to drive best practice sustainability outcomes
- Best practice case studies shared to our sustainability portal.

Embedding sustainability into how we work

To support our sustainability approach and drive best practice environmental outcomes and continual improvement, Transport's Environment and Sustainability Management Framework (ESMF) provides an aligned and consistent approach to meeting environment and sustainability requirements across Transport.

The ESMF identifies 21 mandatory requirements to achieve environment and sustainability outcomes. The mandatory requirements are minimum outcomes that must be achieved when undertaking all Transport activities.

The ESMF also includes performance expectations as well as governance and assurance mechanisms to measure and continuously improve environment and sustainability outcomes. Key environment and sustainability data metrics are regularly collected, analysed and reported across key Transport business areas as part of this continuous improvement process.

A strong focus of 2021–22 was the development and release of an interactive SharePoint site to house the ESMF, which is maintained by the Environment and Sustainability (E&S) Branch. The ESMF includes:

- information about each of the E&S teams, which are available to provide support and advise across Transport
- technical E&S information and resources across various topic areas
- a single source of controlled E&S documentation and tools, available in a document library
- links to useful E&S information, both within and outside Transport.



1

Respond to
climate change





Our goals that respond to climate change

- Consider climate change risks in all key decisions
- Net zero emissions by 2050
- Achieve net zero emissions from our operations and fleet by 2035¹

We understand that climate change poses a significant risk to business, infrastructure assets and the communities we serve. Responding to climate change requires rapidly reducing our emissions to avoid unmanageable impacts, and managing the unavoidable by adapting to the changing climate.

Maintaining a safe, reliable and functioning transport network as the climate changes is critical to the overall resilience of NSW and the ability of our communities to respond to and recover from extreme weather events. We manage and maintain \$178.4 billion of transport network assets and the assets we're developing now are long lasting.

At Transport we have a significant role in both ensuring the network adapts to a changing climate and minimising the impact of natural hazards. This may include the implementation of adaptation and mitigation measures in both infrastructure delivery and asset operations. Key to ensuring the resilience of our network is our Asset Resilience Strategy which sets the scope, context, principles, and objectives for resilient Transport operational assets.

The transport system makes a significant contribution to New South Wales' (NSW) greenhouse gas (GHG) emissions and we are partnering with our customers and industry to rapidly transition to net zero.

Alignment to the United Nations Sustainable Development Goals



¹ New goal added to align with our Future Transport Strategy. The Transport Sustainability Plan will be updated to reflect the change.

Our Assets

Transport manages and maintains **\$178.4 billion** in network assets



Light Rail

- 78** light rail vehicles
- 48** light rail stations
- 27.5** kilometres of track



Walking and Cycling

1.24 million NSW residents ride a bicycle in a typical week and **2.91 million** NSW residents ride a bicycle at least once in a typical year¹.

The bicycle network includes **126** kilometres of bicycle paths and **4,073** kilometres of shared paths².

¹ National Cycling and Walking Participation Survey 2021
² Transport for NSW 2022



Trains

- 2,134** electric and diesel cars
- 364** train stations, including 4 airport line stations
- 1,805** kilometres of track
- 67** tunnels
- 1,185** bridges
- 786** help points



Metro North West Line

- 22** metro trains
- 13** metro stations
- 36** kilometres of twin track
- 15** kilometres of twin tunnels



Ferries

- 33** ferries
- 49** commuter wharves



Roads

- More than **25,324** kilometres of State Roads
- 2,893** kilometres of regional and local roads in unincorporated NSW
- 6,651** road bridges
- 18** road tunnels
- 180** rest stops and highway service centres across NSW
- More than **1,722** CCTV traffic management cameras across Greater Sydney
- Approximately **2,568** traffic signals across the Sydney road network



Buses

- 8,164** buses
- 25,309** bus stops in Greater Sydney



Maritime

- 89** maritime vessels
- 30** personal watercraft vessels for water safety compliance operations
- 13** lighthouses
- 4,118** navigational aids

Delivering and operating a climate resilient network

For Transport, resilience is ‘the ability to anticipate, adapt, rebound and prosper in the face of adversity, disruption and ongoing change’.

In recent years, there have been a number of unprecedented weather events across Australia’s eastern states, including bushfires and flood events. With climate change expected to result in more frequent and intense extreme weather events, we are taking proactive steps to identify key climate change vulnerabilities and to appropriately adapt and respond.

Transport is taking a four-pronged approach to improve the climate resilience of our network, assets and services:

- Delivering climate resilient infrastructure
- Understanding and improving the resilience of our existing assets, networks and services
- Building resilience through asset management and emergency response/recovery
- Cross-government collaboration.



Delivering climate resilient infrastructure

At Transport, we consider climate change risks in all key decisions. We use our Climate Risk Assessment guidelines and tools to assess the climate and natural hazard risk associated with new projects and to identify and inform project decisions and design adaptation measures. These are then embedded throughout project delivery design and construction stages.

Our approach considers the the overall investment value and applies a risk-based approach to integrating climate risk adaptation measures across the project lifecycle. We assess how climate hazards impact the risks to the project and the surrounding network and consider disruptions to community, service levels, asset damage, staff, the environment and economic cost.

We have commenced a holistic review of our asset management requirements to update the Ambient Environment Condition Standard to incorporate climate change adaptation measures and stress testing. The standard is used to inform the environment conditions in which our assets are designed to operate effectively and provide reliable service to our community.

Understanding and improving the resilience of our existing assets, networks and services

Much of Transport's network comprises ageing assets. With the integration of new assets into our existing network, we need to determine the resilience of our existing assets in order to have a true picture of our overall network resilience (new and old).

Transport is developing a plan focusing on the regional and outer metropolitan network's exposure and vulnerability. The plan will identify where natural hazards have impacted the regional and outer metropolitan network. The aim of the plan is to understand how frequently the network has been hit by hazards and what were the associated impacts on our regional outer metropolitan areas. This will inform us about the locations which will require further investigation for investment and resilience treatments.

Over the next two years, we will also undertake a state-wide multi-modal climate change risk and vulnerability assessment. The assessment will identify key vulnerabilities across our network as well as priority areas for action, and will inform a state-wide climate change adaptation plan.

Building resilience through asset management and emergency response/recovery

The \$312.5 million Regional Road and Transport Recovery Package (RRTRP) will fund the planning, development and delivery of priority local and state transport infrastructure betterment resiliency works on transport infrastructure damaged or impacted by the February and March 2022 severe weather and flooding across northern NSW.

Typically, funding under the Disaster Recovery Funding Arrangements would only allow infrastructure to be reconstructed to its pre-disaster condition.

However, the RRTRP recognises that in some cases, reconstruction to pre-disaster conditions is not the best option. Building resilience into the asset will allow the network to withstand and bounce back from the shock of future natural disasters, keeping our customers and communities safe and connected during these events.

RRTRP, along with the Infrastructure Betterment Fund, is the first betterment program to be launched in NSW. It aims to 'build-back-better' by ensuring infrastructure damaged by the 2022 floods is not just reinstated, but rebuilt stronger, better, and more able to withstand the challenge posed by future natural disasters.

This will be achieved through:

- strengthening the regional transport network's capacity to withstand natural disasters
- improving the reliability of the regional transport network for communities during and after natural disaster events
- enhancing the adaptability of the regional transport network during and after natural disaster events
- improving the regional transport network's ability to respond and recover when natural disasters occur.

Cross government collaboration

Transport actively works across government and the sector to coordinate and improve resilience outcomes for the communities of NSW, this includes but is not limited to:

- actively contributing to cross-agency NSW Government net zero and climate resilience working groups
- collaborating with the NSW Government to implement the NSW Climate Risk and Resilience Strategic Roadmap and apply the NSW Climate Change Adaptation Strategy
- support and contribute to NSW Government state-wide climate and natural hazard resilience risk assessment.

Over the last financial year Sydney Metro has also reviewed and benchmarked climate change management activities using the NSW Government Climate Risk Ready Guidance.

Minimising energy and carbon emissions

Our future energy vision is one where the people of NSW live in a prosperous, sustainable economy, enjoying a world class, sustainable transport system that is efficient and powered by renewable energy. Our Future Energy Strategy and Action Plan outlines our commitment to securing our transport energy needs from sustainable sources and supports the transition of the

transport sector to net zero emissions by 2050 – consistent with the objectives of the NSW Government’s Climate Change Policy Framework.

The transport sector accounts for 24 per cent of NSW’s greenhouse gas emissions. Transport’s operations account for only three per cent of the sector emissions, however we are committed to reducing emissions in areas in which we have control and influence.

To help us achieve our commitment, we are working on reducing greenhouse gas (GHG) emissions associated with:

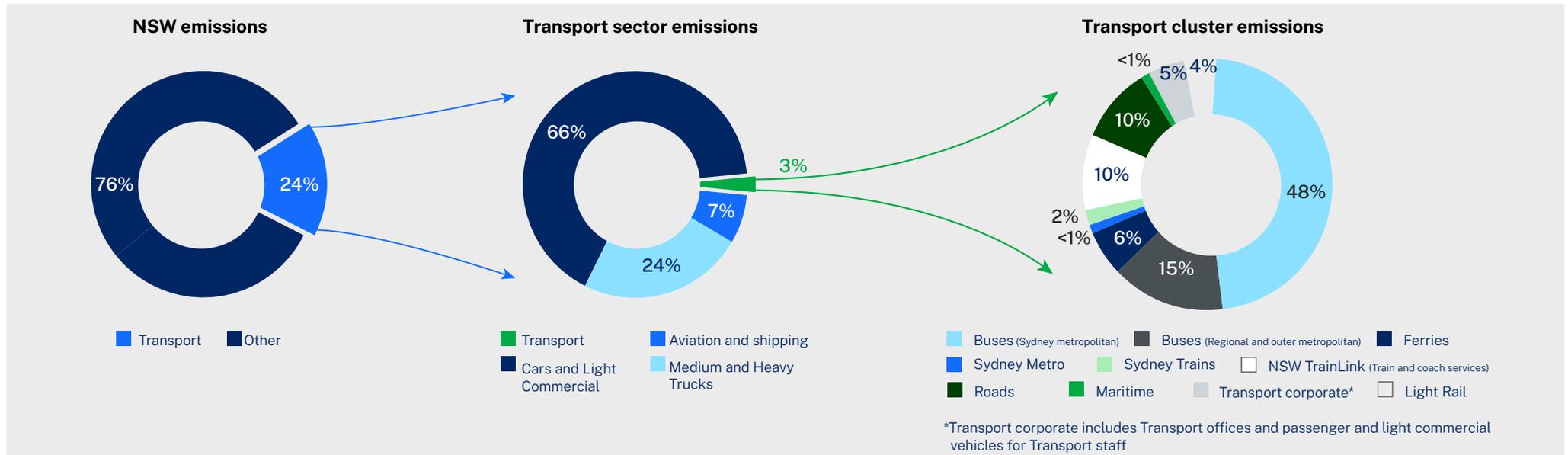
- our operations
- project delivery and maintenance
- users of our network.

In the last year we have made significant progress in reducing our GHG emissions from our operations. This has been achieved through transitioning the Sydney Trains and NSW TrainLink electrified network to zero emissions electricity.

This action has resulted in approximately a 50 per cent reduction in our operational GHG footprint. Refer to our Zero Emissions electricity case study on page 24 for further details.

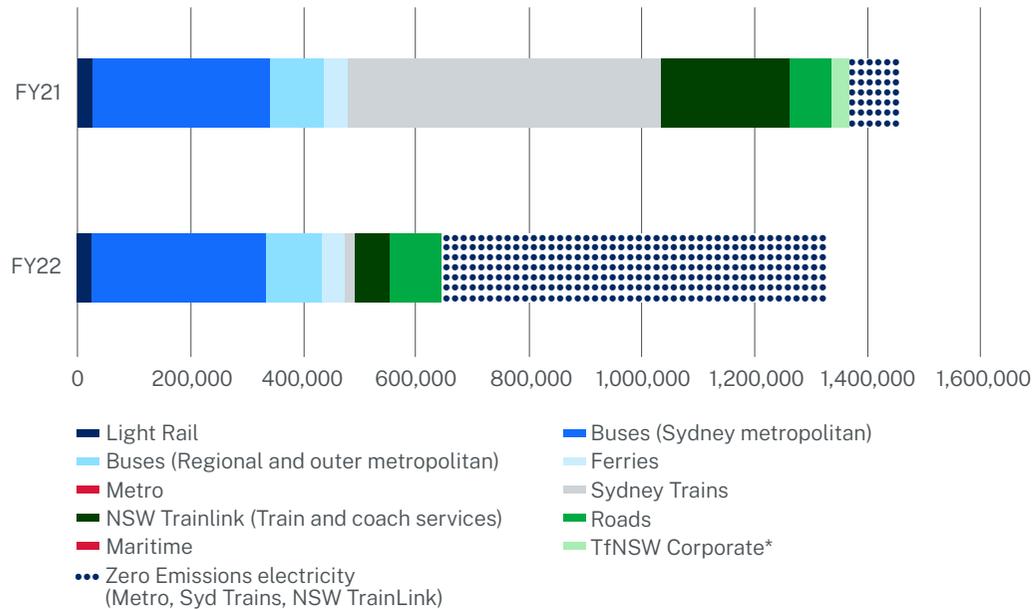
The resulting reduction in carbon emissions, and our commitment to achieve net zero emissions from our operations and fleet by 2035, is consistent with the actions required to meet the Paris Agreement to the United Nations Framework Convention on Climate Change 2016².

Figure 3: Our contribution to greenhouse gas emissions



² Limiting global heating to 1.5°C by 2100 requires aggressive incremental targets, calculated as a 74 per cent cut in global emissions by 2030 and net-zero emissions by 2035. Limiting global heating to 2°C by 2100 requires a 50 per cent cut in global emissions by 2030, 67 per cent by 2035, 84 per cent by 2040, and net zero by 2045. Net zero targets by 2050 alone are not sufficient to meet the Paris Agreement goals because global heating impacts are determined by emissions trajectory (total cumulative emissions) and absolute targets www.climatecollege.unimelb.edu.au/australias-paris-agreement-pathways.

Figure 4: Carbon emissions from Transport operations by mode (tonnes of CO₂-e)



Notes:
 Emissions represented include direct emissions and emissions associated with electricity use in the operation of transport services
 *Transport corporate includes Transport offices and passenger and light commercial vehicles for Transport staff

As well as achieving significant reductions in our operational GHG emissions, Transport is actively working with industry and our delivery partners to reduce the emissions associated with our project delivery activities. This includes initiatives to reduce the embodied carbon in the materials used, in particular concrete, steel and aggregates. Refer to promoting a circular economy for further details.

For information on other initiatives which further minimise carbon, refer to Focus Area 8 Empower customers to make sustainable choices.

Parramatta Light Rail Stage 1

Parramatta Light Rail Stage 1 is the first light rail system within NSW to use Macro Synthetic Fibres (MSF) within concrete for the trackform.

MSF uses modern synthetic materials such as plastics and turns them into engineered fibres, which act like small reinforcement bars in concrete.

The benefits of using MSF in the concrete include:

- reducing the quantity of steel reinforcement required by 2,426 tonnes equating to a reduction of carbon dioxide output of over 4,800 tonnes
- increasing concrete durability and performance
- enabling more efficient construction.



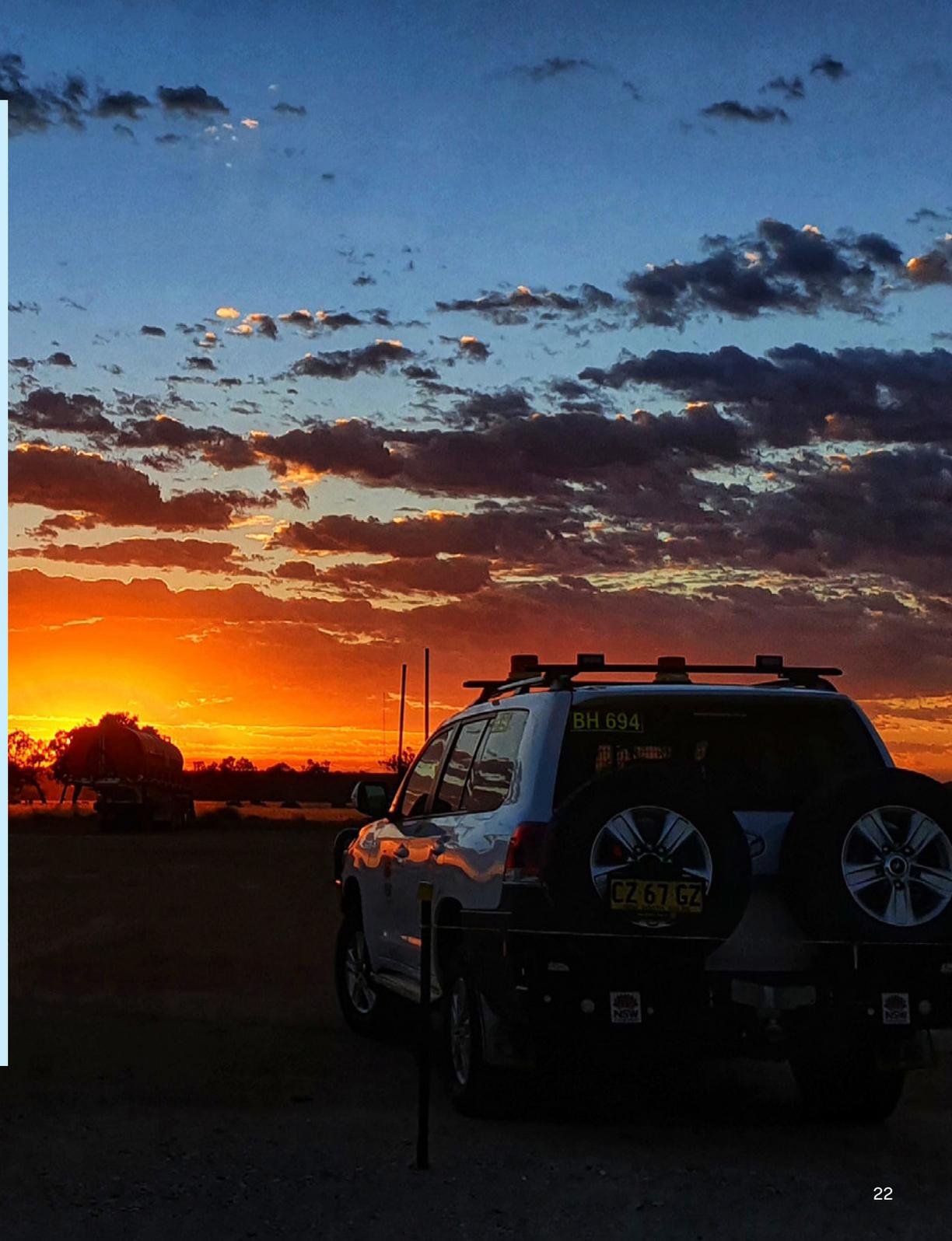
Reducing our operational emissions through sustainable design

