

LIGHT RAIL:

TRANSFORMING

OUR

CITIES



**Keolis
Downer**

THE WORLD'S LEADING LIGHT RAIL OPERATOR

- **75 lines** spanning 800km
- **1,300 trams**
- **670 million** passenger journeys in 2017
- Operator of the **world's largest tram network** in Melbourne

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KEOLIS DOWNER

Leading the way in public transport, Keolis partners with public decision makers to make shared mobility an asset for cities and local communities. Internationally recognised as the leading operator of trams and automated metros, Keolis operates all transport modes and develops new forms of shared and customised mobility to answer local needs. With operations in 16 countries across four continents, Keolis operates and maintains more kilometres of light rail network and carries more passengers than any other company.

Downer is a leading provider of services to customers in markets including transportation, mining, energy and industrial engineering, utilities communications and facilities, with over 150 years' experience across Australia, New Zealand and the Asia Pacific region.

Downer's technology and partnerships offer innovative solutions that bring increased availability, improved reliability and reduced costs.

Together Keolis Downer's commitment to safety, operational performance, innovation and customers enable to deliver success.

Keolis Downer is the largest light rail operator in Australia, operating and maintaining Yarra Trams in Melbourne and G:link on the Gold Coast. Keolis Downer is also the largest private multi-modal transport operator in the southern hemisphere with significant bus operations in Western Australia, South Australia and Queensland, and is the operator of the new integrated public transport system in Newcastle.

We also manage autonomous vehicle trials in Victoria and SA as well as on-demand bus services in NSW and SA.

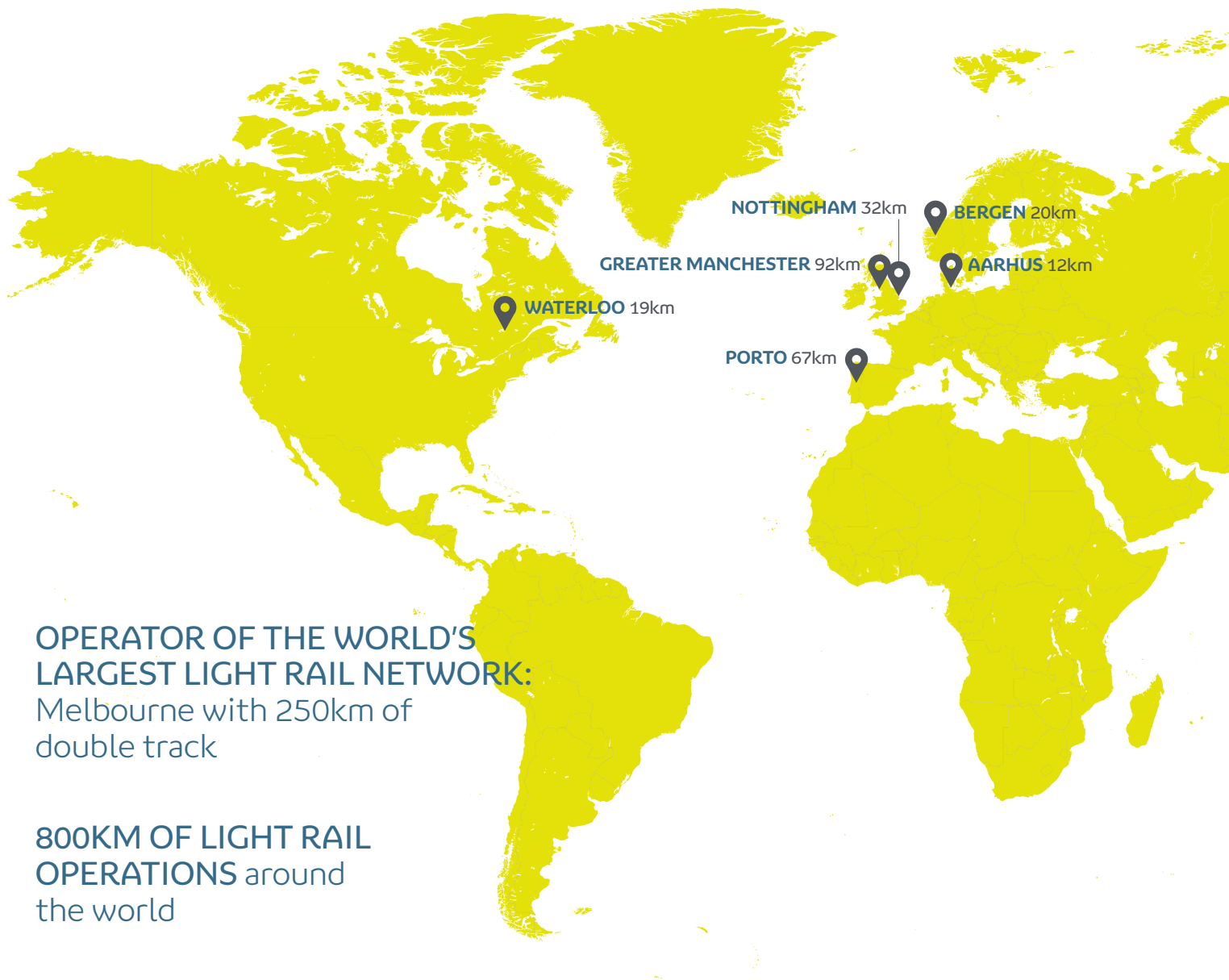
// Our success is built on our ability to integrate all mobility modes and to partner with local transport authorities to deliver solutions that are adapted to community needs and that encourage the use of public transport."

