



TRAINS, TRAMS, JOBS

2015–2025

Victorian Rolling Stock Strategy

Presented by the Hon. Daniel Andrews MP, Premier of Victoria



TABLE OF CONTENTS

| | |
|---|----|
| FOREWORD | 3 |
| TRAINS, TRAMS, JOBS | 4 |
| WHY WE NEED MORE TRAINS AND TRAMS | 5 |
| SUPPORTING LOCAL JOBS | 6 |
| TRANSFORMING THE RAIL NETWORK | 9 |
| MEETING FUTURE NEEDS | 10 |
| AN AGEING TRAIN AND TRAM FLEET | 12 |
| A BETTER PASSENGER EXPERIENCE | 16 |
| OUR TEN-YEAR PLAN FOR MORE TRAINS AND TRAMS | 19 |
| NEW METROPOLITAN TRAINS | 20 |
| NEW REGIONAL TRAINS | 22 |
| NEW TRAMS | 24 |
| TRAINS AND TRAMS – DELIVERY TIMELINE | 26 |



FOREWORD

IF WE DON'T TRANSFORM OUR PUBLIC TRANSPORT SYSTEM AND ORDER NEW TRAINS AND TRAMS, OUR CITY WILL EVENTUALLY GRIND TO A HALT.

The Labor Government's *Rolling Stock Strategy: Trains, Trams, Jobs 2015-2025*, sets out our ten-year plan for 100 new metropolitan trains, 100 new trams, and a massive expansion of our regional train fleet.

Our plan will support thousands of local jobs in Victoria's train and tram building industry, which employs up to 10,000 Victorians.

As our population continues to grow, and we transform our public transport system with projects like Melbourne Metro Rail, patronage will grow to more than 1 billion passengers by 2031.

Over the last four years, not even one single new tram was ordered. That's why local workers and commuters need immediate action.

The Labor Government will invest more than \$2 billion in the 2015-16 Victorian Budget in a pipeline of local train and tram building and maintenance.

Next generation, high capacity trains, new trams and more regional carriages will help transform our system and meet the needs of the future.

The Labor Government's policy of 50 per cent local content in new rolling stock orders gives manufacturers a secure future – with new trains and trams to be built in Victoria by Victorian workers and apprentices.

All new train and tram orders will be procured to ensure the best value for Victorians – encouraging diversity in the Victorian economy, supporting local industry and providing new opportunities for skills, training and employment.

We have a plan to transform Victoria's public transport system and create local jobs – and we're getting on with it.

Daniel Andrews
Premier of Victoria



TRAINS, TRAMS, JOBS

- Victoria is the only state in Australia to build both trains and trams.
- Victoria's wider rolling stock supply chain is estimated to employ up to 10,000 people.
- Victoria has a fleet of almost 1,000 metropolitan trains, trams and regional carriages, of which 400 have been procured in the last 15 years.
- Victoria has an extensive rail network with over 1,600 kilometres of track.
- Our trains and trams carry almost 1.5 million passengers per weekday.
- Over the last decade, annual patronage on trains and trams has risen by 118 million, an increase of over 40 per cent.
- Annual patronage on public transport is forecast to grow to more than one billion passengers in 2031.



WHY WE NEED MORE TRAINS AND TRAMS

SUPPORTING LOCAL JOBS

Victoria's train and tram building industry supports up to 10,000 jobs.

TRANSFORMING THE RAIL NETWORK

The Andrews Labor Government is expanding and growing our rail network.

MEETING FUTURE NEEDS

Our rail capacity needs to grow along with Melbourne's growing population.

AN AGEING TRAIN AND TRAM FLEET

Our train and tram fleet is ageing and needs constant refreshing.

A BETTER PASSENGER EXPERIENCE

New trams and next-generation trains mean a better passenger experience.



SUPPORTING LOCAL JOBS

RECENT ROLLING STOCK ORDERS

| TYPE | MANUFACTURING LOCATION | QUANTITY ORDERED 2006 – 2010 | QUANTITY ORDERED 2010 – 2014 |
|-------------------|------------------------|------------------------------|------------------------------|
| E-Class Trams | Bombardier, Dandenong | 50 | 0 |
| X'Trapolis Trains | Alstom, Ballarat | 38 | 15 |
| VLocity Carriages | Bombardier, Dandenong | 55 | 43 |
| TOTAL | | 143 | 58 |

