



WPI



Friends of
the Earth

The Next Step for Public Transit in Melbourne

The Impacts of the **Melbourne Metro 2** on Melbourne's Transit Infrastructure

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May 13th 2020

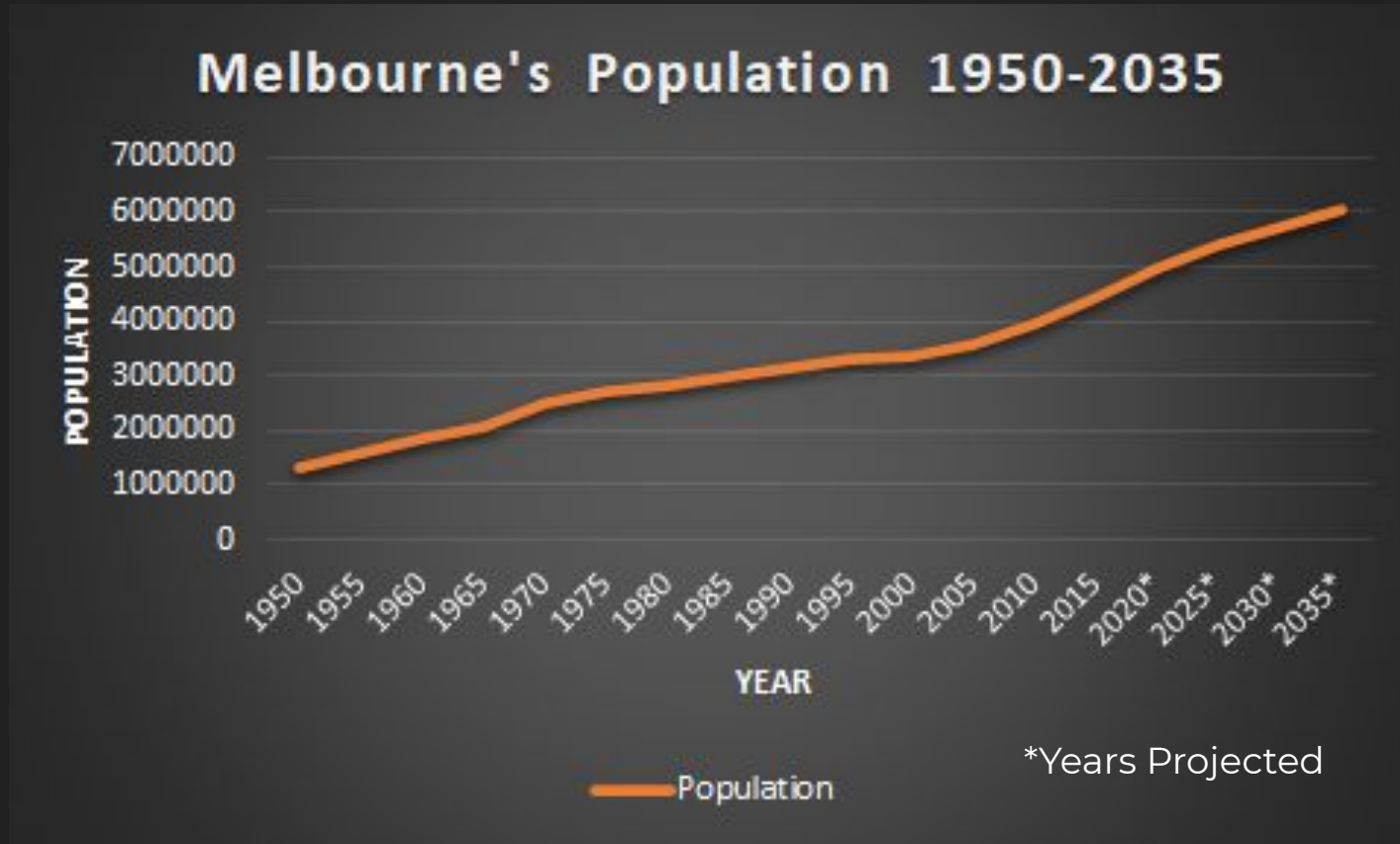
Mission Statement

The goal of this project is to assist Friends of the Earth Melbourne in their efforts to gather support for the MM2 rail project. This will be done by conducting and aggregating multiple analyses regarding the benefits of the MM2 and public transit in order to provide impactful assets for their Sustainable Cities campaign.