Leila Frances
Chairman of the Board,
Keolis Downer



THE WORLD'S LEADING LIGHT RAIL OPERATOR

Creating more liveable cities through integrated public transport.



OPERATOR OF THE WORLD'S LARGEST LIGHT RAIL NETWORK:

Melbourne with 250km of
double track

**800KM OF LIGHT RAIL
OPERATIONS** around
the world



OUTSTANDING

CUSTOMER

SATISFACTION

up to **99%** across
light rail operations
around the world

SUCCESSFUL PROJECT DELIVERY

Project delivery is the complex task of ensuring an infrastructure project moves from conception to reality, on-time and on-budget.

Governments are investing record levels of funding in public transport in order to respond to a growing economy and develop successful places.

As experienced project delivery experts, Keolis Downer has the necessary skills, expertise and processes to ensure a smooth transition from outcome to output, allowing concepts and ambitions to become a reality.

In light rail, Keolis Downer has delivered the overhaul of the New Preston Depot in Melbourne and with GoldLinQ the Gold Coast light rail.

E-Class trams are the latest trams for Melbourne and Keolis Downer has commissioned, tested and introduced 60 trams into service in 2017. We have utilised experts from Downer and Keolis to help oversee the process, bringing world leaders in rolling stock, manufacturing and maintenance to Australia.

Keolis Downer is managing more than \$250 million of projects on behalf of Public Transport Victoria.

The E-Class project included the creation of a new depot in a heritage building in Preston and it includes an innovative yard management system to optimise tram availability using wireless data collection.

Keolis successfully operates and maintains every type of tram network, from those with fully separated lines to others where the majority of lines share the road with cars, like in Melbourne (75 per cent shared). Overhead wires to ground-level power supply (Bordeaux), single class fleets to mixed fleets (up to 8 in Melbourne), or lines with full traffic light priority lines with no traffic light priority.

This diversity of networks, technology and operating conditions mean we are able to deliver and get maximum value out of the networks that we operate.

Keolis Downer's capacity can be applied to transport projects in Australia. A key part of such discussions is the early involvement of operators in the pre-design phase. We have proven ability as both a project manager and operator with the capacity to manage ongoing whole-life-asset management.

➤ At 83.8% punctuality in 2016, Keolis Downer has maintained tram punctuality during a period of unprecedented growth in Melbourne.

