

# Your integrated rollingstock solutions





Millennium and Waratah trains at Downer's Auburn Maintenance Centre.

**520 million**

passenger journeys on our operated or maintained transport network each year (including our Keolis Downer Joint Venture)

**44 million**

kilometres travelled each year by our trains

**1,298  
train and  
light rail cars**

maintained by Downer across Australia

**1,270 bogies  
and 11,500  
wheelsets**

overhauled by Downer each year

**+50%**

more than 50% of Sydney's train fleet maintained by Downer

**30,000**

signals captured every 10 minutes from a single train, using our TrainDNA data analytics platform



# Australia's largest provider

of multi-modal transport solutions including Yarra Trams in Melbourne, G:link on the Gold Coast and Newcastle's integrated transport through our Keolis Downer Joint Venture

## About us

Downer designs, builds and sustains assets, infrastructure and facilities and we are the leading provider of integrated services in Australia and New Zealand.

At Downer, our customers are at the heart of everything we do. Our Purpose is to create and sustain the modern environment by building trusted relationships with our customers. Our Promise is to work closely with our customers to help them succeed, using world leading insights and solutions.

With a history dating back over 150 years, Downer is listed on the Australian Securities Exchange and New Zealand Stock Exchange as Downer EDI Limited (DOW). We are an ASX 100 company that also owns 88 per cent of Spotless Group Holdings Limited (SPO).

### Our passenger rail expertise

Downer has over 100 years' rail experience providing end-to-end, innovative integrated transport solutions. We are a leading provider of rollingstock asset management services in Australia, with expertise in delivering whole of life asset management support to our customers.

Our capability spans all sectors, from rollingstock to infrastructure, and every project phase, from design and manufacture to through-life-support, fleet maintenance, operations and comprehensive overhaul of assets.

Our other rail transport and infrastructure capabilities include depot builds, signalling and track and station works.

We set industry best practice with forward-looking technology solutions to deliver safe, efficient and reliable services for the public transport sector, and work closely with our customers and global partners to deliver solutions that answer the evolving needs of local communities.

### Our business is founded on four Pillars and we demonstrate these in everything we do:

#### Safety

Zero Harm is embedded in Downer's culture and is fundamental to the company's future success



#### Delivery

We build trust by delivering on our promises with excellence while focusing on safety, value for money and efficiency

#### Relationships

We collaborate to build and sustain enduring relationships based on trust and integrity

#### Thought leadership

We remain at the forefront of our industry by employing the best people and having the courage to challenge the status quo