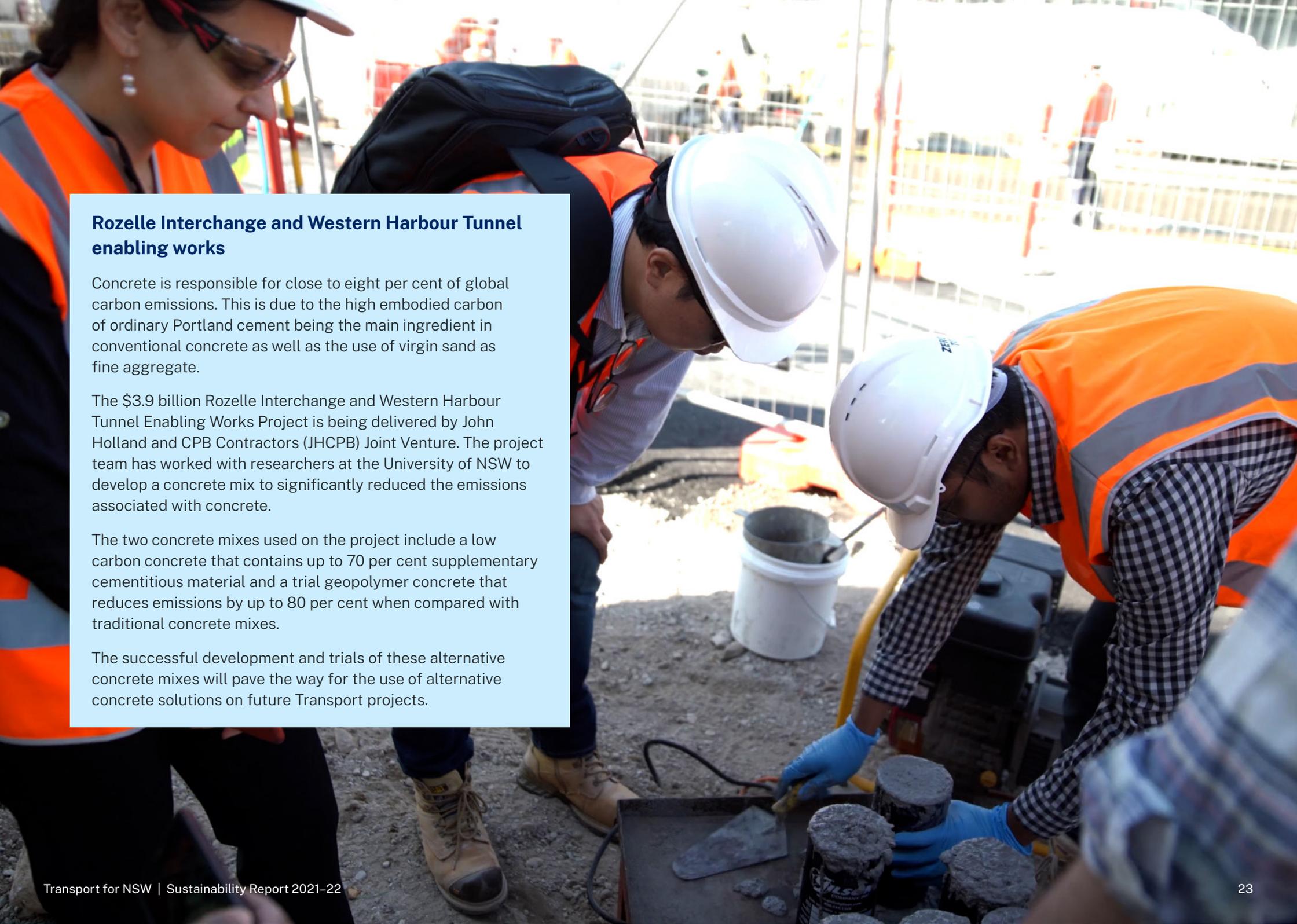
The Regional Rail Mindyarra Maintenance Centre has been built with a number of sustainability initiatives incorporated into the design.

One key initiative to reduce operational emissions is the installation of over 3,400 solar photovoltaic (PV) panels on the roof of the maintenance centre.

The panels have been designed to generate enough electricity to supply at least 95 per cent of the centre's annual low voltage electricity demand, significantly reducing the centre's operational emissions.

In line with the project's priorities to support the local regional economy, the panels were installed by Western Plains Electrical, a family-run business local to the Dubbo area.





Rozelle Interchange and Western Harbour Tunnel enabling works

Concrete is responsible for close to eight per cent of global carbon emissions. This is due to the high embodied carbon of ordinary Portland cement being the main ingredient in conventional concrete as well as the use of virgin sand as fine aggregate.

The \$3.9 billion Rozelle Interchange and Western Harbour Tunnel Enabling Works Project is being delivered by John Holland and CPB Contractors (JHCPB) Joint Venture. The project team has worked with researchers at the University of NSW to develop a concrete mix to significantly reduced the emissions associated with concrete.

The two concrete mixes used on the project include a low carbon concrete that contains up to 70 per cent supplementary cementitious material and a trial geopolymer concrete that reduces emissions by up to 80 per cent when compared with traditional concrete mixes.

The successful development and trials of these alternative concrete mixes will pave the way for the use of alternative concrete solutions on future Transport projects.

Zero emissions bus transition

In June 2022, the NSW Government announced the rollout plan to transition our entire fleet of 8,000 buses to zero emission buses (ZEBs) across the state. The switch to zero emissions technology will deliver a cleaner and healthier environment for our communities. It will help boost our manufacturing efforts and stimulate renewable energy production. The plan will see buses in Greater Sydney fully transitioned to zero emissions technology by 2035, followed by outer metropolitan regions in 2040, and regional NSW in 2047.

NSW is leading the way in building up local skills and jobs around this fast-growing global initiative. As the first state to roll out ZEBs at this scale, the staged approach allows our local industry, operating partners and training organisations to plan and prepare for the new technology. It also means we'll have time to better understand which zero emissions technology is best suited for rural and regional NSW.

To date, over 100 battery electric buses are on NSW roads, with the number expected to increase to around 200 by the end of 2023. Transport is also committed to investigating other zero emissions technologies, such as green hydrogen, through additional bus trials.

Supporting the transition to electric vehicles

Transport is committed to supporting the users of our road network in transitioning to less carbon intensive alternatives.

Electric vehicles (EVs) are better for the environment, quieter, produce lower carbon emissions and less pollutants. Coupled with the anticipated greening of our electricity grid, the transition to electric vehicles is critical to decarbonising our road networks.

Transport is working to deliver EV charging programs in Regional NSW in partnership with NRMA. The charging network we have supported has now delivered over 10 million kilometres of travel throughout NSW. For NSW's major routes, chargers are now available every 150 kilometres.

Transport is also leading by example in working to transition our own passenger and light vehicle fleet to electric vehicles. We have a target of 100 per cent passenger vehicle procurement to be electric by 2030, with an interim target of 50 per cent by 2026. This will both build a market for original equipment manufacturers and, in a few years' time, provide EVs within the second-hand market.

Case Study

Zero emissions electricity for Sydney Trains and NSW TrainLink

Sydney Trains and NSW TrainLink networks transitioned to zero emissions electricity from July 2021.

A firm commitment under the Transport Future Energy Action Plan was to transition to zero emissions electricity for electrified rail by 2025.

To ensure this commitment was met in a financially responsible manner, we undertook a detailed assessment of the various zero emissions electricity procurement options available in the market. Through a series of workshops, it was agreed to adopt an ambitious accelerated pathway and to transition to zero emissions electricity from 1 July 2021, four years ahead of target.

The transition was achieved by leveraging existing agreements with Sydney Trains' electricity retailer in conjunction with the establishment of new LGC offtake agreements with renewable electricity suppliers.

To safeguard the ongoing support of the renewables industry in NSW, we made the decision to ensure that the renewable power plants where the electricity is being generated are all NSW-based solar and wind farms. Avonlie Solar Farm in southern NSW will be the primary source of the LGCs.

This achievement has reduced Sydney Trains' and NSW TrainLink's overall operational GHG emissions by approximately 98 and 75 per cent respectively, accounting for approximately 50 per cent of Transport's operational GHG emissions. The remaining emissions are scope 1 (direct emissions), relating to the combustion of fuels. Plans are being developed to address these remaining scope 1 emissions.

With Sydney Trains and NSW TrainLink using approximately 835GWh of electricity per year (approximately 1.2 per cent of NSW's total electricity consumption), the initiative has avoided approximately 659,000 tonnes of CO₂-e emissions per year.

When combined with the Sydney Metro North West, which runs off zero emissions electricity, the initiative equates to a saving of approximately 719,000 tonnes of emissions. Sydney Metro also has similar commitments to zero emission electricity for 100 per cent of Metro operations on Sydney Metro City and Southwest, Sydney Metro-Western Sydney Airport and Sydney Metro West.

In addition to zero emissions electricity, Sydney Trains has a complementary target of a 10% reduction in the rate of energy consumption (kWh/car km) over five years. This recognises the scale of Sydney Trains' energy profile. Innovative energy efficiency initiatives for rollingstock heating ventilation and air-conditioning, maximising energy recovery from regenerative braking and onsite solar photovoltaic projects will improve the energy consumption profile.

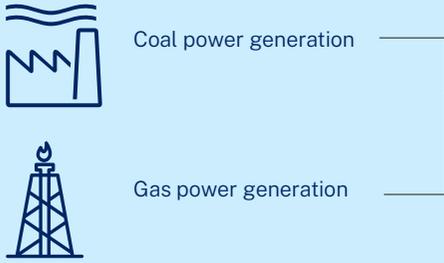
Transport maintains a commitment to transition to renewable electricity for light rail operations by 2025, at which point the entire electrified passenger rail network will be running on zero emissions electricity.

Learnings from this initiative are providing the platform for development of a Transport-wide decarbonisation approach.

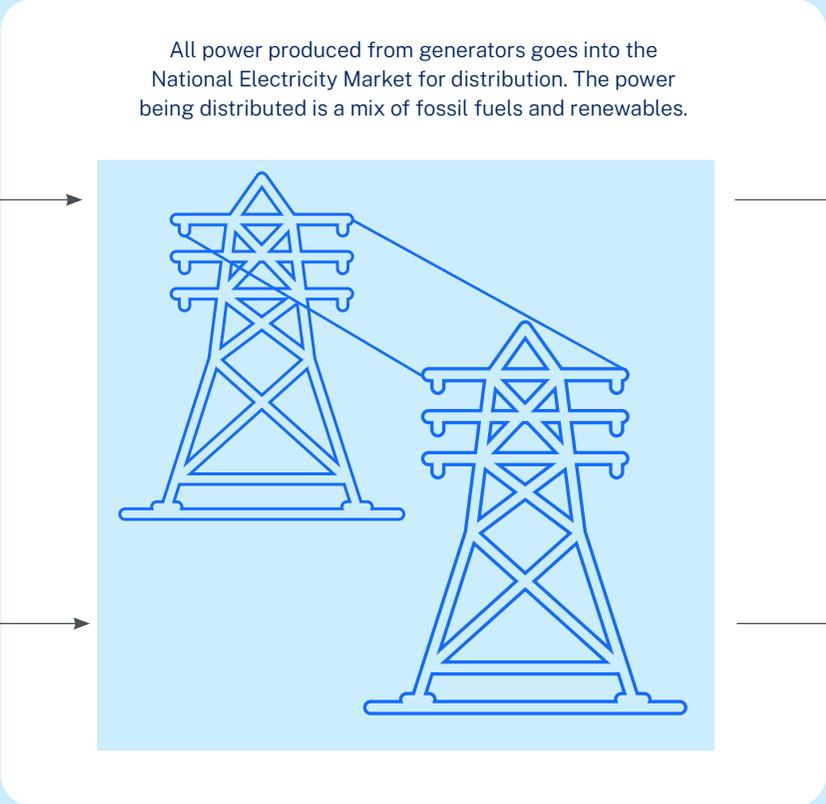


Figure 5: How zero emissions electricity is powering rail transport

Conventional fossil fuel power generators



Renewable power generators



Businesses without LGC purchase use electricity produced from a mix of generation sources including large amounts of fossil fuel power.

Businesses that purchase and retire LGCs are verified as using renewable electricity.

Sydney Trains, NSW TrainLink and Sydney Metro North West purchase LGCs to cover all their electricity use, meaning we are powered by 100% renewable electricity.

Large-scale Generation Certificates (LGCs) >>>>

For each one mega-watt hour of power produced by renewable generators one **Large-scale Generation Certificate** is created.

LGCs can be bought by businesses that want to use renewable energy.

<p>Renewable electricity powers all of Sydney Trains, NSW TrainLink and Sydney Metro North West's operational needs, including all electric trains and stations.</p>	<p>Enough renewable electricity to power 165,000 homes.</p>	<p>Supporting renewables in NSW and boosting the economy.</p>	<p>The same amount of power generated by approximately 1.7M solar modules.</p>	<p>Avoiding approximately 720,000 tonnes of CO₂-e emissions being generated annually.</p>	<p>The equivalent carbon emissions saved as removing 321,000 cars from the road.</p>
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2

Protect and
enhance biodiversity





Our goals to help protect and enhance biodiversity

- No net loss biodiversity as a result of our infrastructure development program¹

The development of transport infrastructure can lead to unavoidable direct and indirect impacts on biodiversity. These can include habitat fragmentation effects that persist long after the infrastructure is built. Mitigation measures, including supporting habitat connectivity, can reduce the severity of impacts and are critical to the ongoing sustainable operation of transport infrastructure.

Biodiversity offsetting is an important supplementary strategy to address unavoidable impacts by improving the ecological values of like-for-like offset lands.

At the same time, vegetation within infrastructure corridors holds significant biodiversity values that can form critical habitat corridors across fragmented landscapes. This retained vegetation can also support habitat resources such as tree hollows, that are rare in the surrounding landscape. Due to the extent of historical land clearing over much of NSW, roadsides in many areas support the only remaining examples of original vegetation. Vegetation quality varies from biologically diverse remnants in good condition through to highly-disturbed areas in poor condition. Significant opportunities exist to repair and reconnect habitats within infrastructure corridors.

According to recent research undertaken by the Department of Planning and Environment, without concerted investment in biodiversity management, 50 per cent of all threatened species and 41 per cent of threatened ecological communities in NSW will become extinct in the next 100 years². With this in mind, we are taking proactive steps to minimise the impact of our activities on biodiversity and to move towards our goal of no net loss biodiversity.

Alignment to the United Nations Sustainable Development Goals



¹ Goal amended to provide additional clarity around the scope of the goal. The Transport Sustainability Plan will be updated to reflect the change.

² Department of Planning, Industry and Environment, 2017, NSW Biodiversity Outlook Report.

Managing biodiversity

Our new Biodiversity Policy was approved in June 2022 and outlines what we do to protect and enhance biodiversity for NSW. Biodiversity is a key consideration for Transport across all of our activities and within the environments in which we work including on land (terrestrial), below water (aquatic) and even within built structures. Our approach to biodiversity management is underpinned by the principle of applying an avoid, minimise, mitigate, offset hierarchy.

Figure 6: Biodiversity management hierarchy

Avoid	Planning and impact assessment processes must include consideration of the impacts on biodiversity and ways in which to avoid these impacts as much as practicable.
Minimise	Further design refinements must consider ways to minimise the impact on biodiversity.
Mitigate	Residual impacts will be mitigated through various measures – e.g. wildlife connectivity may be developed and implemented to reduce the landscape scale impacts on habitats.
Offset	Transport will offset its residual impacts after all efforts have been made to avoid, minimise and mitigate our impacts in the first place.

Transport implements measures as part of our business-as-usual activities to ensure both our direct and indirect impacts on biodiversity are minimised. Such measures include:

- careful clearing protocols comprising identification and protection of environmentally sensitive areas
- provision of dedicated fauna connectivity structures such as rope bridges, glider poles and underpasses
- wildlife vehicle strike prevention measures such as fauna exclusion fencing
- promoting fish passage through well designed culverts
- habitat supplementation activities such as artificial hollows and integrating microbat habitat in bridges
- tree replacement programs
- seed collection and plant propagation activities.

Where residual impacts on biodiversity are unavoidable, we participate in the NSW Biodiversity Offset Scheme (BOS). We aim to go beyond statutory requirements. We assist private landholders in generating biodiversity credits or enter into biodiversity agreements over our own residual land. These agreements establish an enduring legal protection over the land

and provide a funded framework for the long-term management of flora and fauna and their habitats.

Biodiversity

On the M12 project, Toolijooa nursery has been engaged to collect a large diversity of native seed from both within and around the M12 footprint area. The aim of this program is to collect native seed and plant material for use in future propagation of up to 150,000 tube stocks to use in and around the M12 Motorway. This initiative commenced in 2020 and has continued through the reporting period, focusing on Cumberland Plain Woodland species.

A Koala Habitat Establishment Program was delivered on the Woolgoolga to Ballina project. The program was designed to improve habitat connectivity and included the establishment of 130 hectares of new koala habitat, with the final 17 hectares being planted in 2021. The initiative has earned recognition at the Australian Institute of Landscape Architects NSW Awards.

The table below provides details of Transport State Significant Infrastructure (SSI) projects approved under Part 5, Division 5.2 of the *Environmental Planning and Assessment Act 1979*, that have triggered the Biodiversity Offset Scheme.³

Project name	Region	Date approved	Number of ecosystem credits required by approval	Number of species credits required by approval	Total number of credits required	Credits completed ⁴	Credits substantially completed ⁵
M6 extensions Stage 1	Eastern Harbour City	18/12/2019	82	10	92	92	N/A
Sydney Metro - Sydney International Speedway	Western Harbour Parkland	13/12/2020	5	0	5	5	N/A
Western Harbour Tunnel and Warringah Freeway	Eastern Harbour City	21/01/2021	0	2	2	2	N/A
Sydney Metro Western Sydney Airport	Western Harbour Parkland	23/07/2021	846	539	1,385	826	418
Sydney Metro West - Concept and Stage 1	Eastern Harbour City and Central River City	11/03/ 2021	3	4	7	7	N/A

The table below provides details of Transport Review of Environmental Factors (REF) projects determined under Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979*, that have triggered the Biodiversity Offset Scheme.