CUSTOMER

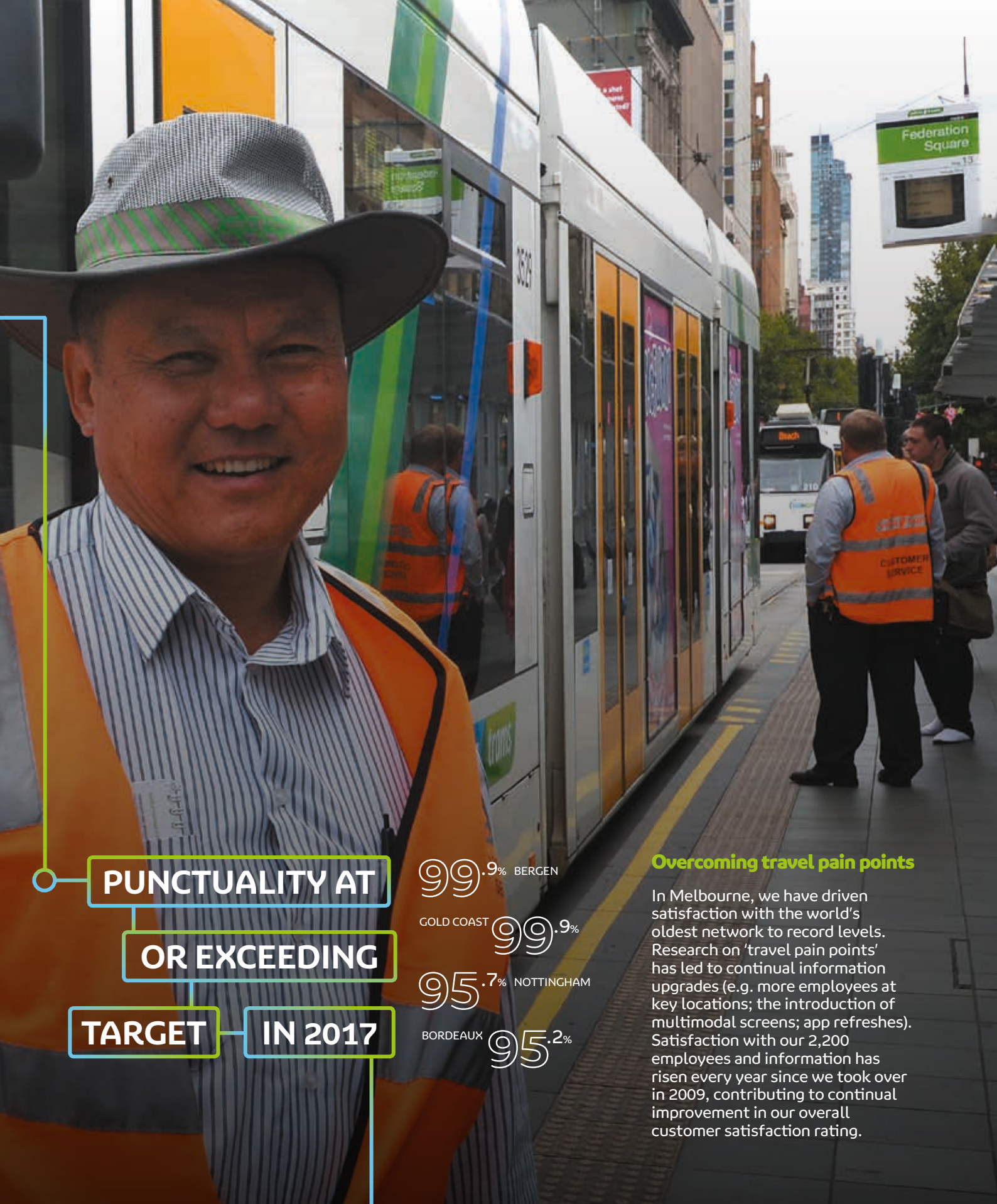
SATISFACTION

OVER 80%

IN 2017

95 - 99% CUSTOMER SATISFACTION IN BERGEN SINCE 2010

96 - 98% CUSTOMER SATISFACTION IN NOTTINGHAM SINCE 2013



PUNCTUALITY AT
OR EXCEEDING
TARGET IN 2017

99.9% BERGEN

GOLD COAST 99.9%

95.7% NOTTINGHAM

BORDEAUX 95.2%

Overcoming travel pain points

In Melbourne, we have driven satisfaction with the world's oldest network to record levels. Research on 'travel pain points' has led to continual information upgrades (e.g. more employees at key locations; the introduction of multimodal screens; app refreshes). Satisfaction with our 2,200 employees and information has risen every year since we took over in 2009, contributing to continual improvement in our overall customer satisfaction rating.

OUR MISSION

Delivering high, quality accessible public transport integrated into the fabric of city life.

Our promises – to passengers, communities and transport authorities.



1

Zero Harm

We have set ourselves the highest possible safety standard – zero injuries to passengers, employees and people living close to our networks.