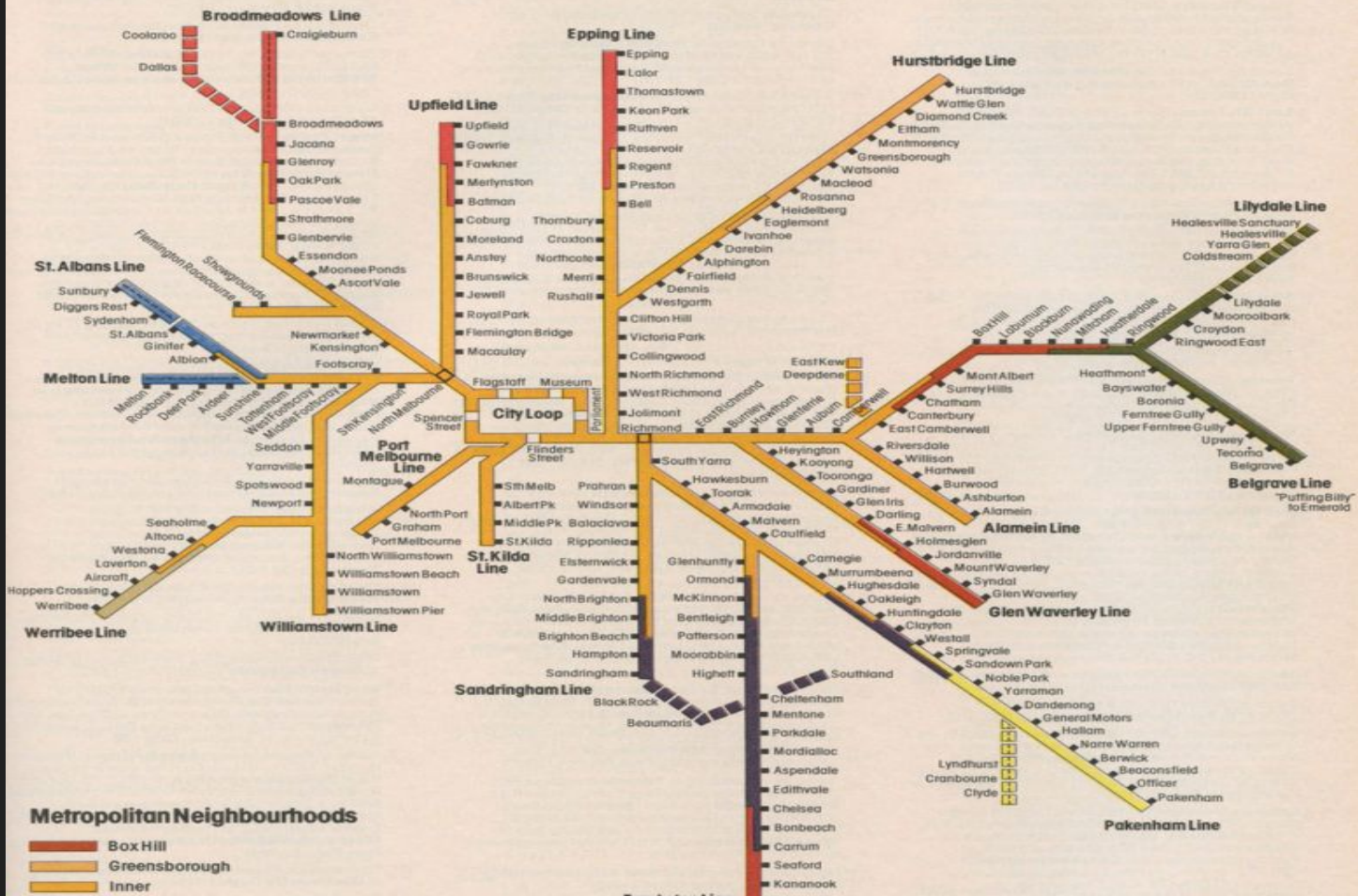


Higher Capacity Shorter Wait Times

Transit Infrastructure Follows Population Growth

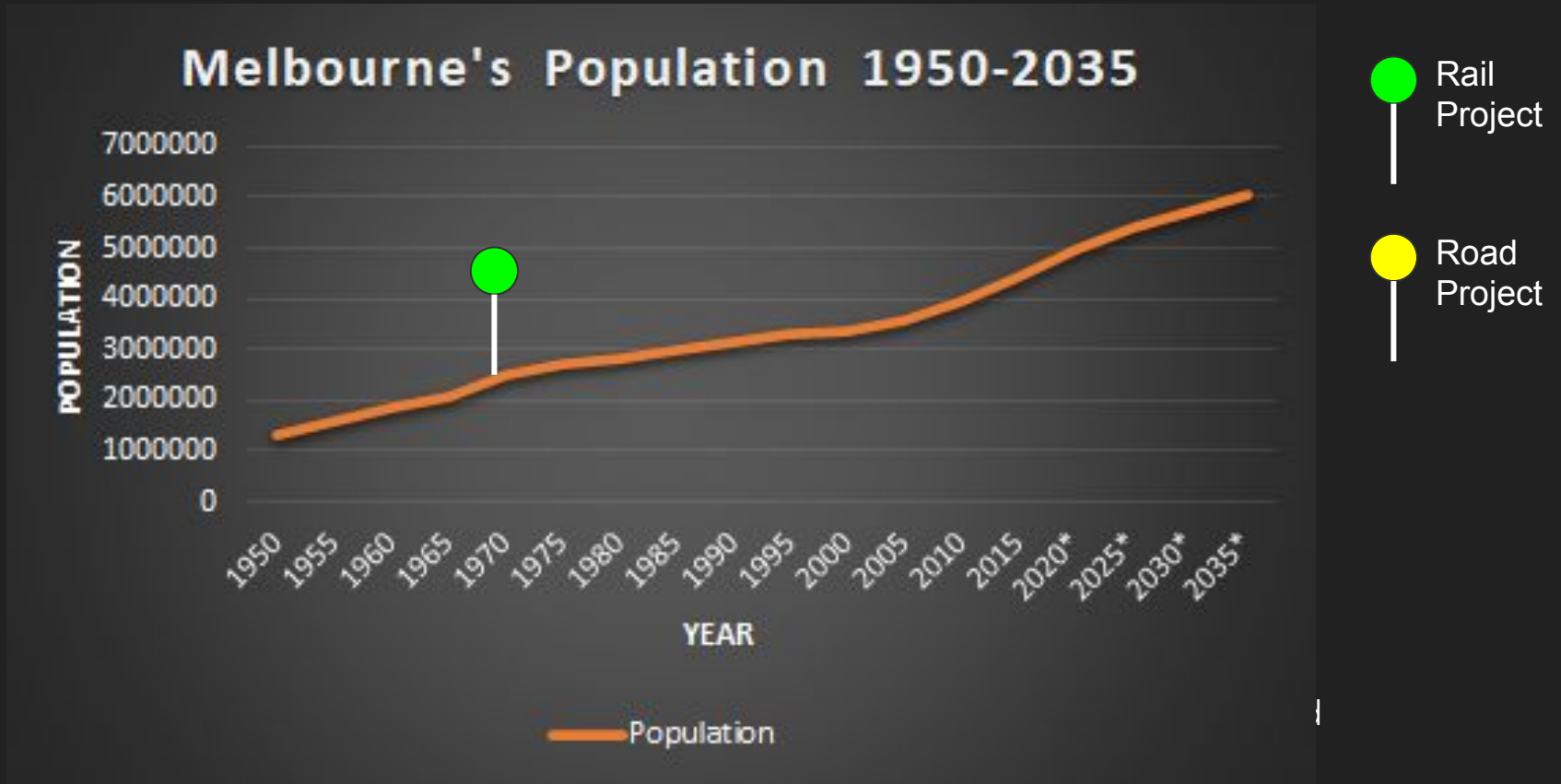


1971 - City Loop (2.5 Million People)



Retrieved from "Victorian Train Network" by Victorian Government and "Transport maps of Melbourne: Part 9 – The Trains (1986-89)" by Metfink

Transit Infrastructure Follows Population Growth



1989 - M80 Ring Road



1995 - Dandenong to Cranbourne Rail Extension



1996 - CityLink Freeway



2005 - EastLink Freeway



2009 - Regional Rail Link



2010 - Epping to South Morang Rail Extension



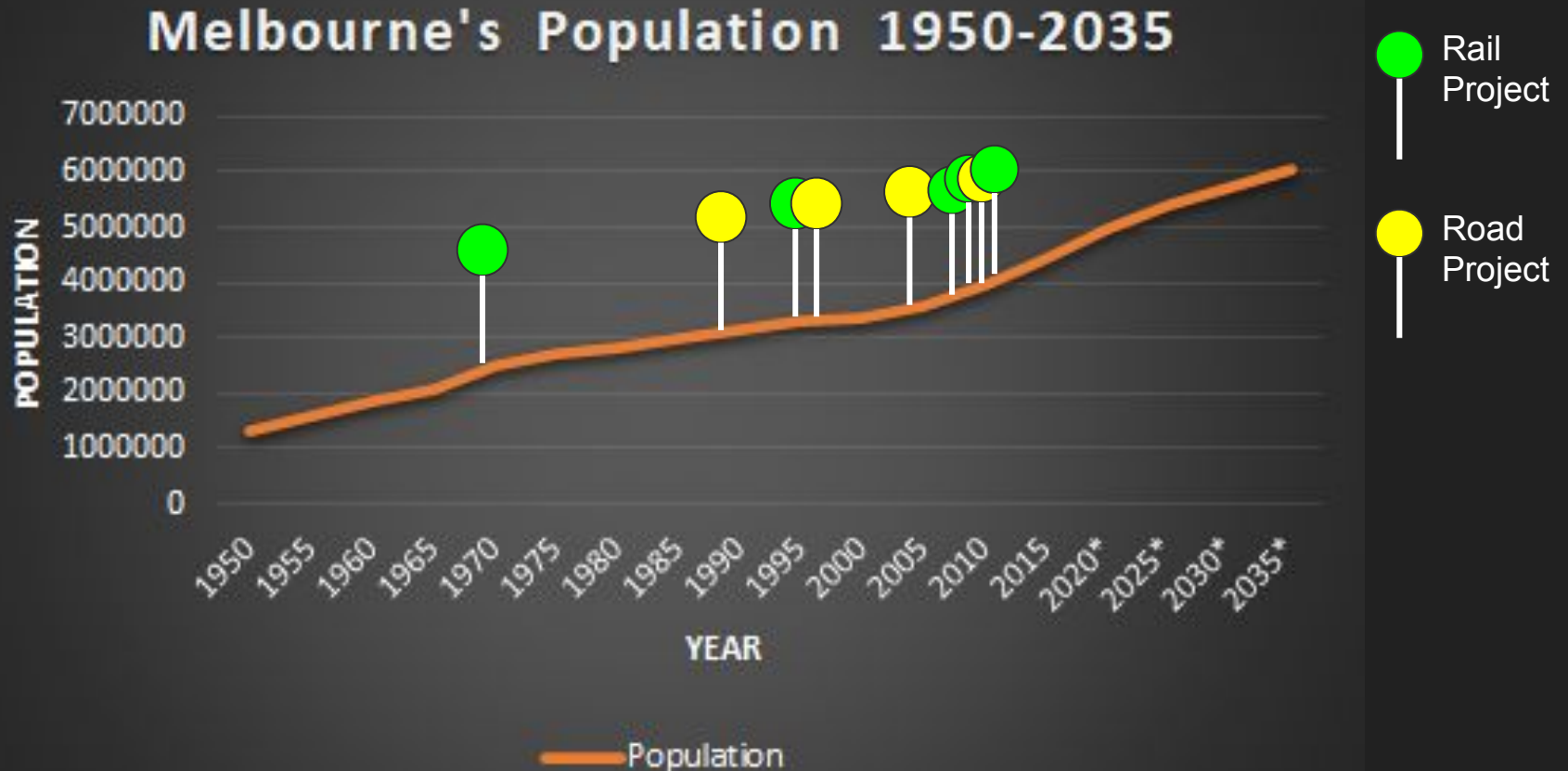
2012 - Frankston Bypass Freeway



2012 - Werribee to Deer Park Rail Extension



Transit Infrastructure Follows Population Growth



The Network Development Plan - 2012 (NDP)

- Umbrella plan for public transit developed by PTV (Public Transport Victoria)
- 4 stages over 20 years
- Melbourne Metro 1
 - Currently being built
- Melbourne Metro 2
 - Next step of NDP, but has not been committed to/funded yet
 - Tunneling rail plan



2017 - Melbourne Metro 1



The Melbourne Metro 2 (MM2)

- The complement of the Melbourne Metro 1
- \$14-20 Billion AUD
- Tunnel that connects Clifton Hill and Newport
 - Increases capacity of the Werribee and Mernda lines
- 2-3 minute wait times - increased capacity trains



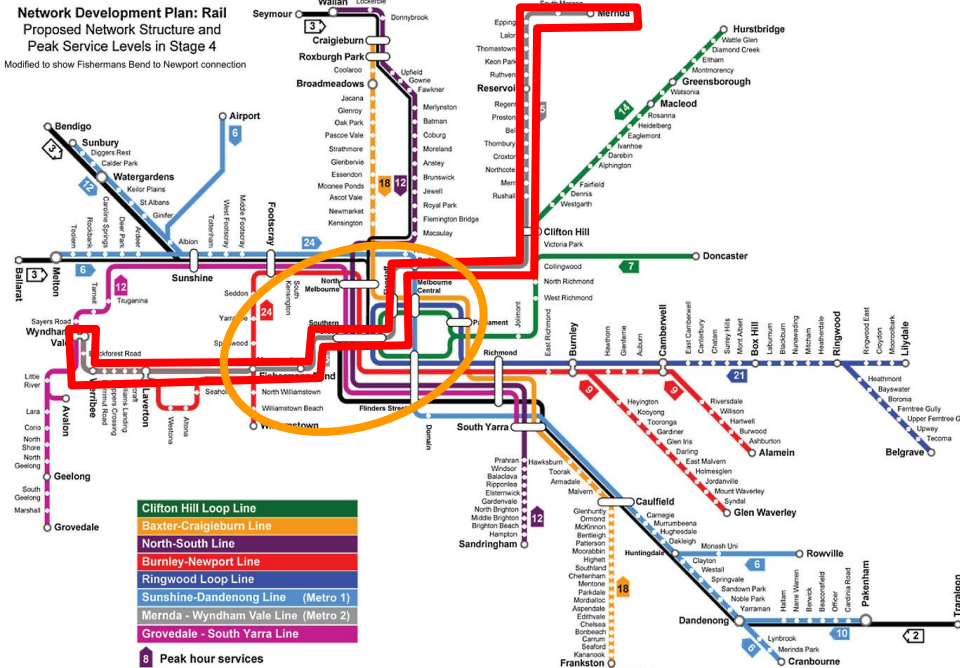
Source: [Get On Board](#)

MM2 Improves Connections to CBD

Network Development Plan: Rail
Proposed Network Structure and
Peak Services in 2012



