



# Melbourne's Tram Plan



Department  
of Transport  
and Planning

# Ministerial foreword

Melbourne's iconic tram network is the largest in the world, connecting over 200 million passengers every year to work, school, healthcare, shops and loved ones. Trams have linked our city for generations and become an integral part of Melbourne's culture and identity.

As the city grows, our \$100 billion Big Build presents the opportunity to modernise our tram network. The Tram Plan outlines our vision for a tram network that connects more people and places than ever before.

At the heart of the Tram Plan is a focus on improving accessibility and safety, moving more people, improving journey times and reliability, better connecting people and places, and delivering value for money.

Our work to reform the tram network has been backed by nearly \$3.9 billion of investment by the Andrews Labor Government since 2015.

This has seen the introduction of the Night Network and the completion of the rollout of 100 E Class trams.

It also includes the largest investment in locally made trams in Australia's history with \$1.85 billion to build 100 Next Generation Trams and a new tram maintenance facility in Melbourne's west. The new low-floor trams will enter service from 2025 and be more comfortable, accessible and energy efficient.

We are delivering these new world class trams on western routes first, on the 57, 59 and 82 – a boost for passengers from Airport West to Maribyrnong through to Moonee Ponds Flemington and Footscray.

We have delivered 83 accessible tram stops, with a further pipeline of 24 stops. Planning for future corridors of level access stops is underway. This includes a \$68 million investment to deliver level-access tram stops along La Trobe Street and better integration of services on this key CBD corridor with the Metro Tunnel.

The Tram Plan identifies the actions we will take to ensure Melbourne's trams are more accessible, more technologically advanced and more efficient than ever before.

We will better integrate our tram network with the wider public transport system and the urban environment in which it operates and deliver better passenger experiences through real-time information and technology upgrades.

This includes a new public transport ticketing system that will make improvements using proven technologies which allows passengers to safely and seamlessly access, use and pay for tram travel.

The new ticketing contract is an important step in the evolution of myki as a future-proofed ticket to travel on Victoria's world-class public transport system.

Delivering Melbourne's Tram Plan is the next step in modernising our network and builds on Victoria's Bus Plan, which we released in 2021 and sets out how we are delivering a modern, productive and environmentally sustainable bus network that increases the number of passengers.

Our Government is getting on with it, and the Bus Plan and now Tram Plan provide a blueprint for the future of public transport in our state. Having a vision for our transport network gives certainty to businesses, communities and passengers and the Andrews Government has laid out our plan for the future.

Transforming the world's largest tram network is a significant undertaking, but I look forward to working in partnership with our passengers, workforce, operator, and community to deliver it.



A handwritten signature in black ink that reads "Ben Carroll". The signature is fluid and cursive.

**The Hon Ben Carroll MP**  
Minister for Public Transport  
Minister for Roads and Road Safety



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# Introduction

Trams have been the lifeblood of Melbourne's streets and have supported our city's growth for more than 135 years. They contribute to the economic vitality of the city and play a critical role in everyday life. They support simple, convenient connections between central Melbourne and the suburbs, enabling access to tourist destinations, jobs, healthcare, education, and social opportunities.

Trams are a critical part of Melbourne's integrated transport network, facilitating more than 200 million trips a year. They are also an iconic part of Melbourne, with locals and visitors alike relying on the network to connect them to the places they want to go.

Each tram route serves different neighbourhoods and precincts along its journey, transporting passengers to Melbourne's key residential, shopping, sporting, cultural, educational and employment precincts and providing vital support for our economy.

As Melbourne's population grows, the public transport network must cater for an increasing volume and diversity of trips. Enhancements in public transport can help to drive the economic growth of the city.

It offers Melburnians greater choice in where to live, work, and do business by connecting the city's suburbs and precincts.

The future system will be accessible to more people and provide a safe means of travel. It will boast service outcomes that support a range of activities throughout the day, not just in the peak periods. It will provide fast and reliable services to employment and activity centres, residential suburbs and major urban renewal precincts, major hospitals, and a variety of entertainment facilities across the city.



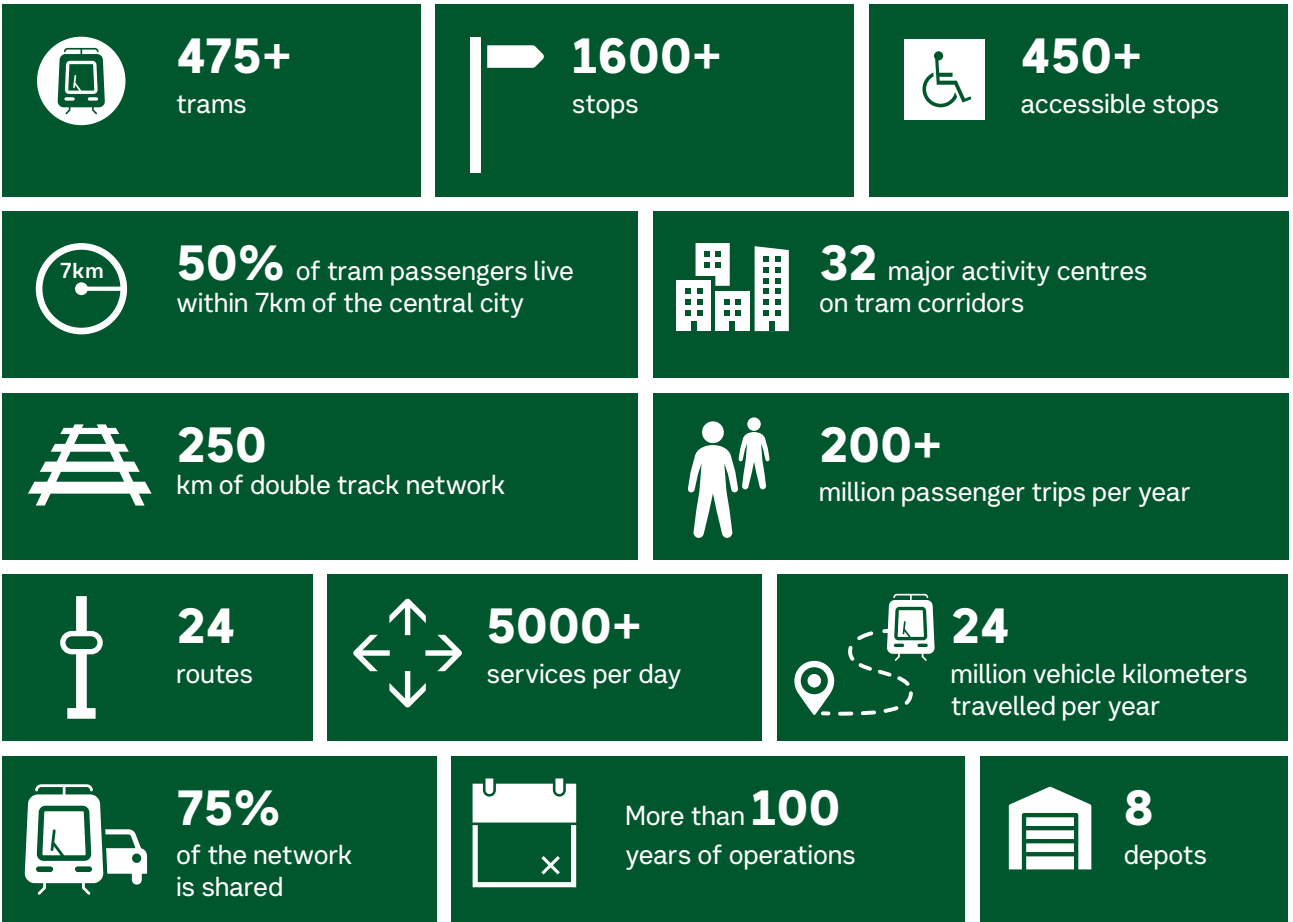


Figure 1: Key features of Melbourne's tram network

# About Melbourne's Tram Plan

Melbourne's Tram Plan sets out how we can deliver a tram network that puts passengers first, connects people to the places they want to go, and is accessible to more people. Reliable, accessible, and efficient transport options are key to achieving a more prosperous, liveable, and connected Melbourne.