2

Economic efficiency

We provide added value to taxpayers by using our operations, commercial, and management expertise to increase service quality and revenue while reducing lifecycle costs.



3

Operational excellence

We provide services passengers can depend on, whatever the conditions. From this foundation, we adapt to the needs of residents and clients – redesigning networks for both special events and lasting improvements.



4

Sustainable operations

We create sustainable businesses by reducing the environmental impact of travel, building trusted relationships with clients, investing in employee skills and developing our services for all citizens.



HOW WE DO IT

The five pillars of excellence.

The Keolis Downer approach is based on five pillars that reflect the entire lifecycle of the light rail network – from design and construction to start of operations, improving day-to-day performance and developing the network.

1

Engaging early
with transport
authorities

2

Securing smooth
launches and
takeovers

3

Thinking Like
a Passenger

4

Optimising
operational
performance

5

Enhancing
network
capability



Image supplied by TransLink

Each pillar has a set of processes and systems which guarantee that throughout each phase we:

- **Understand** what public transport authorities and passengers want
- **Transfer** solutions that work and adapt them to local needs
- **Work with** suppliers, transport authorities and stakeholders to continually improve results
- **Take account of** future requirements to deliver the best value
- **Capture lessons** and share success.

To assist our teams on the ground, we provide a wealth of central knowledge and support, including research centres staffed by our leading engineering, safety, operations and customer service specialists.

Our success is evidenced by a record of world class performance and continual improvement across Australia and the world.



Pillar #1

ENGAGING EARLY WITH AUTHORITIES

Keolis Downer works in partnership with public transport authorities offering local and international expertise and proven solutions to maximise the benefits of new and extended light rail networks.

Designing efficient, high performance light rail networks

Our local and international experts work proactively with public transport authorities (PTAs), project builders and other partners to add value to network design. Early involvement includes drawing on our operational experience through design reviews and specialist workshops to help ensure services will be:

- Safe (separated from cars as much as possible)
- Fast (traffic light priority)
- Convenient (station access and layout)
- Reliable (robust infrastructure, location and design)
- Accessible and considerate to residents (low noise)
- Sustainable (financially and environmentally).

Integrating transport to maximise growth

Our experience of positioning light rail lines as the backbone of integrated transport networks helps deliver services that match demand and lifestyle across the city with all transport modes working together. Across our projects, we have been able to grow patronage and cut costs by:

- Redesigning networks with light rail lines fed by high frequency, complementary bus services
- Coordinating timetables and capacity
- Funneling all public transport into multimodal termini with frequent connections.

More liveable cities

We work with all levels of government, partners, councils and residents to build streetscape improvements into construction plans for new light rail networks. Benefits delivered include new urban plazas, wider pavements, green spaces, and new cycle and pedestrian routes.



A vibrant city street scene featuring a modern tram with a green and white design and yellow doors. The tram is stopped at a station platform where a diverse group of people, including a man in an orange shirt with 'EPS' on the back, are waiting. The background shows a tall, ornate building and a street decorated with red and yellow star-shaped bunting. A blue line with a green circle at the bottom connects the 'OUR' and 'APPROACH' text boxes to the list of points.

OUR

APPROACH

- Understanding government priorities for their city
- Basing world-leading experts locally
- Providing constructive feedback, based on proven solutions
- Offering transparent, open dialogue
- Looking beyond our contract to where we can add value
- Maximising the benefits from the light rail investment.



Pillar #2

SECURING SMOOTH LAUNCHES AND HANDOVERS

We draw on our global experience to deliver new networks that achieve high performance from the start, and the seamless transfer of existing networks to Keolis Downer. Our success is based on a tested approach that works time and again. It is part of our everyday business.

16 new light rail networks launched or taken over globally since 2016.

Transferring proven processes and knowledge

Our processes for launching new light rail services include:

- Management training on twinning networks, with local managers trained to drive trams and train their own employees, so they fully understand their network
- Employee recruitment/ training based on tested and proven mobilisation schedules
- Trial run tests based on Keolis Downer best practice (eg. safe driving at road junctions).

When existing networks are handed over to Keolis Downer for operation, we focus on key tasks for seamless service continuity including:

- Employee transfer – early, accurate communication for strong workplace relations
- IT – highly-skilled teams replace IT owned by the outgoing operator and ensure systems work faultlessly
- Day 1 readiness – audits and briefings ensure all people and equipment are prepared and in the right place.