JOBS

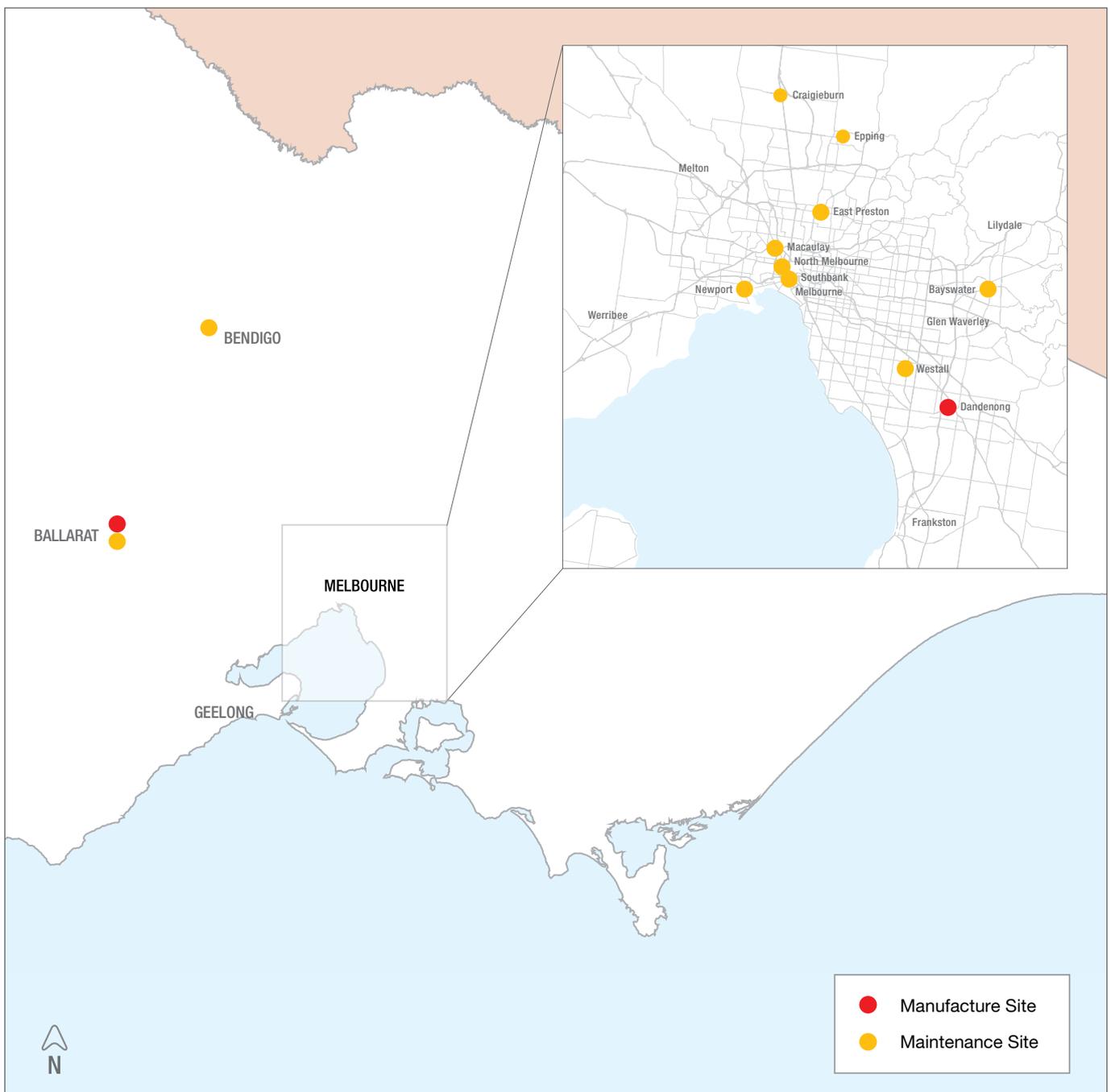
- Victoria's wider rolling stock supply chain, which is estimated to employ up to **10,000 people**, will benefit enormously from a strategic approach that ensures the future of the industry.
- This local industry is strengthened by the Andrews Labor Government policy to include a minimum of **50 per cent local content** in all rolling stock orders.
- **Local manufacturers** Bombardier in Dandenong currently construct VLocity trains and E-Class trams, and Alstom in Ballarat assemble X'Trapolis trains.
- In addition to the manufacturing benefits, the **maintenance** of rolling stock supports ongoing employment in Melbourne and regional Victoria.
- Delivery of new rolling stock as a **program of works** over the next decade results in lower costs for employers, creates even more local jobs and supports the retention of skilled employment. There is more likelihood for local content as manufacturers and their supply firms 'tool up' and apply their resources in a consistent manner.
- **Planned and consistent supply** will provide a basis for Victorian firms to more confidently bid for interstate and overseas rolling stock contracts, and offers a transitional opportunity for automotive suppliers and their workforce.