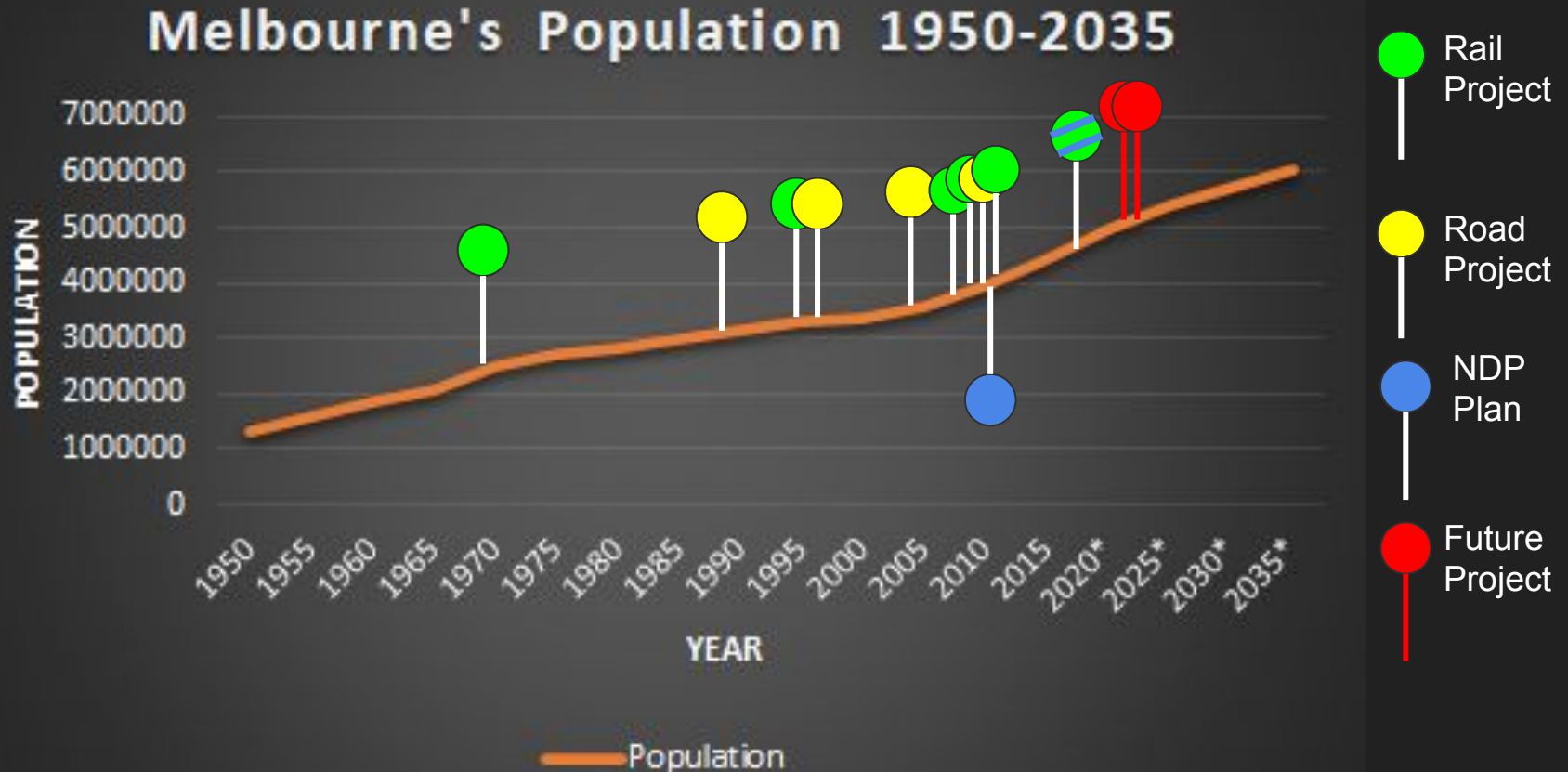
Network Development Plan: Rail
Proposed Network Structure and
Peak Service Levels in Stage 4
Modified to show Fishermans Bend to Newport connection



The biggest draw to the MM2 is the tunnel going through the CBD and metro-style upgrades

Source: [PTV Network Development Plan](#)