As part of the broader transport network, trams will play a critical role in driving Melbourne's growth.

Melbourne's tram network has developed and changed as the city has grown from the early days of a horse-drawn tram network to the modern network we have today. We now have an opportunity to make a transformational change to the tram system to prepare it for the future.

The *Transport Integration Act (TIA) 2010* defines how a coordinated approach to the planning of the transport network can contribute to an inclusive, prosperous and environmentally responsible state. The TIA provides the template for the outcomes-based approach adopted in the development of Melbourne's Tram Plan.

Melbourne's Tram Plan has been developed around a passenger-centred, outcomes-based, and integrated approach which aims to progressively build elements scaled to match the development of Melbourne's activity centres, precincts and suburbs.

This plan sets out the vision for the city's tram network. It details the challenges the existing network faces in a growing and evolving city. Right now, we have an unprecedented opportunity to complement Victoria's Big Build transformation and connect more people to the places they want to go.

The plan outlines how the development of the tram system will complement the city's economic and urban planning policies, enhance the passenger experience, and help to deliver a more accessible and reliable tram system.

This plan has been developed as part of the Department of Transport and Planning's integrated approach to planning for the transport system. It complements Victoria's Bus Plan in planning for the future of the Victorian public transport network.

Melbourne's Tram Plan explains the critical role that trams will play in a more prosperous, more liveable, and more connected Melbourne.



# A modern tram system



## Connecting more people to more places

Improving connections to National Employment and Innovation Clusters and dense residential areas will give people greater choice in where they live and work.

## Provide value for money

Reconfiguring the network and delivering necessary infrastructure upgrades to existing assets will maximise the benefit of our ongoing investment in tram services.



## Improve journey times and reliability

Providing more capacity and delivering infrastructure and technology upgrades will create a better passenger experience by improving journey times and reliability.

## Move more people throughout the day

Improving reliability and capacity will move more people to where they want to go.





## Improve accessibility and safety

Making access to the network safer and more universal will help connect more Victorians to jobs, education, shopping, services, leisure, and cultural activities.



## Deliver better passenger outcomes

Putting the passenger experience at the centre of our decisions will ensure we're delivering what's most important to our passengers.



## Contribute to local places

Integrating transport and land use planning will encourage more economic and social activity along densely populated tram corridors.



# Why trams?

Trams are a quintessential part of Melbourne's culture and identity. The world's largest operational tram network has been supporting the economic vitality of the inner city and playing a critical role in everyday life since the late 19th century.

The fine grid of tram routes across central Melbourne complements the broader role of trains and buses in connecting people to their destination. Trams connect people from regional Victoria arriving at Southern Cross Station with jobs and services in locations such as Docklands, St Kilda Road and Parkville. Tram trips are often the first or last mile of people's multi-modal journeys.

As Melbourne's population continues to grow, the tram system's capacity to service a greater proportion and diversity of trips will be an important contributor to the city's economic success.



## SUPPORTING ECONOMIC GROWTH

The transport network transformation being delivered by Victoria's Big Build, with projects like Suburban Rail Loop and Metro Tunnel among others, creates an unprecedented opportunity. By providing greater, more efficient connectivity to the places we live, work, learn and play, Victoria's Big Build will help deliver economic growth beyond central Melbourne and into the suburbs and precincts surrounding the city.

Trams will facilitate access to a greater range of employment opportunities, provide access to a wider range of tertiary education institutions, and enable visitors to easily reach destinations within and beyond central Melbourne. Providing transport links to business areas and Metropolitan Activity Centres (MACs) outside central Melbourne can support economic activity, particularly in the growth industries identified as critical to Victoria's future.

The Victorian Government's \$200 million Future Industries Fund supports key industry sectors which will underpin the future Victorian economy. Many of the businesses serving these sectors will be based in National Employment and Innovation Clusters (NEICs).

There are seven NEICs identified in Plan Melbourne 2017-2050, which will be a focus for investment and jobs growth. The NEICs will provide employment opportunities in education, research, health, medical technology, pharmaceuticals, science, business services, high-tech manufacturing, and information technology.

The tram network already supports many jobs across its planning, development, operation, maintenance and supply chain. The implementation of the actions contained within this plan will create thousands of jobs to further support the Victorian economy.

## SUPPORTING A GROWING AND DIVERSIFYING MELBOURNE

Trams have the potential to boost the connectivity of a growing city. Plan Melbourne proposes multiple clusters and centres with high social and economic participation.

Future knowledge hubs and employment precincts will emerge in areas of high connectivity and are proposed to be centred around medical, research and tertiary institutions across Melbourne. They include NEICs such as Monash, La Trobe, Sunshine and Fishermans Bend as well as metropolitan activity centres like Footscray and Box Hill.

As areas outside the central and inner city start to grow and densify, trams have the potential to provide connections within and to these new hubs.

Tram corridors also support rich and diverse land uses to create vibrant precincts and accessible businesses. A single tram journey can include a residential area, a strip-shopping centre, a university district, central Melbourne and a sporting precinct. Trams also provide critical infrastructure to support the visitor economy, connecting tourists to retail, recreational, and cultural experiences such as the National Gallery of Victoria and Melbourne Museum as well as popular destinations like St Kilda, the renowned Queen Victoria Market and shopping strips in Malvern, Richmond, Windsor and Fitzroy.

## SUPPORTING LOCAL PRECINCTS AND BUSINESSES

Rapidly increasing population density along tram corridors is a recent and welcome development. Changing land use, complementary planning schemes, and a recognition of the importance of living close to transport links, have triggered massive growth in the number of dwellings built along tram routes.

This population will rely heavily on the tram network for its transport needs. Daily trips are predicted to almost double by 2046, with patronage growth expected across all periods of the week. The most significant growth is anticipated in the off-peak, where daily trips are predicted to reach almost 300,000.

In most cases, the transport needs of a growing inner-city population can be met with a relatively small investment. A tram can move 50 times more people than a car and operates at high frequencies over extended service hours, enabling the efficient movement of large numbers of people.



# Challenges



## A GROWING AND CHANGING MELBOURNE

Melbourne's continued population growth and expansion mean changes to the tram network are needed so that it can remain an iconic part of Melbourne and deliver the additional capacity required to move more people. The tram network's ability to provide more services in more places will be an important contributor to the city's liveability and economic success.



## CHANGING PATTERNS OF TRAVEL AND DEMAND

Significant growth in employment and residential development along nearly all tram routes means increased service levels and corridor capacity are needed. Several routes have an imbalance between passenger demand and capacity which needs to be addressed.