Project name	Region	Date approved	Number of ecosystem credits required by determination	Number of species credits required determination	Total number of credits required	Credits completed	Credits substantially completed
Spring Farm Parkway	Western Parkland City	1/12/2019	28	0	28	0	0
GWH – Little Hartley to Lithgow	Western	28/04/2022	2,474	3333	5,807	5,807	N/A
Mamre Road Stage 1	Sydney	30/06/2022	245	245	490	0	0

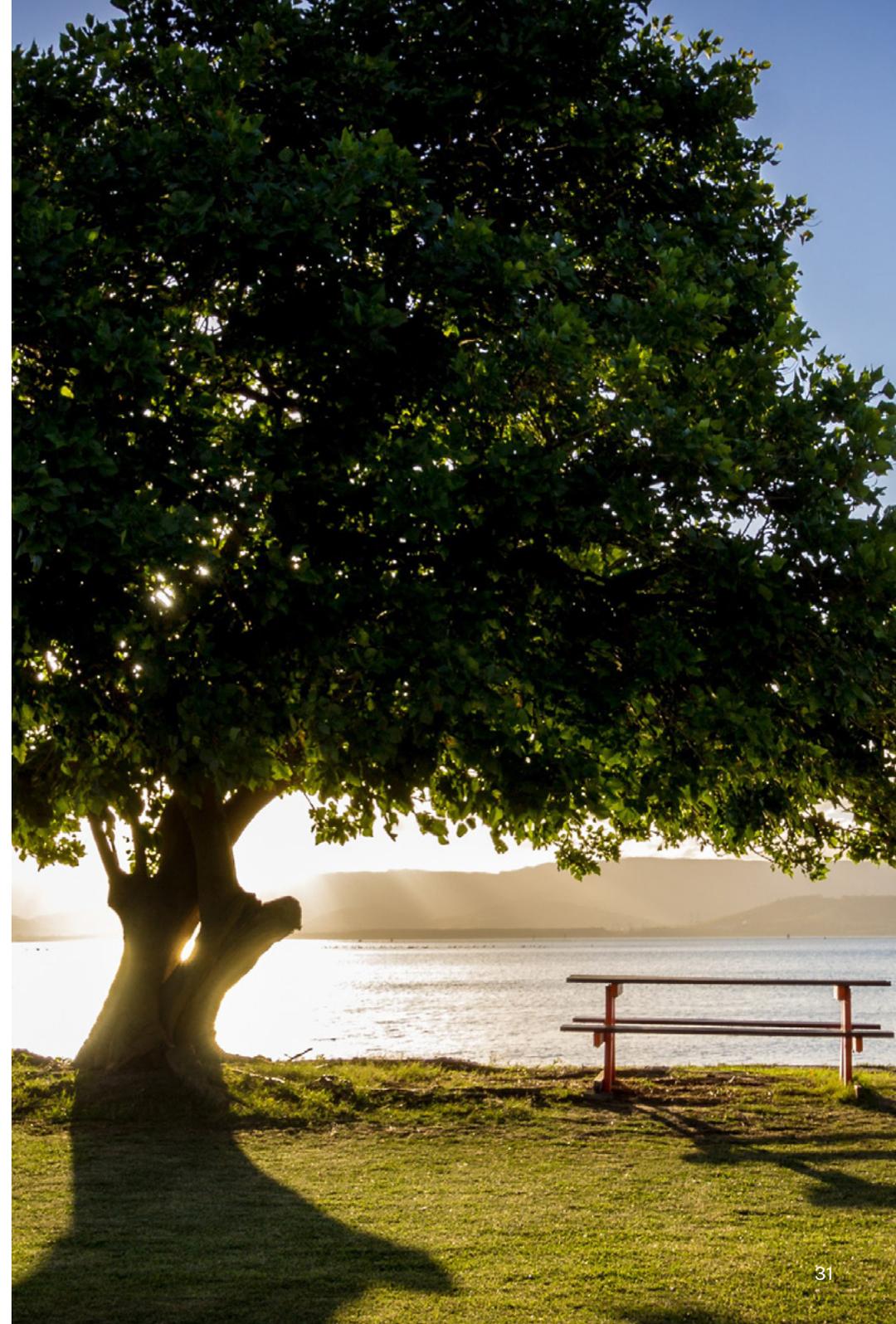
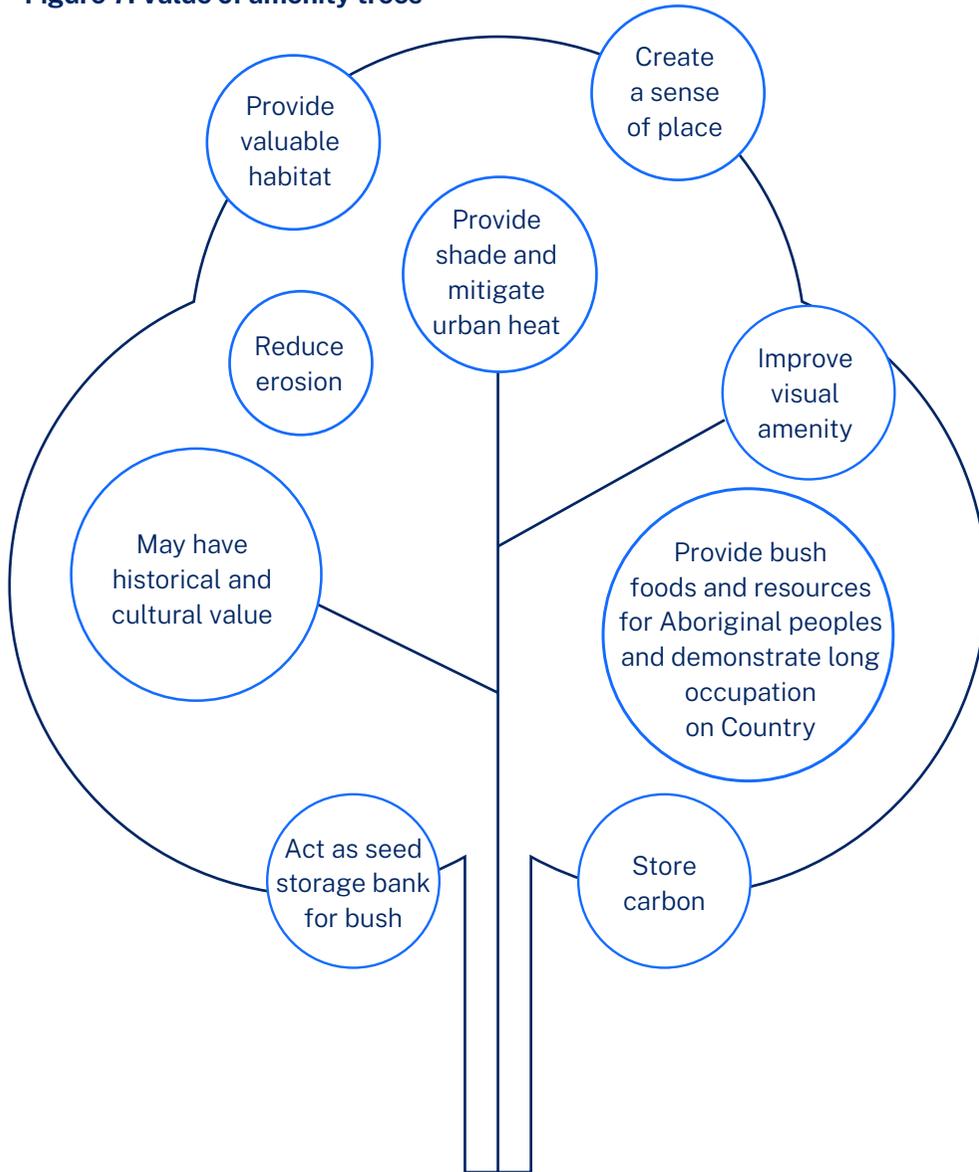
³ Table does not include aquatic offsets required under Department of Primary Industry policy and guidelines.

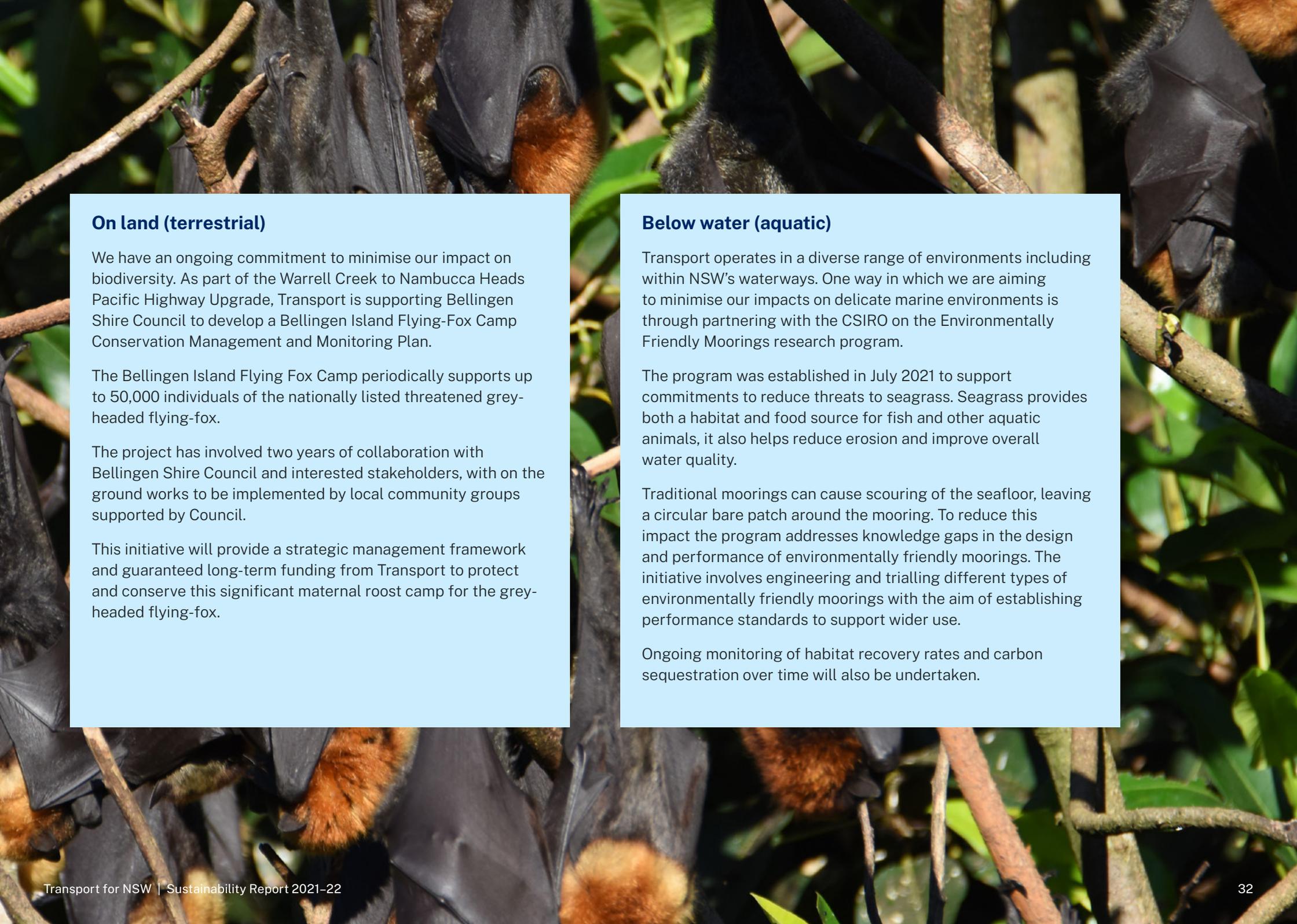
⁴ Credits completed are credits purchased and retired or Biodiversity Conservation Fund (BCF) payments made.

⁵ Credits substantially complete are credits purchased but not yet retired or application for BCF payment made but payment not finalised.

Transport also recognises the value that individual amenity and habitat trees can bring and is committed to ensure a net increase in urban trees. This commitment is highlighted through our Future Transport Strategy and Biodiversity Policy.

Figure 7: Value of amenity trees





On land (terrestrial)

We have an ongoing commitment to minimise our impact on biodiversity. As part of the Warrell Creek to Nambucca Heads Pacific Highway Upgrade, Transport is supporting Bellingen Shire Council to develop a Bellingen Island Flying-Fox Camp Conservation Management and Monitoring Plan.

The Bellingen Island Flying Fox Camp periodically supports up to 50,000 individuals of the nationally listed threatened grey-headed flying-fox.

The project has involved two years of collaboration with Bellingen Shire Council and interested stakeholders, with on the ground works to be implemented by local community groups supported by Council.

This initiative will provide a strategic management framework and guaranteed long-term funding from Transport to protect and conserve this significant maternal roost camp for the grey-headed flying-fox.

Below water (aquatic)

Transport operates in a diverse range of environments including within NSW's waterways. One way in which we are aiming to minimise our impacts on delicate marine environments is through partnering with the CSIRO on the Environmentally Friendly Moorings research program.

The program was established in July 2021 to support commitments to reduce threats to seagrass. Seagrass provides both a habitat and food source for fish and other aquatic animals, it also helps reduce erosion and improve overall water quality.

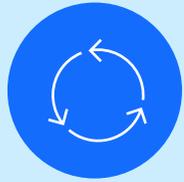
Traditional moorings can cause scouring of the seafloor, leaving a circular bare patch around the mooring. To reduce this impact the program addresses knowledge gaps in the design and performance of environmentally friendly moorings. The initiative involves engineering and trialling different types of environmentally friendly moorings with the aim of establishing performance standards to support wider use.

Ongoing monitoring of habitat recovery rates and carbon sequestration over time will also be undertaken.

3

Improve
environmental
outcomes





Our goals to help improve environmental outcomes

- Develop a circular economy for Transport by designing waste and pollution out and keeping products and materials in use
- Reduce environmental impacts of projects and operations

We are committed to reducing the environmental impacts of our network, projects and operations. We recognise that these impacts can vary in type and scale and that while the impact of an activity on its own can be quite small the cumulative impact can be great. At Transport, we have robust systems and processes in place to manage the impacts of our activities on air quality, flora and fauna, heritage, contaminated lands, noise and vibration, waste, soil and water.

Improving environmental outcomes is largely driven by the legislative context under which we operate. However, we also have the opportunity to deliver environmental programs that leave a positive environmental legacy for future generations.

Minimising pollution

Transport is committed to reducing the environmental impacts of projects and operations, including minimising pollution from our activities.

One way in which we proactively aim to minimise pollution is through undertaking environmental inspections on both project and maintenance sites and operational premises. This proactive approach provides us with a lead indicator for the early identification of environmental risks and assists with prevention of environmental incidents and breaches of environmental obligations.

Transport¹ classifies inspections using a traffic light system (green/amber/red) which indicates the overall risk exposure at the time of the

inspection. We gather and record all environmental inspection data which is then used to help benchmark our performance and support ongoing performance improvement.

During the last financial year, we conducted 1,485 environmental inspections across our activities compared with 2,115² the previous year. The drop in the number of inspections from the previous year is due to:

- prolonged COVID-19 lockdowns over the period of July, August and September
- reduced numbers being allowed on construction sites
- extreme weather events resulting in some sites being unsafe to visit for a number of weeks or months, particularly in regional and outer metropolitan NSW.

¹ Excluding Sydney Trains, NSW TrainLink and Sydney Metro

² It is noted that the Transport Sustainability Report 2021 reported 2,295 inspections. This difference is understood to be an error due to transitioning between data capture systems. The error has since been rectified and this report contains the most up-to-date data.

Alignment to the United Nations Sustainable Development Goals



Of the inspections conducted in the last financial year, 85 per cent were classified as green light inspections compared with 81 per cent the previous financial year.³ Green traffic light inspections indicate that environmental risks are being effectively managed.

Environmental incidents are also reported centrally to assist Transport in ensuring that appropriate corrective actions, regulatory notifications and performance monitoring is undertaken following an incident.

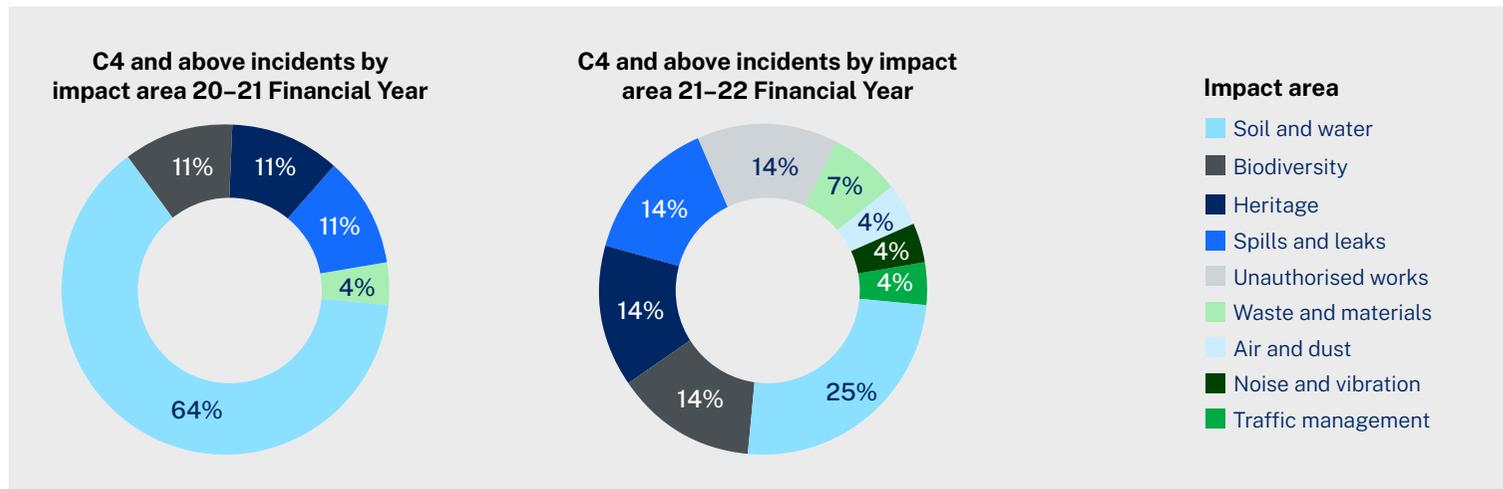
Over the last financial year, our top three environmental incident impact areas related to spills and leaks, soil and water, and biodiversity. This is compared to spills and leaks, soil and water, and waste and materials in the previous financial year. Our incidents are classified against the Transport Enterprise Risk Management Framework to help us understand the consequence of each incident and to assist us with the analysis of environmental performance. Incidents are classified on a scale of C1 to C6, with C6 being the lowest consequence classification and C1 being the highest.

Since last year there has been a significant decrease in the number of soil and water incidents classified as C4 and above. Although biodiversity has emerged as one of the top three incident areas, we have worked with project teams to focus on the issues and our obligations. The increased awareness has resulted in a reduction of this type of incident. In the previous financial year, we achieved a 100 per cent close out rate for all C4 incidents and above, and this has been maintained in this financial year.

Additionally, with the increase in people working from home over the last financial year, the industry has also seen an increase in the number of noise-related complaints. As well as having well established systems and processes to manage noise in construction, Transport offers a number of programs to manage noise and vibration of our operations.

As well as minimising the impacts from our activities, we have improved environmental outcomes within communities through embedding environmental design initiatives in our projects. One such example is the installation of green tracks as part of the Parramatta Light Rail Project as outlined on page 37.

Figure 8: Incidents by impact area



³ Inspection classification data, using the traffic light system excludes Sydney Trains, NSW TrainLink and Sydney Metro. They do not utilise the traffic light system on their inspections.

Cleaning up our Sydney waterways

The Maritime Environmental Services team within Transport cleans the waters and foreshores of Sydney Harbour and navigable waters of the Parramatta and Lane Cove Rivers. This area consists of 5,020 hectares and a combined foreshore length of 270km.

The rubbish removal service is currently the only effective means of removing floating litter and waste from Sydney Harbour including storm water pollution as well as other visible debris and floating hazards.

During the 2021–22 financial year the team collected and removed 2,204 cubic metres of litter, debris, and hazards to navigation from Sydney Harbour waters, public foreshores, and river tributaries. This volume equals close to 9,200 large general household bins.

The team also recovered 4,600 items that would be hazards to navigation. These items if left would have had a direct safety impact on the navigation of recreation and commercial vessels in and around our Sydney waterways.

