

The Metro Tunnel will free up space in the City Loop to run more trains to and from the suburbs by taking our busiest train lines through a new tunnel under the city.

Next-generation High Capacity Signalling technology will be installed to deliver more trains, more often during peak times.

This technology will revolutionise Melbourne's train network as we move towards a reliable 'turn-up-and-go' network similar to other cities such as London, Singapore and Hong Kong.



## What is High Capacity Signalling?

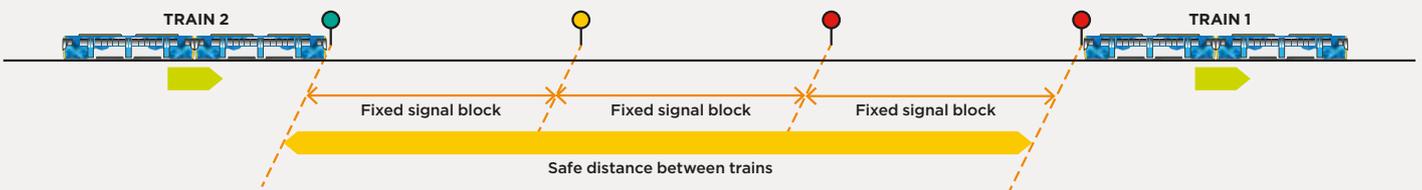
High Capacity Signalling is a new hi-tech 'moving block' signalling system that enables trains to automatically adjust their speed to maintain a safe distance from the train in front.

This replaces the current conventional 'fixed block' system, which uses coloured signals to indicate when it is safe for a train to proceed.

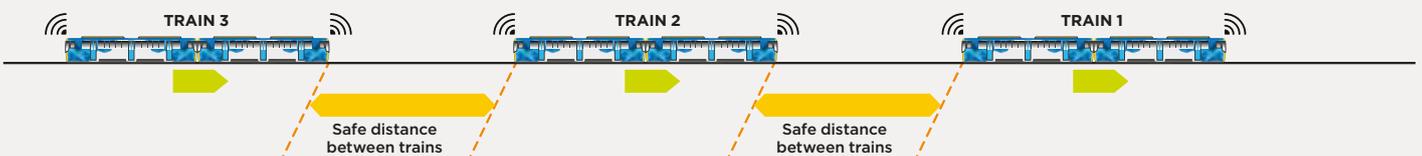
To visualise how High Capacity Signalling works, imagine driving on a freeway. Adaptive cruise control adjusts the vehicle speed according to the distance from the car ahead to help the driver travel more safely.

Under the control of train drivers, High Capacity Signalling works in a similar way by communicating wirelessly between trains and a control centre.

### Existing fixed block signalling system



### Moving block signalling system

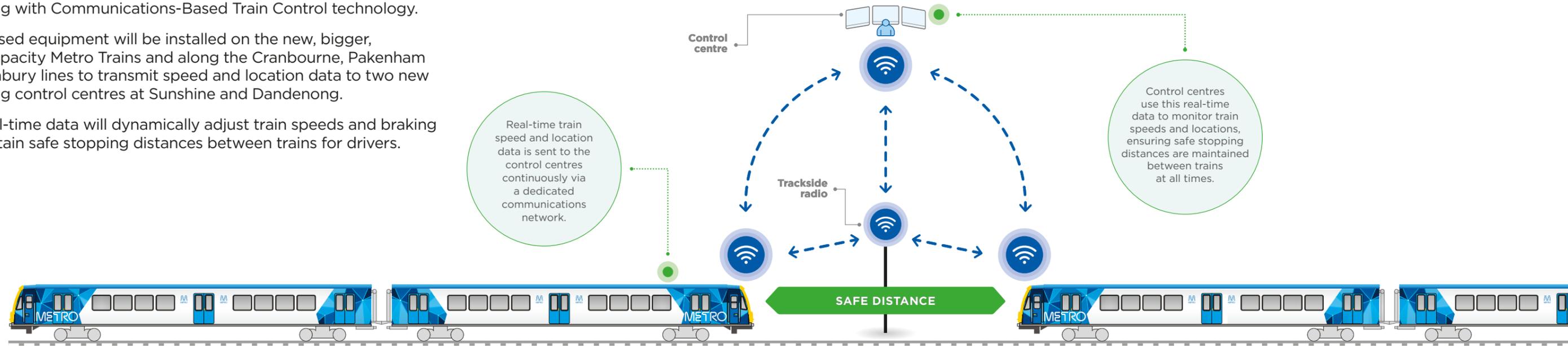


# How High Capacity Signalling works

High Capacity Signalling will replace conventional 'fixed-block' signalling with Communications-Based Train Control technology.