TRAINING AND APPRENTICES

- With greater investment certainty, companies will be able to plan for the long term and invest in facilities, new technology and processes, and enhanced skills.
- Education and training will be incorporated into any new maintenance depots. The State Government will work with the TAFE sector to develop programs for apprentices in the rolling stock industry, training the next generation of rolling stock engineers.
- The transport technology sector, one of the six priority sectors identified by the Government, will be a significant beneficiary of the strategy.



CURRENT LOCATION OF ROLLING STOCK MANUFACTURE AND MAINTENANCE IN VICTORIA







TRANSFORMING THE RAIL NETWORK

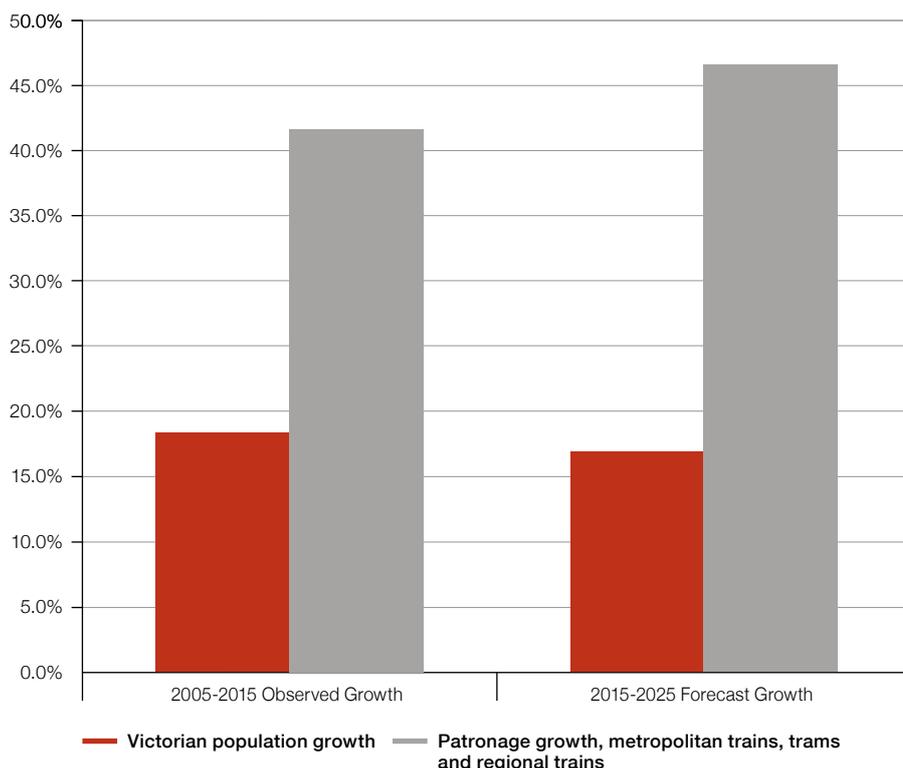
The Andrews Labor Government is transforming our rail network. New trains and trams are needed to unlock the benefits of our expanding network.

- **Regional Rail Link** starts this year, boosting services for Regional Victoria.
- **Melbourne Metro Rail** will create an international-style underground rail network.
- **Removing 50 level crossings** will mean more trains and less congestion.
- **The Cranbourne-Pakenham Line** will be upgraded with no level crossings between Caulfield and Dandenong and more trains.
- **Mernda Rail Link** will expand rail access for thousands of people in the north.
- **Homesafe** will trial 24-hour public transport on weekends across Melbourne.
- **Flinders Street Station** will be upgraded and preserved, with a focus on passengers.