Ensuring safety and quality from day 1

We take a holistic view when launching a new network and actively engage with road planners and operators to maximise tram reliability in traffic; with project partners to coordinate tasks; and with communities on safe use of the network.

The Yarra Trams **Beware The Rhino** campaign to encourage pedestrians to look, listen and be alert around trams - which can weigh as much as 30 rhinos – has been highly successful in engaging communities in light rail safety and has been rolled out across Keolis' global light rail networks.

We engage with highway departments to maximise tram reliability in traffic, with project partners to coordinate tasks and with communities on the safe use of the network.

Building highly-skilled workforces

We create flexible, agile workforces for each network we operate. Well-sized teams with multi-skilled employees improve service and customer experience and reduce costs.

Our open plan depots mean all employees work as one team and understand their impact on service delivery.

Smooth transfer of employees

Keolis Downer started operating Melbourne's iconic Yarra Trams network in 2009, transferring almost 2,000 employees from previous franchisee to the new entity. Today, more than 1,200 tram drivers work across nine depots - Brunswick, Camberwell, Essendon, Glenhuntly, Kew, New Preston, Malvern, Southbank and Tram Hub.

More than 200 authorised officers and customer service employees provide a visible staff presence from first to last tram ensuring passengers have a valid ticket and travel safely.

Working closely with employees, the Victorian Government and unions, significant improvements have been made to support employees including the introduction of Team Manager, Drivers roles, which changed manager:employee ratio from 1:240 to a maximum of 1:50 and a 67% increase in the number of women working at Yarra Trams.



Networks just launched, taken over or in mobilisation:

Greater Manchester, UK

Transferred in July 2017, merging maintenance and operations employees from four companies into one organisation; 38 million passengers in 2016; 92km of lines.

Aarhus, Denmark

Launched first phase of the network in 2017 with 12km of lines, 98km more lines to open early 2018 - will include tram-train operations with speeds up to 100 km/h.

Waterloo, Canada

Due to open Summer 2018. Early involvement includes integrated bus/rail planning. 19km of lines.

Newcastle, Australia

Due to open in 2019. 2.7km of lines running through the city centre.

THINKING LIKE A PASSENGER

Keolis Downer has adopted the Thinking Like a Passenger approach, delivering world class customer satisfaction and continuous improvement. The results are driven by deep understanding of our passengers and a culture focused on customer service.

Enriching the customer experience

From tram stop to boardroom, we build customer experience into every aspect of our business, and expect everyone to 'put yourself in passengers' shoes'. Day-to-day this means:

- High passenger comfort – attentive driving style
- Clean trams – cleaning adapted to changes in weather
- Useful information – real-time, on-demand
- Employees – available where needed most.

We have detailed procedures in place to ensure sufficient employees are available quickly and qualified to assist passengers during disruptions, including practiced rapid response of back office employees trained to assist.

We build on these basics with proactive customer engagement and insightful research to truly understand our passengers.

Inclusive services for all passengers

We meet passengers and their representatives to understand different needs, then modify services, staffing and training, or arrange initiatives with public transport authorities, to meet these needs. Some examples include familiarisation events for people with reduced mobility and the employment of ambassadors at gateway stations (e.g. airports) to guide visitors on using local light rail services.

Informed travel tailored for each passenger

Our ultimate aim is to offer fully-personalised transport, using IT innovations to remove all uncertainty and inconvenience.

In 2015, we set up a digital lab to understand trends in people's use of new technology. We then investigated 2,000 digital solutions, shortlisting 200.

We are now piloting world first technology to integrate barcode ticketing with our existing journey planner.

Customers plan their door-to-door trip, buy a ticket and download it to their phone using a single app. We have also tested virtual reality software to show passengers how tram routes and surrounding areas will develop.

World first technology trials

In Bordeaux we have tested virtual reality software to show passengers how the tram route and surrounding area will develop. Digital images on the inside of the tram windows also showed real-time multimodal information.



THINK

LIKE A

PASSENGER

Making it easier to get around

We know our services are part of the daily lives of hundreds of thousands of Australians and we strive to make public transport the first choice for our customers whatever their reason to travel. It is crucial to us that despite the diversity of passengers, every customer feels that our service is designed with them in mind.