Transport's noise abatement program

One way Transport manages road traffic noise-related complaints is through our noise abatement program. This program has been ongoing for over 25 years with the aim of providing noise mitigation for dwellings and other sensitive receivers including schools, hospitals and churches, where road traffic noise is at acute levels.*

Mitigation measures provided by the program include:

- architectural treatment at eligible properties to improve the noise reduction performance of the facades
- provision of mechanical ventilation
- construction of noise walls in some circumstances where multiple dwellings are eligible.

Over the reporting period

- 86 locations have been monitored
- 100 properties were eligible for treatment
- 278 new complainants were recorded in Sydney and the regions
- 321 at-property treatments were undertaken in Sydney and the regions.

*Noise levels are classified as acute where the LAeq daytime noise levels between 7am and 10pm and the night time LAeq noise level between 10pm and 7am are at or above 65dBA and 60dBA respectively.

Case study

Parramatta Light Rail green track

Parramatta Light Rail Stage 1 is the first light rail service in NSW to feature green track. The initiative has delivered a state-of-the-art light rail design that features grass and ground cover between and along the tracks, in place of traditional materials such as concrete, asphalt or ballast. Installing green track means we use 81 per cent less concrete than traditional methods.

Transport worked with the Western Sydney University to undertake a detailed feasibility study, which led to a prototype being built and tested for a 12-month period to ensure the green track would be viable. The prototyping process included the testing of various turf species to ensure they were suitable for the local climatic conditions and low maintenance.

Key benefits of the green track include:

- reduced urban heat
- reduced noise and glare
- reduced use of carbon intensive materials such as concrete
- enhanced visual aesthetics

- filtering of dust in the air and production of oxygen
- filtering of stormwater and regulation of drainage
- enhanced natural habitat and improved biodiversity.

The green track covers approximately 10 per cent of the total alignment and is expected to open in 2024.

The initiative won two categories in the Australian Institute of Landscape Architects (AILA) NSW 2022 Awards for its research study ‘Green track for Parramatta Light Rail’.





Managing the water cycle

Transport is committed to identifying, assessing and managing potential surface and groundwater impacts of our activities and assets in accordance with legislation including the *Environmental Planning and Assessment Act 1979*, *Protection of the Environment Operations Act 1997*, *Water Management Act 2000* and *Fisheries Management Act 1994*.

We strive to minimise the impact of our activities on the water cycle and are updating our guidelines and tools to reflect and support best practice in water cycle management through all phases of project development, delivery and operations.

Through water sensitive urban design and water efficient design principals we are using our significant infrastructure investment to improve water quality and reduce water demand across our activities.

Mindyarra Maintenance Centre Water Efficiency

The Mindyarra Maintenance Centre has been designed to collect 90 per cent of its annual operational water demand from non-potable water sources. Wherever possible, fleet maintenance activities will be supplied through a combination of rainwater captured on site, bore water and recycled water, reducing demands on potable water supply in the Dubbo region.

Key design initiatives include:

- the installation of a 100,000L rainwater tank
- recycling of 80 per cent of train wash water
- landscaping with 100 per cent native and drought tolerant species with low or no requirement for irrigation.

In addition to the design initiatives, the project has also used non-potable water for dust suppression during construction.

Promoting a circular economy

As one of the largest procurers of projects in Australia, we have the ability and responsibility to leverage our buying power to help shape a more sustainable market, drive innovation and support the transition to a circular economy.

Over the last year, we commenced work on our Sustainable Procurement in Infrastructure Initiative. This initiative is a critical component in helping us to achieve our circular economy commitments and supports our decarbonisation approach within project delivery.

Case study

Co-creating with our delivery partners

The Sustainable Procurement in Infrastructure Initiative discussion paper was released during a launch event on 14 March 2022. This marked the commencement of one of the largest industry engagement campaigns undertaken by Transport. The response to the industry engagement campaign was positive, with 40 unique submissions received, representing hundreds of industry partners.

Key feedback and themes that came out of the industry engagement included:

- There was overwhelming support for the concept of Baseline Sustainability Requirements, although further consultation is needed to define the proposed measures.
- A consistent approach to consideration of whole of life carbon is needed.
- There is need to focus on the role of design in promoting a circular economy and decarbonisation.
- Reviews of specifications and standards are required to consider carbon throughout the project lifecycle and to move towards a more performance-based approach.
- Consideration should be given to extending the initiative to include

social and economic sustainability rather than just focusing on environmental sustainability.

- Initiatives to drive decarbonisation and transition to a circular economy need to be supported through digital technology.
- There is a need for transparent and clear processes for trialling new and innovative materials.
- Increased collaboration across NSW Government agencies is required to drive sustainable outcomes.
- A clear long-term roadmap for decarbonisation will be necessary to provide industry with the confidence to invest in initiatives to decarbonise.
- Capability and competency building are required to support the achievement of sustainable outcomes across industry.

As part of this initiative, Transport has already developed and commenced trialling modified procurement processes with enhanced sustainability requirements. Included projects represent a range of project types with different delivery models, geographic locations and complexities. Ongoing proactive industry engagement will continue to shape the content and roll out of the initiative moving forward.

Albion Park Rail Bypass

The Albion Park Rail Bypass was opened in October 2021. The \$630 million project, which completed the 'missing link' for a high standard of road between Sydney and Bomaderry, has adopted a circular economy approach to keep materials in use for longer. The project has successfully reused large quantities of materials including:

- **500,000** tonnes of coal wash, a low grade mining waste which was previously stockpiled as landfill
- **300,000** tonnes of tunnel spoil
- **130,000** tonnes of recycled Selected Material Zone (SMZ) material
- **180,000** tonnes of heavily bound base (HBB)
- **6,000** tonnes of recycled crushed glass (RCG) used in asphalt.

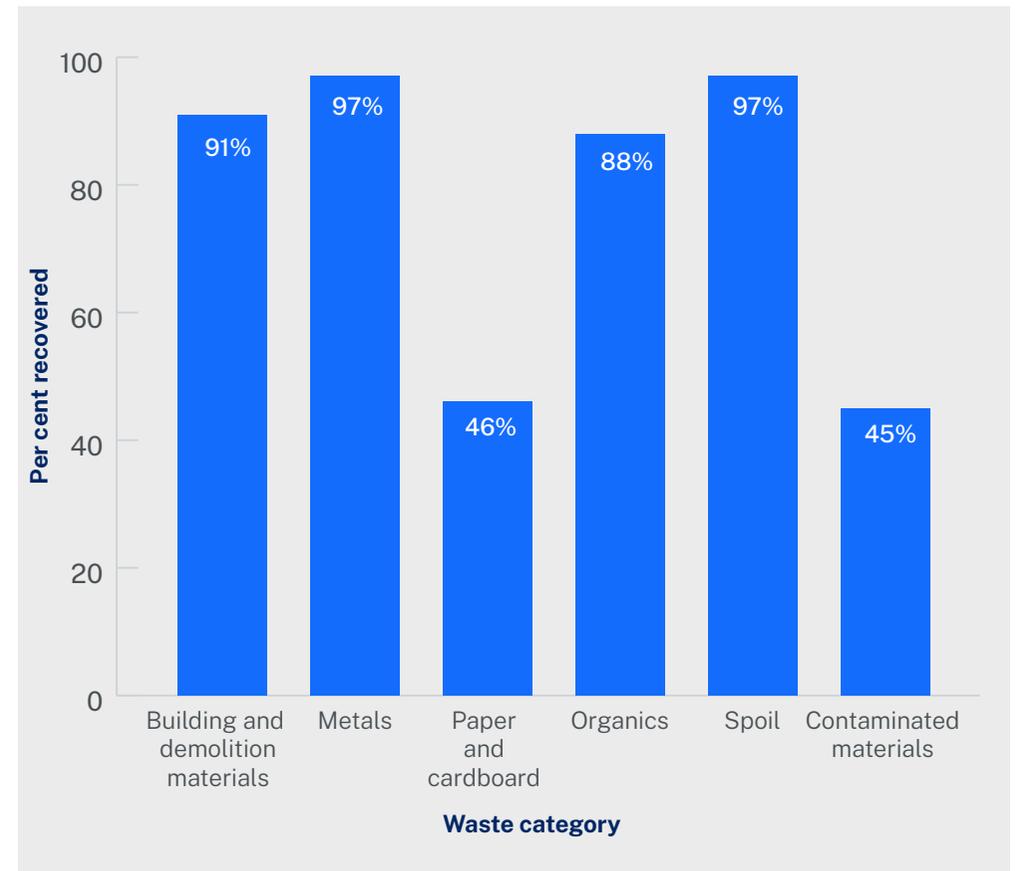
Technical lessons learned from the application of these recycled materials in design will help inform their use in future projects.

Although the Sustainable Procurement in Infrastructure Initiative will provide a consistent approach to how we enhance sustainability performance and promote the circular economy, our projects have long been driving outcomes in this space and include:

- Using recycled materials or materials that contain industrial bi-products in our construction and maintenance activities such as coal wash, coal ash, crumb rubber, slag, amorphous silica, recycled crushed glass and reclaimed asphalt pavement (RAP).
- Using materials that are recyclable or biodegradable in construction such as using biodegradable erosion and sediment controls.
- Using technologies or processes that reduce the amount of material required and waste produced. For example, the Nowra Bridge Project used reusable thermal curing blankets to maintain the optimum conditions for concrete curing in place of hessian and plastics, which would typically require up to two skip bins per segment. This initiative also resulted in cost, time and energy savings.

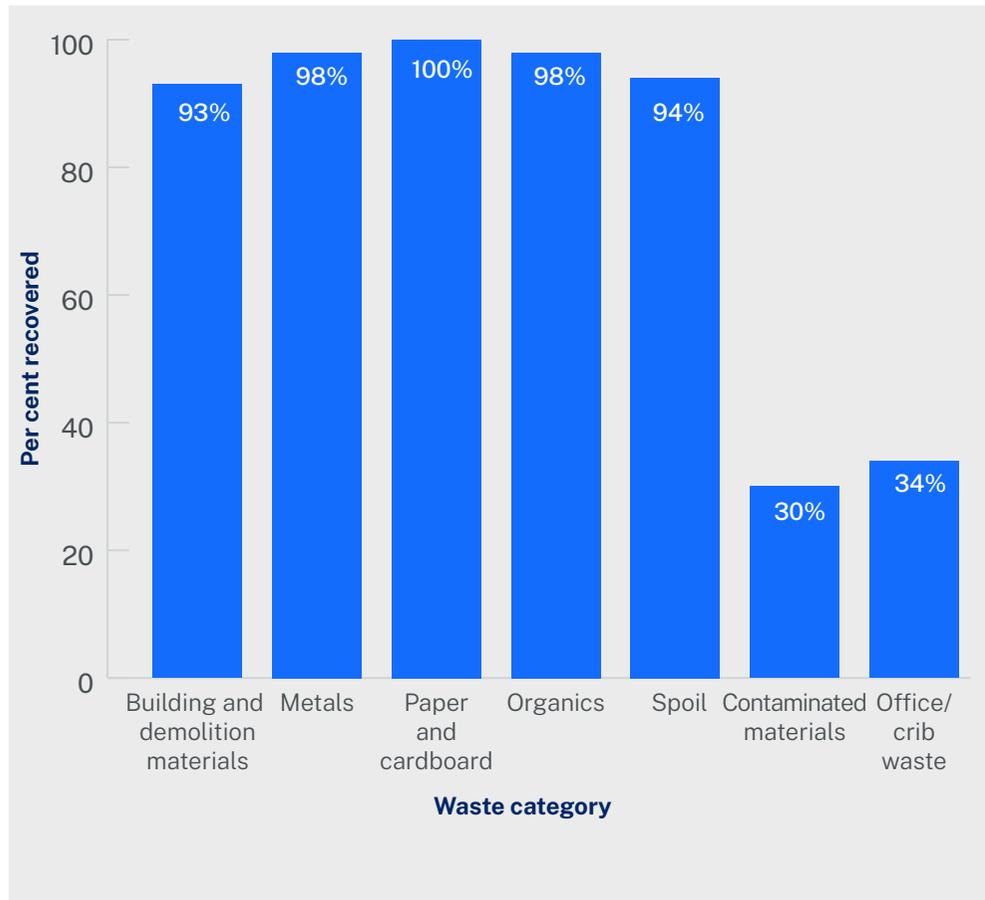
The construction and maintenance of roads involves the management of millions of tonnes of excavated spoil, road building materials and waste. The table below shows resource recovery rates associated with our road maintenance activities across the state. Over the last financial year, Transport has diverted 96 per cent of our road maintenance waste away from landfill, exceeding the NSW Government's targeted recycling rate of 80 per cent.

Figure 9: Resource recovery rates from our road maintenance activities



Across our project portfolio Transport has diverted approximately 91 per cent of waste away from landfill. The table below shows indicative resource recovery rates associated with project activities by waste category. In the last financial year, Transport has developed enhanced project waste data collection processes and embedded the reporting requirement into contracts. As such, it is anticipated that Transport will be able to report more holistically on waste data associated with our projects moving forward.

Figure 10: Resource recovery rates from project delivery



In addition to reducing waste from our project delivery and maintenance activities, Transport is also looking to reduce waste associated with the users of our network. Over the last financial year, Sydney Trains and NSW TrainLink have trialed two initiatives to improve recycling at our stations. The trials aimed to identify how to best improve waste separation and as a result improve recycling rates. The two initiatives included:

- changes in rubbish bin decals and signage relating to waste disposal
- back of house sorting of waste after it has been disposed of, to ensure waste is being disposed of appropriately.

The initiatives were successful in improving recycling rates at our stations. Sydney Trains and NSW TrainLink are working through lessons learned from these initiatives to consider how this information may be applied to a broader scale.



4

Procure
responsibly





Our goals to help procure responsibly

- Social and environmental outcomes are included in all procurement decisions
- Go beyond minimum compliance targets in the Aboriginal Procurement Policy

Transport has extensive and complex supply chains of goods and services and within these lies inherent environmental and social risk. We have a responsibility to ensure our activities, and the activities of our suppliers and delivery partners, are undertaken in an environmentally and socially responsible manner.

The extent of our supply chains means we can leverage our buying power to drive far reaching positive environmental, social and economic outcomes.

We are committed to clearly communicating our sustainability expectations to industry to ensure we drive positive change through our direct activities, the activities of our contractors and suppliers, and the broader market.

Ensuring sustainable procurement practices

As well as communicating our sustainability expectations, we ensure our social and environmental outcomes are included in all key procurement decisions. Our Transport Procurement Policy demonstrates our commitment to fair and ethical procurement that supports the delivery of safe, sustainable and customer-centred transport infrastructure and services.

At Transport we also have a responsibility to ensure that goods and services procured by and for Transport are not the product of modern slavery. We are developing an Anti-Slavery Strategy and Modern Slavery Statement to demonstrate our commitment to mitigating modern slavery risk across our operations and supply chain.

‘Modern slavery’ is the term used to describe situations where coercion, threats or deception are used to exploit victims and undermine or deprive them of their freedom.

Transport aligns with NSW Treasury’s Reasonable Steps Framework in response to the *Modern Slavery Act 2018* as amended by the *Modern Slavery Amendment Act 2021*.

The Act includes, as a prescribed modern slavery offence (whether or not occurring in NSW) and serious forms of exploitation such as human trafficking, any form of slavery, servitude or forced labour to exploit children or other persons taking place in the supply chains of organisations.

Alignment to the United Nations Sustainable Development Goals



The Reasonable Steps Framework aims to develop a streamlined, whole-of-government approach to effectively identify and address modern slavery risks across supply chains. Transport has commenced implementation of this framework and will continue to focus priority actions for 2022–23 on high risk procurements and industries such as construction, textiles, cleaning services, security services, and ICT and electronics.

In addition to ensuring we and our supply chains are not complicit in poor social and environmental outcomes, we leverage our contracts to encourage our supply chains to improve and thereby drive significant environmental and social change.

Sydney Road Asset Performance contract

The Sydney Road Asset Performance (SRAP) is a nine year contract with three service providers for the maintenance of roads within greater Sydney. The contract was written with a key focus on sustainability and has encouraged the service providers to make sustainable choices and changes within their own organisations.

The contract promotes:

- use of reused and recycled timber
- achievement of resource and waste management targets
- sustainable office practices
- ensuring no net loss in tree canopy area
- reuse of recycled material in asphalt, road bases and sub-bases.

The contract also requires the achievement of Infrastructure Sustainability Council (ISC) Operations ratings to measure the performance of service providers against an industry recognised benchmark.

To date, the service providers have made changes such as:

- substituting petrol-operated equipment for electric powered where possible
- installing solar panels at their depots
- introducing electric vehicles into their fleet.

Use of reporting portals supports the consistent collection of sub-contractor sustainability data which can ultimately be used to help model and report on their sustainability outcomes.



Improving Aboriginal procurement outcomes

The NSW Government values the economic, social and cultural contribution of the Aboriginal and Torres Strait Islander peoples of NSW and recognises that government procurement provides an important opportunity to increase skills and economic participation. Through the NSW Government's Aboriginal Procurement Policy, we are committed to supporting economic participation, enhancing social outcomes, developing skills and creating jobs for the people of NSW.

Key requirements of the NSW Aboriginal Procurement Policy

Minimum 1.5 per cent of eligible spend to Aboriginal participation for contracts over \$7.5 million	Minimum 3 per cent of goods and services contracts to be awarded to Aboriginal-owned businesses by 2021	Target 1 per cent of addressable spend with Aboriginal-owned businesses	Consider Aboriginal participation in goods and services and construction contracts over \$7.5 million	Contribute to creation of 3,000 Aboriginal identified jobs
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Within Transport, our significant investment in goods and services (including construction) enables us to further drive positive outcomes for Aboriginal people. In line with our Aboriginal Participation Strategy and the Aboriginal Procurement Policy, Transport is focused on supporting the sustainable growth of Aboriginal businesses. Our procurement initiatives are designed to increase supplier diversity, remove barriers to participation and promote the economic prosperity of Aboriginal peoples and communities in NSW.

We are committed to working towards exceeding the minimum compliance requirements set out by the Aboriginal Procurement Policy. This significant investment in Aboriginal-owned suppliers has enabled the direct spend of \$64.75 million and 250 contracts with Aboriginal-owned businesses over the past financial year, exceeding our NSW Aboriginal Procurement Policy requirements.