MEETING FUTURE NEEDS

- More and more Victorians are using our trains and trams. Over the last decade, annual patronage has risen by 118 million, an increase of over 40 per cent.
- This has been driven largely by the strong jobs growth of central Melbourne, population increases in inner Melbourne and growth corridors to the west, north and south east.
- The increase in train and tram patronage reflects Victoria’s rapid growth. Victoria’s population is expected to grow by around 17 per cent over the next decade, with consolidation in established areas but also with an expected additional 600,000 people living in new suburbs on Melbourne’s fringes and in regional centres.
- Melbourne’s metropolitan trains carry 800,000 passengers on a typical weekday, an increase of more than 60 per cent over the past decade.
- Trams are the primary means of getting around inner Melbourne and carry over 600,000 passengers on a typical weekday, an increase of more than 120 per cent in the past decade.
- The V/Line rail network carries nearly 50,000 passengers on a typical weekday, an increase of nearly 100 per cent in the past decade.
- The long term forecast growth rate is anticipated to be at similar levels of growth to that experienced in recent years. Public Transport Victoria operational planning has identified the need to strategically add services to cater for this patronage growth.

OBSERVED AND FORECAST GROWTH





AN AGEING TRAIN AND TRAM FLEET

Based on the design lives of vehicles, the following vehicles will require replacement in the coming decade:

- 44 per cent of the metropolitan train fleet
- 60 per cent of the tram fleet
- 40 per cent of the regional train fleet.

METROPOLITAN TRAIN FLEET



X'TRAPOLIS

TRAINS: 77 (10 on order)

AGE: 0–12 Years



SIEMENS

TRAINS: 36

AGE: 9–11 Years



COMENG

TRAINS: 93

AGE: 25–33 Years

REGIONAL CARRIAGE FLEET

VLOCITY

DIESEL MULTIPLE UNITS

CARRIAGES: 161
(16 on order)

AGE: 0–10 Years



SPRINTER

DIESEL MULTIPLE UNITS

CARRIAGES: 21

AGE: 20–23 Years



N CARRIAGE

LOCOMOTIVE HAULED CARRIAGES

CARRIAGES: 56

AGE: 30–33 Years



Z CARRIAGE

LOCOMOTIVE HAULED CARRIAGES

CARRIAGES: 22

AGE: 45–56 Years



H CARRIAGE

LOCOMOTIVE HAULED CARRIAGES

CARRIAGES: 55

AGE: 46–58 Years



TRAM FLEET



E-CLASS

LOW FLOOR TRAMS

TRAMS: 22 (28 on order)

AVERAGE AGE: 0 Years



C2-CLASS

LOW FLOOR TRAMS

TRAMS: 5

AVERAGE AGE: 5 Years



D-CLASS

LOW FLOOR TRAMS

TRAMS: 59 (38 D1 & 21 D2)

AVERAGE AGE: 10 Years



C1-CLASS

LOW FLOOR TRAMS

TRAMS: 36

AVERAGE AGE: 12 Years

B-CLASS

HIGH FLOOR TRAMS

TRAMS: 132

AVERAGE AGE: 24 Years



A-CLASS

HIGH FLOOR TRAMS

TRAMS: 70

AVERAGE AGE: 28 Years



Z-CLASS

HIGH FLOOR TRAMS

TRAMS: 147

AVERAGE AGE: 33 Years



W-CLASS

HIGH FLOOR TRAMS

TRAMS: 40

AVERAGE AGE: 60+ Years



A BETTER PASSENGER EXPERIENCE

IMPROVED FLEET PERFORMANCE

A new level of reliability and performance is required as Melbourne's rail system is transformed into an international style 'turn up and go' metro. New rolling stock will meet this demand using the latest technology that is designed with these needs in mind.

IMPROVED COMFORT AND ACCESS

The introduction of new rolling stock improves the on-board experience of the travelling public. With enhanced safety, accessibility and comfort features, new rolling stock allows us to meet and exceed the expectations of the Victorian community.

New rolling stock will:

- **Improve passenger amenity**
Provide improvements such as up-to-date passenger information systems, improved lighting, CCTV and a smoother ride.
- **Meet access requirements**
Accessible public transport benefits everyone, however 60 per cent of the current tram fleet comprises high floor vehicles that present difficulties for passengers in wheelchairs as well as people with restricted mobility, using strollers or carrying luggage. New and upgraded rolling stock and infrastructure are required to meet the minimum standards for access outlined by the Commonwealth Government in the *Disability Standards for Accessible Public Transport (2002)*.
- **Provide a fully air-conditioned fleet**
Nearly half of the tram fleet is not air-conditioned.





MADE IN
MELBOURNE
FOR MELBOURNE



OUR TEN-YEAR PLAN FOR MORE TRAINS AND TRAMS

The Andrews Labor Government is ending the ad-hoc procurement of trains and trams. We're providing certainty to thousands of local workers, providing a long-term pipeline of work, and delivering more trains and trams for a better rail network.