Transit Infrastructure Follows Population Growth





Population Projections

Job Distribution

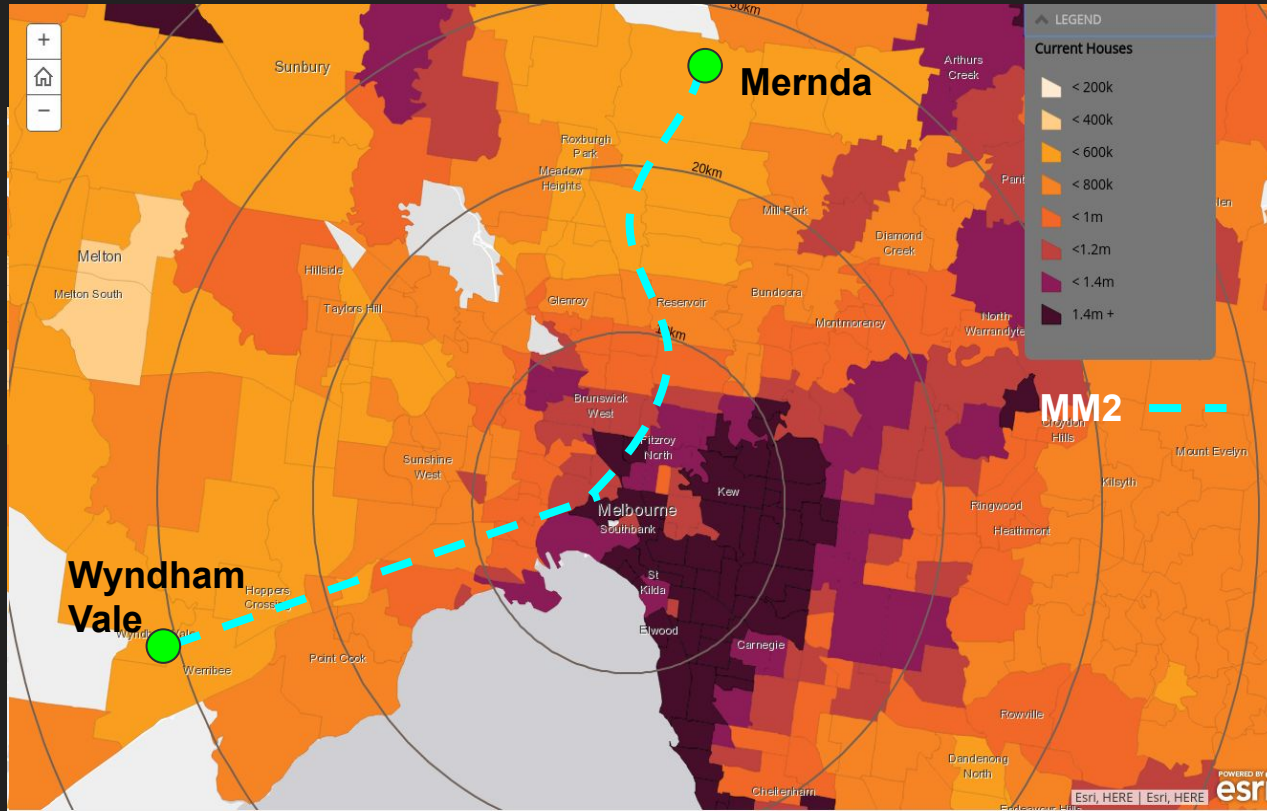
Method of Travel To Work

Traffic Volume

Environment & Health

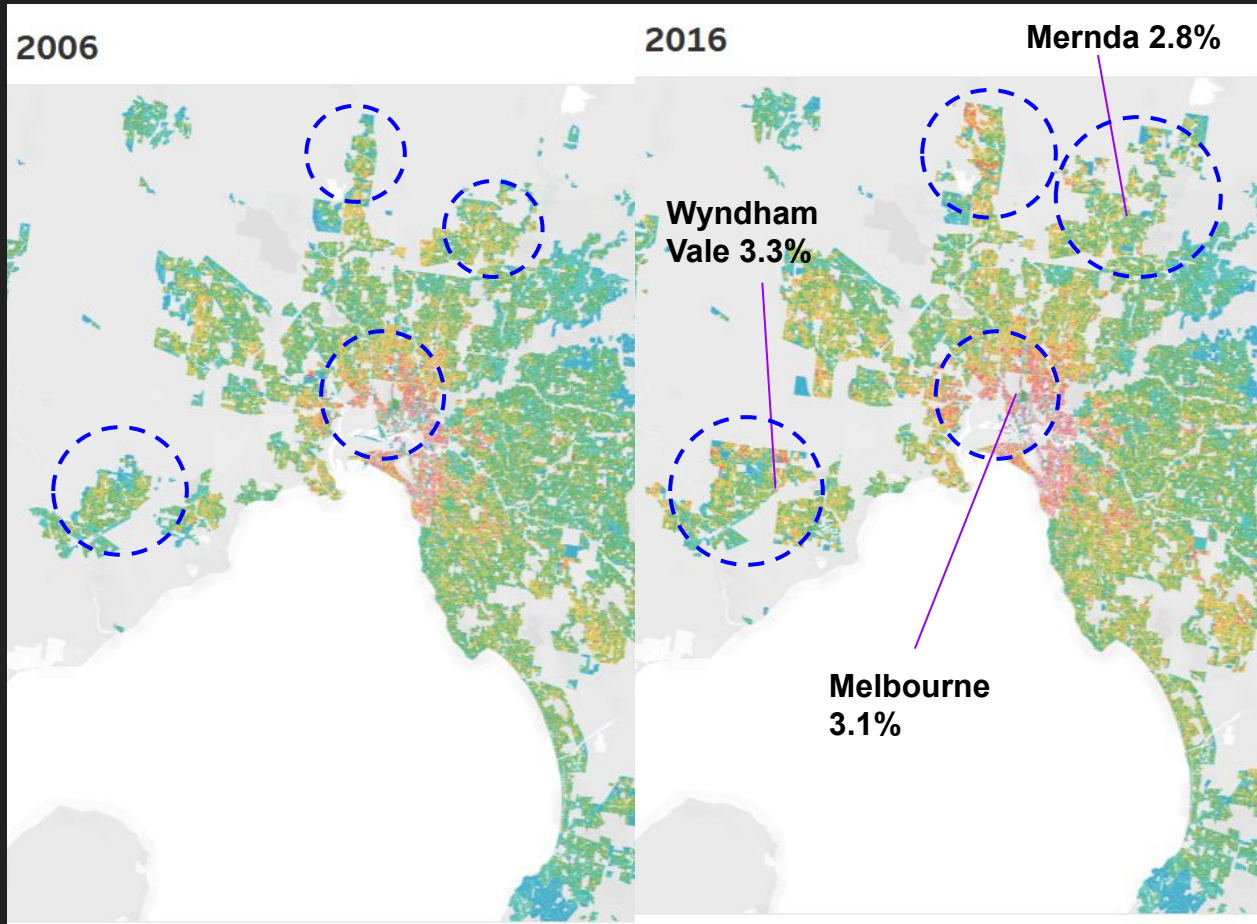
One Project Many Effects

Low Real Prices Drive People to the Suburbs

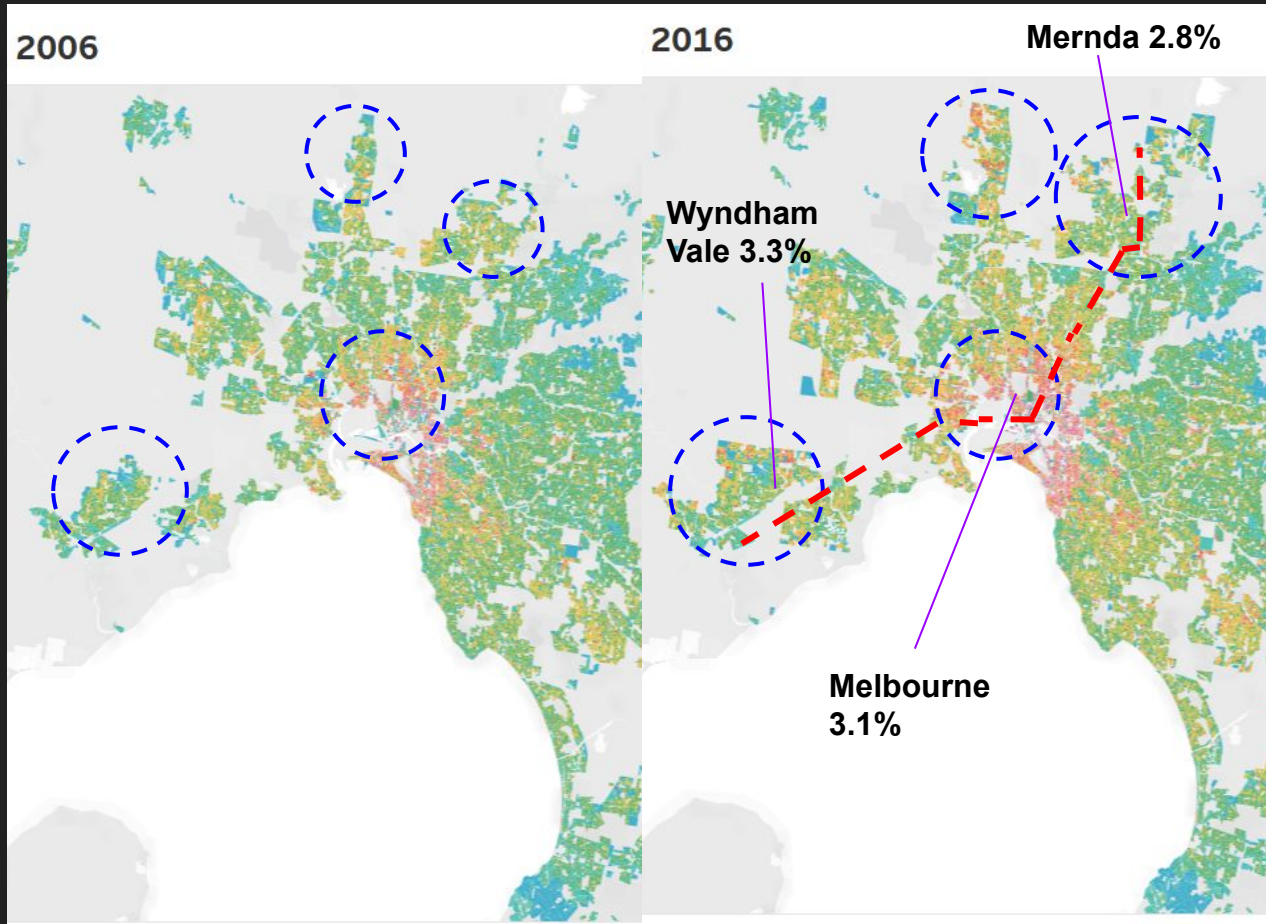


- Prices are higher towards the CBD because of increased demand
- People are moving to outer suburbs, but there are little to no public transit options

Melbourne's Suburbs are Growing Rapidly

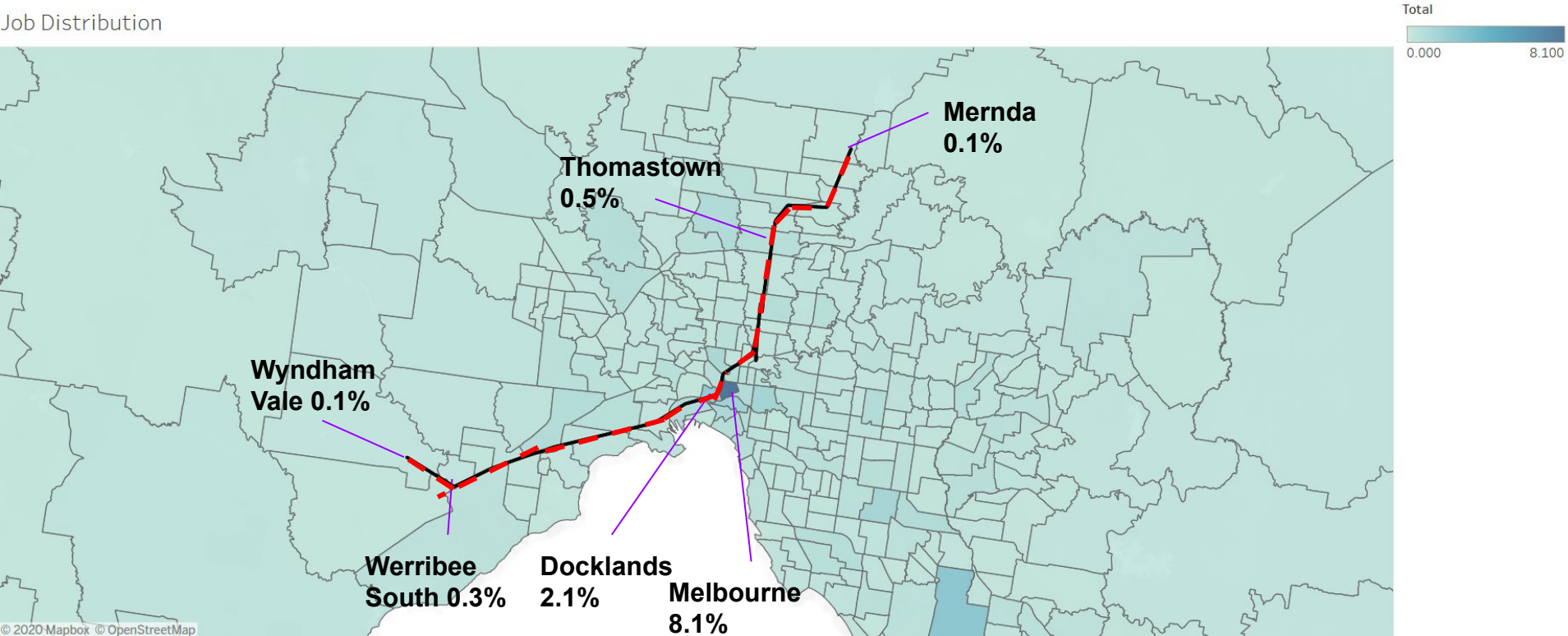


The MM2 Will Service These Rapidly Growing Suburbs



Jobs in Victoria are Centered Around the CBD

Job Distribution

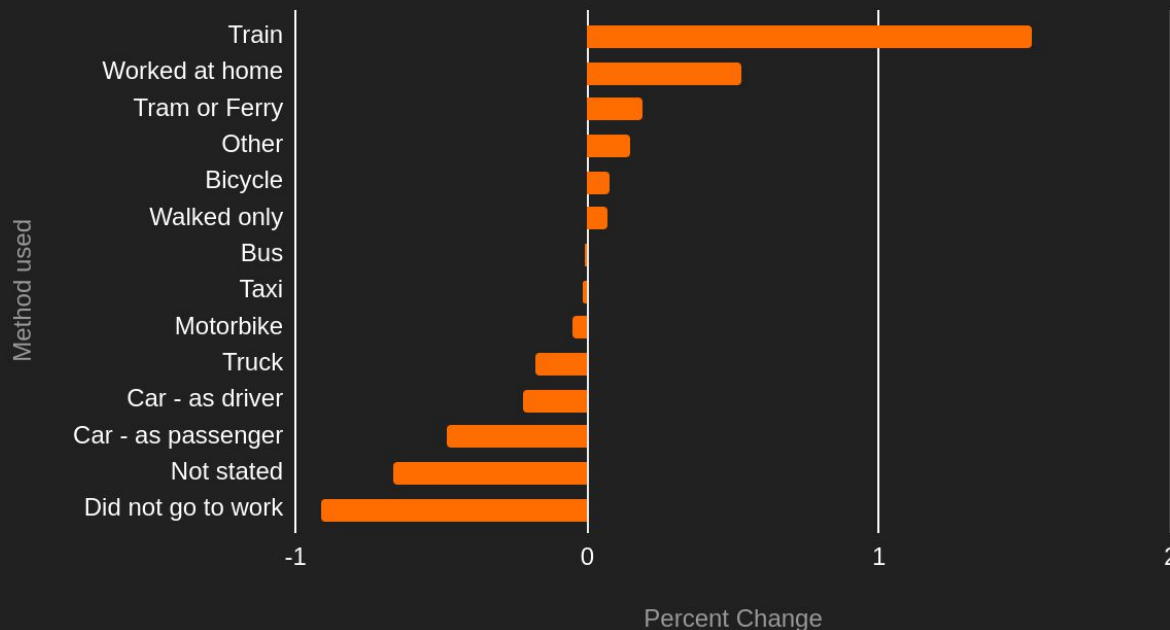


[Population Projections](#)[Job Distribution](#)[Method of Travel To Work](#)[Traffic Volume](#)