Driving positive outcomes for Aboriginal people through project delivery

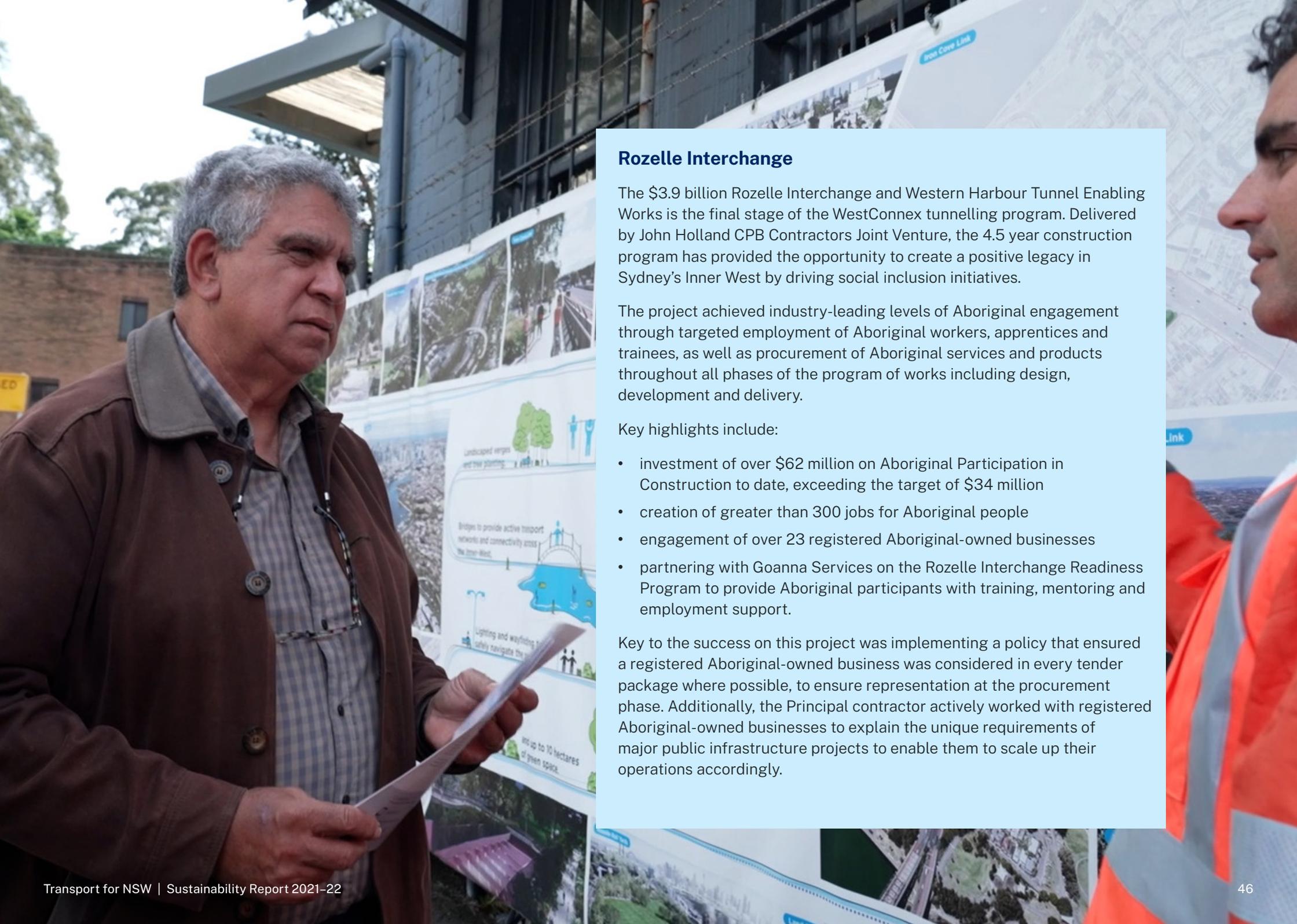
In line with the Aboriginal Procurement Policy, Transport is required to achieve a minimum of 1.5 per cent of eligible project spend to Aboriginal participation for all contracts greater than \$7.5 million. Sydney Metro and Transport's Infrastructure and Place Division are the primary developers and deliverers of major transport infrastructure projects for the people of NSW.

In the 2021–22 financial year, there were 126 active construction contracts across Infrastructure and Place and Sydney Metro with an awarded value of greater than \$7.5 million. To date, the total amount spent on Aboriginal participation across these contracts was approximately \$370 million. The largest components of this include:

- more than \$137 million on the employment of Aboriginal identified people
- over \$202 million on the engagement of Aboriginal-owned subcontractors
- approximately 2,360 people of Aboriginal or Torres Strait Islander descent employed across the 126 contracts.

Note: the data provided includes both direct contracts with Transport and indirect contracts through our delivery partners.





Rozelle Interchange

The \$3.9 billion Rozelle Interchange and Western Harbour Tunnel Enabling Works is the final stage of the WestConnex tunnelling program. Delivered by John Holland CPB Contractors Joint Venture, the 4.5 year construction program has provided the opportunity to create a positive legacy in Sydney's Inner West by driving social inclusion initiatives.

The project achieved industry-leading levels of Aboriginal engagement through targeted employment of Aboriginal workers, apprentices and trainees, as well as procurement of Aboriginal services and products throughout all phases of the program of works including design, development and delivery.

Key highlights include:

- investment of over \$62 million on Aboriginal Participation in Construction to date, exceeding the target of \$34 million
- creation of greater than 300 jobs for Aboriginal people
- engagement of over 23 registered Aboriginal-owned businesses
- partnering with Goanna Services on the Rozelle Interchange Readiness Program to provide Aboriginal participants with training, mentoring and employment support.

Key to the success on this project was implementing a policy that ensured a registered Aboriginal-owned business was considered in every tender package where possible, to ensure representation at the procurement phase. Additionally, the Principal contractor actively worked with registered Aboriginal-owned businesses to explain the unique requirements of major public infrastructure projects to enable them to scale up their operations accordingly.

Delivering positive social procurement and workforce outcomes

We are also leveraging our infrastructure investment to support local and regional economies through establishing supply chain workforce targets to address skills shortages and gaps in workforce participation. Such targets relate to:

- participation for disadvantaged and diverse communities and businesses
- engagement of small and medium businesses
- engagement of young people through education, work experience and other employment pathways
- supporting vocational career development through apprenticeships and traineeships
- engagement and capability building of diverse businesses including social enterprises, disability enterprises and regional businesses

- workforce diversity including increasing the number of women in construction and non-traditional occupations.

Collaborating with industry

Transport also works collaboratively with our delivery partners across various projects in construction, to deliver jobs, skills and workforce diversity outcomes to meet targets aligned with the Infrastructure Skills Legacy Program (ISLP).¹

We support our delivery partners in identifying initiatives to meet their commitments, including:

- engaging key stakeholders and organisations in collaboration with our delivery partners to drive initiatives that support employment and training outcomes
- embedding targets in sub-contracts
- supporting access to state and federal government subsidies

- coordinating cross government advisory groups that support our industry partners to deliver against their requirements. Groups such as the Sydney Metro Skills and Employment Advisory Group and the Dubbo Area Jobs, Skills & Industry Participation Advisory Group have proven to be successful
- delivering pre-employment programs. These programs are collaborative models providing accredited entry level technical skills and employability training for the long term unemployed and other under-represented groups in the workforce. The programs are designed to prepare job ready candidates for entry-level opportunities. Delivery Partners are required to commit to providing sustainable employment opportunities for graduates of these programs.

¹ ISLP recognises the need for the NSW Government to work with industry to boost the number of skilled construction workers, and increase diversity in construction. The six ISLP requirements agreed by government and industry are (1) must apply the relevant Aboriginal Procurement Policy; (2) 20 per cent of the trades workforce to be apprentices; (3) 20 per cent of the project workforce to be learning workers; (4) doubling the number of women in trade-related work to 2 per cent; (5) ensuring at least 8 per cent of the project workforce is aged less than 25 years; and (6) reporting local employment outcomes.

Social Procurement and Workforce Development Resource Guide

Within Transport, the Infrastructure and Place division is responsible for the development and delivery of the majority of Transport infrastructure, including heavy and light rail related projects, roads and motorways, active transport links and place-making projects across NSW. Within the reporting period, the team developed and launched the Social Procurement and Workforce Development Resource Guide. The guide was developed to support our delivery partners and broader supply chain companies to meet social procurement and workforce development requirements and commitments.

The guide provides information on industry programs, funding and initiatives relating to business capability and diverse suppliers as well as jobs, skills and workforce diversity. It helps facilitate connections between delivery partners and the wider social procurement and workforce stakeholders. Bringing everyone together allows us to drive meaningful and long-lasting social outcomes and economic participation.

Beyond developing the guide, Transport also undertook programs that drove social procurement and workforce requirements. The team developed a series of tender writing videos to support small and medium businesses, social enterprises, Aboriginal businesses and Disability Enterprises in preparing for opportunities across the supply chain of Transport's infrastructure investment. The initiative involved engaging iClick2Learn, a small regional business and certified social enterprise, to develop the tender writing series.



TAPPING into the future (School Ambassador Program)

Within the Transport Access Program (Pymble, Erskineville, Normanhurst, Thornleigh and St Peters train stations) the Head Contractor, Laing O'Rourke, facilitated an Introduction to the Construction Industry event.

The event was delivered in collaboration with Cheltenham Girls High School with the key objectives of:

- advancing Women in STEM (science, technology, engineering and mathematics)
- advancing Women in Construction
- promoting equality and change
- inspiring the future workforce by listening to and engaging with successful role models of Women in Construction.

The first event was held at Cheltenham Girls High School and was attended by 42 year 9 and 10 students undertaking STEM subjects. The second event was held onsite at Thornleigh Station and was attended by 48 students. This event included a site visit of the project and Q&A session.

Promoting Women in Construction careers to girls at these early ages will help improve diversity in the industry. It will encourage women into non-traditional occupations as well as improving industry capacity by making young people aware of the opportunities a career in construction can provide.



Great Western Highway Upgrade Local Industry Briefing – Lithgow

As part of the Great Western Highway Upgrade Program, a local industry briefing was held in person at the Lithgow Workers Club. Over 200 individuals registered to attend, representing 125 different employment organisations.

The briefing was held in April 2022, prior to any of the program contracts being awarded by Transport. This was to ensure sufficient time for potential principal contractors to consider local industry capability and service offerings in their delivery methodologies, procurement strategies and industry development approaches.

The briefing also aimed at equipping local and regional business to access opportunities. This was achieved by providing them with time to connect with government stakeholders and with mechanisms for adapting their business models to best support the program.

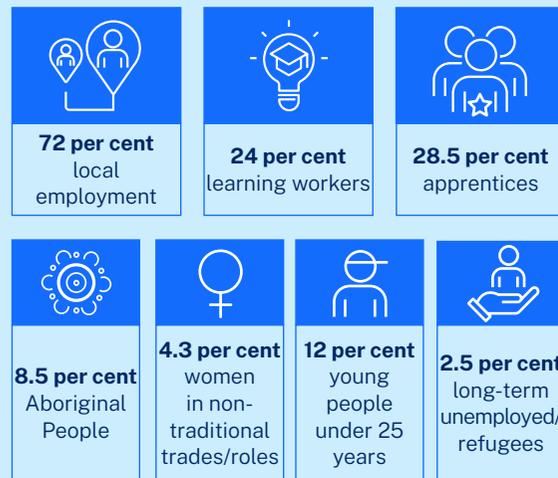
A post-event survey showed that attendees gave the event a satisfaction rating of 4.46 stars out of 5 with 99 per cent of attendees indicating that the information was relevant to their business.

Albion Park Rail Bypass

As part of the Albion Park Rail Bypass Project, the Principal Contractor Fulton Hogan committed to working with Transport to develop workforce skills and deliver social outcomes for disadvantaged groups in the community, while meeting targets aligned with the Industry Skills Legacy Program.

Fulton Hogan constructed a Training Hub onsite to deliver project workforce skills development and pre-employment programs. As part of this process they also commissioned a local Aboriginal Artist, Warwick Keen, to produce Aboriginal art which was incorporated on the Training Hub.

The workforce participation outcomes achieved as an average percentage of the workforce over the life of the project are outlined below.

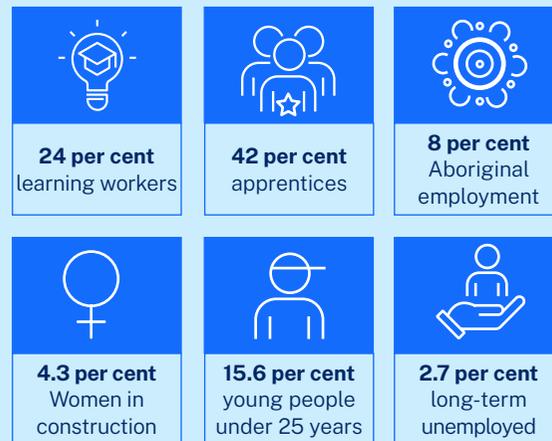


Berry to Bomaderry Princess Highway Upgrade

The \$450 million Berry to Bomaderry Princess Highway Upgrade Project is the final piece in more than 30 kilometres of highway upgrade between Gerringong and Bomaderry.

The Principal Contractor, Downer Seymour Whyte joint venture, is committed to working with Transport to develop workforce skills and deliver social outcomes aligned with the Industry Skills Legacy Program (ISLP).

Instrumental to the success of the ISLP was construction of an onsite Skills Training Hub. The workforce participation outcomes achieved as an average percentage of the workforce over the life of the project are outlined below.



Sydney Metro

Sydney Metro is Australia's biggest public transport project. The Sydney Metro program includes the operational Metro North West Line and three projects under construction including City & Southwest, West, and Western Sydney Airport.

Sydney Metro provides a significant opportunity to support jobs and skills for a more diverse and inclusive workforce and supply chains. Sydney Metro's Workforce Development and Industry Participation Plans set out how these priorities will be delivered while addressing key NSW Government Policies such as the NSW Infrastructure Skills Legacy Program (ISLP) and the Aboriginal Procurement Policy (APP). A range of mechanisms are in place to ensure the successful implementation of both the ISLP and APP including:

- minimum requirements
- bid back mechanisms - through the procurement process, Sydney Metro encourages tenderers to bid back their own initiatives and commitments to further drive outcomes in the workforce and the supply chain
- collaborative forums and client led programs - Sydney Metro identified that further benefits could be achieved by bringing industry expertise and government partners together.

Outcomes achieved to date include:



22.4 per cent
learning workers



\$130 million
Aboriginal participation
spend



16.5 percent
of the trades workforce
are apprentices



4 per cent Women in
trade related work



15.1 per cent
young people under
25 years



8.7 per cent
Aboriginal businesses in
supply chain*

*As a percentage of small to medium enterprises in the supply chain



5

Partner
with communities





Our goals that help partner with communities

- Always leave a positive legacy for communities as a result of projects
- Enable, apply and report on community engagement

Partnering and engaging with communities enables us to meet their needs while developing and managing public spaces in ways that preserve and enhance their character. Through these partnerships we are better able to factor into our projects aspects such as comfort, safety, attractiveness, accessibility and broader social and community outcomes.

We are committed to building resilience and adaptive capacity in local communities and economies through our activities by ensuring community is at the heart of our investment-making decisions. This is reflected in both our sustainability goals and our vision to create a NSW where every journey is people and planet positive.

By creating connected places and communities, we can enhance social inclusion and local economic development while also providing significant environmental and social benefits to the communities in which we operate.

Engaging with our communities

Our engagement approach is increasingly designed to embed community needs and aspirations early to ensure decisions add value for people who use, are affected by or live and work near our network and services. Our Stakeholder and Community Engagement Policy drives a consistent approach to stakeholder engagement for all projects, ensuring consideration of the needs of our diverse communities. This commitment is led by the belief that meaningful communication with our community is a crucial element in the successful delivery of our projects.

Together with our delivery partners we work with communities at all stages of the project lifecycle to leave a positive legacy as a result of our projects.

The COVID-19 pandemic provided challenges for the community around accessing information on both the impacts and benefits of our infrastructure projects. In line with the Transport NSW Technology Roadmap 2021–2024, we trialled digital technologies within the environmental approvals process as a way of meeting face-to-face consultation requirements.

During the reporting period we also delivered our first Digital Review of Environment Factors (REF) product. The product meets relevant legislative requirements while incorporating a powerful new combination of digital tools. The product was trialled on Killara Station Upgrade REF and Mamre Road Upgrade REF, with positive results and feedback from stakeholders and the community.

Alignment to the United Nations Sustainable Development Goals



M6 Stage 1 Recreational Facilities

As part of the M6 Stage 1 project, Transport upgraded recreational facilities at two sites: Ador Park Precinct, Rockdale and Brighton Memorial Fields, Brighton-Le-Sands.

People were at the heart of each stage of the project and key features of the \$30 million investment include a war memorial, all abilities playgrounds, skate park and learning spaces, as well as a range of other facilities. We consulted widely and incorporated feedback into the design of the facilities including:

- ensuring inclusive design features
- acknowledging Aboriginal history and heritage in the area
- reflecting the local environment with inspiration for the play areas coming from nearby wetlands
- sustainable design features including water sensitive design, diverse planting (including canopy trees) and passive design amenities to maintain comfortable year-round temperatures.

Although the initiative was started in response to the potential loss of open space and facilities during construction, the project took a proactive approach towards mitigating this impact and the new facilities were delivered in advance of construction commencing.



Rail trails

Rail trails are open public pathways built either partially or entirely on disused rail corridors. These trails follow the route of previous rail lines for most of their length, often connecting small communities and townships. These corridors with gentle gradients are ideal for active travel such as walking, cycling hiking or even commuting.

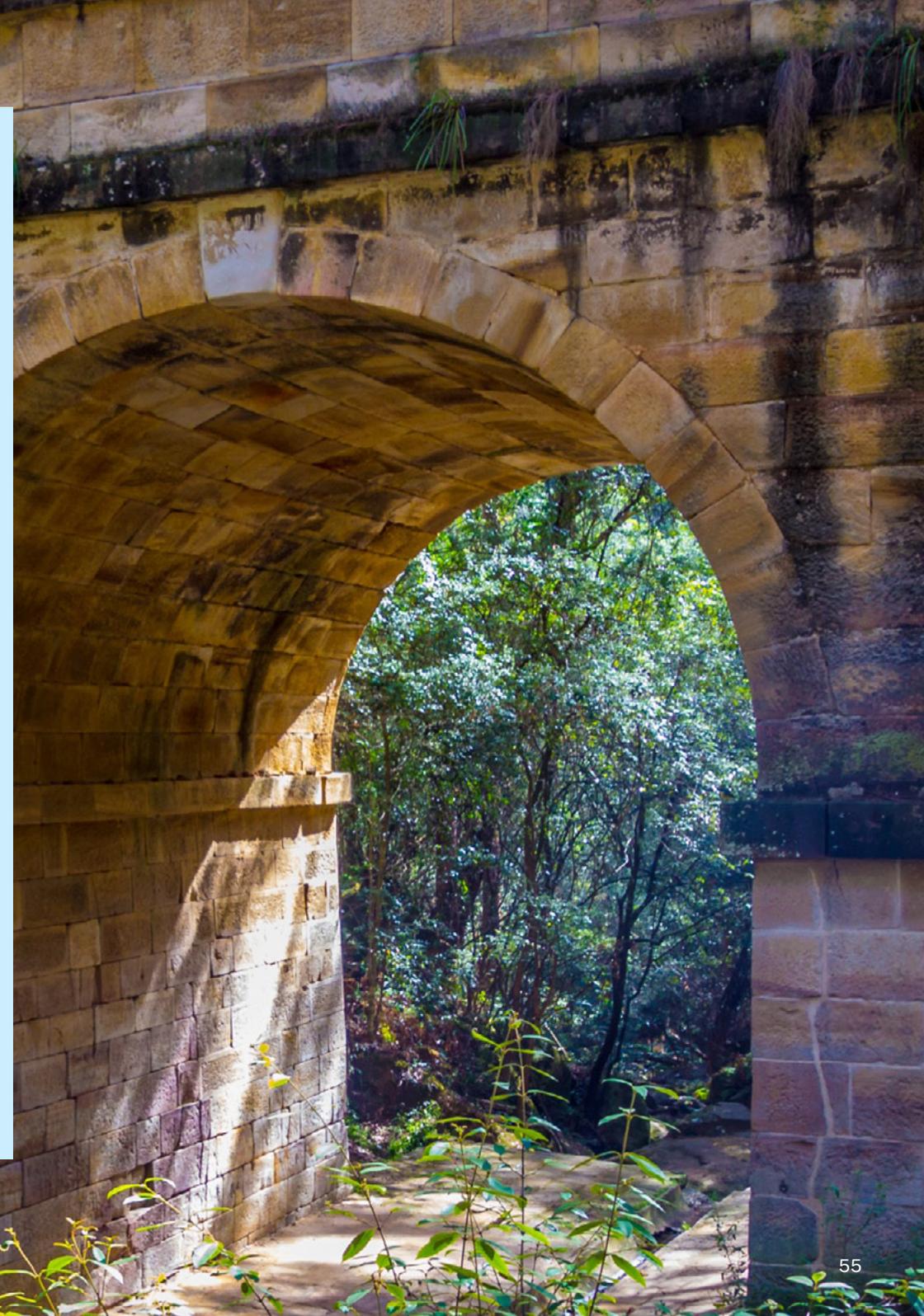
Reactivating these places can support economic and tourism growth in local communities, as well as enhancing the health and wellbeing of the community.