GETTING ON WITH IT

We will immediately invest more than \$2 billion in the 2015–2016 State Budget for hundreds of new train and tram carriages to meet the future needs of the network.

Our ten-year Rolling Stock Strategy outlines our plan for 100 new next-generation metropolitan trains, 100 new trams, and a massive expansion of our regional rail fleet.

- **37 High Capacity Metro Trains** (and supporting infrastructure) \$1301m
- **Comeng Life Extension** \$75m
- **5 New X'Trapolis Trains** \$90m
- **21 VLocity Carriages** (and supporting infrastructure) \$257m
- **B-Class Tram Life Extension** \$21m
- **20 E-Class Trams** (and supporting infrastructure) \$274m



NEW METROPOLITAN TRAINS

GETTING ON WITH IT

The Andrews Labor Government will immediately invest \$1.3 billion in 37 new High Capacity Metro Trains, totalling more than 200 new carriages.

This is in addition to the \$90 million we are investing in 30 new X'Trapolis train carriages from Alstom in Ballarat to meet our immediate network needs.

We are also funding a \$75 million life extension program for the Comeng trains which were delivered in the 1980s, improving train reliability and amenity and ensuring passenger safety.

OUR TEN-YEAR PLAN

Over the next decade 100 new metropolitan trains will be needed, to cater for patronage growth, provide trains to operate the extension to Mernda, Melbourne Metro and to boost suburban services following the opening of Regional Rail Link. Older trains will be retired and replaced as they reach the end of their service life.

HIGH CAPACITY METRO TRAINS

Next generation High Capacity Metro Trains (HCMT) will meet the demands of the next decade and allow us to fully realise the benefits of Melbourne Metro.

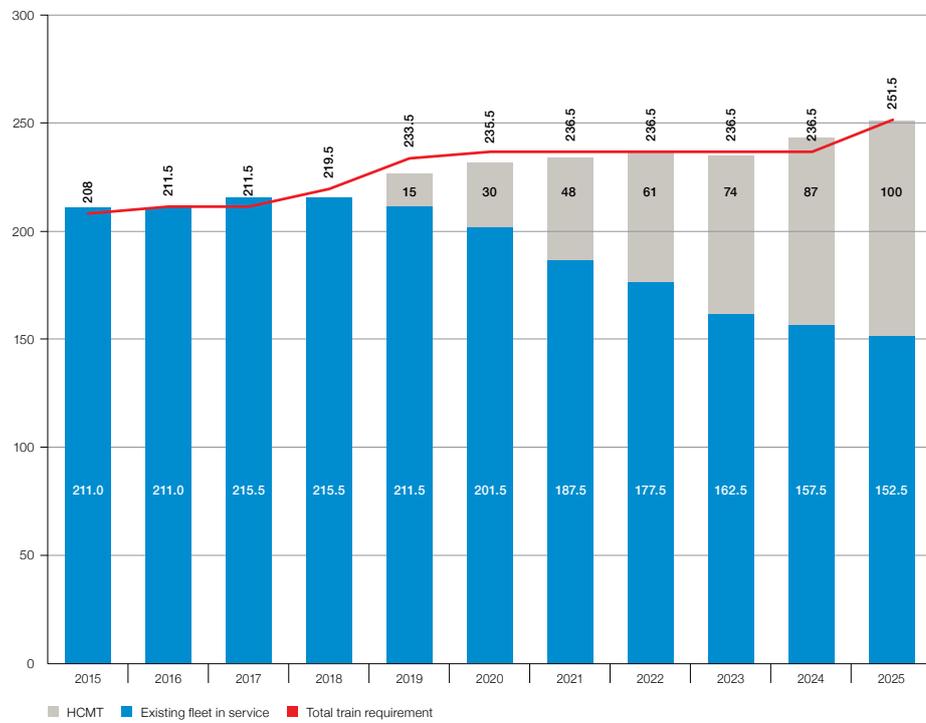
It is anticipated that HCMTs will enable average loads of up to 1100 passengers. As demand grows, the potential extension of these trains at a later date to longer 234 metre high capacity trains would allow up to 1570 passengers to be carried.

To meet the projected level of service, new HCMTs need to be delivered at an average rate of 15 trains per year, with production beginning here in Victoria by the end of 2017.

When the 100 new HCMTs are in service, and allowing for fleet retirements, it is forecast that an additional 175,000 daily train trips will be accommodated.



METROPOLITAN TRAIN FLEET REQUIREMENT, 2015–2025





NEW REGIONAL TRAINS

GETTING ON WITH IT

The Andrews Labor Government will immediately invest \$257 million in 21 new VLocity carriages, built at Bombardier in Dandenong.