Method of Travel To Work

Citizens are Switching to Public Transport

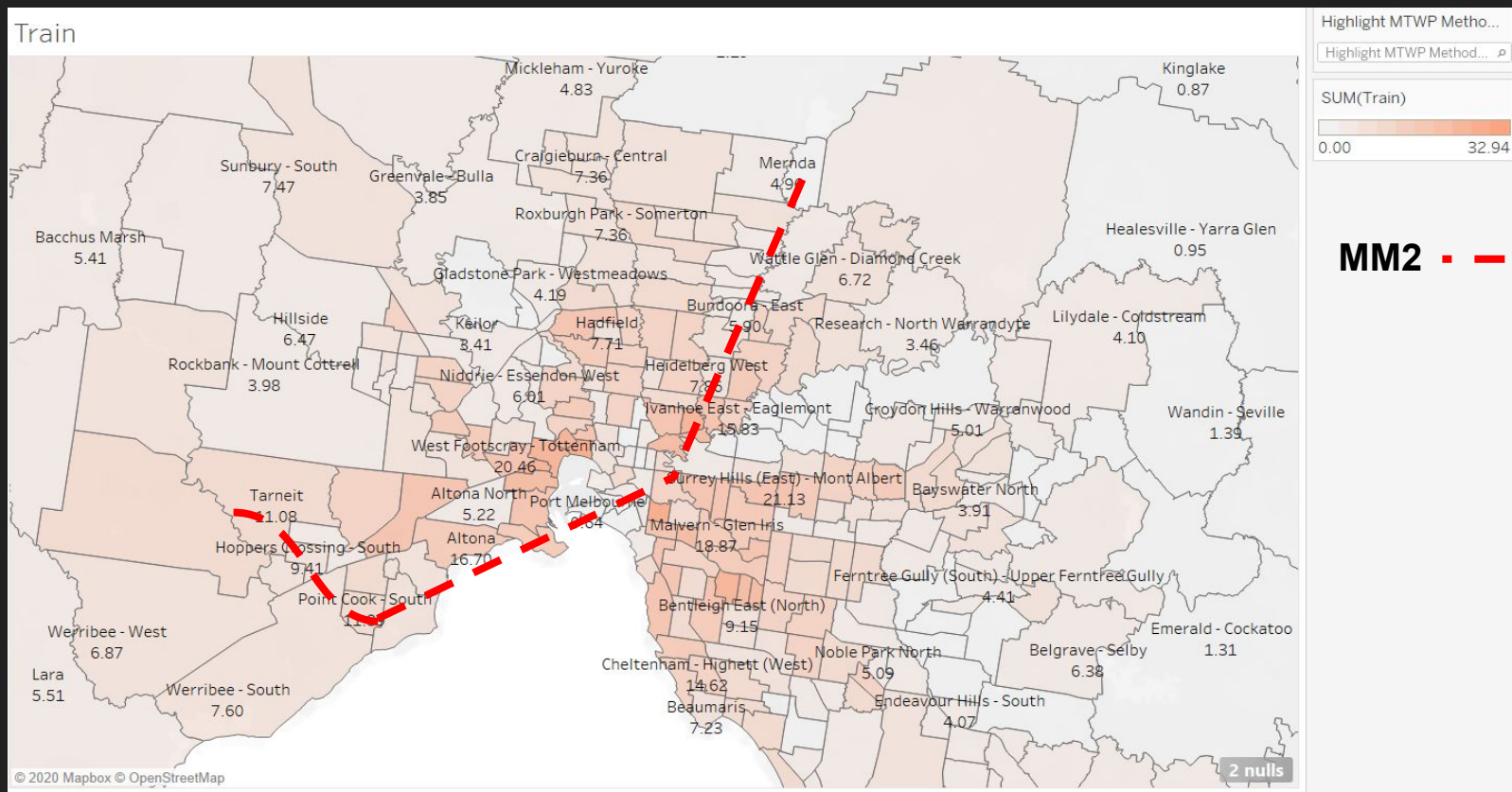
Percent Change in Method of Travel to Work from 2011 to 2016