In the last financial year the Department of Regional NSW worked with council, community groups and other areas of government including Transport, to develop a framework that will support the revitalisation of these disused lines. The framework helps outline the NSW Government's criteria in determining the viability of a rail trail and provides clarity around the expectations at various stages throughout the establishment of a new rail trail.

Guided by lessons learned through the Rosewood to Tumbarumba Rail Trail, Transport has signed leases with Tweed Valley Council and Richmond Valley Council to enable the development and operation of the first two sections of what will become the Northern Rivers rail trail. The Tweed section is currently being constructed and is expected to be open by early 2023.

To streamline the process of developing future rail trails, Transport sought an Amendment to the *Transport Administration Act 1988*. A bill passed through Parliament in August 2022 and the amended Act now enables leasing of disused rail corridors to councils for rail trails without the line having to be formally closed by an Act of Parliament. This amendment also makes it easier to reinstate rail services along a line in future, should such a prospect be viable.

This collaboration will ensure that future rail trail projects continue to link towns and regions and contribute to social and economic outcomes in regional NSW.



Delivering community benefit initiatives at Sydney Metro

Along with its delivery partners, Sydney Metro seeks to deliver a positive legacy for communities through identifying and implementing community benefit initiatives. Sydney Metro has established targets within contracts for the delivery of both construction stage and legacy initiatives. Two such examples include:

- Lakemba community garden rejuvenation
- Cooks River Canoe Club partnership

The Lakemba community gardens provide the local community with a place to grow local produce and come together for social interactions. Prior to Haslin and Stephen Edwards Constructions' joint venture (HSE) involvement the gardens were in need of a makeover. Members of the joint venture team joined with the Canterbury Community Centre to provide:

- staff as volunteers to complete the physical work and materials including soil
- trimming, pruning overgrown vegetation and the removal of weeds
- five new plant beds, reducing the waiting list for plots in the community
- installation of a shade-cloth running the length of the border fence to stop weeds entering from the neighbouring vacant property

Downer EDI in partnership with Cooks River Canoe Club, Mud Crabs Community Group, Police Citizens Youth Club and Sydney Metro undertook a Paddle Against Plastic event. The team canoed the Cooks River to collect and remove as much waste as possible from the river. The event involved a total of 43 people paddling on the river for a few hours in May 2022. The project team donated a collective total of more than 200 hours preparing and participating in the event. Over 140kg of plastic and waste were extracted from the waterway by the attendees.

For further information regarding community benefit initiatives delivered across Sydney Metro projects please refer to the Sydney Metro Sustainability Report.



Delivering community benefits

The NSW landscape is incredibly diverse, as are the communities and people within it. At the end of 2021, the NSW population stood at over 8 million with a projected increase to between 11 million and 15.6 million by 2066. In planning, delivering and operating Transport assets, we are committed to supporting the needs of the community including the needs of underrepresented groups. Transport has an opportunity to lead government, ensuring our infrastructure and services deliver on social outcomes. During the reporting period, Transport established the first cross agency Social Outcomes Community of Practice. The group came together to build internal capacity focused on implementing meaningful engagement, Country-centred place shaping, supply chain participation and initial recommendations for system change.

Under a maturity model, the Social Outcomes principles of practice will guide collaboration across Transport, and with our delivery partners, operators, industry and government partners. The objective of the principles of practice is to facilitate knowledge sharing and drive a consistent approach to embedding and delivering social outcomes for the communities within which we operate.

The key principles that underpin the Social Outcomes Community of Practice include:

- social is the human relationship with everything else
- recognising the value of an Indigenous-led and Country-centred approach to design
- being proactive, to ensure social outcomes are embedded from the beginning and are agile to change
- establishing a relationship-based approach built on reciprocity is important
- adopting a place-based approach ensures our services and infrastructure build on the needs and aspirations of community
- recognising that people are the experts in their own lives and therefore the lived experience needs to inform our approach.

Throughout the reporting period we have expanded our place-based approach with a focus on building relationships to draw on the depth and breadth of knowledge, experience and resources. Our focus on a Country-centered design approach enables Transport to better understand the voice of community and recognise the value of their lived experience, providing better representation of community needs and aspirations within our planning processes.

In doing so, we will plan and create future-ready places that are adaptive and resilient, while also building a social fabric that reflects the needs and aspirations of our diverse communities across the state

We have also been developing our approach to social impact assessment in a way that demonstrates how we can more broadly embed social outcomes across stages in the project lifecycle and service offerings.

For further information on how social outcomes are being delivered across Transport refer to pages 42, 59 and 72.



Macquarie Park Precinct and Bus Interchange upgrade

Transport took a deliberate stakeholder co-design approach through the concept design phase of the project. This co-design approach ensured we were designing and delivering the precinct in partnership with key stakeholders and community representatives. Collaboration at this early stage enables the project to not just improve travel efficiency and connectivity, but create a vibrant heart, making Macquarie Park Precinct a better place for people to live, work, learn and play.

In the 2021–22 financial year, we held five workshops to co-design the precinct. Working with City of Ryde Council, Macquarie University and the Macquarie Centre, the outcomes of this process were to create a design that would:

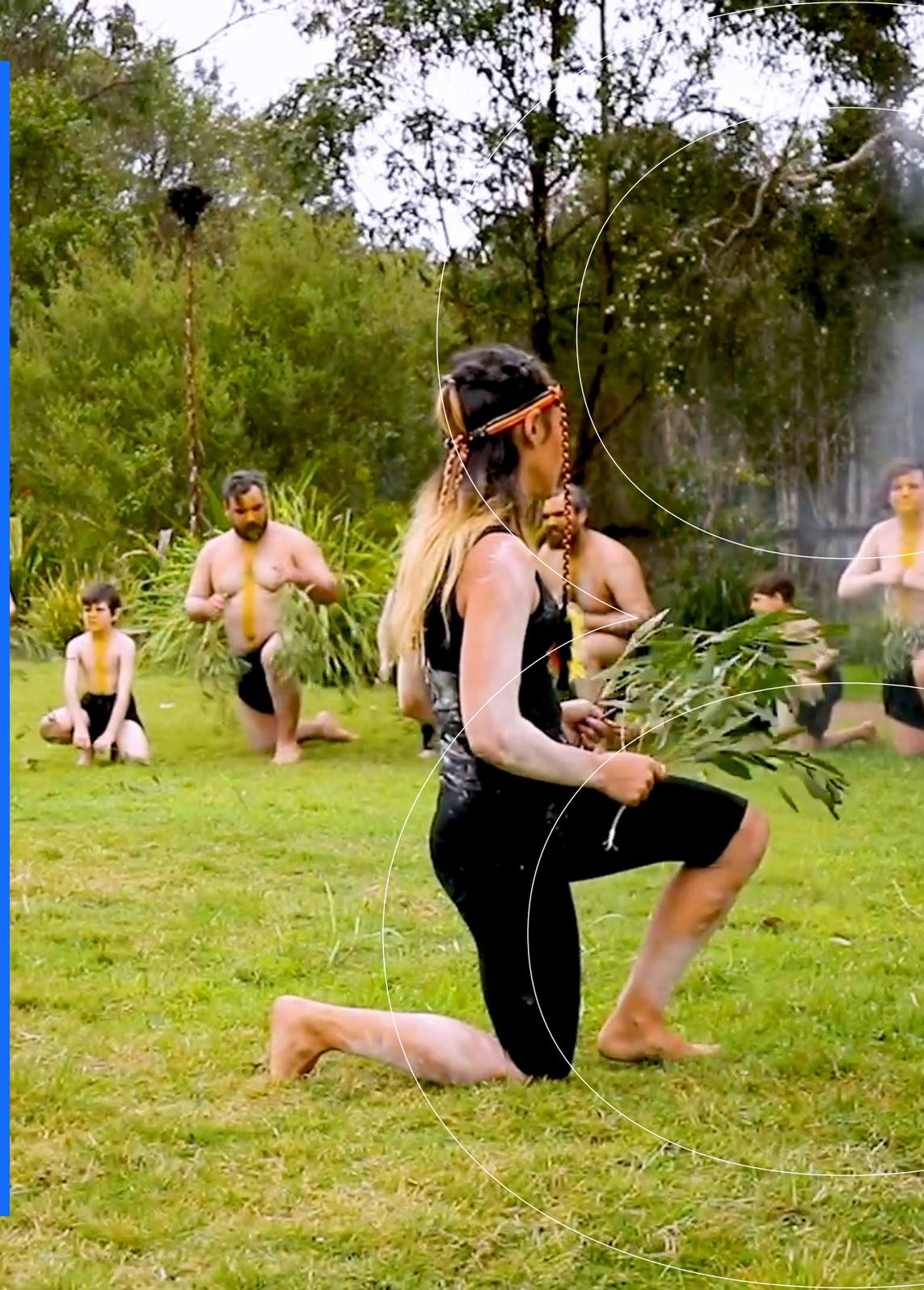
- provide features for people of all abilities to move in and around the precinct safely and easily, with wider and more direct pedestrian crossings and clear and visible sight lines for bus passengers.
- save travel time for our customers by almost doubling the capacity of bus boarding and alighting areas and improving the accessibility and reliability of buses in the area.
- create green shaded gathering areas and provide comfortable spaces where people can meet, relax, connect and enjoy.

The preferred option, a co-design developed from our stakeholder workshops, will create a connected, safe and green public domain and bus interchange. The future focused design is flexible to accommodate customers and community, and integrate with future land uses from Macquarie University and Macquarie Centre.



6

Respect culture
and heritage





Our goals to help respect culture and heritage

- Aboriginal culture is acknowledged, integrated and preserved
- Acknowledging and incorporating culture through stories, examples and best practice

NSW has a rich diversity of culture, heritage and history. At Transport, we develop, implement and manage projects around a range of these cultural and heritage places. Given the extent of our network, it is vital that we manage the risk to our state's culture and heritage. We also need to look for further opportunities to conserve, protect, share and integrate our rich and diverse culture and heritage into our network.

Aboriginal culture and heritage are associated with past and present-day Aboriginal communities. Aboriginal culture and heritage relate both to the tangible, such as objects and places, and the intangible, such as dreamtime stories, songs, cultural practices, lands, waters, sky, plants, animals and traditions.

We understand that meaningful engagement with Aboriginal communities is critical to ensuring Aboriginal culture and heritage are understood and preserved for future generations.

According to the 2021 Census, approximately 278,000 people in NSW identified as Aboriginal¹ people, representing 3.4 per cent of the NSW population. We work closely with Aboriginal stakeholders and our Aboriginal Engagement team to ensure that Aboriginal culture is acknowledged, integrated and preserved throughout all our activities and across the network.

Alignment to the United Nations Sustainable Development Goals



¹ The use of Aboriginal is inclusive of Torres Strait Islander people

Our commitment to reconciliation

Our Reconciliation Action Plan is key to how we support reconciliation outcomes for our people as well as the communities of NSW.

Transport is currently transitioning from our inaugural Reconciliation Action Plan (RAP) 2019–2021 to our Stretch RAP 2022–2025. Our Stretch RAP will further drive our contribution towards reconciliation, both internally and in the communities in which we operate.

Our first RAP was an opportunity to understand our organisation better and has proven to be an excellent vehicle for positive, deep employee engagement. Our RAP inspired and challenged our staff to incorporate and embed reconciliation into their work every day. Since its development and implementation, we have achieved 45 of the actions in our inaugural RAP. We have one action on hold and 17 that are ongoing and will be carried over to our Stretch RAP where appropriate.

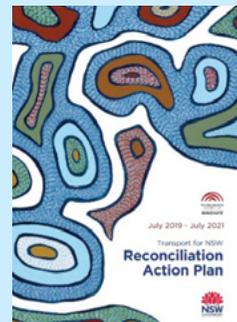
Key RAP Action Highlights

250 staff and community members attended the Innovate RAP launch event

Creation of **flexible career pathways for Aboriginal people** through vocational education traineeships and Transport's Graduate Program

Establishment of the annual **Aboriginal Staff Forum** to promote a network of Aboriginal employees

Over **800** staff have completed Aboriginal cultural awareness training



Development of an **Aboriginal Cultural Learning Framework**

Celebration and acknowledgement of significant Aboriginal events across the Transport cluster such as **Reconciliation week, NAIDOC week** and acknowledging **National Sorry Day**

Development of the **Aboriginal Cultural Protocol**

Over **600** Aboriginal people employed at Transport



Improving Aboriginal engagement

At Transport we employ a specialist engagement team who collaborate with Aboriginal groups across a range of projects to protect and enhance Aboriginal cultural and heritage values.

Our Aboriginal engagement approach is defined by the:

- Principles and Framework for Aboriginal Engagement, “Ngiyani Winangaybuwan Bunmay”, which is designed to assist our people in facilitating meaningful Aboriginal engagement through provision of key principles.
- Aboriginal Cultural Protocol 2020–2022, which is designed to strengthen Aboriginal engagement activity by providing practical hints and tips.
- Aboriginal Art Strategy, which supports Transport staff to participate in the creation of a positive and supportive environment for Aboriginal Art practices as business-as-usual across the cluster.
- Aboriginal Participation Strategy 2021, which is aligned to the NSW Government Aboriginal Procurement Policy and is designed to support an increase in supplier diversity, to improve social outcomes and promote the economic prosperity of Aboriginal peoples and communities in NSW.
- Aboriginal Culture and Heritage Framework, which sets out cultural and heritage commitments and co-design principles to assist our staff in embedding Aboriginal engagement, culture and heritage into their ways of working.



Orchid dance and song

Transport has dedicated protocols and processes to ensure we understand if work associated with our projects might affect Aboriginal cultural heritage. Project teams also follow best practices to ensure that knowledge captured during this process can be collated and shared back with Aboriginal communities.

The Nelson Bay Road duplication between Salt Ash and Bobs Farm sits within an area of significant movement corridors between Tilligerry Creek, Tomaree and Fullerton Cove. These areas are associated with resource collection, community gatherings and ceremonial activities for the Worimi people. In undertaking our Environmental Impact Statement process in the project area, a small quantity of the Sand Doubletail Orchid (*Diuris Arenaria*) was identified. This native orchid is of cultural value for its use as a traditional food source.

In an innovative approach to sharing this information with the community, Transport's project team repatriated collated cultural knowledge related to this particular orchid and its connection to country back to the Worimi community. This partnership brought together representatives from the Worimi Local Aboriginal Council and Saretta Art and Design, a local Aboriginal-owned business.

Through this partnership, the local Worimi Aboriginal community came together to create a traditional dance and song in Gathang language. This dance and song showcased the importance of the Sand Doubletail Orchid and has enabled the passing of this cultural knowledge to future generations and is helping to strengthen the living language and culture of the Worimi community.



Protecting and enhancing heritage

Our commitment to heritage is driven by legislation and is embodied in Transport's heritage procedures, guidelines and resources. We identify, assess and manage the effects we have on heritage. We also conserve, adapt and interpret our shared living history to ensure our state's heritage is carefully and sustainably managed for generations to come. We aim to avoid and mitigate impacts to both tangible and intangible Aboriginal cultural heritage. To reduce our impacts, we proactively engage with Traditional owners to ensure they can make informed decisions about the management of their cultural heritage sites.

Through our activities we have the potential to directly and indirectly impact non-Aboriginal heritage assets. These can be:

- known heritage assets that we own and maintain
- known heritage places located in close proximity to our owned assets or projects
- unexpected finds discovered through project work.

We aim to minimise these impacts and celebrate heritage through our established systems and processes including heritage sensitive design and implementing heritage interpretation throughout our projects.

Naming the Bidgee Bidgee Bridge

Bidgee Bidgee Bridge is the largest new bridge delivered as part of Parramatta Light Rail Stage 1. Located in Rosehill and spanning James Ruse Drive, it was officially named in April 2022, following extensive community consultation.

A Bridge Naming Consultation Panel assessed over 500 community suggestions in line with naming guidelines and conventions. Five shortlisted names were provided and after close engagement with the Darug Custodian Aboriginal Corporation and reviewed by an internal working group at Transport, the name Bidgee Bidgee was selected.

Bidgee Bidgee (c.1787-c.1837) was a leader of the Burramattagal clan of the Darug people. For 20 years, this local Aboriginal leader was instrumental in bringing all people together to help shape the region's history. Naming the bridge after the respected local Aboriginal leader honours the significant contribution he has made to shape Parramatta's history.

Adapting heritage footbridges to meet accessibility requirements

Pedestrian footbridges are an integral part of many railway precincts. They are often historic structures dating from the early twentieth century and contribute to the significance of the heritage-listed stations.

We implemented the Transport Access Program (TAP) to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure such as upgraded footbridges.

Where feasible, the TAP program has retained and adapted heritage footbridges. Over 2021–22 the TAP program retained and adapted nine heritage footbridges. Key benefits of this initiative include:

- retention of heritage value
- maintenance of existing social connectivity and urban connections
- avoidance of carbon emissions and resource consumption associated with demolition, waste disposal and processing, and rebuilding with new materials.

Thompson Square heritage interpretation

As part of the Windsor Bridge Replacement project, Transport funded an exhibition at the Hawkesbury Regional Museum.

The UNCOVERED exhibition incorporated archaeology salvaged from the Hawkesbury River and within Thompson Square and its surrounds. The exhibition was the winner of the 2021 Museums & Galleries of NSW, Highly Commended Award.

The exhibition was one of the interpretation experiences outlined in the Thompson Square heritage interpretation plan.

Key features of the exhibition included:

- custom-built displays to showcase a selection of the 30,000 archaeological items uncovered
- reconstruction of a section of box drain encased in a display for viewing by the public, plus interpretation of the whole drainage system
- 3D visual renders of a shipwreck discovered during the construction of the new bridge.
- educational and interactive elements for children
- signage outlining the historical context of the site, project and archaeological record
- digital media and video content covering various topics.