This will bring the number of our new VLocity carriages in service to 207 by 2018, servicing our expanded regional network.

OUR TEN-YEAR PLAN

Over the next decade, 160 new regional carriages will be needed to meet forecast growth. Victoria's regional locomotives are typically 30 years old and some of the carriages are nearly 60 years old, failing to meet customer expectations for comfort and reliability, and requiring significantly more investment in ongoing maintenance.

New trains will be needed to cater for both growing patronage and to replace vehicles that are at the end of their life.

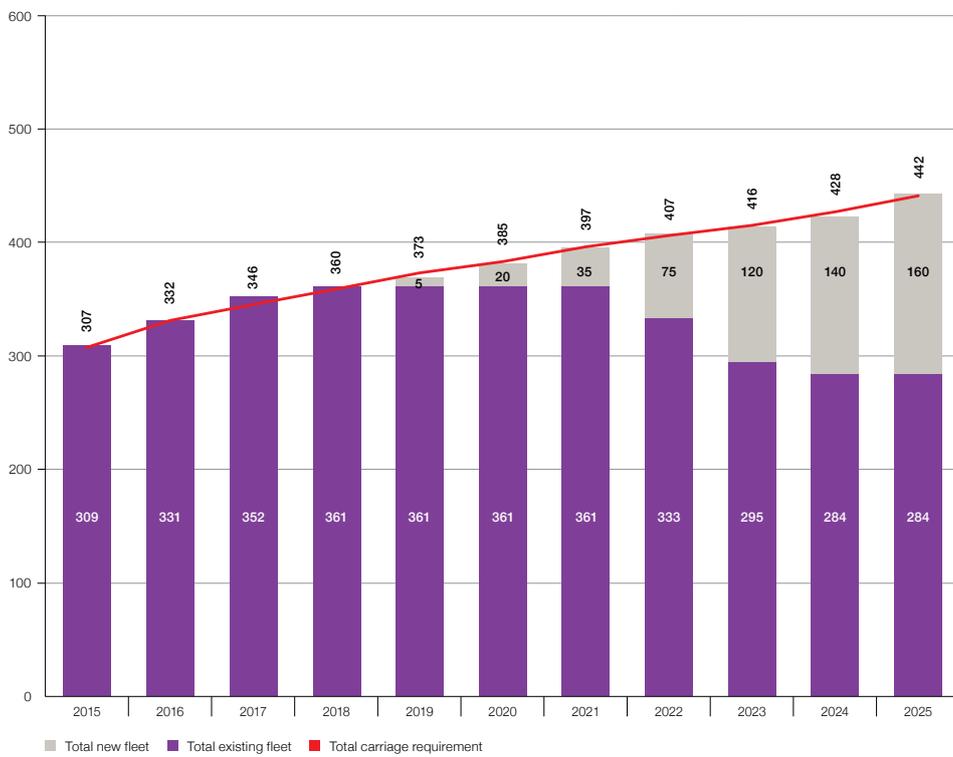
Patronage forecasting will be further informed by PTV's upcoming Regional Network Development Plan.

NEXT GENERATION REGIONAL TRAINS

A next generation high capacity regional train will be commissioned in the coming years to cater for strong patronage growth and provide new peak services. Work is now underway to determine the exact specifications of these new trains.



REGIONAL CARRIAGE FLEET REQUIREMENT, 2015–2025





NEW TRAMS

GETTING ON WITH IT

The Andrews Labor Government will immediately invest \$274 million in 20 new E-Class trams, built at Bombardier in Dandenong. Further orders are planned that will bring the number of our new E-Class trams in service to 150 by 2022. This allows retirement of old Z-Class trams.

We are also funding the \$21 million refurbishment and life extension of 130 B-Class trams which were delivered in the 1980s, to address reliability and amenity, and to ensure passenger safety, until they too can be retired.

OUR TEN-YEAR PLAN

Two hundred and forty new trams will be needed over the next decade. The E-Class trams currently in delivery will form the base of the tram fleet, and provide the additional capacity and reliability needed to cater for projected patronage.

The size of the existing fleet will reduce as trams reach the end of their service life and are withdrawn from use. As new larger trams will replace smaller old trams the total number of vehicles will drop in the short term, although passenger capacity will continue to increase.

DEPLOYMENT AND NEXT GENERATION TRAMS

It is expected that new trams would be deployed primarily on Routes 11, 55, 59, 86 and 96. Older low-floor trams would then be cascaded across the remaining routes to improve accessibility across the network.