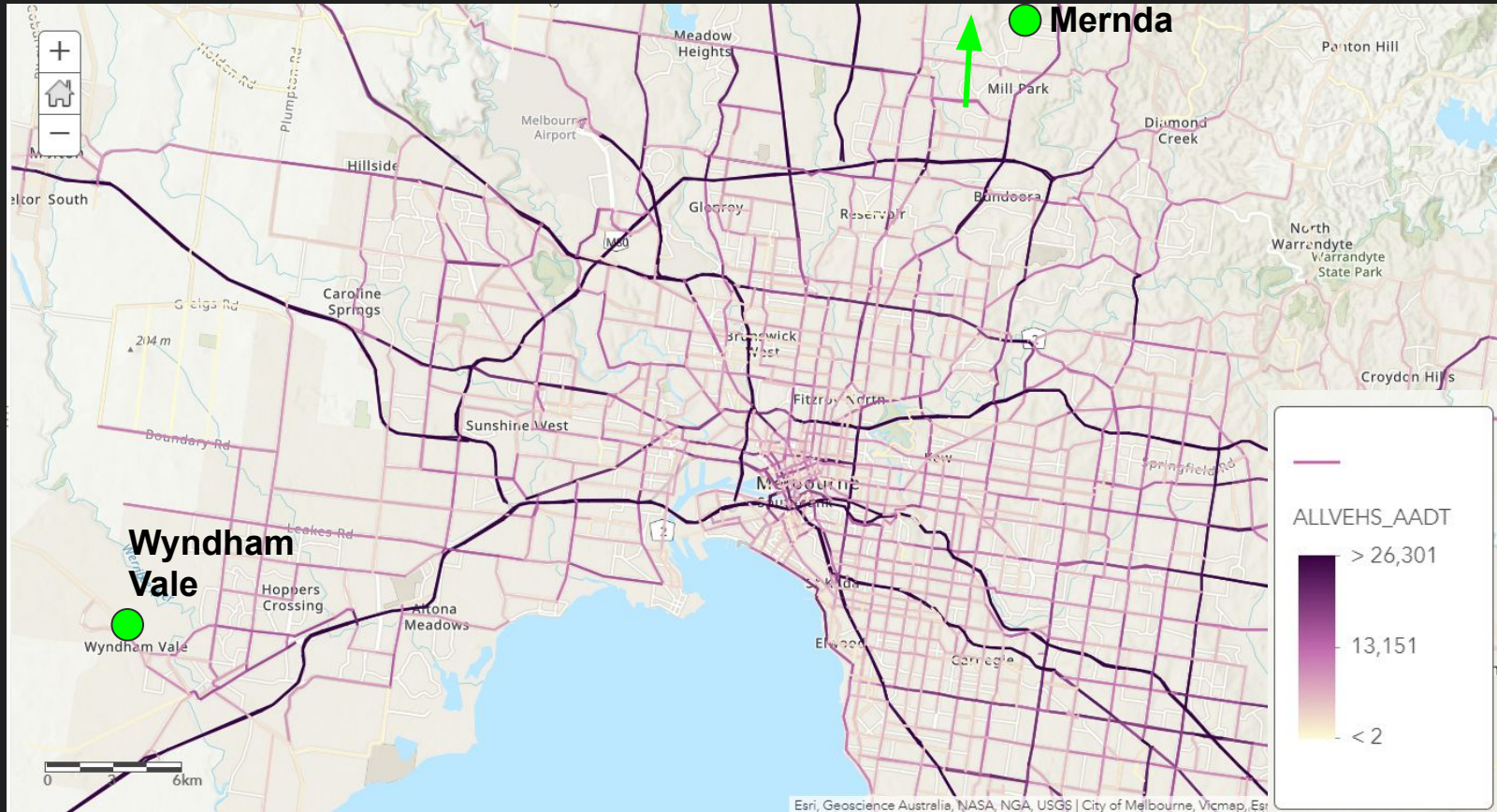
Most People in Melbourne Drive to work



Outer Suburbs Have Poor Train Infrastructure

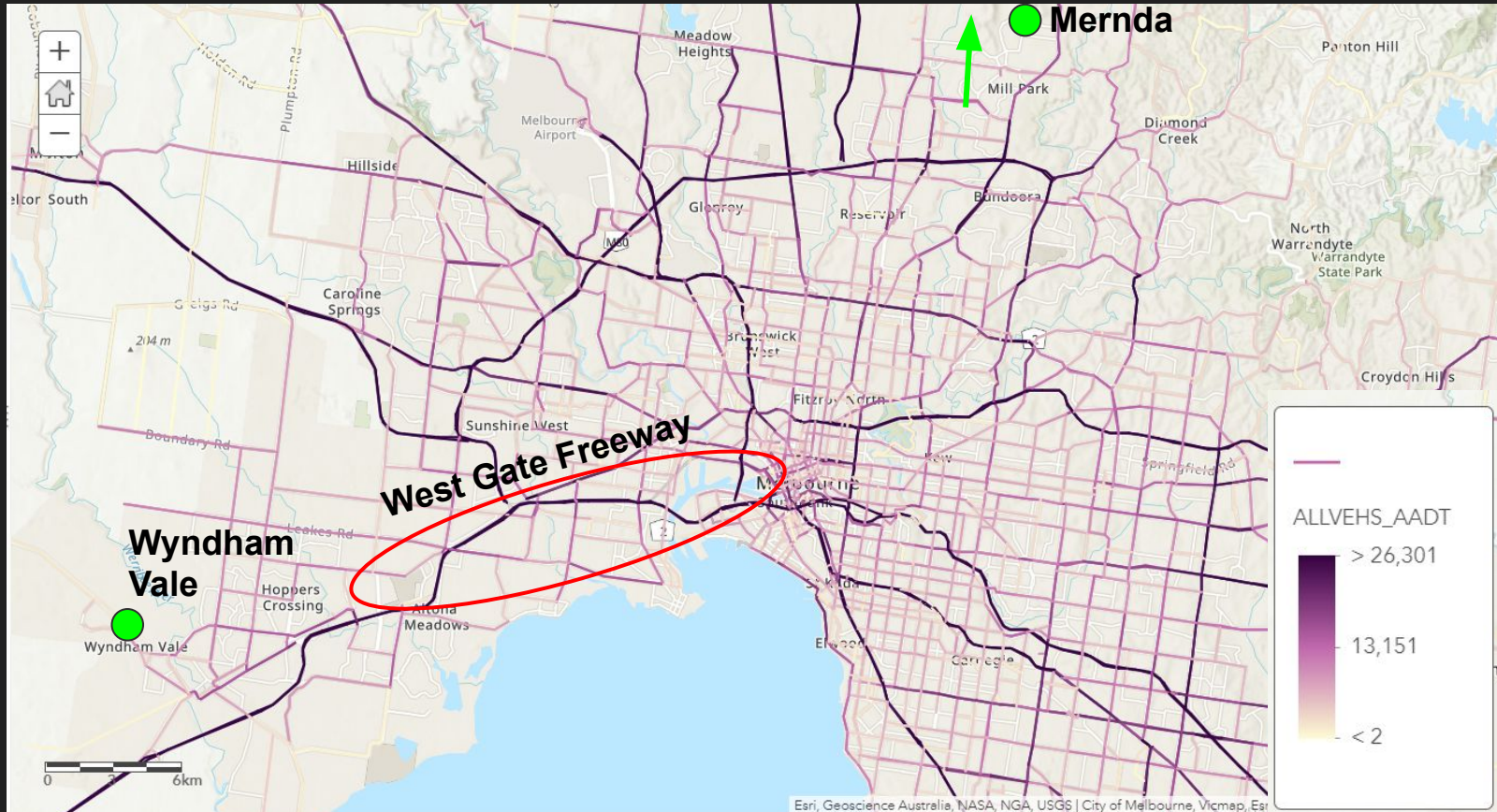


Freeways in and out of Melbourne are Being Stressed



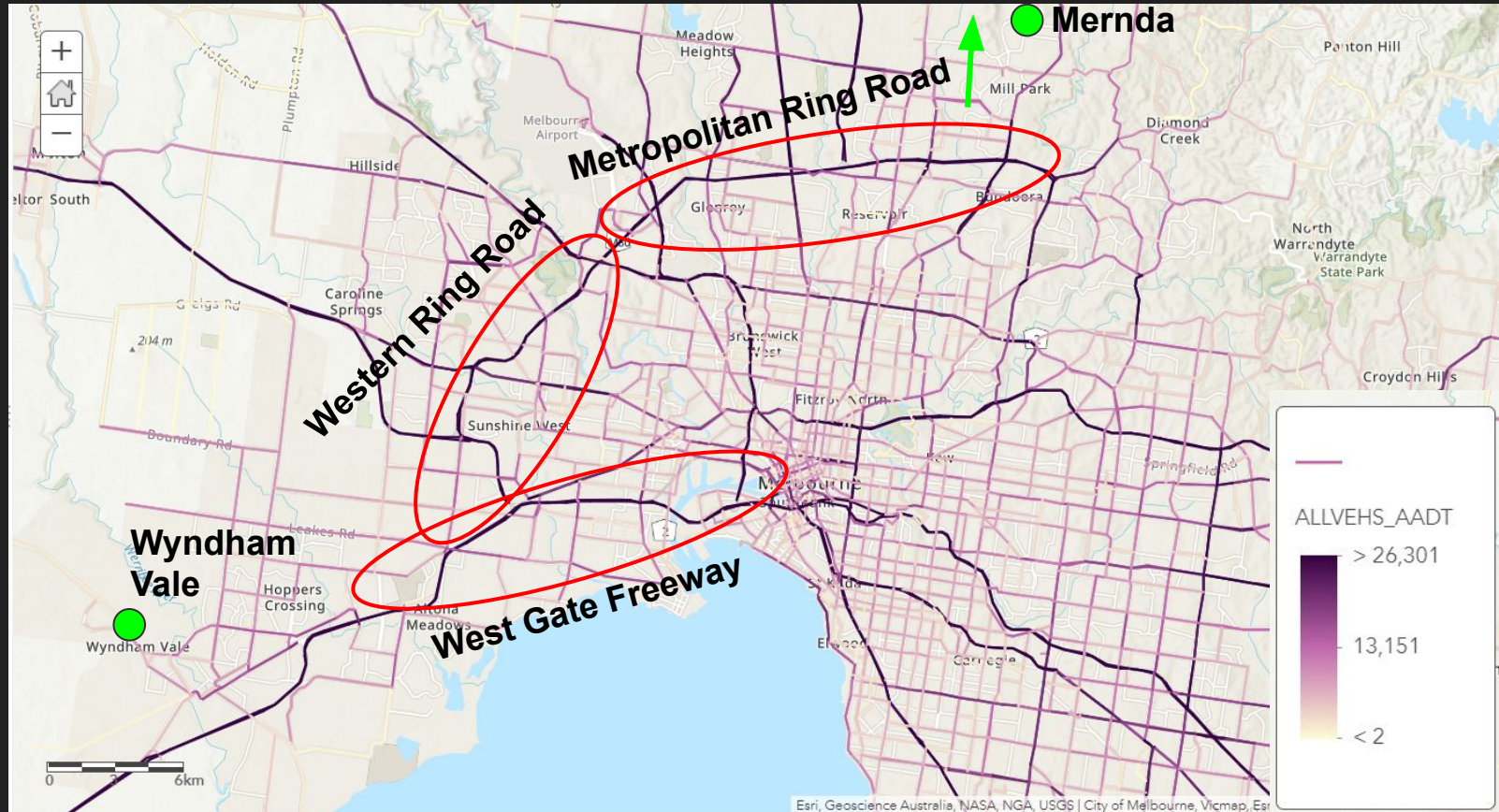
Source: [Victoria Department of Transport](#)

Freeways in and out of Melbourne are Being Stressed



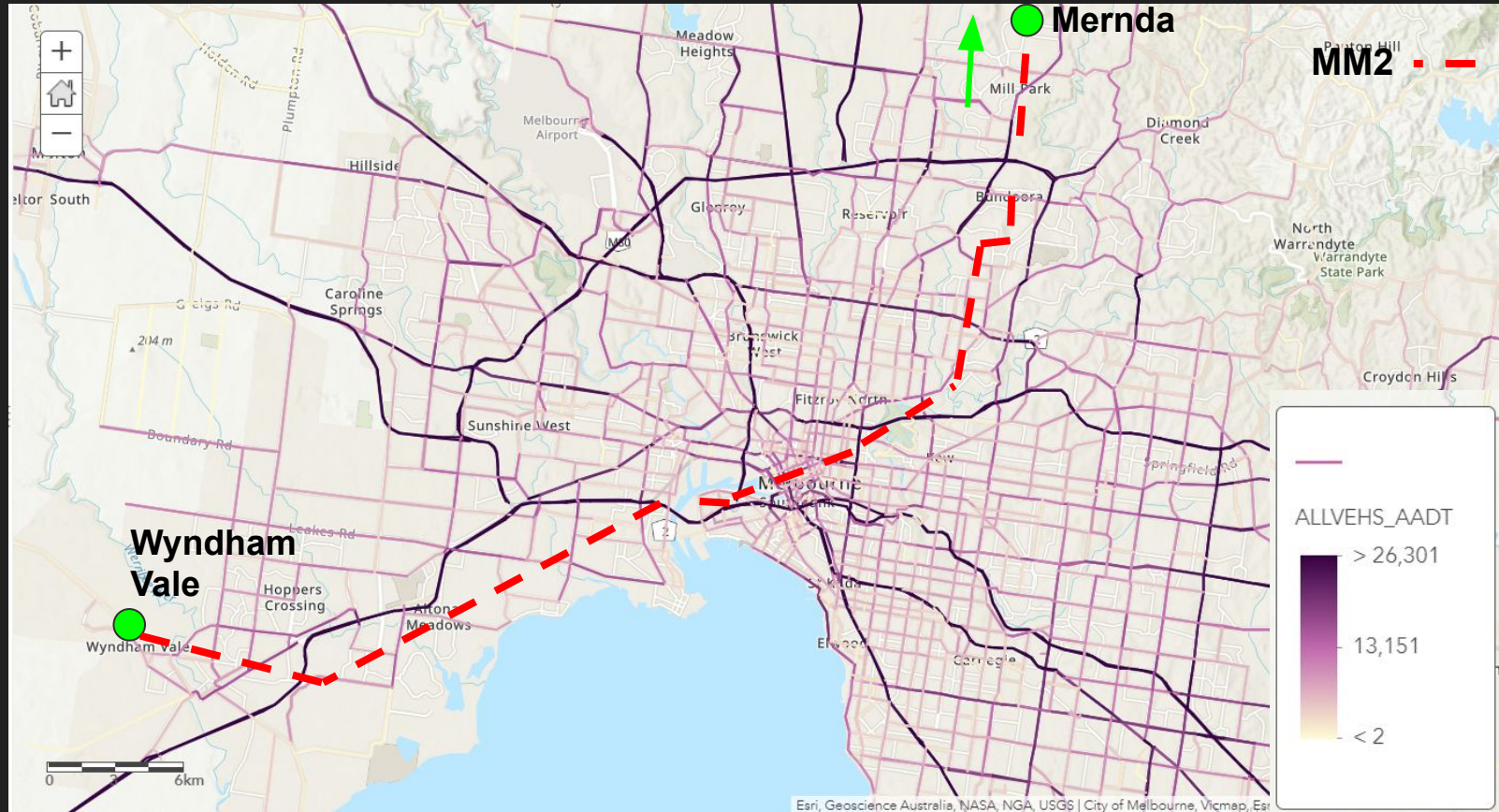
Source: [Victoria Department of Transport](#)