Plan Melbourne identifies key strategic areas across the city for future growth. In some cases, these areas are either underserved, or not serviced at all by the tram network. Expansion of the tram network can help connect these areas and ensure they thrive.



## ACCESSIBILITY

The differing levels of accessibility across the network excludes some people with disability or mobility limitations from tram travel.

Tram stops have been earmarked to be upgraded for level access, which in parallel with the deployment of low-floor-trams, will improve accessibility across the network.



## MEETING PASSENGER NEEDS

The existing network can be improved to better meet passenger needs for accessibility, safety, up-to-date travel information and overall journey experience.

Many existing tram stops require passengers to cross lanes of traffic exposing them to conflicts with cars and other road users. The implementation of platforms, kerb out-stands and other safety measures can help passengers to access the network safely. Shelters, seating and improved technology can make stops better places to wait for trams. Investment is necessary to ensure the tram network is accessible and provides a safe environment for all passengers.



## ROAD CONGESTION AND TRAM PERFORMANCE

More than 75 per cent of Melbourne's tram network operates in streets shared with other traffic, resulting in about 1000 vehicle-to-tram collisions every year.

As traffic returns to, and in some cases exceeds pre-COVID levels, congestion is likely to remain a challenge to delivering faster, more reliable journeys. On some routes, almost 20 per cent of the journey time is spent waiting at lights.

Greater on-road prioritisation for trams can improve safety and reduce travel times.



## LEGACY INFRASTRUCTURE – AN AGEING NETWORK

Melbourne has one of the oldest tram systems in the world. Many routes date back to the original cable tram system of the 19th century, when the city was much smaller and cars were fewer.

On some parts of the network, the existing power supply is at, or nearing capacity, and needs to be upgraded to accommodate more services. Some of the newer low-floor trams can require up to three times as much power as older trams. Additionally, some tram stops across the network are unable to accommodate newer, longer trams.

The purchase of newer larger trams continues to drive the need to build new depots to store and maintain them. While both New Preston Depot and Maidstone Depot will provide for many of these new trams, older depots across Melbourne also need to be upgraded to cater to a different mix of trams. Depots and termini also need to be upgraded to improve facilities for staff.



# What we know

Daily tram trips are forecast to almost **double by 2046**.



Trams can help connect people to activity centres.



**Separation** from other road traffic can help enable the efficient and reliable operation of the tram network.

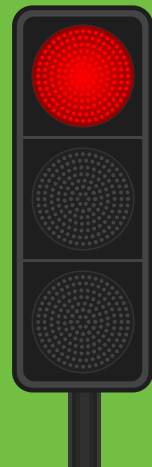


The population of inner metro Melbourne is projected to **grow strongly** over the coming decades.



On some routes, almost 20 per cent of journey time is spent waiting at red lights – optimising traffic signals and on-road priority for trams could help reduce waiting times.

**20%**  
of journey time  
is spent waiting  
at red lights



# Strategic response

## TRAM NETWORK

Melbourne's tram network was created for a city that has since undergone significant change. The city has expanded with new residential, employment and education hubs extending to places beyond central Melbourne. To respond to these changes, the broader transport network is also undergoing significant change with the Big Build program.

As demand increases we need to implement a series of changes and upgrades to the network. Addressing both short-term challenges and long-term operational objectives will require staged and sustained investment across the tram system.

At peak periods, all available trams are being used. This limits the ability to add more services to address overcrowding.

Buying accessible, modern trams to replace our ageing fleet of smaller high-floor non-accessible trams increases the number of passengers that can be carried by our fleet. We've invested in 100 E Class trams and have invested a further \$1.85 billion to build 100 new next-generation G Class trams and a new maintenance and stabling facility in Maidstone.

Improving running times and reducing the number of trams out of service due to crashes are other ways of freeing up trams to run more services. We're working to improve journey times and reduce crashes via on-road priority projects.

Reconfiguring the tram network is another strategy that can address growing demand. Network reform will allow trams to be more effectively deployed across the network, to the places they are needed most.

We have the opportunity to optimise the capacity of the tram network in line with demand by reconfiguring routes and services and using the existing and new tram fleet and infrastructure more efficiently. This will create a more efficient tram network, capable of moving more people to more places, and designed to support a growing and changing Melbourne. The outcomes delivered will focus on improving network connectivity, addressing critical capacity and operational constraints, as well as enabling future network extensions to support the growth of major urban renewal and employment precincts.

**Increasing services or using larger trams will increase capacity, but upgrades to the network are needed to support newer and larger trams.**

In December 2021 larger, low-floor E Class trams were introduced to Route 58 which travels from West Coburg to Toorak.

Route 58 was selected as it services key employment areas such as the Parkville medical precinct, central Melbourne and South Yarra, and key population growth areas. With recent upgrades to stops at South Yarra station, and along William Street at Flagstaff, Bourke and Collins streets this means that there will be less crowding and more accessible travel on one of our busiest routes.