On the Gold Coast, our focus on the local customer resulted in the development of innovative customer information systems, including the My G: app for mobile devices and passenger information at stops.

In Melbourne, we are delivering the Route 96 Upgrade Project, which will result in low-floor trams, accessible stops and dynamic customer information along the whole route - a first in more than 100 years of trams in Melbourne.





CONTINUAL

IMPROVEMENT

IN

PUNCTUALITY

- On the Gold Coast, we have continually improved high punctuality since network launch in July 2014. Initiatives include monitoring performance data for patterns or issues and addressing them, training to manage small delays in real time, sharing drivers' knowledge and feedback, regular cross-departmental analysis, and working with city authorities on efficient on-street operation. We are now achieving 100% punctuality against some of the world's toughest targets.

Pillar #4

OPTIMISING OPERATIONAL PERFORMANCE

Our planning and service delivery expertise mean the operational performance of our light rail networks rivals any in the world. From new lines to the world's oldest tramways, our passengers are travelling more safely and reliably year after year.

Acting on our Zero Harm promise

All Keolis Downer employees are trained to understand the link between high safety and punctuality, preventing conflicting priorities and clarifying safety as our top concern. From that foundation, our businesses develop their safety culture based on:

- Annual action plans reviewed by Keolis experts
- Investigating every incident, no matter how small
- Safety ambassadors to observe working practice
- Continuous improvement programmes to evaluate how we work and raise awareness of how to travel on, and live safely near, the tram
- Working with councils, local road authorities, emergency teams, etc.

Continually improving operational performance

High performance is embedded in our day-to-day business from planning to service delivery. We adapt timetables to seasonal conditions, our maintenance systems anticipate and prevent faults, and we manage operations in real-time.

We drive continuous improvement in asset management and network control by co-locating operations and maintenance teams, with a shared objective of on-time services. Daily and weekly reviews assess whether incidents can be handled better and anticipate challenges.

Effective planning for special events

We provide the highest possible capacity and reliability to special event venues, while meeting the needs of other passengers, by:

- Scheduling maintenance so trams are available to increase frequencies
- Managing passenger flows to ensure platform safety
- Reviewing plans with PTAs to ensure the best service for the city.

➤ This approach caters successfully for regular festivals (e.g. taking at least 300,000 spectators to Melbourne's Australian Open tennis tournament), and new venues (e.g. taking up to 14,000 people to Lyon football matches).

Pillar #5

ENHANCING NETWORK CAPABILITY

Across the world, rapid patronage growth is creating reliability and capacity challenges for public transport operators and transport authorities. Keolis Downer is responding with innovative operational and asset management solutions to accommodate demand and meet passenger expectations at an affordable cost to our governments.

Increasing speed to create new options

We constantly investigate ways to improve average service speed in order to release trams to increase capacity or provide 'hot spares' to improve service reliability. Joint projects with transport and road authorities include traffic light priority (while taking account of the impact on road users) and improving the location of speed limit signs. Other initiatives focus on fast departure from stops through refresher driver training to cut dwell times, managing passenger flows at high demand stations, and tram modifications so doors open/close faster.

Innovative timetables to accommodate growth

We look beyond our contracts to identify new ways to accommodate growth which minimises the need for additional investment in trams and infrastructure.

Our proven timetabling solutions to increase frequencies include:

- Dedicated short distance services on the busiest parts of the route
- Moving from fixed departure times on high frequency networks to metro-style interval timetables.

Before presenting a case for change, we provide a technical assessment of any infrastructure requirements, a passenger impact study, and a plan showing how we will operate new service patterns reliably.

Asset development to meet emerging challenges

Our asset management plans look beyond our role as network maintainer to offer innovative choices on efficient asset renewal. We consider whether remodelling infrastructure (e.g. termini and road junctions) would increase speed, capacity and reliability at efficient cost. In addition, we trial technology to manage demand and improve passenger comfort.

Image supplied by TransLink

MODERNISATION

LABORATORY

Melbourne's Route 96 Brunswick East to St Kilda Beach is one of the city's busiest tram routes carrying 39,700 passengers a day with a tram every six minutes during peak periods. The route was identified as a priority for upgrades under Keolis Downer's management and is rapidly becoming a test case for how to modernise older tramway systems.