150 new E-Class trams over the next decade would allow the full retirement of the Z and A-Class trams, and make over two thirds of the tram fleet fully accessible.

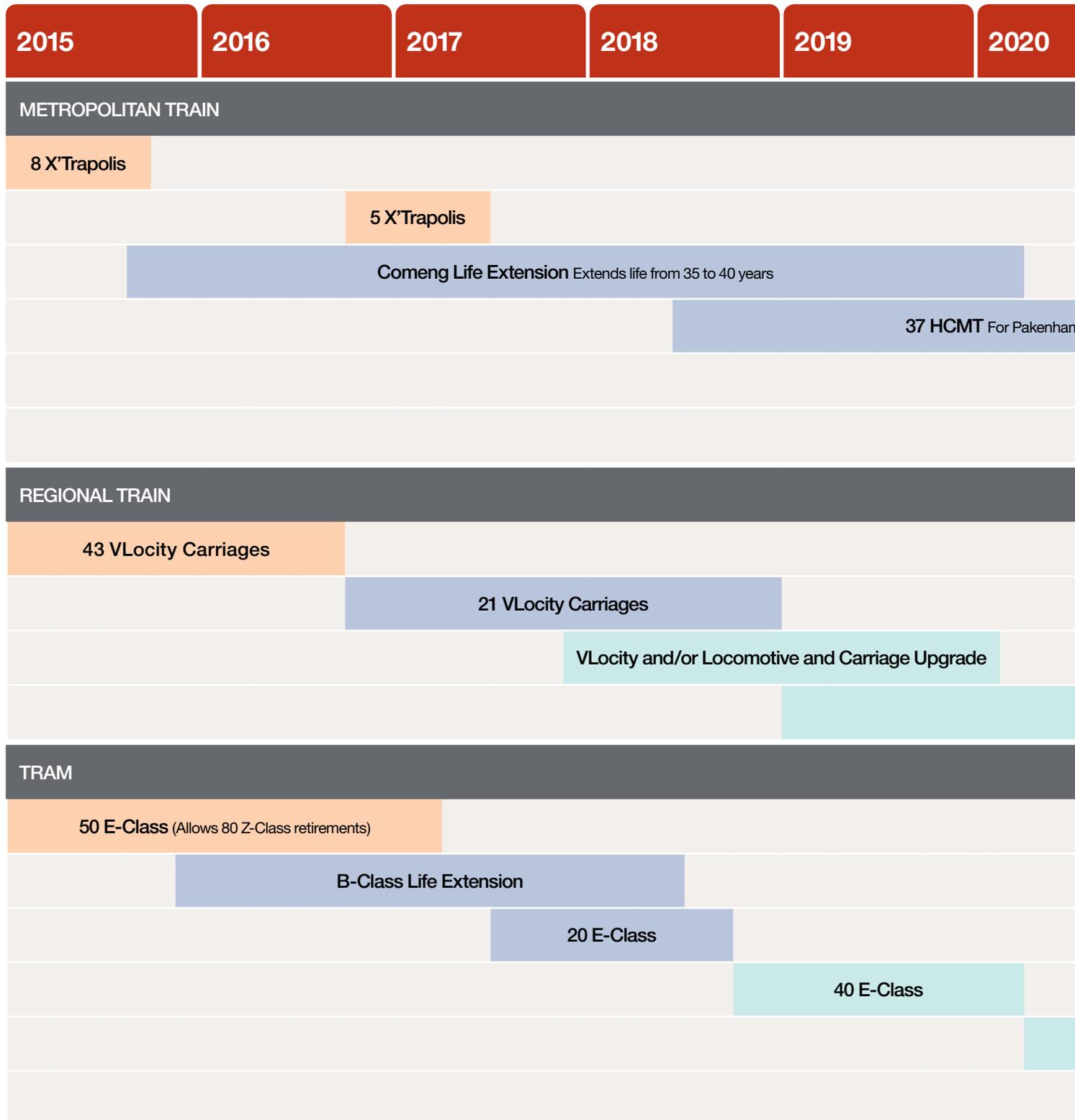
Further planning work is currently being undertaken to determine the exact specifications of the next generation of trams that are planned to be introduced in the early to mid-2020s.