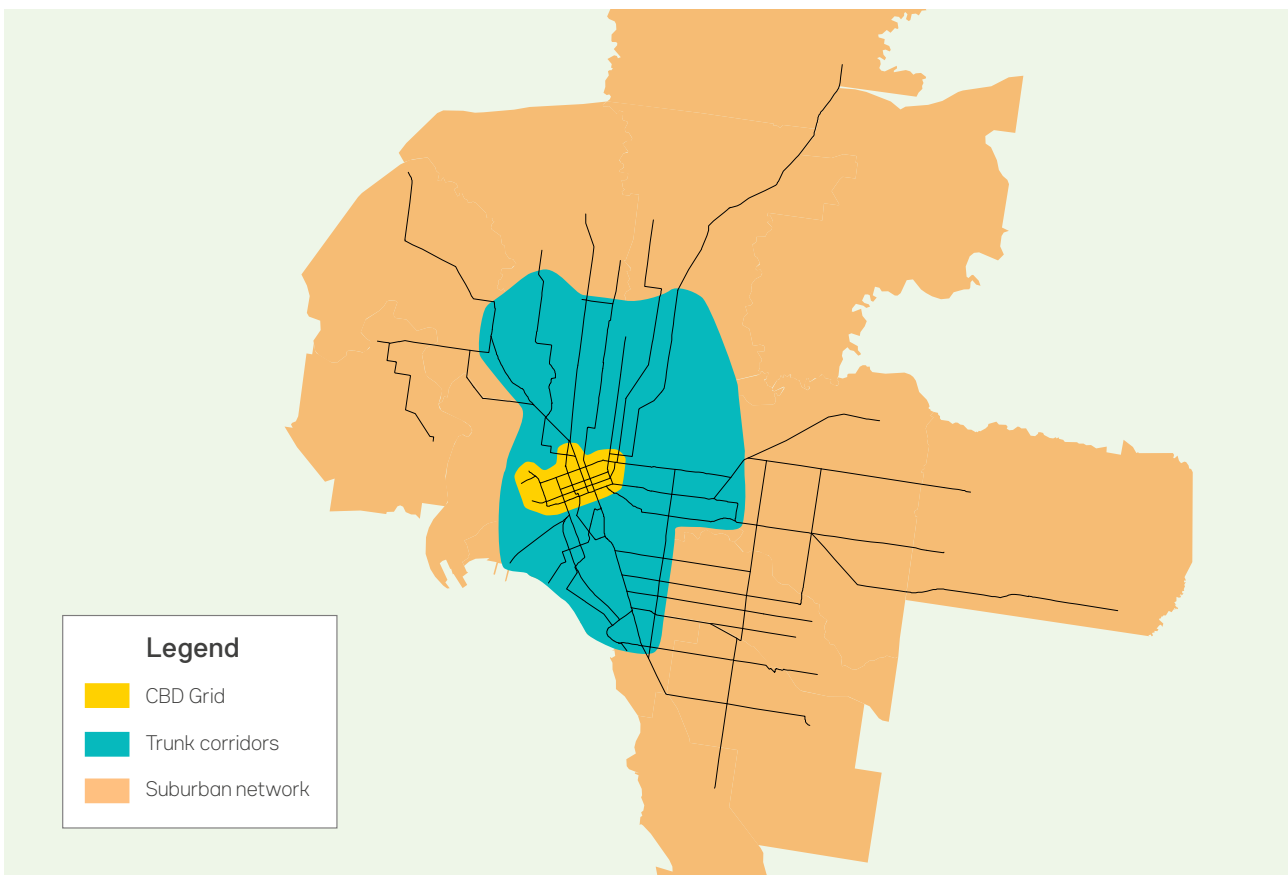
## Developing trunk corridors

Melbourne is growing denser in the inner suburbs, most significantly along existing tram corridors. Many inner-city industrial sites are being converted to residential areas.

To reflect these evolving land uses and support the planning and implementation of reform, the tram plan considers the differing needs of passengers in central Melbourne, along busy tram corridors and in suburban areas.

The tram network services different functions in each of these areas. Creating trunk corridors, where tram routes converge at key locations, supports the optimisation of the network, and will help to increase capacity across the busiest parts of the network. In central Melbourne network reform prioritises connectivity and connections.

In the suburban network the focus of reform is on providing a turn-up-and-go service frequency, sufficient capacity to meet demand, increasing reliability and reducing journey times, and improving connectivity.





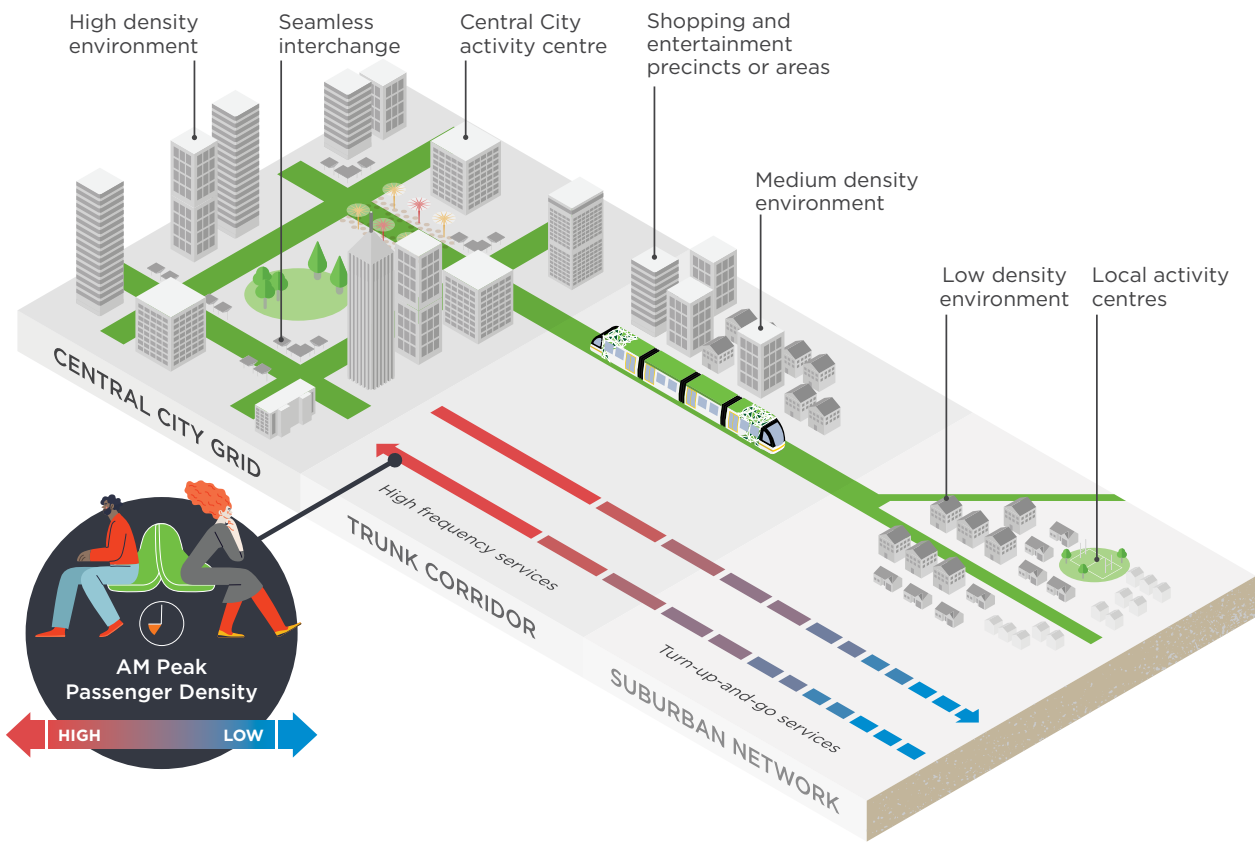


Figure 2: Trunk corridors

### Trunk corridors

The busy and critical St Kilda Road corridor operates as a trunk corridor. Routes from bayside and south-eastern suburbs converge along St Kilda Road providing frequency and capacity closer to the central city to match demand.



## DELIVERING MELBOURNE'S TRAM PLAN – BENEFITS



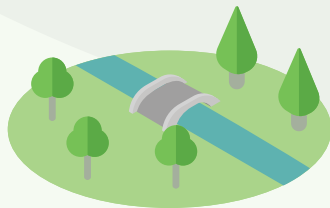
**Improving connections to National Employment and Innovation Clusters** and residential areas gives people greater employment and housing choices



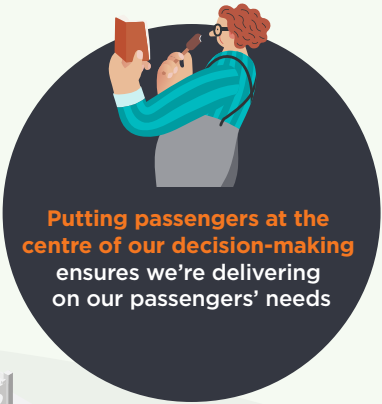
**Improved reliability and capacity** will move more people through the city each day