While still underway, benefits of the upgrades so far include:

- Creation of double track terminus - preventing delays of up to six minutes
- Major junction redesign to create triple tracks – improving tram priority
- Four stops made level access
- High capacity trams
- Partnership to trial passenger count sensors and lighting controls at stops
- New public plaza and wider pavements.

The project is opening further discussions with the Victorian Government on new ways to combat challenges of high growth across the Yarra Trams network (12.5% in 2016) and ensuring safety in a network with 75% on-street operation.



THE KEOLIS DOWNER DIFFERENCE

Working with public transport authorities at every stage of the light rail cycle.

Pillar #5

ENHANCING NETWORK CAPABILITY

- Increasing speed to create new options
- Innovative timetables to accommodate growth
- Asset development to meet emerging challenges.

Pillar #1

ENGAGING EARLY WITH AUTHORITIES

- Designing efficient, high performance tram networks
- Integrating transport to maximise growth.

Pillar #2

SECURING SMOOTH LAUNCHES AND HANDOVERS

- Transferring proven processes and knowledge
- Building robust, lean subsidiaries
- Ensuring safety and quality from Day 1.

Pillar #3

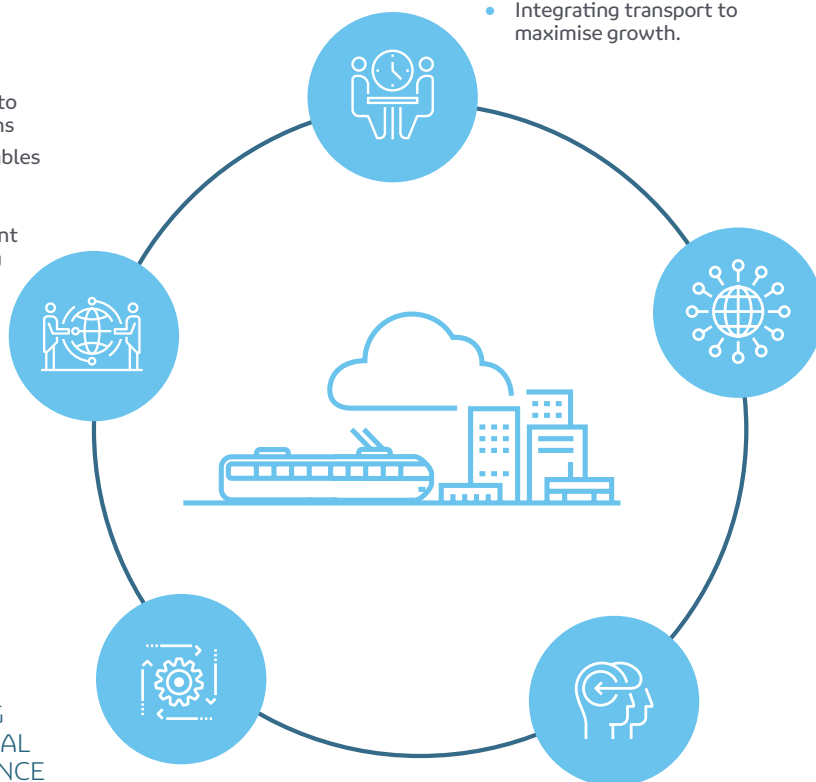
THINKING LIKE A PASSENGER

- Enriching the customer experience
- Inclusive services for all passengers
- Personalised mobility services.

Pillar #4

OPTIMISING OPERATIONAL PERFORMANCE

- Acting on our Zero Harm promise
- Continually improving operational performance
- Effective planning for special events.



NEW WAYS OF THINKING ABOUT TRANSPORT

As Australia's largest private multimodal transport operator, and the world leader in light rail operations, Keolis Downer is focused on innovation.

Identifying new and better ways to tailor public transport to the unique needs of each city, delivering outstanding passenger experiences and maximising the return on assets requires deep knowledge of existing networks and new ways of thinking about the future.

Our focus is as much on how to enhance and share mobility as it is delivery of outstanding public transport. That means integrating our light rail services with on demand, autonomous vehicles, buses, heavy rail, metro, ride-sharing services or parking.