## What we do

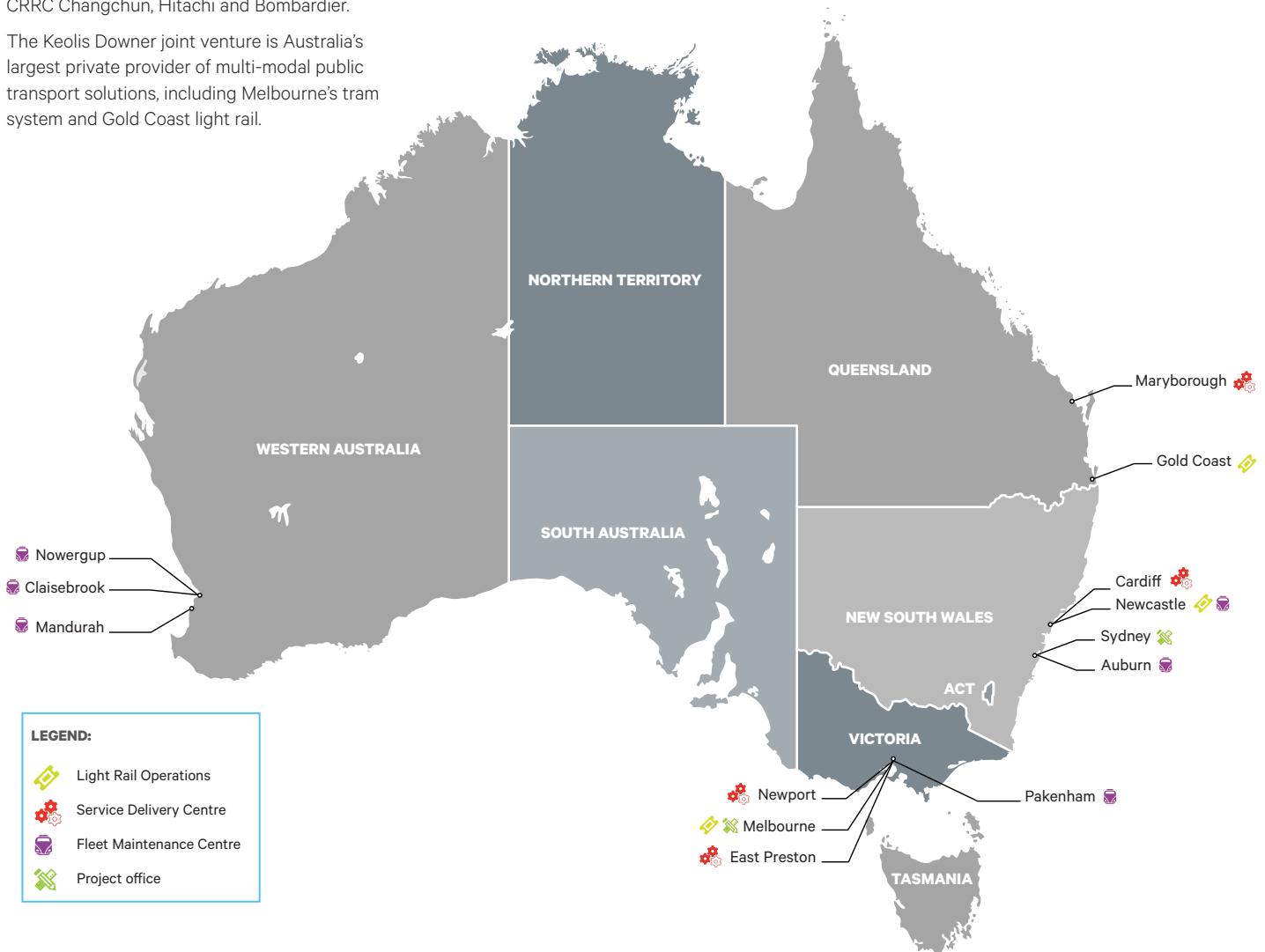
# Local expertise. World-class solutions.

As Australia's leading integrated service provider, Downer operates, maintains and delivers rollingstock across 13 sites nationally.

We combine a long history of local knowledge and expertise with global partnerships to deliver world-class solutions to our customers.

Leveraging our global supply chain, Downer has formed strategic joint ventures and relationships with leading technology and knowledge providers including Keolis, CRRC Changchun, Hitachi and Bombardier.

The Keolis Downer joint venture is Australia's largest private provider of multi-modal public transport solutions, including Melbourne's tram system and Gold Coast light rail.



## What we do



## Delivering end-to-end transport solutions

Downer's rail capability spans every sector and project phase, from design and build to through-life-support, refurbishment, overhaul and operations. With our wealth of experience and industry knowledge, we provide total rail solutions to our customers around Australia.

### Design and build

Through key global partnerships with leading rollingstock manufacturers, we have delivered over 1,200 rail cars in the past ten years. Our business has capabilities in engineering design, systems engineering and integration and manufacture and testing of rollingstock. Downer is currently delivering some of the largest rollingstock projects in Australia, including the Sydney Growth Trains project in New South Wales, and the High Capacity Metro Trains project in Victoria.