**Reconfiguring the network and delivery infrastructure upgrades** will provide passengers with a better experience



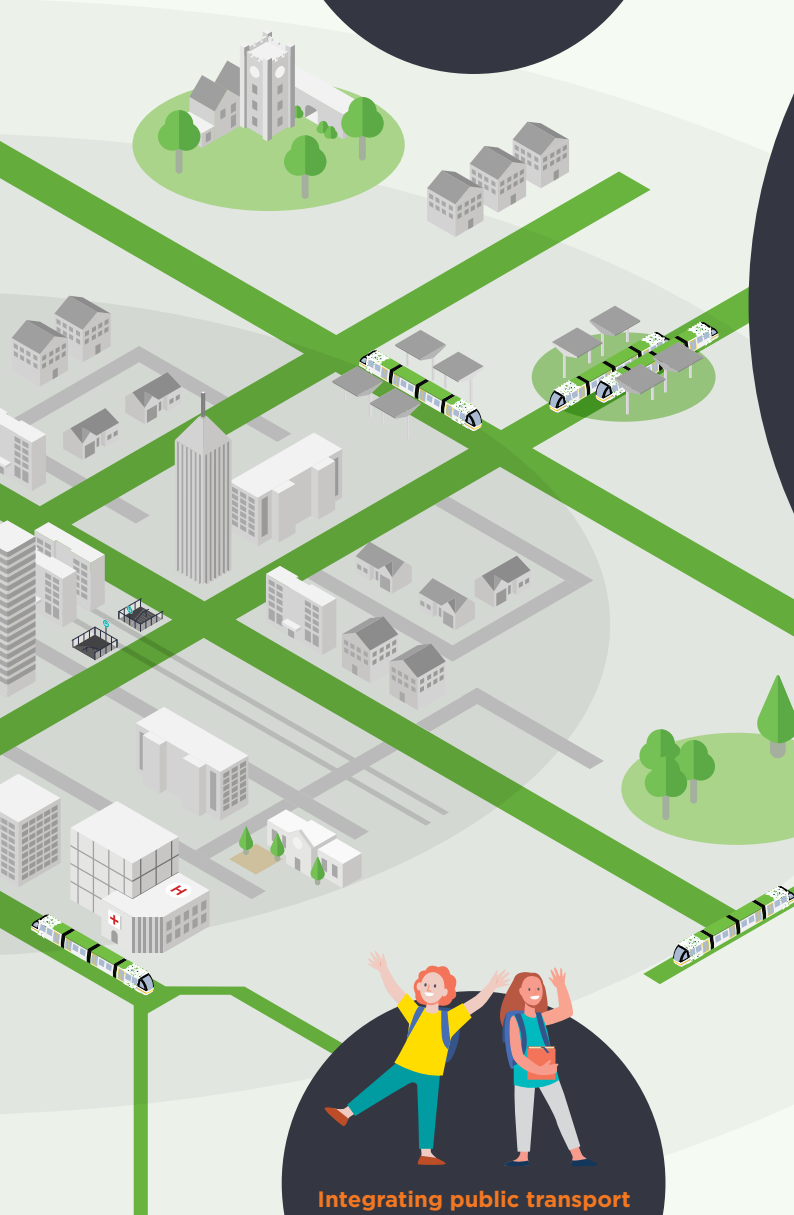
**Improved accessibility and safety** will help connect people to jobs, education, essential services and activity centres



**Putting passengers at the centre of our decision-making** ensures we're delivering on our passengers' needs



**Improved journey times, infrastructure and technology upgrades,** like Next Generation Trams, can create better experiences for passengers



**Integrating public transport and land use** encourages activity along tram corridors and densely populated areas



Figure 3: City of Melbourne Development Activity Map <https://www.developmentactivity.melbourne.vic.gov.au/>

### Connectivity and reforms in central Melbourne

The redevelopment of previously light-industrial and commercial sites in central Melbourne has significantly changed patterns of demand and tram usage. Network reform aims to distribute trams and routes to where capacity is needed across central Melbourne, bringing services closer to new residential areas and businesses.

Activity along La Trobe Street is rapidly increasing, with new residential and employment developments. Major destinations such as RMIT University, Queen Victoria Market and Docklands Stadium are also experiencing increasing popularity.

Spencer Street has also experienced significant land use change and growth, with several major developments completed in recent years. This, coupled with growth in West Melbourne, has increased demand for north-south connections in the western part of central Melbourne.



## Metro Tunnel

The Metro Tunnel will provide a new north-south train connection across central Melbourne, as well as a connection to the Parkville precinct north of the city. This creates an opportunity to reconsider the configuration of the north-south tram routes in central Melbourne. The capacity uplift delivered by the Metro Tunnel will reduce pressure on certain tram routes so additional capacity can be created where it is needed most. Traditionally services in the central city have been focussed on Swanston, Elizabeth and Collins streets.

Network reform would see trams better aligned to provide last mile connectivity with the new rail stations, particularly for the east-west corridors serving the State Library and Town Hall stations. They will provide an opportunity to align services to address new patterns of travel and increased demand along La Trobe, Spencer and William streets.

Work is underway to deliver new level-access tram stops along La Trobe Street to provide safe and accessible connections to and from the Metro Tunnel at State Library station.

## TRAM STOPS

The upgrading of tram stops is a key component of Melbourne's Tram Plan and a response to providing more inclusive and equitable access to tram travel for all passengers, and a pathway to deliver a universally accessible tram network. Improving accessibility, safety and the user experience will increase travel options and opportunities, and ensure the tram system is a desirable mode of transport for all.

This supports the Department of Transport and Planning's approach to improving transport accessibility, Victoria's Movement and Place Strategic Framework, Victoria's Big Build and Plan Melbourne, with the core vision for tram stops to provide a safe, accessible, and desirable user experience that integrates with place and enables increased access to opportunities for all Victorians.

Our approach comprises several elements, each designed to support the timely and cost-efficient delivery of accessible tram stop infrastructure across the domains of planning, design, project development and delivery.

A key part of informing how tram stops will be upgraded is the development of a corridor approach to planning, design, and delivery. By assessing accessibility, tram rolling stock type, safety and passenger experience along a whole corridor, we can identify where and when to prioritise upgrades, so we can deliver safer, more accessible tram stops, alongside accessible tram services, that support level access boarding for all passengers, where the demand is greatest. In order to achieve this vision, six strategic objectives have been developed.

<b>Vision</b>	Tram stops provide a safe, accessible, and desirable user experience that integrates with place and enables increased access to opportunities for all Victorians.					
<b>Strategic Influences</b>	Plan Melbourne					
	Tram Plan					
<b>Strategic Objectives</b>	Accessibility		Safety	Movement & Place		Big Build
	Increase the <b>accessibility</b> of the tram network.	Increase <b>travel options</b> to access opportunities across Melbourne.	Improve the <b>safety</b> of the tram network for all road users.	Enhance the <b>desirability</b> of tram travel for existing and new users.	Integrate tram stops into the surrounding <b>place</b> context.	Expedite the <b>delivery</b> of a safe and accessible network.

Figure 4: Strategic framework strategic framework

## Benefits of upgrading stops

We have established a comprehensive understanding of the social, economic and environmental benefits of upgrading tram stops.

### Social benefits

Improving participation in employment and social opportunities as the barriers to accessing public transport are removed.

Mitigating safety incidents between cars and pedestrians.

Reducing health system burden by encouraging people to walk to stops.

Enhancing sense of place as tram stops become safer, more attractive, and easier to use.



### Economic benefits

Better support for people with accessibility needs to use the tram network and access education, jobs, and social opportunities.

Creating jobs for Victorians during design and construction.

Uplift in economic activity on tram corridors.

Faster travel times due to optimisation of stops and a reduction in dwell time.



### Environmental benefits

Reducing greenhouse gas emissions as stop upgrades encourage commuters to shift from driving.

Enhancing the liveability of Melbourne by increasing the safety, cleanliness, and amenity of public spaces.



## A corridor approach to planning, design, and delivery

To date, the upgrade of tram stops across Melbourne has typically been undertaken on a stop-by-stop basis, with funding provided to address targeted physical and other accessibility gaps at key locations, such as high-demand interchanges in central Melbourne. Tram stop designs are not consistent across the network and some of the older designs are not easily accessible for some passengers and don't always meet the required standards.