Specialised equipment will be installed on the new, bigger, High Capacity Metro Trains and along the Cranbourne, Pakenham and Sunbury lines to transmit speed and location data to two new signalling control centres at Sunshine and Dandenong.

This real-time data will dynamically adjust train speeds and braking to maintain safe stopping distances between trains for drivers.



## How will High Capacity Signalling benefit passengers?

High Capacity Signalling allows trains to run closer together and delivers more trains, more often.

It means that passengers on the Cranbourne, Pakenham and Sunbury lines will have more travel options and service reliability.

## Why do we need it?

The advanced signalling technology allows more trains to safely run on the network.

It monitors train movements in real-time, allowing network operators to reduce the impacts of incidents and unexpected delays.

## Upgrading existing signalling

In addition to introducing High Capacity Signalling to the Cranbourne, Pakenham and Sunbury lines, existing signals used to run regional and freight trains will also be upgraded.

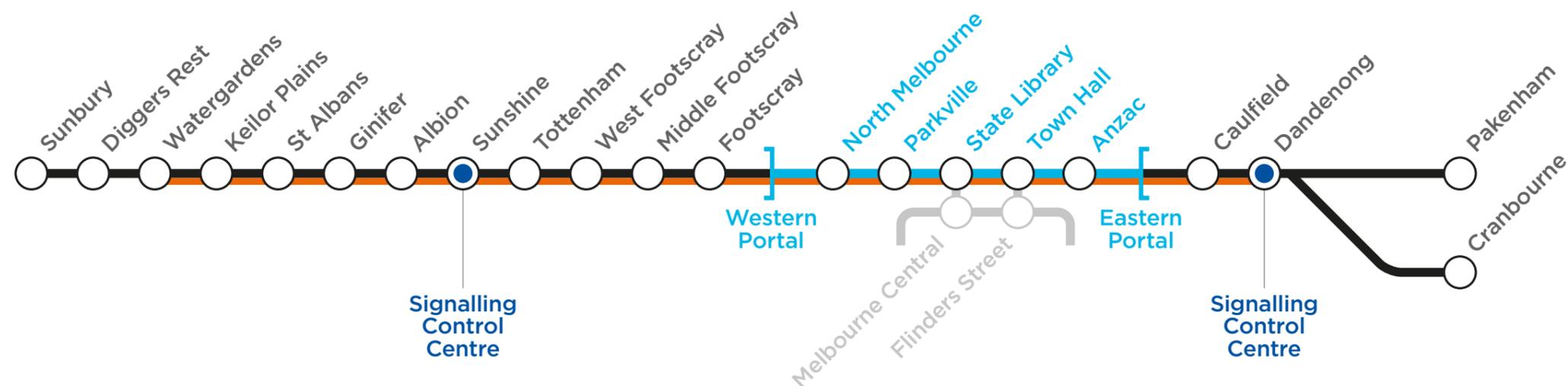
This means regional passengers and freight services will also benefit from the Metro Tunnel.

## Initial test on the Mernda line

A test of High Capacity Signalling will begin on the Mernda line between Epping and South Morang stations mainly at night. This test will help us fine tune the operation of the system for use in Melbourne. It will then be rolled out along the new Cranbourne, Pakenham and Sunbury lines between Watergardens and Dandenong stations.



## High Capacity Signalling will be installed on the Cranbourne, Pakenham and Sunbury lines



**Legend**

- High Capacity Signalling
- Metro Tunnel
- Cranbourne, Pakenham and Sunbury lines



Platform Screen Doors – example only

### Platform Screen Doors

In a first for Melbourne, new hi-tech Platform Screen Doors will be installed at each of the Metro Tunnel's five new underground stations.

Each station will be fitted with floor-to-ceiling toughened glass walls along the length of its platforms and Platform Screen Doors that will open and close automatically when trains arrive at and depart stations.

Platform Screen Doors improve passenger safety and boarding times, help manage station temperature and improve tunnel ventilation.

Platform Screen Doors are used in some of the world's leading underground rail networks.

### Benefits for all lines

Taking some of Melbourne's busiest metropolitan train lines – Cranbourne, Pakenham and Sunbury, out of the City Loop, means there will be increased capacity for other lines to run more services through the City Loop.

As a result, there will be room for more than half a million additional passengers per week across Melbourne's train network to use the rail system during peak periods.

The Metro Tunnel will also bring travel time savings to passengers across suburban and regional lines.

## Who is delivering HCS?

High Capacity Signalling is being delivered by the Rail Systems Alliance, comprising CPB Contractors, Bombardier, Metro Trains Melbourne and Rail Projects Victoria.

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### More information

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