Expert support from our tram excellence centre

Keolis's Tram Excellence Centre draws on the expertise of 30 senior light rail experts and project managers from around the world. Located in Lyon where Keolis has operated and maintained the multimodal network since 1977, it is a centre of excellence for:

- Tram network design
- Performance management and modelling to improve speed, punctuality and capacity
- Operation and maintenance costing

- Rolling stock maintenance, refurbishment and renewal
- Infrastructure maintenance (e.g. signalling, track, power supply)
- Ticketing, fare collection and passenger information systems.

The networks operated by Keolis Downer in Australia are able to draw on the centre's expertise in preparing new networks for passenger service and beyond. On new-build networks, the centre's team carries out readiness audits one year and then three months before launch to advise on any risks that need to be addressed and assess progress against schedule. A further audit at the end of the first year advises on whether operations and safety management could be improved, drawing on Keolis best practice.

When we take over existing networks, a readiness audit takes place three months before transfer, including assessing the performance of the existing operator.

A further audit after six months assesses progress and opportunities during the crucial change management period when we are introducing Keolis Downer systems and best practice.

New proprietary business systems to achieve results

Keolis Downer has developed proprietary business systems that improve both service design and asset management.

The new Keolis Downer service design system ensures the impact of new and existing light rail networks are maximised through integration with both existing and proposed transport modes. Including roads, ferries, heavy rail, car share and active transport such as cycling and walking, the system can model scenarios to enable the most efficient and effective operations, whether trunk and branch style systems or metro-style timetabling, and can be updated and reviewed as transport planning develops.

Similarly, Keolis Downer has a proprietary approach to deliver value for money through whole-of-life management of light rail network assets.





Delivering value through asset management

At Keolis Downer, digital technologies are bringing new possibilities in our approach to asset management. We are embracing examples of technology that enable us to provide better visibility of asset condition, to identify ways of increasing system reliability and to improve the way data is shared for planning and decisions.

Our approach to asset management of the tram network assets is about:

- Reducing operating costs by extending the useful life of assets
- Reducing technical and commercial risks by providing an assurance that our engineering practices are safe
- Improving the performance of assets through smarter analysis of historical data
- Creating opportunities to optimise asset investment planning and decisions.

Digitisation of the asset management approach has created new opportunities to automate and improve processes with more than 140 systems and applications in the Keolis Downer digital portfolio.

In Melbourne, the Keolis Downer asset management approach has enabled the upgrading of 30% more kilometres of track than originally promised, at no extra cost to the government.

Over the coming years, we will be embracing the ISO 55001:2014 standard that requires organisations to integrate planning to achieve asset management objectives with other organisational activities, including financial, human resources and other support functions.

We expect this approach will deliver:

- Revitalisation of more than 85 per cent of the fleet over five years, with the creation of more than 100 new jobs
- Double the amount of track renewed across the network annually from 5kms to 10kms on average each year
- Optimised transport services during major projects and special events
- Refurbishment of a further six iconic W-Class trams, investing in the heritage and cultural significance of Melbourne's tram network.



LIGHT RAIL DRIVING URBAN RENEWAL

Efficient public transport is a key element of the successful renewal of cities across the globe, with light rail projects operated by Keolis at the centre of many.

Public transport increases social inclusion, reduces traffic congestion and pollution and increases the liveability of high and medium density areas, attracting not only residents but also businesses to areas that had often previously been in decline.

Gold Coast, Queensland, Australia – G:link opened in 2014 as Australia's first light rail in a greenfield site and has already proven to be much more than just a transport service. Running 13km down the spine of the famous coastline, the Keolis Downer operated light rail has been credited with delivering \$6 billion of investment, particularly in Southport, and driving a 25% increase in public transport usage through effective integration with bus services. Recent research has also found that property values within 800 metres of the light rail stations increased by more than 30% from the time planning began.

Newcastle, NSW, Australia – In Newcastle, Keolis Downer took the keys to the public transport network on 1 July 2017. Under the Newcastle Transport brand, we will operate an integrated transport offer that includes buses, ferries and, commencing in 2019, light rail.

Keolis Downer aims to improve connections between the city and activity centres by delivering fast, frequent and convenient services that make public transport an attractive and viable option for all.

Waterloo, Ontario, Canada – a new 19km light rail network to be operated by Keolis is due to open in 2018, with plans for a further 17km of high frequency bus plans to be converted to light rail. Significant development is now underway around each of the light rail stops which includes offices, retail spaces, restaurants and residential units.



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