Freeways in and out of Melbourne are Being Stressed



Source: [Victoria Department of Transport](#)

MM2 Will Reduce Congestion on Roads In and Out of Melbourne



Source: [Victoria Department of Transport](#)

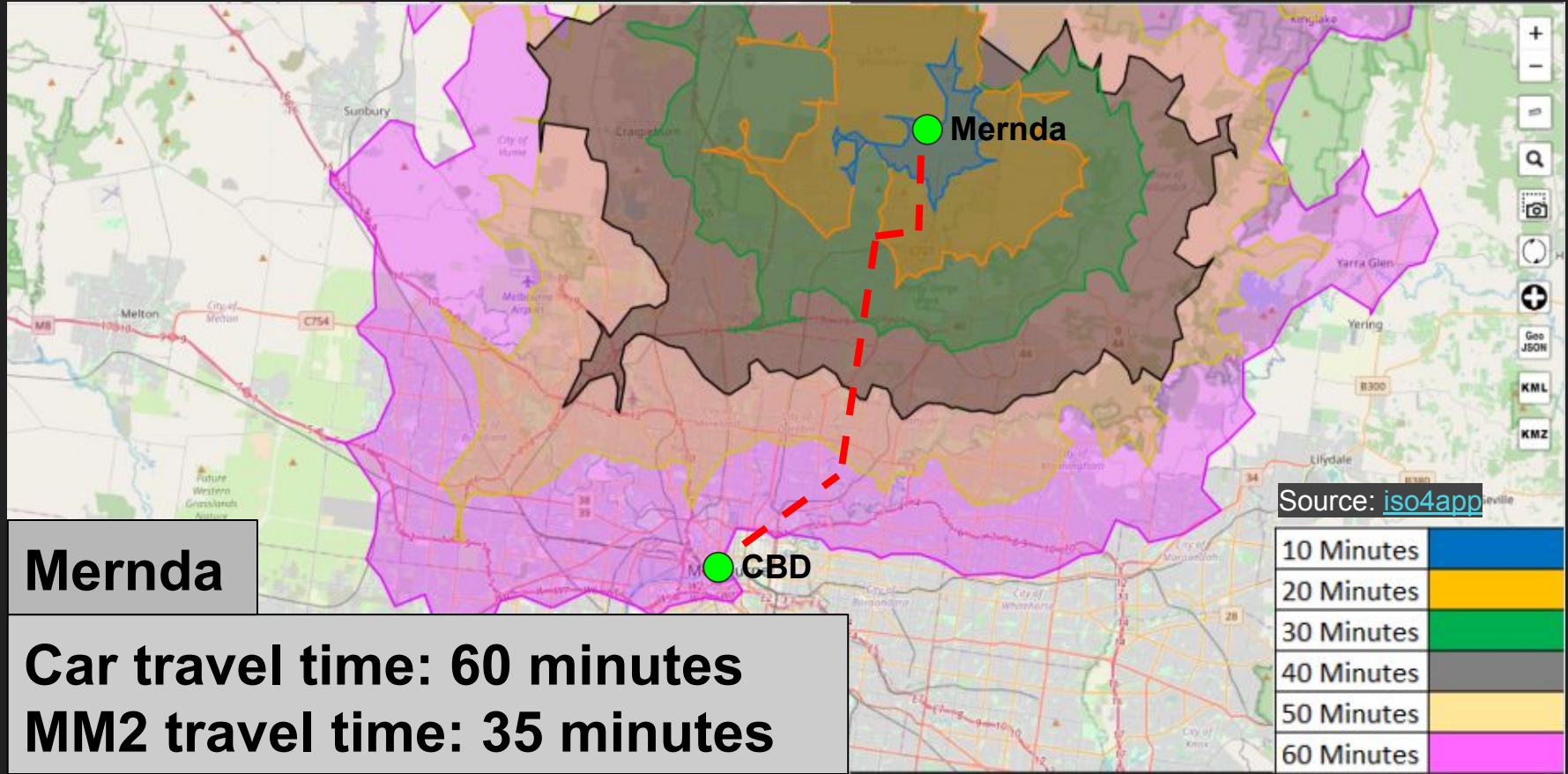


Cost and Time Savings



The MM2 Will Reduce Travel Times by 40-50%

Estimation calculated based on line distance, train speed, dwell time, and number of stops

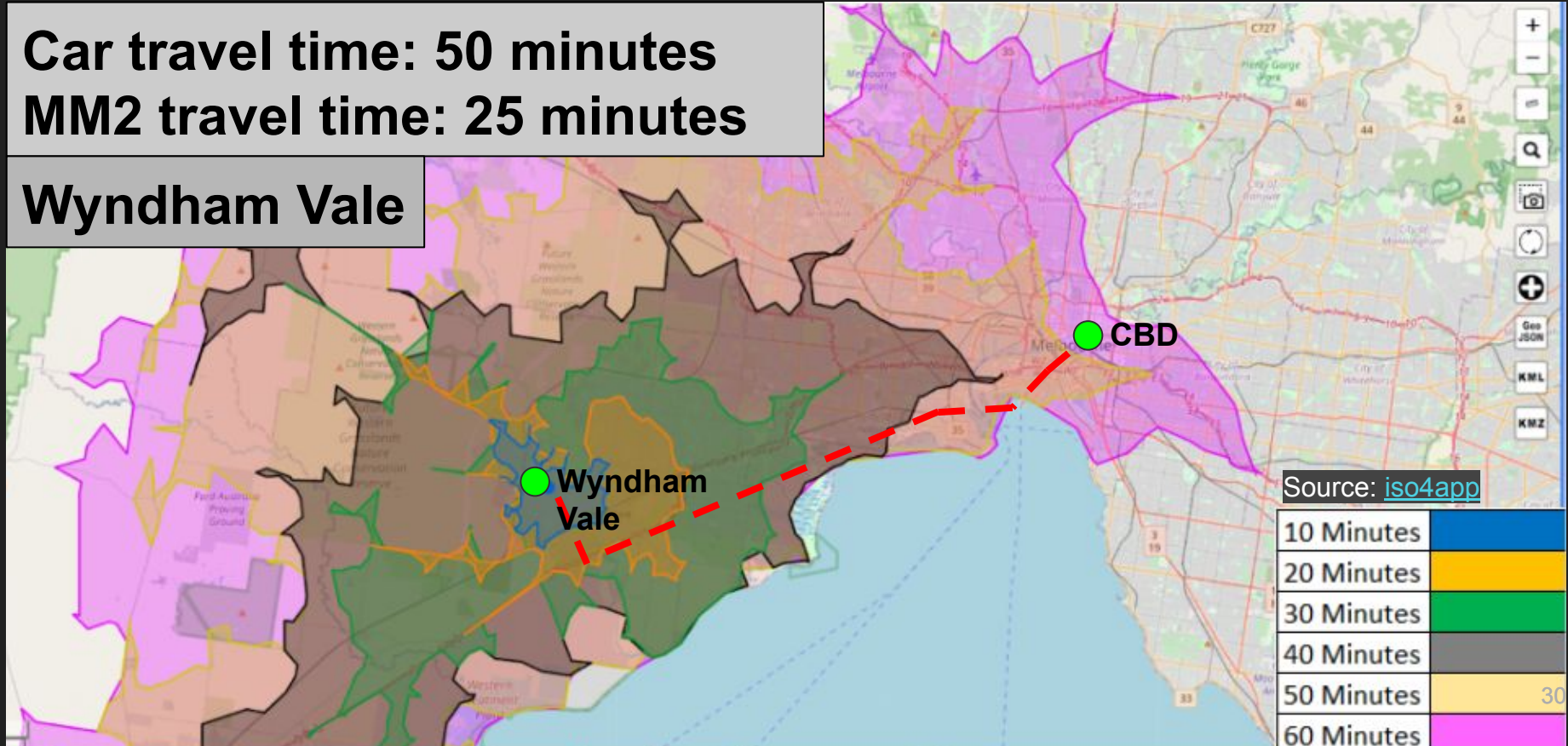


The MM2 Will Reduce Travel Times by 40-50%

Estimation calculated based on line distance, train speed, dwell time, and number of stops

Car travel time: 50 minutes
MM2 travel time: 25 minutes

Wyndham Vale



The Metro Reduces Travel Costs

Round Trip to Work by Car and Train



➤ \$7 per hour parking

➤ ~\$3.00-\$10.00 AUD for tolls

Source: [Public Transport Victoria](#)