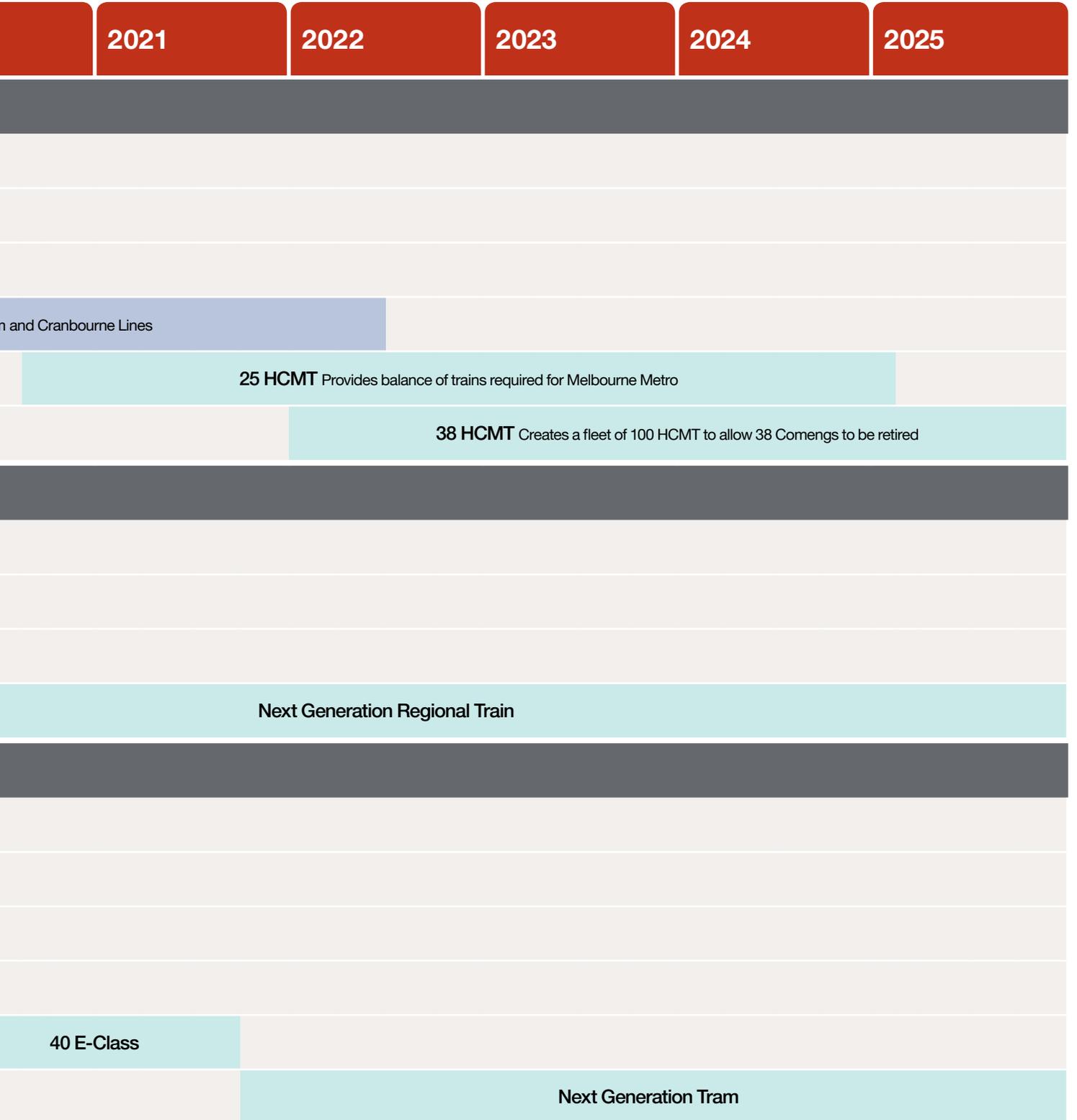
TRAM FLEET REQUIREMENT, 2015–2025



TRAINS AND TRAMS – DELIVERY TIMELINE



■ Funded/In delivery
 ■ 2015-16 State Budget investment
 ■ Planned investment



If you would like to receive this publication in an accessible format, please call Public Transport Victoria on 1800 800 007.

Authorised and published by the Victorian Government,
1 Treasury Place, Melbourne, 3002

Printed by Public Transport Victoria

This work is made available under the terms of the Creative Commons Attribution 3.0 Australia license. You are free to re-use the work under that license on the condition that you credit the State of Victoria as the original author. The licence does not apply to any images, photographs or branding, including the Victoria Coat of Arms and the Victorian Government logo.

To view a copy of this license visit
creativecommons.org/licenses/by/3.0/au