### Depots

Downer has expertise in developing and upgrading state-of-the-art depots that include maintenance and overhaul facilities, stabling yards, and cleaning and bio wash facilities. Our depots provide the capacity, technology and design to deliver major and mid-life refurbishments of rollingstock. We leverage the insights of our in-house operators and maintainers to design and deliver depots with efficient operations and maintenance practices in mind.

#### Sydney's Fleet

The Waratah fleet is the pride of Sydney's network, delivering unprecedented reliability, availability, safety and comfort. It is Australia's largest single order of rollingstock.

Downer designed and manufactured the initial order of 78 trains in conjunction with CRRC Changchun, with through-life-support managed by Downer at the purpose built Auburn Maintenance Centre.

Downer has further delivered another 24 trains as part of the Sydney Growth Trains project, taking the fleet to 102 with future growth to 119 trains on the back of additional orders from the NSW Government in February 2019.

Downer also maintains a further 35 four-car Millennium train sets that were designed, built and commissioned almost two decades ago.

#### Melbourne Metro

Melbourne's new fleet of metro trains is the largest single order of rollingstock in Victoria's history. The Victorian Government's investment includes the delivery of 65 next-generation High Capacity Metro Trains, a state-of-the-art depot including train maintenance facility and stabling yard for 30 trains, a light service facility and two driver simulators. The project is being delivered with over 60 per cent local content and will create over 1,100 new jobs. It is being delivered by the Evolution Rail consortium comprising Downer, CRRC Changchun and Plenary, with Downer also providing ongoing maintenance.

#### Transperth B-Series Trains

A joint venture (JV) between Downer and Bombardier Transportation (known as EDI Rail Bombardier Transportation Pty Ltd) delivered 78 three-car B-Series trains for the Transperth network. The trains were designed in Australia and built at Downer's historic Maryborough Service Delivery Centre in Queensland. The JV also holds the maintenance contract for Transperth's A and B-Series trains until 2026.

## What we do



Yarra Trams refurbishment

### Through-life-support

Downer maintains nearly 1,300 train and light rail cars across Australia, including more than 50 per cent of the Sydney train fleet. We pride ourselves in being an asset management partner of choice, delivering exceptional fleet reliability and availability for our customers. From our state-of-the-art maintenance centres, we manage all aspects of through-life-support, from real-time condition monitoring to repairs.

### Refurbishment, upgrades and overhauls

From our four Service Delivery Centres across Australia we manage the overhaul, refurbishment, repair and manufacture of rollingstock fleets for key customers including Sydney Trains, Queensland Rail and Yarra Trams. With unique capability to manage both the maintenance and overhaul of entire fleets, we offer increased efficiencies to our customers, and peace of mind your assets are in the most capable hands.



### Integrated Operations Centre

In May 2019, Downer launched our Integrated Operations Centre (IOC), a hub of cutting-edge technology, co-located staff and integrated systems. The IOC brings together critical functions such as planning, engineering, mobile response and procurement to enhance operational asset management. Based at our Auburn Maintenance Centre, the IOC provides fleet monitoring and data-driven decision making for our assets across Australia, improving response times, performance and reliability for our fleets.