Discovery and reinterment of Mr Joseph Thompson

As part of the Sydney Metro Central Station project, the remains of Mr Joseph Thompson were identified at the site of the former Devonshire Street Cemetery.

Following the discovery, his remains were exhumed and transferred to a museum for expert handling and storage. The process involved consultation with the community, which included advertisement of the discovery to assist in identifying descendants.

Transport worked with Mr Thompson's descendants and the Pitt Street Uniting Church, where Mr Thompson served as Deacon. His life was celebrated in a service at the Church in November 2021. His remains were then reinterred at the Eastern Suburbs Memorial Park with over 50 of his descendants and their families present.

The discovery and reinterment of Mr Joseph Thompson established a best practice process for the exhumation and management of human remains.

7

Align spend
and impact





Our goals to help align spend and impact

- All decisions consider value created from sustainability alongside financial analysis
- Reduce whole of life costs for the transport network

NSW has seen unprecedented investment in the transport network over recent years. Our projects are helping shape our cities, centres and communities for generations to come. Understanding the financial cost as well as the direct and indirect environmental and social benefits of our projects across their lifetime is critical to Transport being able to make sustainable choices. It is imperative that we obtain best value when deciding where and how to invest in transport infrastructure. This includes considerations around best value for the economy, environment and our communities.

Ensuring that industry has the skills, capability and capacity to support our sustainability ambitions is also imperative to us delivering on our commitments in a fiscally responsible manner. We are working to ensure our infrastructure investment creates

significant positive social and environmental impacts and achieves value for money for the people of NSW.

Sustainability leadership

Transport is working towards the vision where every journey is people and planet positive. We recognise that the earlier sustainability is considered in a project lifecycle, the better value for money sustainability can deliver. To maximise value for money, we aim to ensure sustainability is embedded into key decision points across the project lifecycle from development, procurement, design and construction to operation, maintenance, renewal and disposal of assets.

We recognise Transport plays an important role in leading and enabling the industry to make sustainable decisions and reduce its impact. One way we can deliver value for money in sustainability is through actively collaborating and openly sharing knowledge with industry. This can deliver efficiencies by helping drive an uplift in industry sustainability capability and performance. Key knowledge sharing initiatives undertaken over the last financial year include:

- delivering a variety of contractor sustainability forums
- collaboration with Transport agencies in other states to align practices
- establishment of sustainability related Communities of Practice, including the Sustainable Procurement and Social Outcomes communities of practice.

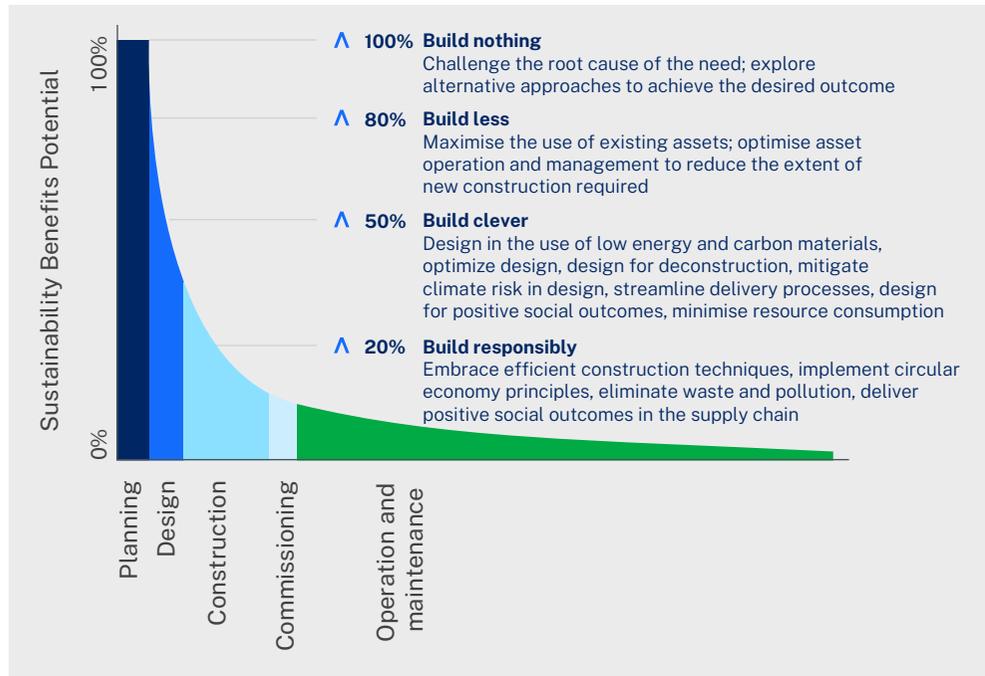
Alignment to the United Nations Sustainable Development Goals



Transport uses Benefits Realisation Management to identify and measure costs and benefits as well as to define the success and impact of a project. We are also progressing significant research and analysis to embed the direct and indirect economic benefits of sustainability outcomes and externalities into decision making. This includes considering how Transport can:

- estimate and accurately embed carbon values in business cases to drive decarbonisation outcomes
- quantify the benefits of climate-resilient infrastructure and services
- capture the value of improving biodiversity, heritage, visual amenity, air quality, ecosystem services and social outcomes
- capture the value of reducing stormwater run-off, flood risk, urban heat island effects and land use
- integrate a framework for valuing green infrastructure and public spaces.

Figure 11: Sustainability benefits potential across asset lifecycle



Derived from carbon reduction potential graph in WGC: "Bringing Embodied Carbon Upfront" report.



We recognise the value that third-party rating tools provide in verifying the sustainability performance and impact of our projects against industry benchmarks. The Infrastructure Sustainability (IS) rating scheme and Green Star rating tool are nationally and internationally recognised rating systems aimed at pushing industry towards best practice for sustainability. In the last financial year, 13 IS ratings and two Green Star ratings were achieved across our projects.

Figure 12: Third party sustainability ratings 2021 – 2022

Transport Access Program 3			
Redfern 'Excellent' IS Design rating (64.43 points)	Roseville, Banksia, Birrong, Canley Vale and Wollstonecraft 'Leading' IS Design rating (91.63 points)	Como Station 'Excellent' IS Design rating (70.3 points)	Bexley North and Petersham Stations 'Leading' IS Design rating (90.59 points)
NovoRail	Downer	Degnan	Arenco
Faulconbridge and Lapstone 'Leading' IS Design rating (87.5 points)	Hawkesbury River and Warrawee 'Leading' IS Design rating (75.75 points)	Mittagong and Fairy Meadow 'Excellent' IS Design rating (67.1 points) Degnan	
Arenco	Haslin		
Commuter Car Parks Program	Regional Rail	WestConnex	M12
Edmondson Park and Leppington 'Excellent' IS Design rating (63.3 points)	Dubbo Mindyarra Maintenance Centre 'Leading' IS Design rating (80.1 points)	Rozelle Interchange 'Leading' IS Design rating (88.8 points)	M12 West 'Leading' IS Design rating (77 points)
AW Edwards	CPB Contractors	JHCPB	TfNSW/WSP
Sydney Metro City and Southwest			
Sydenham Station 'Leading' IS Design rating (91 points)	Tunnels & Stations Excavations 'Leading' IS As-Built rating (96 points)	Waterloo Station 6 Star Green Star Design Review	Pitt Street Station 6 Star Green Star Design Review
John Holland Laing O'Rourke JV (JHLOR)	John Holland CPB Ghella	John Holland	CPB Contractors

Rooty Hill Station and commuter car park

In March 2022, Rooty Hill Station Upgrade and commuter car park won the ISC Outstanding Achievement IS Design v1.2 Award. The award is given to the project that has achieved the highest verified IS Design score during the awards period. This project leaves a legacy of sustainable infrastructure, advancing the NSW Government's commitment to a low-carbon future and sustainable practices by setting a benchmark for future projects.

Key sustainability achievements included:

- installation of 938 photovoltaic panels on the car park roof with battery storage, generating 412MWh per year – offsetting approximately 60 tonnes of carbon dioxide equivalent (CO₂-e) in the first 30 days of operation
- creation of a sense of place that celebrates Rooty Hill's rich and diverse culture and heritage through artwork and heritage interpretation, including an Aboriginal mosaic designed by local Darug Aboriginal artists and Pride in Place artwork designed by local school children
- 46.7 per cent reduction in lifecycle greenhouse gas (GHG) emissions
- use of low-carbon concrete in footpaths
- incorporation of water sensitive urban design features.



Driving innovation

At Transport we recognise the value leveraging new technologies can provide in delivering innovative and sustainable solutions. By piloting and adopting innovative systems, processes and technologies we can provide efficiencies, drive sustainable outcomes and deliver value for money.

Our focus is to facilitate innovation both internally and through our delivery partners. Internally we engage our staff in innovation processes, such as our Bright Ideas: Pitch to the Panel program, which enables our staff to engage with a leadership panel on their ideas to deliver better customer outcomes.

Through our Sustainable Procurement in Infrastructure Initiative, we are looking to facilitate innovative solutions with our delivery partners. Working collaboratively with industry, this initiative strives to break down barriers to the delivery of innovative solutions. A key component of our approach is the introduction of Sustainability Initiative Options (SIOs), which are proposed as a structured way to bring sustainability innovation to all projects.

We have harnessed innovative technologies to drive sustainable outcomes through programs such as the commuter car park program. As part of the program, solar photovoltaic (PV) systems have been installed across a range of sites that generate renewable energy for both the car park and commuters. Our next step will be integrating the solar inverter into the electric vehicle (EV) charging systems allowing EVs using the chargers to be supplied with locally generated renewable energy.

Koala population monitoring

The Koala Management Plan monitoring program for the Woolgoolga to Ballina project includes up to 15 years of monitoring of the effectiveness of mitigation measures implemented on the project.

Leveraging innovative technology, the Woolgoolga to Ballina project trialled the use of drone and thermal imaging technology to conduct koala population surveys.

Traditional day and night observation surveys can be costly, time consuming and often difficult due to koala behaviours making them difficult to spot. Trialling drone technology provides the opportunity to assess the efficacy and cost of the technology against the current methods. Such a trial has the potential to drive efficiencies and provide more reliable biodiversity data on Transport projects.



Solar powered generator for off-grid sites

The Newell Highway is the longest highway in NSW, stretching over 1,060 kilometres. As part of the Newell Highway Program Alliance, Transport is delivering around 40 additional overtaking lanes as well as various safety upgrades.

The project teams are often working in areas that are 'off-grid' and therefore are unable to have easy access to electricity. Traditionally, the project team's electricity supply would be provided from diesel powered generators.

To assist in the delivery of this significant program of work, the team procured a renewable energy generator which uses solar panels to supply power at off-grid sites. The generator was used on the Back Creek overtaking lane project between Forbes and West Wyalong and has now been moved to Pilliga State Forest. Using a renewable energy generator has delivered financial and greenhouse gas emissions savings associated with the reduction of diesel usage.

The program of works is expected to take around four years to complete, and the generator has a return on investment of less than two years. It is anticipated that the generator will continue to be used by Transport well beyond the completion of the Newell Highway Program.



8

Empower customers
to make sustainable
choices





Our goal to help empower customers to make sustainable choices

- Use customer journeys to inform, engage and inspire more sustainable practices and demonstrate Transport’s progress

One of Transport’s values is placing the customer at the centre of everything we do. We encourage our staff to make decisions with the customer experience in mind and to know our customers and their needs.

Encouraging people to reduce their private car use by choosing public transport, walking or cycling will support positive sustainability outcomes. We are helping customers understand what sustainable transport options are available, and encouraging them to make more sustainable transport choices. To support this, we strive to deliver transport options that blend seamlessly into our customers’ lifestyles, allowing them to experience safe, sustainable, door-to-door journeys. Our solutions are designed to cater for the wide range of journey types needed by people and for the movement of freight.

Engaging with our customers

We will continue to focus on our customer outcomes while aligning with the NSW Government’s Customer Service Commitments. The commitments help us to place the customer at the centre of everything we do and ensure that those who use our services and infrastructure receive high-quality experiences, while also outlining our promise to customers on what they can expect when we develop, design or deploy services for them.

The application of the Customer Service Commitments allow us to use the feedback and insights received from our customers to better understand and anticipate their needs and to meaningfully engage with them to deliver better services. It also helps us prioritise investment and decide what matters most to our customers.

Transport has an important part to play in building a sustainable transport system, considering that the decisions we make today and into the future must balance social, environmental and economic outcomes for our local metropolitan and regional communities, our customers, and our state. We will continue to focus on customer outcomes while aligning with the NSW Government’s Customer Service Commitments.

To engage effectively with our customers, we need to understand and adapt to their changing transport needs. As such we are increasing our use of human-centred design and co-design principles in the development and delivery of projects, as well as customer engagement campaigns.

Alignment to the United Nations Sustainable Development Goals



By understanding our customers' needs, including demographics, travel behaviours and barriers, Transport is better informed and able to develop suitable initiatives to encourage our customers to make more sustainable choices when it comes to transport modes, leading to a greener NSW. We are engaging directly with our customers in regional areas to understand what they value most in relation to sustainability. Through this engagement we intend to develop a set of customer requirements to ensure that future projects and activities align with these customers' sustainability expectations.

Transport uses the Travel Demand Management (TDM) approach to enhance the transport network and to enable effective planning and operations. The approach focuses on the factors that influence demand rather than simply concentrating effort on supply or capacity. Some of the benefits of using this approach are improved customer journeys and experiences. TDM can also assist with encouraging modal shift and supporting customers in making more sustainable travel choices.

Case study

COVIDSafe Travel Choices

Travel Demand Management (TDM) has become increasingly important with the effects of COVID-19 impacting the way our customers travel. In response to the COVID-19 pandemic, Transport's TDM team launched its COVIDSafe Travel Choices program which focused on empowering businesses and their employees to make sustainable commuting choices as they return to their workplaces.

Key activities delivered through the program included:

- engaging with over 300 businesses across Greater Sydney
- establishing a TDM Community of Practice
- using behavioural science approaches to deliver a range of activities that empower employees to support sustainable commutes, including the launch of return to the workplace intervention trials

- providing advice and guidance to workplaces to implement interventions and initiatives that support sustainable commutes
- producing educational resources for employers and employees that support sustainable commuting and working practices
- sharing sustainability best practice through organisational and commuter profiles, case studies and recognition awards.

Evaluation of the Travel Choices program indicates it has been an effective source of information sharing with industry. The delivery of a range of publicly available materials to empower others to transition to more sustainable commuting choices has also raised awareness of the benefits of supporting sustainable transport commutes, both for individuals and businesses.

The TDM Team encourages sustainable transport outcomes through a range of activities. Further information, toolkits, case studies and other resources can be found under Travel Choices on the mysydney website (refer page 83 for link).

Creating liveable places

We recognise that public transport is important and can enhance the liveability and economic success of communities and places. Delivering integrated, resilient and accessible transport networks, along with protecting and enhancing communities and their environments, is critical to the successful delivery of places.

More people than ever are choosing active transport options as a result of the pandemic. In NSW, this equates to over 1.1 billion trips a year being made by foot or bicycle, including approximately 600 million trips that form part of a broader public transport journey. An in-depth understanding of our customers' changing needs will ensure investment in active transport across the state addresses our customer needs and inspires customers to make sustainable transport choices.

Cities and Active Transport

During the reporting period, the NSW Premier announced changes to Ministerial Portfolios that resulted in a Machinery of Government change. This change brought together key groups within Transport and the Department of Planning and Environment to form the Cities and Active Transport (CAT) division, within Transport for NSW.

The Cities and Active Transport division is responsible for a wide range of functions including Cities Revitalisation, Cities Integration, Active Transport, Placemaking NSW, Cities Revitalisation and Place, Smart Places, Greater Sydney Parklands, Royal Botanic Gardens and Domain Trust. Bringing all these functions together allows us to further increase all aspects of active transport and placemaking in NSW communities. CAT is leading programs and driving change to reinvigorate our cities and public spaces, and working towards increasing, improving and activating public green space.



Get NSW Active

To empower our customers to make sustainable choices, the Get NSW Active program invests in projects that support safe, easy and enjoyable walking and cycling trips. The projects funded by the program include walking and cycling infrastructure as well as the development of strategies that support walking and cycling in local communities.

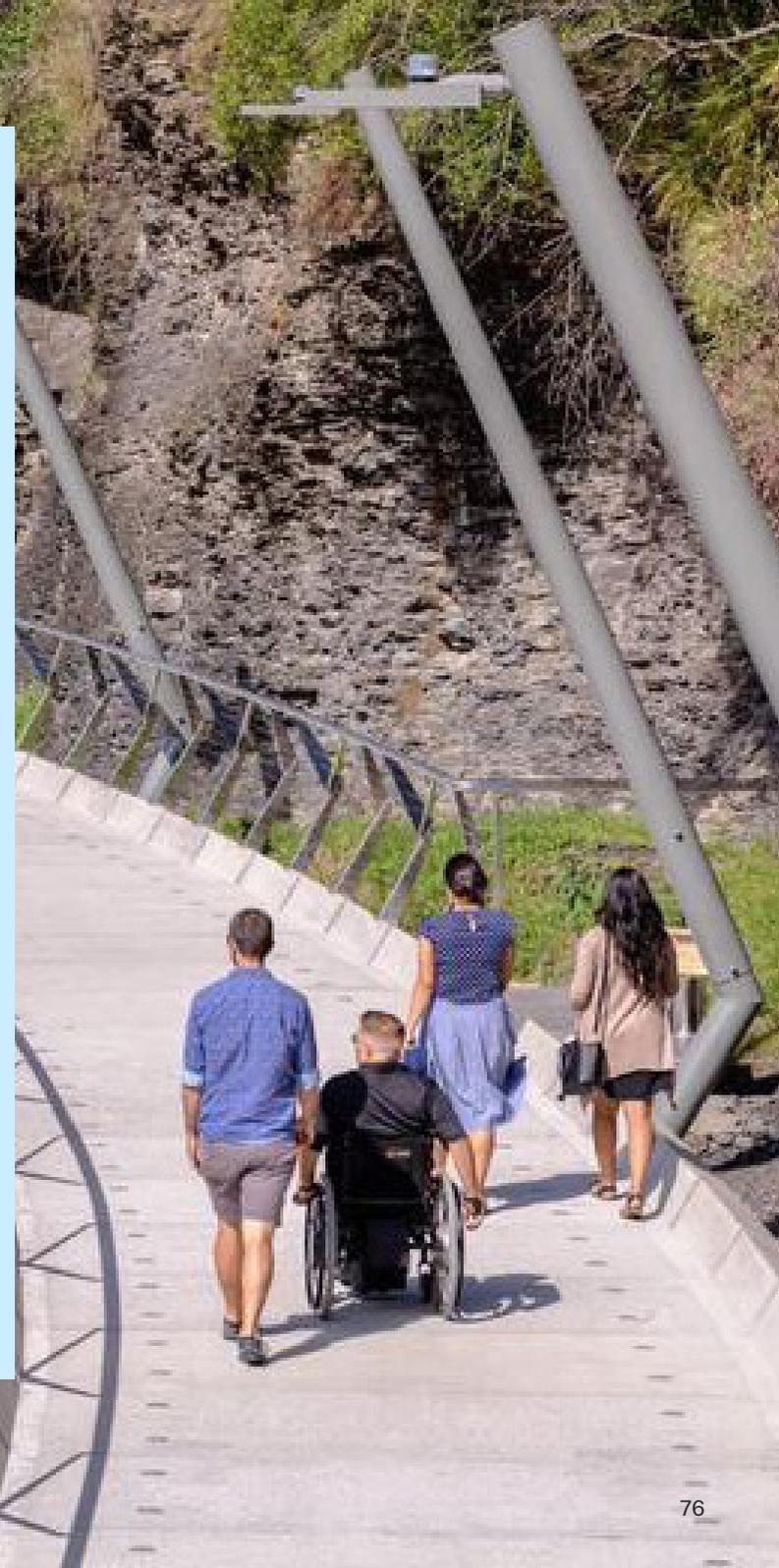
Over 90 projects were delivered in the 2020–21 financial year. However due to COVID-19 impacts, the program readjusted the focus and delivered a series of pop-up temporary cycleways. A number of these have now been approved as permanent cycleways including Bridge Road Glebe and Sydney Park Road Erskineville. By working closely with local councils, a number of additional projects have been delivered throughout 2022. Funding has also been secured for the delivery of several more projects in the 2022–23 financial year.