The scale of the accessibility challenge faced across Melbourne's tram network requires a new approach.

In future, the planning and development of tram stop upgrades will occur on a corridor basis, grouping the more than 1,600 tram stops across the network into 100 corridors, to streamline delivery.

This approach means common sets of stops along a corridor can be combined and planned for as a group of stops.

As with any change within the streetscape, tram stop upgrades do not occur in isolation. Each tram stop has its own unique set of network and land use contexts to respond to, which means that upgrade works can help align street infrastructure with broader placemaking aspirations, partnering with the community and local businesses for strategic outcomes along high street tram corridors. The allocation of stops into corridors considers road and street types, land use, the scale and function of the street, where tram routes merge or split, and major changes to the road network.

This approach will enable tram stops to be a catalyst for change along tram corridors, to meet universal accessibility needs, to achieve the desired movement and place outcomes, to support greater consistency in tram stop planning and design, and to enable timely and cost-efficient delivery of future tram stop upgrades to improve local communities.



Figure 5: Corridor approaches to planning

## Future stop upgrades

We're categorising stop upgrades based on four broad criteria – accessibility, safety, movement, and place.

This framework approach shifts the emphasis from stop-level to corridor-level prioritisation to best meet passenger needs. Corridors are assessed against a number of criteria including number of passengers that use the stop, the number of pedestrian crashes or near misses, if the corridor is serviced by low-floor trams, the type of street it's on and the type of community facilities nearby.

A framework has been developed using four broad metrics:

### Movement

How many people use the stop?  
Is there an expected increase in patronage?

### Place

What type of street is it?  
A high activity street, a suburban street,  
or is there a school or university nearby?

### Safety

How many pedestrian crashes and near  
misses have occurred?  
How safe is the current stop?

### Accessibility

Are there low-floor trams on the route?  
Is the stop currently level access?  
Is there a hospital, disability service  
or aged care facility nearby?

The assessment framework is intended to be a living framework which is updated and revised regularly to reflect updated data inputs.



## Enhancing our stop designs

To address key issues with the accessibility, safety and passenger experience of tram stop designs, a set of modernised design principles has also been developed to support the preparation of future tram stop designs. These design principles have been informed by global reviews, comprehensive local passenger research, surveys, and usability testing, as well as engagement across the Department of Transport and Planning and Yarra Trams. They are guided by the principles of universal design and aim to deliver the high-quality experience that passengers expect from a modernised tram network with users at the heart of the design.



The following design principles were established to guide the iterative development of tram stop concept designs.



### **People**

Prioritise the needs and experiences of our passengers at tram stops.



### **Connectivity**

Ensure that the movement of people, goods and freight across the on-road transport network is integrated and connects to Melbourne's diverse cultural and physical environment.



### **Consistent, high quality experience**

Create a design language that is befitting of Melbourne's global standing as a liveable city, which is intuitive, easily read and interpreted by users and non-users across the network.



### **Flexible and efficient delivery**

Ensure our design solutions meet the future needs of Melbourne's growing population, while ensuring delivery and construction can be scaled appropriately to minimise community impact and meet strategic objectives.

This process has resulted in the development of a suite of tram stop designs that will work with standardised options for seating, lighting, shelter, and customer information to address key issues of accessibility, safety and user experience.

We're partnering with Monash University and Yarra Trams to provide innovative solutions to our tram stop design and delivery. The project will develop ways to turn recycled plastics into modular components that are fit-for-purpose for the construction of future tram stops across Melbourne.

To apply these stop designs to the network in a manner consistent with our movement and place priorities, an options framework has been developed, which allows a range of factors (such as street type, modal priorities, and adjacent land uses) to be considered when identifying suitable stop design options for a corridor.





### **Exploring opportunities for rapid builds and trials**

Along with considering full cost stop designs, we are exploring how short-term tram stop improvements can be delivered, and how this could support better long-term design outcomes through pilots, trials, and stakeholder engagement.

### **Efficient delivery of accessible stops**

Changes to the existing development and delivery process will seek to support time and cost-efficient delivery of tram stop upgrades, minimise disruption and delay, maximise benefit and formalise engagement with local councils and communities. Having an overarching plan for the network will enable us to drive value for money by taking advantage of other works place on or nearby the network.

Recent changes to the state planning framework provide coordinated delivery of Victoria's major transport and infrastructure projects. State Project Facilitation establishes a standard planning approval process to prioritise the planning and assessments of state projects to support Victoria's sustainable development.

## **AN ENERGY EFFICIENT NETWORK**

Melbourne's tram network is now 100 per cent powered by renewable energy thanks to two Victorian solar farms. Under the Solar Trams Initiative, the Victorian Government purchases and surrenders about 82,000 MWh in large-scale generation certificates each year from the Bannerton Solar Park near Robinvale and Numurkah Solar Farm near Shepparton, providing enough renewable energy to meet the electricity consumption of Melbourne's tram network. This avoids 200,000 tonnes of carbon emissions, giving Melburnians more clean-energy travel options.

Our Next Generation Tram will feature onboard energy storage to limit current draw at peak times and reduce power use. The new trams will use 30–40 per cent less energy per passenger compared to an E Class tram, by using onboard energy storage technology and regenerative braking.

Yarra Trams recently flicked the switch on nearly 100 kilowatts of solar panels freshly installed on the roof of Southbank Depot, the first of seven tram depots to have renewables installed on-site.

The 200-panel array will help power depot operations, as well as feed into the network when excess power is produced. The seven depots will collectively produce more than 550 megawatt hours of power annually.

## RENEWING OUR FLEET AND INFRASTRUCTURE

To improve capacity and reliability and to create a better passenger experience, we're renewing and upgrading our fleet and assets across the network.

### Fleet

Accessibility is a central focus of Victoria's ongoing strategy for rolling stock. One hundred low-floor E Class trams are operating on the network and a further 100 modern, locally built next generation G Class trams are on their way.

Design development of the new trams will involve extensive consultation with mobility and accessibility advocates and passenger representatives to ensure they meet community expectations for modern, accessible trams.

Next Generation Trams will be equipped with the latest accessibility features, can move almost double the number of passengers as some older-style trams, and have cooling and heating systems to provide a more comfortable passenger journey. They are more energy efficient and require less power to operate than some of the existing low-floor tram fleet.

The first new G Class trams will be rolled out from 2025, helping us to gradually replace our longer serving high-floor trams and making our public transport network more accessible for all Victorians. Passengers will benefit from improved capacity, better reliability, less overcrowding and a better on-board experience.

A new tram maintenance and stabling facility will be built at Maidstone in Melbourne's west to create the space needed to store and maintain the upgraded fleet. The facility will also support the deployment of a more reliable and accessible tram fleet in Melbourne's inner west.

Deploying new trams creates an opportunity to review and reconfigure the network to make better use of the tram fleet and match service levels to areas of growing demand. Reconfiguring routes can lead to greater efficiency, with shorter, faster routes requiring fewer trams to operate high-frequency services. This will enable more trams to be deployed to other routes across the network.

We've invested \$230 million to refurbish more than 400 older trams to keep them in good shape until their eventual retirement from the network. The refurbishment program includes mechanical overhauls, window replacements, new seat upholstery and repainting.