### Rollingstock Additional Works

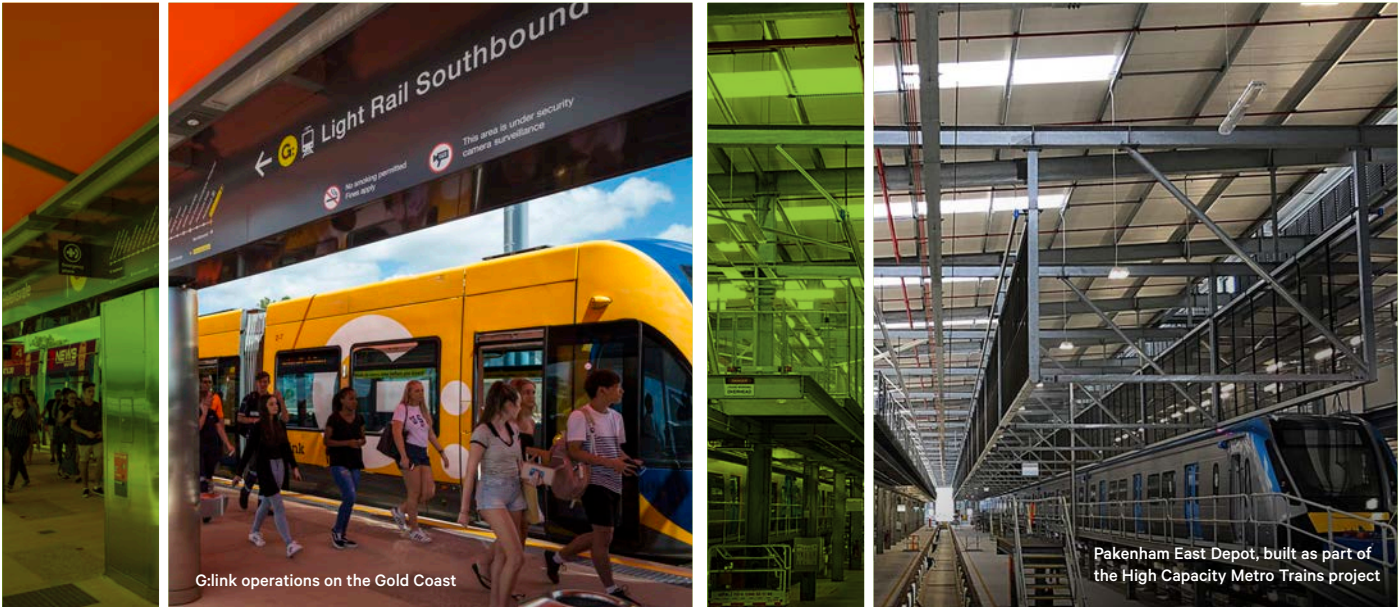
From Melbourne's East Preston Tram Depot, Downer manages the structural refurbishment of Yarra Trams' fleets. As part of the five year project, over 85 per cent of Melbourne's trams will undergo work including cleaning, window replacement and repairs, as well as mechanical and electrical overhaul for older fleets. We employ over 90 Victorians at our state-of-the-art facility, which has the capacity to refurbish 14 trams at a time.

### Bogie Centre of Excellence

Our recently upgraded Cardiff Service Delivery Centre is equipped with world-class rollingstock overhaul capabilities. The \$38 million refurbishment includes the Southern Hemisphere's first purpose built eight car train lift and a bogie centre of excellence, with the capacity to overhaul more 3,000 bogies and 23,000 wheelsets a year. Cardiff also has the capacity to support technology upgrades, customer experience enhancements and new fleet introduction.



## What we do



### Operations

Keolis Downer is the leading light rail operator and the largest private multi-modal public transport operator in Australia. Our operations draw on Keolis' experience as the world's leading light rail operator, and Downer's experience as a leading transport and infrastructure service provider, to deliver rollingstock and infrastructure that optimises whole-of-life solutions, ensures reliability of service, and prioritises safety and passenger experience.

For more information visit  
[www.keolisdowner.com.au](http://www.keolisdowner.com.au)



### Transport infrastructure

Downer has a long history of delivering transport infrastructure projects under a variety of contracting models. Services include the design and construction of light rail, heavy rail, signalling, track and station works, rail safety technology, bridges and roads.

We are a leading rail signalling contractor with major projects across Australia and New Zealand. Our signalling solutions include turnkey infrastructure alterations, factory builds of signalling equipment, signalling construction and commissioning of signalling works.

#### Melbourne's Yarra Trams, Victoria

Keolis Downer provides operations and maintenance services for Melbourne's light rail system, Yarra Trams, which is the largest tram network in the world. We ensure the delivery of over 5,000 24-hour operation services across Melbourne. The network consists of 250 kilometres of double track, over 1,700 stops, nine depots and more than 475 trams.