Under this grants program, councils are encouraged to plan ahead by developing a forward program of works that considers different funding options for the proposed projects. This approach allows Transport to progressively plan integrated networks that enable improvement and expansion, and support a sustainable forward program of walking and cycling projects. It will also ensure that benefits and funding are optimised, tangible and effectively delivered to support NSW communities and customers.

Strategic Cycleway Corridors program

During the last financial year, the Strategic Cycleway Corridors program was announced to encourage more people to cycle by providing safe cycleways for people of all ages and abilities that better connect centres, precincts and places. The program provides the foundations for establishing safe and convenient cross-city cycleway connections that help councils to progressively expand local cycle networks.

The program is initially focused on the Eastern Harbour city and will grow over time to the other metropolitan cities across NSW. The program has already identified the strategic cycleway network for the Eastern Harbour City and will determine how each of the 30 corridors should be prioritised. Five connections within the strategic network have been highlighted as immediate opportunities as they will fill important gaps in the network. Progressing these connections will help fast track the forming of our connected network and enable more people to ride safely for everyday trips.



As NSW continues to grow, Transport can change the way our places and transport networks are designed, planned and delivered, to optimise the outcomes. We are implementing the Movement and Place Framework, which recognises that streets have multiple functions, including being places where people live, work and spend time. We will continue to match design and operation to the desired function and enable our community to thrive.

The objective of the framework is to achieve roads and streets that:

- contribute to the network of public space within a location, enabling more connections within the community
- are enhanced by transport and have the appropriate space allocation to move people and goods safely and efficiently while continuing to connect places.

An important part of the framework is the Road User Space Allocation Policy and associated procedure, which promotes the fair and equitable allocation of space on roads to all road users and establishes an order of road user space considerations.

Figure 13: Order of road user space considerations



Sydney Park Junction

As part of the WestConnex series of projects, the M8 has become the through movement corridor for north-south travel. Combined with local road upgrades, this has taken pressure off Sydney Park Road and King Street.

Understanding this change in movement function has allowed the reallocation of space on Sydney Park Road and the Princes Highway around Sydney Park.

In partnership with local councils, we developed a solution that allowed road space to be reallocated for active modes of transport. This provides more options for local community activities such as walking and cycling, and enhances connectivity between the park and vibrant activity on King Street.



Bourke Street, Wollongong

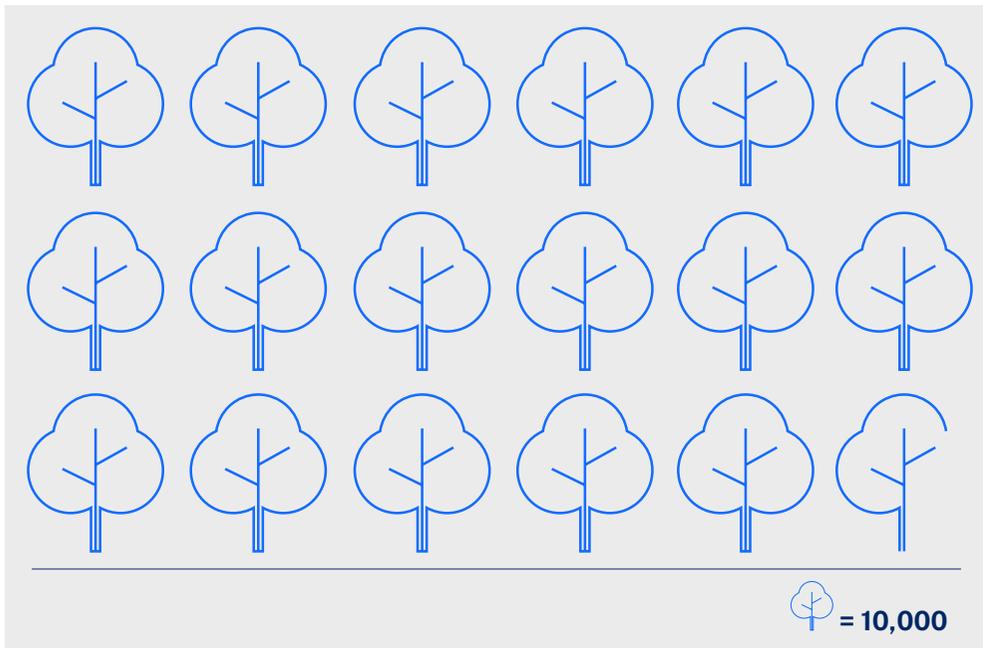
To further strengthen safety upgrades already carried out on Bourke Street in the Wollongong CBD, Transport worked with Wollongong City Council to introduce a reduced speed limit of 50km/h at this location.

The new speed zone will better support the shared use of the road corridor which serves as a key walking and cycling route connecting the busy North Wollongong Station to the North Wollongong Beach and Stuart Park foreshore precincts. The change will help the local council investigate future strengthening of the cycling provisions along the route.

Trees play an important role in creating liveable places for communities, enhancing outdoor recreation and exercise opportunities, and making the places we live and work greener, cooler and more connected. The NSW Government Premier's priority for Greening Our City, aims to increase the tree canopy and green cover across Greater Sydney by planting one million trees by 2022. Since the initiative commenced in 2018, Transport has planted more than 177,000 trees in Greater Sydney, including an additional 50,000 planted in the last financial year.

In addition to supporting the Greening Our City priority we also support the Greener Public Spaces priority, through the delivery of open spaces on residual land associated with our projects. The initiative aims to increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open and public space by 20 per cent by 2023.

Figure 14: Transport's contribution to trees planted since 2018



Public Spaces Charter

Launched in December 2021, the NSW Public Spaces Charter is a principles-based document that supports the creation and improvement of high-quality public spaces. The Charter supports outcomes in our Future Transport Strategy by helping to connect our customers' whole lives by creating successful places for communities and enhancing economic activity. It promotes neighbourhood walkability, streets as shared spaces and safe routes to walk and cycle, among a number of other key characteristics.

Developed through evidence-based research and in collaboration with public space experts and the community, the Charter identifies 10 principles for quality public spaces:

- Open and welcoming
- Community focused
- Culture and creativity
- Local character and identity
- Green and resilient
- Healthy and active
- Local business and economies
- Safe and secure
- Designed for place
- Well-managed.

The Charter supports all those who provide advice on, or plan, design, manage and activate public spaces in NSW. Eligible organisations can apply to become signatories to the Charter. By becoming a signatory, Transport is committed to promoting and embedding the Charter's principles in the creation and improvement of public spaces. Through adopting these principles, Transport has a framework to help deliver on our sustainability focus areas including partnering with communities and empowering our customers to make sustainable choices.

Bateman's Bay Bridge

Through consultation on the Bateman's Bay Bridge project we learned how important the river foreshore's are to all parts of the community.

Community feedback was invited on the Urban Design and Landscape Plan, including designs for the river foreshore. The project team worked closely with a foreshore advisory committee made up of community members and stakeholder groups that provided expertise and advice on foreshore designs as they progressed.

The vision for the foreshores involved rehabilitating areas to bring back natural landscapes, ecosystems and wildlife, while also providing spaces that could be used for events and recreation.

Temporary activation of the river foreshore through the Streets as Shared Spaces program also enabled Eurobodalla Shire Council to trial and test permanent changes to strengthen the amenity, accessibility and economic vitality of the area.



Get involved

Join us in creating a NSW where every journey is people and planet positive.

In the future we will refine our sustainability reporting systems and processes to enable us to clearly benchmark our performance and drive measurable improvements in our sustainability performance. We know the best way to achieve a better, more sustainable future is

through working hand-in-hand with our customers, partners and the broader NSW community.

We will regularly share updates throughout the year. Visit Sustainability at Transport to see how we are progressing towards our vision of a NSW where every journey is people and planet positive.



sustainability.transport.nsw.gov.au



environmentandsustainability@transport.nsw.gov.au



TTY (Teletypewriter service for hearing and speech impaired customers): 1800 637 500



7 Harvest Street, Macquarie Park NSW 2113



PO Box K659, Macquarie Park NSW 2113

Glossary of terms

Terms	
Technical terms	
Active transport	Transport that requires individual physical effort to provide mobility. For personal travel, this includes walking, use of a wheelchair or mobility aid, cycling using a bicycle (without power assistance) and power-assisted micromobility. Active forms of transport for freight delivery include both pedal-powered and electric power-assisted cargo bikes.
Benefits realisation management	Benefits realisation management is the process of identifying, planning, managing and evaluation the intended benefits of an investment.
Carbon	Carbon refers to both pure carbon dioxide emissions and carbon dioxide equivalent emissions (refer below).
Carbon dioxide equivalent (CO ₂ -e)	A metric used to compare the emissions from various greenhouse gases based on their global warming potential, by converting the other gases to the equivalent amount of carbon dioxide with the same global warming potential.
Climate risk assessment	<p>A process for identifying the likelihood of future climate hazards and their potential impacts on the subject of the assessment. In the TfNSW Climate Risk Assessment Guidelines, this is a three-stage process which involves:</p> <ol style="list-style-type: none"> Preparation: historical data analysis, relevant climate projections analysis, and preliminary risk assessment (risk identification and consideration of adaptation measures) Risk assessment workshop: review and allocate consequence and likelihood to risks, select adaptation measures, and assess residual risk Post climate risk assessment: monitor implementation and effectiveness of adaptation measures, identify trigger points for future actions.
Delivery partners	An external organisation that is engaged by Transport to assist in delivering its works.
Greenhouse gas	Greenhouse gases are both natural and artificial gases, (e.g. carbon dioxide) which have been significantly increasing in concentration in the earth's atmosphere due to human activities. When the sun's energy reaches the earth, some of it is reflected back to space and some of it is trapped by greenhouse gases in the atmosphere, which is then emitted back towards earth and warms the earth's surface. This is known as the greenhouse effect. The increased concentration of greenhouse gases in the atmosphere is trapping extra heat, causing the earth's temperature to rise along with other negative environmental effects.
Heavily bound base	Granular materials which meet certain technical requirements, which are bound together using binding agents for extra strength. This supports the road pavement layers (asphalt or concrete) above it, and provides for a higher strength road pavement.

Terms	
Large-scale generation certificates (LGCs)	An instrument created by the Australian Government Clean Energy Regulator to facilitate and regulate the trade of renewable electricity. One LGC is equivalent to 1 MWh (megawatt hour) of renewable electricity generated above the energy generator/power station's baseline.
Resource recovery rate	That percentage of useful materials which can be recovered from a waste material at the end of its life.
Selected Material Zone (SMZ)	Granular materials which meet certain technical requirements that supports the road pavement layers (concrete or asphalt).
Social enterprise	An organisation certified by Social Traders.
Solar photovoltaic (PV) system	A system that captures a proportion of the energy from sunlight and converts it into electricity. It is comprised of two main components: solar photovoltaic (PV) panels and an inverter. These are accompanied by wiring (which facilitates the flow of electricity within the system) and a load to use the electricity generated (or a storage device, typically a battery), for later use.
Solar inverter	An electronic device which regulates the flow of electricity. In the context of a solar PV system, it changes the direct current (DC) electricity generated by the solar PV panel(s) into alternating current (AC).
Supplementary cementitious material	Refers to a broad range of materials that are widely used in concrete to partly substitute Portland cement e.g. flyash or slag.
Sustainability	Enabling, delivering and operating a transport system that meets the needs of the present whilst safeguarding the future by optimising environmental, social and economic outcomes.
Travel Demand Management (TDM)	The application of focused, data-led strategies to change demand on transport networks by redistributing journeys to other modes, times and routes or removing the journey altogether. TDM strategies often comprise a variety of interventions such as financial incentives, social marketing campaigns and direct engagement with trip generators.
Triple bottom line	A framework that underpins sustainability approach, consisting of three parts, social, environmental and economic.
Water sensitive urban design	The integration of water cycle management into planning, design and construction of the built environment. It replicates natural processes in the treatment of water in a constructed environment and is relevant to all built environments from highly urbanised rural settings.
Programs/Initiatives	
Get NSW Active	A program that invests in projects that support safe, easy and enjoyable walking and cycling trips.
Movement and Place Framework	A cross-government framework for planning, designing and managing our transport networks to maximise benefits for the people and places they serve.
Strategic Cycleway Corridors	A program focused on encouraging more people to cycle by providing safe cycleways for people of all ages and abilities that better connect centres, precincts and places.
Sustainable Procurement in Infrastructure Initiative	A Transport initiative developed to help us achieve our circular economy commitments outlined in the Sustainability Plan and to support our decarbonisation approach within project delivery.

Hyperlinks

[NSW Aboriginal Procurement Policy](#)

[NSW Climate Change Policy Framework](#)

[NSW Government Customer Commitments](#)

[NSW Government Climate Risk Ready Guide](#)

[NSW Premier's Priorities](#)

[NSW Public Spaces Charter](#)

[Road User Space Allocation Policy](#)

[Sustainable Procurement in Infrastructure Initiative Industry Discussion Paper](#)

[Transport Environment and Sustainability Policy](#)

[Transport Future Energy Strategy](#)

[Transport Future Energy Action Plan](#)

[Transport Procurement Policy](#)

[Transport Community Engagement Policy](#)

[Transport Social Procurement and Workforce Guide](#)

[Transport Sustainability Plan](#)

[Transport Reconciliation Action Plan 2022 -2025](#)

[Travel Choices on My Sydney](#)

[Regional Roads and Transport Recovery Package \(RRTRP\)](#)

Appendix A – Industry awards

Industry Awards Finalists					
Award title	Association	Category	Project	Delivery partner if relevant	Further details
NSW Sustainability Awards	Banksia Foundation	NSW Clean Technology	Como Station	Degnan Construction	Winners of the NSW Sustainability Awards -Banksia Foundation (banksiafdn.com)
Australian Institute of Landscape Architecture NSW Awards	Australian Institute of Landscape Architecture	Infrastructure	Parramatta Light Rail	Parramatta Connect Joint Venture (CPB Contractors and Downer)	View entry in gallery AILA Awards and Competitions (awardsplatform.com)
Australian Institute of Landscape Architecture NSW Awards	Australian Institute of Landscape Architecture	Research, Policy and Communications	Parramatta Light Rail	Parramatta Connect Joint Venture (CPB Contractors and Downer)	View entry in gallery AILA Awards and Competitions (awardsplatform.com)
Australian Institute of Landscape Architecture NSW Awards	Australian Institute of Landscape Architecture	Land Management	Pacific Highway Upgrade, Wardell	Pacific Complete, Corkery Consulting in association with Studio Colin Polwarth, Dr Rod Kavanah, GMC Environmental Consulting	View entry in gallery AILA Awards and Competitions (awardsplatform.com)
Infrastructure Sustainability Council Awards	Infrastructure Sustainability Council of Australia	Outstanding Achievement IS Design	Rooty Hill Station upgrade and multi-storey car park	Arenco	Awards showcase sustainability in infrastructure projects- ISCouncil
NSW Sustainability Awards	Banksia Foundation	NSW Net Zero Action	Sydney Trains	NA	Finalists in the NSW Sustainability Awards -Banksia Foundation (banksiafdn.com)

Industry Awards Finalists

Infrastructure Sustainability Council Awards	Infrastructure Sustainability Council of Australia	Excellence in Social Outcomes	WestConnex M4-M5 Link (Rozelle Interchange and Western Harbour Tunnel Enabling Works)	John Holland CPB	NA
Infrastructure Sustainability Council Awards	Infrastructure Sustainability Council of Australia	Excellence in Environmental Outcomes	WestConnex M4-M5 Link (Rozelle Interchange and Western Harbour Tunnel Enabling Works)	John Holland CPB	NA
Infrastructure Sustainability Council Awards	Infrastructure Sustainability Council of Australia	Excellence in Economics	WestConnex M4-M5 Link (Rozelle Interchange and Western Harbour Tunnel Enabling Works)	John Holland CPB	NA

Note: this awards list reflects the awards associated with Transport projects that have been either awarded to Transport directly or to our delivery partners.

Appendix B – Key relevant legislation

Key legislation

Commonwealth Government legislation

[Climate Change Act 2022](#)

[Disability Discrimination Act 1992](#)

[Environment Protection and Biodiversity Conservation Act 1999](#)

[Modern Slavery Act 2018](#)

[National Greenhouse and Energy Reporting Act 2007](#)

NSW Government legislation

[Biodiversity Conservation Act 2016](#)

[Environmental Planning and Assessment Act 1979](#)

[Fisheries Management Act 1994](#)

[Heritage Act 1977](#)

[Modern Slavery Act 2018](#)

[National Parks and Wildlife Act 1974](#)

[Plastic Reduction and Circular Economy Act 2021](#)

[Protection of the Environment Operations Act 1997](#)

[Protection of Environment Operations \(Clean Air\) Regulation 2021](#)

[Protection of the Environment Operations \(Noise Control\) Regulation 2017](#)

[Protection of the Environment Operations \(Waste\) Regulation 2014](#)

[Transport Administration Act 1988](#)

[Waste Avoidance and Resource Recovery Act 2001](#)

[Water Management Act 2000](#)

Image acknowledgement

A number of images used throughout this report were taken by our talented staff members. These images showcase NSW through our staff and their work or hobbies and enable them to show the rich and diverse landscape, flora and fauna. We are very proud of the unique talents of our staff and thank them for enabling us to use their images in this report.

Tayla Doubfire

Works Support Officer
Maintenance & Delivery | Network Assets
Regional and Outer Metropolitan -West



Peter George

Track Stability Specialist
Sydney Trains



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Safety, Environment & Regulation



Shahrukh Nadeem

Site Engineer
Infrastructure and Place



Adele Graham

Safety, Environment & Quality Officer
Regional and Outer Metropolitan



Unattributed

Social media
Transport for NSW



Join us in creating a NSW where every journey is people and planet positive.

Transport for NSW

Levels 5-12
231 Elizabeth Street
Sydney NSW 2000
Executive Reception Monday to Friday 8.30am to 5.30pm

Ph: 02 8202 2200
Fax: 02 8202 2209

Customer feedback

Transport for NSW
PO Box K659
Haymarket NSW 1240

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The information in this document is intended as a guide only and is subject to change at any time without notice. It does not replace the relevant legislation.

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