### Next Generation Trams (G Class)

Low-floor trams

Trams: 100 (progressive delivery)

Introduced from: 2025



### New trams in the west

The new low-floor trams will be rolled-out in the west first from 2025 on Routes 57, 59 and 82 servicing suburbs such as Footscray, Essendon, Moonee Ponds, Ascot Vale, Maribyrnong, North Melbourne and Niddrie.

The NGTs will progressively replace some of Melbourne's longest-serving high-floor trams, providing better access for people with mobility needs and those travelling with prams, as well as offering improved capacity, with space for up to 150 passengers.

## Network infrastructure

We're investing \$65 million a year to maintain and renew Melbourne's tram network, ensuring a smoother ride for passengers. We're replacing and upgrading tram tracks, poles and overhead wiring to provide more reliable services as well as improving safety and comfort for passengers.

We're also building new electrical substations to power the trams and ensure we can provide reliable and consistent services.

We're upgrading the Brunswick tram depot to make room for more trams and more staff.

## IMPROVING TRAM PERFORMANCE

Technology and safety improvements across the network can help improve journey times and deliver faster, more reliable tram travel for passengers.

Because trams share the road with vehicles across 75 per cent of the network, improving the safety and reliability of the road network is critical to improving tram performance.

Technology is being rolled out to enable real-time traffic monitoring. This data is being used to optimise traffic signals to improve traffic flow along key tram routes, resulting in more green light time for trams and vehicles travelling along busy corridors. This is also decreasing congestion and helping reduce tram journey times.

We are also implementing measures to improve safety such as separation kerbs, to better separate trams and vehicles along key corridors to reduce the risk of collisions. In addition, we're trialling new technology on trams and at stops to reduce tram and vehicle collisions, improving both reliability and safety for passengers.



## IMPROVING PASSENGER EXPERIENCE

To ensure Melbourne's tram network delivers the convenient, safe and accessible experience that our passengers expect, our future planning will prioritise the needs of passengers across all stages of their journeys, from planning to travelling onboard and interchanging between services.

Investment is necessary to create a safe tram network that makes travelling by tram attractive to all passengers.

Upgraded stops and new trams will improve accessibility and safety across the network.

Better signage and wayfinding, accessibility information, real time information, upgrades to technology and weather protection will generate a better passenger experience.



# Future state of the network

## Victoria's Big Build

As part of Victoria's Big Build, the Victorian Government is investing \$100 billion to transform the transport network, make it more accessible and keep Victorians moving for decades to come.

The tram network will play an important role in connecting more people to the new stations and transport links that will be created by these city-shaping projects.

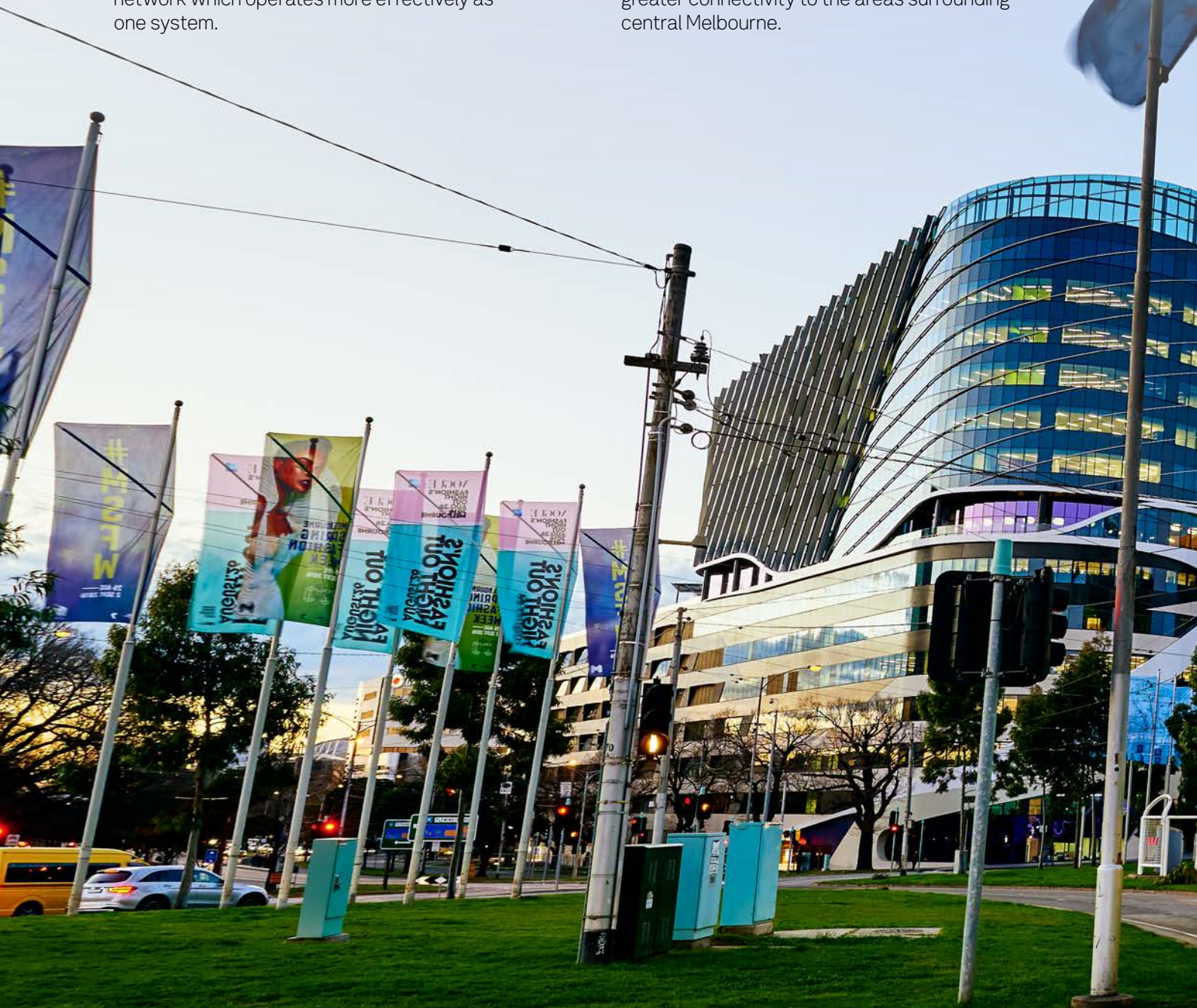
As the frequency and reliability of Melbourne's metropolitan rail network increases, upgrades to the tram network will ensure an integrated transport network which operates more effectively as one system.

## Metro Tunnel

The Metro Tunnel will create a new end-to-end rail line from Sunbury in the north-west to Cranbourne/Pakenham in the south-east, with high-capacity trains and five new underground stations.

The project will create more capacity on the train network and ease demand on tram routes serviced by the new stations. This presents an opportunity to reconfigure the network, deploying trams to locations where demand is greater.

Reconfiguration has the potential to better connect tram routes, creating new trunk corridors and greater connectivity to the areas surrounding central Melbourne.





## Network extensions

We continue to plan network extensions and cross-town links to maximise the value of the existing infrastructure and prepare for the transformation that will be delivered by Victoria's Big Build projects. This will also support the growth of National Employment and Innovation Clusters, Metropolitan Activity Centres, major urban renewal precincts and major shopping developments.