Keolis Downer also manages the major \$230 million tram refurbishment project for the Victorian Department of Transport, including the redevelopment of Melbourne's East Preston Tram Depot, where Downer is currently undertaking refurbishment works to more than 85 per cent of the Yarra Trams fleet.

#### Parramatta Light Rail

As part of a 50:50 joint venture with CPB Contractors, Downer has been selected by the NSW Government to build Stage 1 of the Parramatta Light Rail Project. The project will support population and employment growth, as well as the urban development expected in the region. Commencing construction in 2019, Stage 1 of the Parramatta Light Rail project will connect the Parramatta CBD to a number of cultural and residential hubs, including the three Western Sydney University campuses at Westmead, Parramatta and Rydalmere, and the private social and housing redevelopment at Telopea.

#### G:link Gold Coast Light Rail

Launched in 2014, G:link has been a star performer of south east Queensland's public transport, driving 50 per cent patronage growth across the whole network. In its first five years of operations, the light rail carried more than 42 million passengers.

## How we work

# A reliable asset management partner

Downer is a leader in providing asset management services that make a difference. Our customers trust us with long-term contracts of various durations up to 30 years, including our flagship contract to maintain Sydney's Waratah fleet.

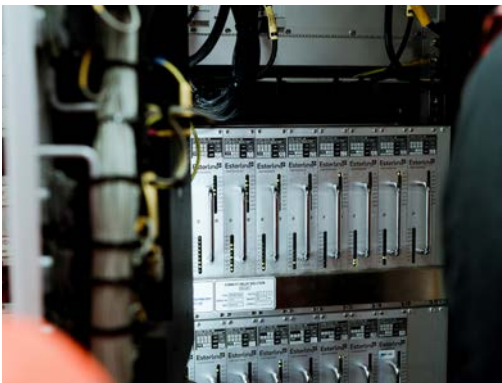
We have many long-term asset and data intensive projects being managed by our experienced teams on the ground who understand our customers' assets. We also understand that many of our customers are under increasing pressure to get more out of their assets. They need to manage financial constraints, forecast lifetime costs, limit unnecessary maintenance and future-proof their assets. More than ever, they need intelligent partners who can provide data-driven solutions to enable their assets to optimise business objectives.

With Australia's first accredited ISO 55001 certification for Asset Management, Downer is among the first organisations in the Southern Hemisphere – and one of the first 10 globally – to pass through the rigours of this formal assessment. The accreditation reaffirms that Downer's asset management system is one of the leading in Australia.

### Waratah Fleet ISO 55001 Certification

Our rollingstock and rail infrastructure is certified to the highest standard. In 2018 we achieved ISO 55001 certification for the Sydney Waratah and Waratah Series 2 rollingstock fleet, simulators and rail depot facilities.

Our continued ISO 55001 certification gives independently verified assurance to our customers that our approach to managing their assets is industry-leading and actively improving. For the Waratah fleet, our commitment to improving asset management has resulted in world-class reliability and availability, enabling our customers to deliver an improved service to the public.







***“We pride ourselves  
in being an asset  
management partner  
of choice, providing  
end-to-end, innovative  
solutions for our  
customers across  
Australia”***

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## How we work



## Making innovation a reality

At Downer, we strive to lead the way in innovation and thought leadership. We develop cutting-edge solutions that embrace new technology and ways of working to drive improvements across our business.

We partner with industry, our customers and some of Australia's top universities to develop and deliver innovations that are changing the face of Australian transport. From predictive maintenance to integrated intermodal transport, we're committed to creating technology solutions that enhance business operations and improve outcomes for our customers.

### Dwell Track

Downer partnered with the University of Technology Sydney and the Rail Manufacturing Cooperative Research Centre (CRC) to develop a world-leading technology that works to reduce dwell time at rail stations.