We're working to ensure the tram network supports the strategy and vision of Plan Melbourne. Future reforms will focus on how to extend the network to better service these areas. Creating connections to key urban renewal areas will help skilled workers access these job-dense areas and contribute to economic growth beyond central Melbourne. The priority and timing of these extensions will consider a range of factors including predictions of patronage, travel time, geography, running costs and the infrastructure required.

# Key actions and timeframes

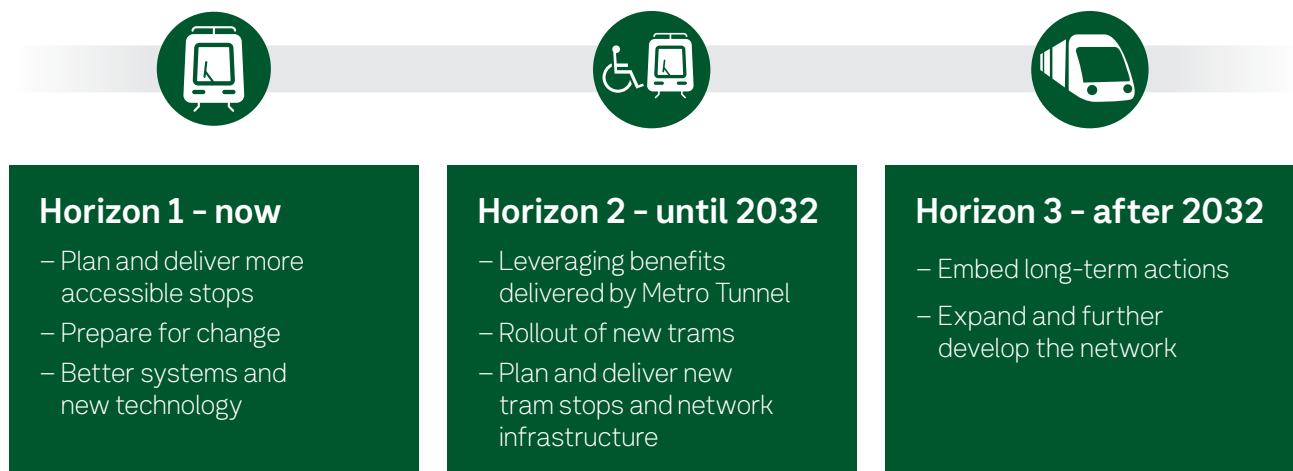


Figure 6: Tram plan program

## HORIZON 1 – CURRENT ACTIONS

### Action 1 – Plan and deliver improved tram accessibility

Work is underway to deliver new level-access tram stops at six locations along La Trobe Street in central Melbourne. These stops will improve accessibility and provide connections with the Metro Tunnel when it is completed.

Engagement will commence shortly with the community and other stakeholders about the development of the next three tram corridors for level access tram stop upgrades. Two of these corridors are along Route 86 which is serviced by low-floor E Class trams. The third corridor is along Route 82 in Footscray which will be serviced by low-floor NGTs. Low-floor trams are being delivered in parallel to tram stop upgrades.

Additional signage and providing real time information, along with the above changes, will enhance the overall passenger experience.

### Action 2 – Prepare for the arrival of Next Generation Trams

The Victorian Government has invested \$1.85 billion in 100 Next Generation Trams (G Class) and a new tram maintenance and stabling facility.

Next Generation Trams will be more comfortable, accessible and energy efficient.

This investment includes construction of a new tram maintenance and stabling facility in Melbourne's west and providing upgrades to depots to support the delivery of this new fleet.

The new trams will roll out from 2025 and will enable the retirement of older high-floor trams. Next Generation Trams combined with more accessible stops will make our public transport network more accessible for all Victorians.

More than \$60 million will prepare our tram network in the western suburbs for the new modern and accessible trams to be rolled out in the coming years.



### **Action 3 – Plan for network reform**

We're undertaking planning to understand how best to achieve network reform that delivers greater reliability, connectivity, efficiency, and capacity across the network.

This work involves looking at our existing operations and network to better understand where priority upgrades and changes are needed to deliver our short-term goals. We know that to get the best outcomes, we will need to work closely with the community, stakeholders and the workforce as we develop this work.

### **Action 4 – Prepare for change**

We're looking at how the city and its transport network will be transformed as Big Build projects come online. As the transport network changes, so are people's journeys. We are looking at how travel patterns are changing and prioritising planning for areas of the network where demand is growing and additional capacity is needed.

This work includes identifying how the existing tram fleet can be deployed across the network to place larger trams on routes with the most demand and ensuring infrastructure like stops and power supply in these locations can support more frequent and accessible services.

### **Action 5 – Plan, test and then implement systems and technology**

We're working to make more real-time tram data available to help passengers access information they need in the ways they prefer.

We're exploring updating the technology used on trams so that they can provide improved location and service information for our fleet.

We're exploring the use of new and emerging technology such as augmented QR codes, cooperative intelligent transport systems (C-ITS), machine learning and sensors on trams and in stops.

This technology will help us understand patronage patterns, better manage and communicate unplanned disruptions and provide better real-time data tracking and safety alert systems which help improve passenger choice, safety and overall experience.

Blind and low vision tram passengers will be able to use NaviLens codes to hear information about their current location and live tram arrival information at stops along Route 96 and on E Class trams. A trial of the codes, which are read by a smart phone app commenced in August 2023.

### **Action 6 – Plan, test and implement measures to improve the reliability and performance of the tram network**

We've invested \$230 million to refurbish more than 400 trams across Melbourne to improve reliability and passenger experience and are making changes across the road network to improve safety and decrease congestion to enable faster tram journeys.

More than five kilometres of kerbing has been installed on La Trobe, Flinders, Swanston, Spring, Market and Spencer streets in Melbourne's CBD to reduce vehicle to tram collisions, incident-related service disruptions and improve safety for people travelling in trams and vehicles.

As part of the \$340 million Smarter Roads initiative we are optimising traffic signals across the metropolitan Melbourne road network to create more green time at lights along the whole route, creating faster and more reliable journey times. By upgrading technology across the tram and road network, we can collect real-time data to inform where traffic signal optimisation needs to occur.

## **HORIZON 2 – MEDIUM TERM**

### **Implement reforms that transform Melbourne's tram network and aligns it with changing demand.**

In the medium term we will focus on leveraging the benefits delivered by the Metro Tunnel, Rolling Stock Strategy, and the rollout of Next Generation Trams through changes to service patterns including implementing trunk corridors and value-for-money tram infrastructure upgrades.

Accessibility will be improved through technology upgrades, the delivery of more low-floor trams and upgrades to stop infrastructure. We will also pilot new approaches and processes in this phase to help deliver the long-term reform objectives.

Network expansions and new connections will be planned to support our highest priority areas of urban renewal and growth.

## **HORIZON 3 – LONGER TERM**

### **Embed long-term actions including expanding and further developing the network.**

In the longer term, we will embed successful practices and changes trialled in the previous horizon.

The role of the tram network will expand as the Big Build and Victoria's economic development initiatives come online. The development delivered by these projects will require network changes and extensions to ensure seamless journeys and connections for passengers. The tram network will continue to be optimised to meet the changing demand for services and to deliver greater capacity and connections across central Melbourne and middle suburbs.

This future tram network will further ingrain the tram's status as a Melbourne icon, as well as support the growth of activity centres, employment clusters and population growth in urban renewal areas and growth areas, making the most of longer-term investments such as the Suburban Rail Loop. It will provide services that support a range of activities throughout the day, not just in the peak periods.