Dwell Track uses 3D camera technology and perception algorithms to monitor passenger numbers and behaviour at stations in real time, reducing chronic congestion on platforms and improving platform operation.

Sydney Trains is the first rail operator in Australia to trial Dwell Track at Wynyard Train Station in Sydney city.

### TrainDNA

Downer's TrainDNA data analytics tool is the first step in the journey towards predictive maintenance. Built on the Downer-developed Neuroverse platform, TrainDNA uses complex analytics and machine learning to capture data from trains and perform assessments to predict the remaining life of components.

Downer worked in collaboration with Deakin University and the Rail Manufacturing Cooperative Research Centre (CRC) to develop TrainDNA, which is currently deployed on Sydney's Waratah train fleets. The cutting-edge technology solution boosts Downer's asset management capability, providing real-time data for decision making, and improving efficiencies in the maintenance of fleets.

### Newcastle's integrated multi-modal transport

On behalf of Transport for NSW, Keolis Downer operates Newcastle's integrated multi-modal public transport system, the first of its kind in Australia. Newcastle's multi-modal system includes light rail, buses, on-demand transportation and ferries. The catenary-free light rail consists of 2.7 kilometres of double track, six stops, six vehicles and one maintenance depot. Downer successfully delivered construction of the rail network infrastructure for Newcastle Light Rail on time and on budget under a managing contractor model, and also manages the maintenance of the six trams.



## Our approach



## Zero Harm, safety, environment and sustainability

Zero Harm is embedded in our culture and is fundamental to our future success of delivering on our promise to create and sustain our modern environment. We are committed to achieving our goal of Zero Harm.

At Downer, Zero Harm means sustaining a work environment that supports the health and safety of our people and conducting our operations in a manner that is environmentally responsible and sustainable.

Our Zero Harm culture is built on leading and inspiring, verifying the effective management of risks that have the potential to cause serious harm, rethinking processes, continuously improving our management systems, applying lessons learnt, and adopting and adapting practices that aim to achieve zero work related injuries and unintentional harm to the environment.

We're focused on developing solutions to reduce our energy consumption and greenhouse gas emissions, while at the same time increasing our cost competitiveness.

### National recognition for sustainability

In 2019, Downer was recognised as an industry leader in environment and sustainability by the Australasian Railway Association. Downer received the Rail Sustainability award for delivering the first Environmental Product Declaration (EPD) in the Southern Hemisphere for a rollingstock asset, the Waratah Series 2

train, as well as other sustainability measures put in place in our maintenance and service delivery centres around Australia.

Downer continues to deliver Australian firsts in sustainability, including the first solar supplemented generator for the traverser used by the High Capacity Metro Trains Manufacturing Facility in Newport, and the first Responsible Construction Leadership Group aligned sustainable temporary site shed for a construction project in the Australian rail industry.

### Partnering with local suppliers and the community

Through our experiences and values, we understand the role we play in contributing to the economic prosperity of the regions we work in. We achieve outcomes through technology-transfer commitments and by engaging with local suppliers, including the promotion of a supply chain-wide lean manufacturing initiative, partnering with training providers, manufacturing associations and agencies representing disadvantaged communities.

### Supporting the Victorian Supply Chain

Melbourne's High Capacity Metro Trains (HCMT) project is driving jobs, industry development and prosperity for Victoria. The \$2.3 billion Victorian Government initiative, being delivered by the Evolution Rail Consortium comprising Downer, CRRC Changchun and Plenary, procures products and services from local suppliers with known capability and capacity to evolve with the industry. For example, Victorian suppliers Hofmann Engineering, Austbreck and Ultimate Australia are manufacturing and delivering components for the HCMTs and have participated in technology transfer and localisation initiatives to showcase their innovation and technologies to Chinese suppliers, leveraging the CRRC relationship.

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