Source: [BudgetDirect](#) 31

The Metro Brings Opportunity Savings





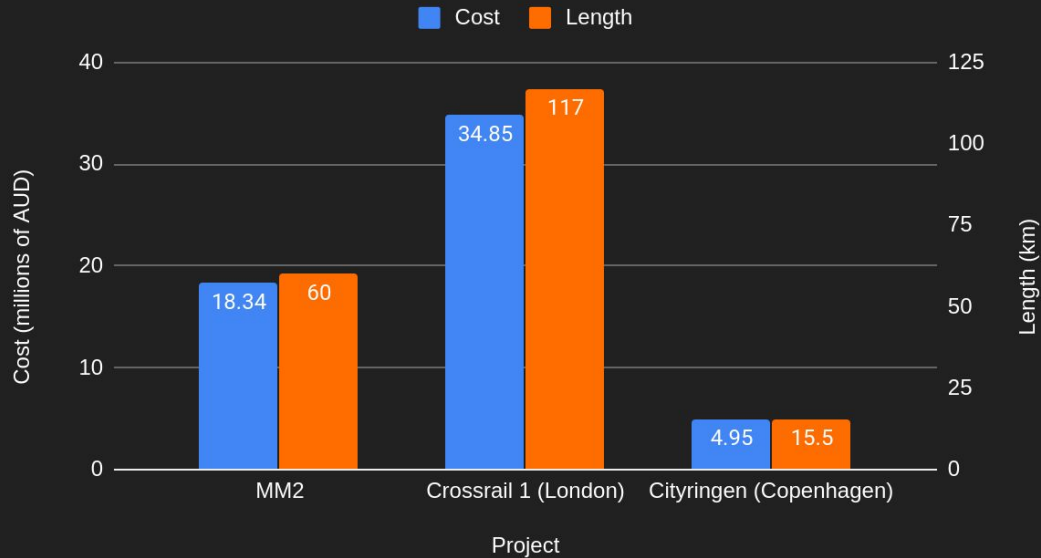
Similar Projects

London Crossrail 1

Copenhagen M3
Cityringen

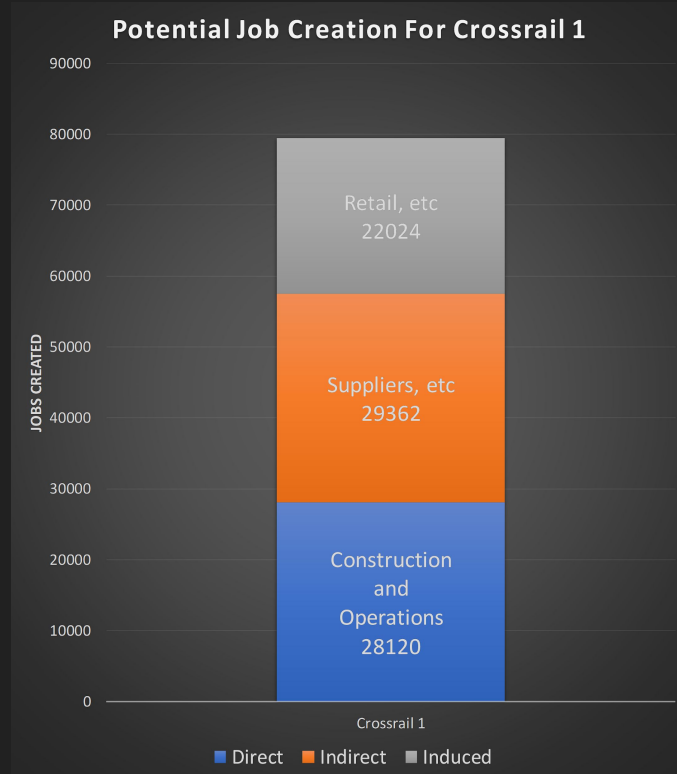
The MM2 Follows Other Major Rail Projects

Cost and Length of Major Public Transit Projects



All three of the major projects have almost exactly the same cost per km

London Crossrail 1 Rail Project Job Creation Estimation



Direct jobs: Primary output of project.

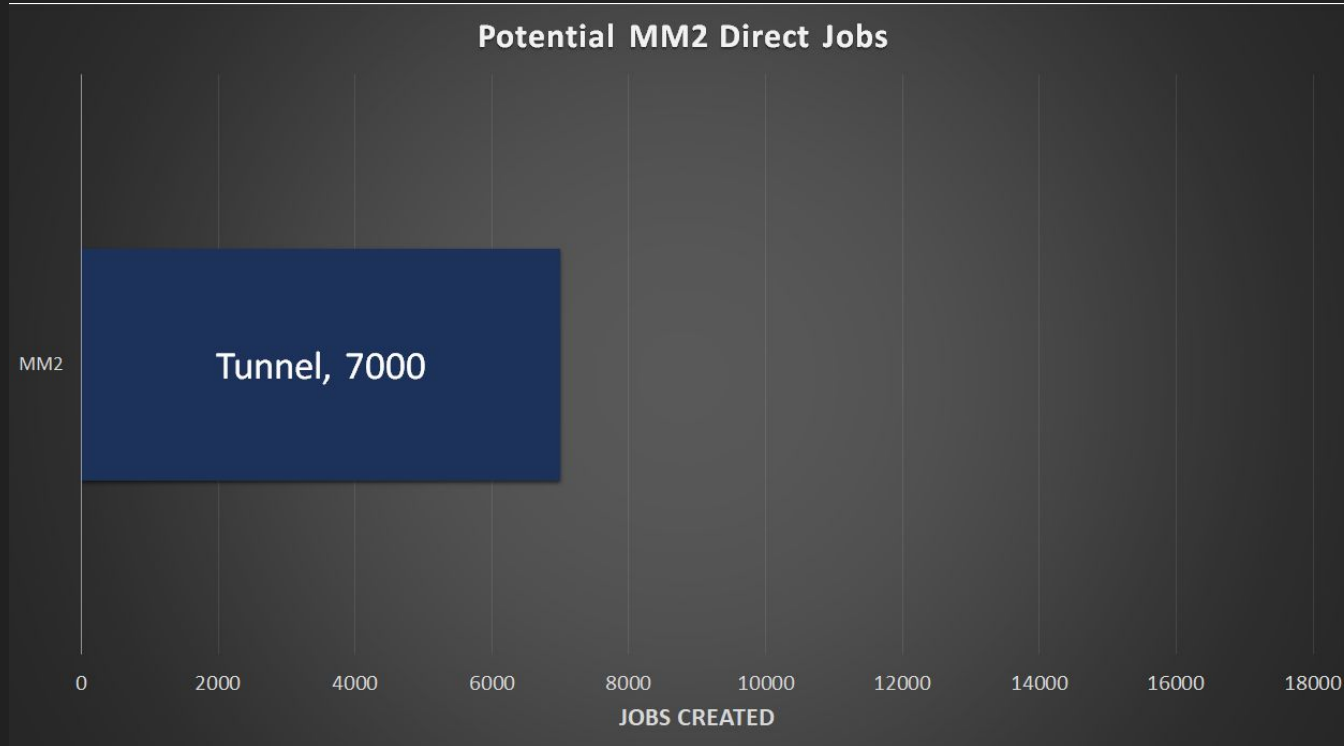
Indirect Jobs: Additional output made possible by the project, but not direct.

104% of direct jobs

Induced Jobs: Additional jobs created that are not direct or indirect jobs.

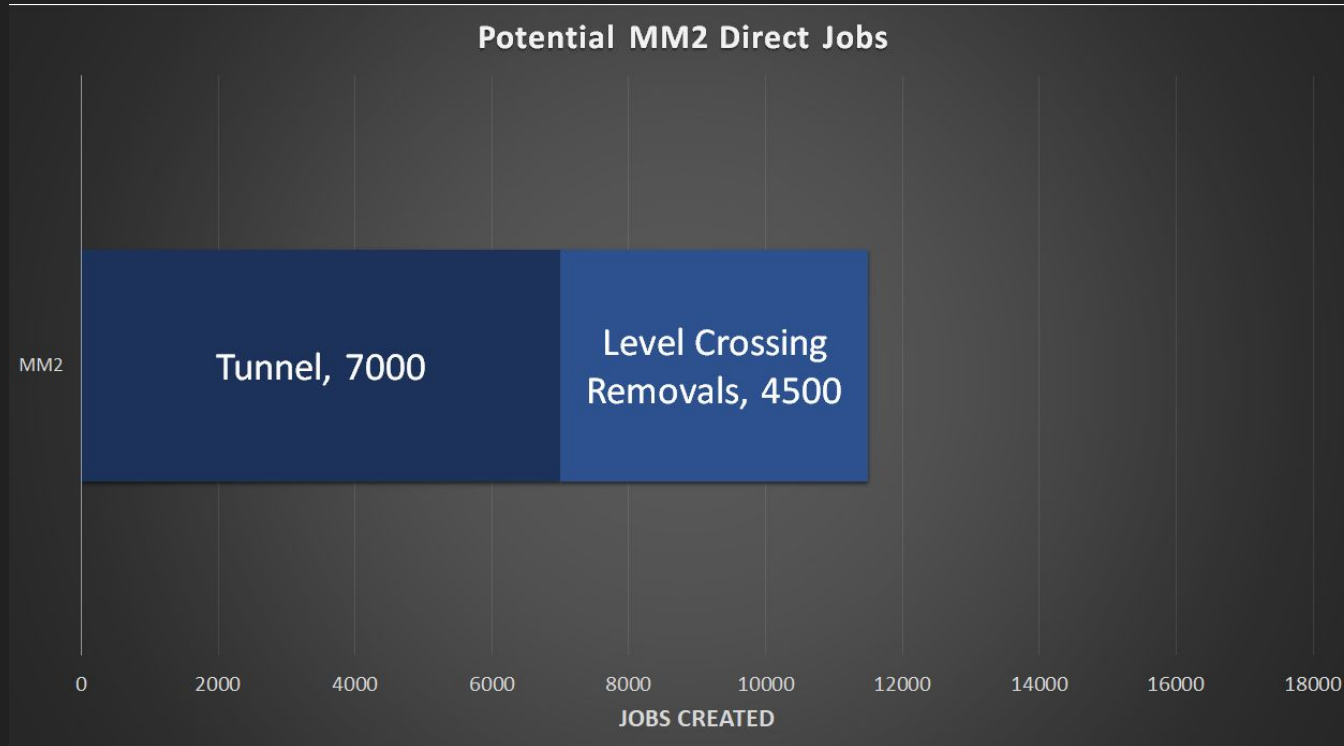
78% of direct jobs

Tunneling is Expected to Create 7000 Jobs



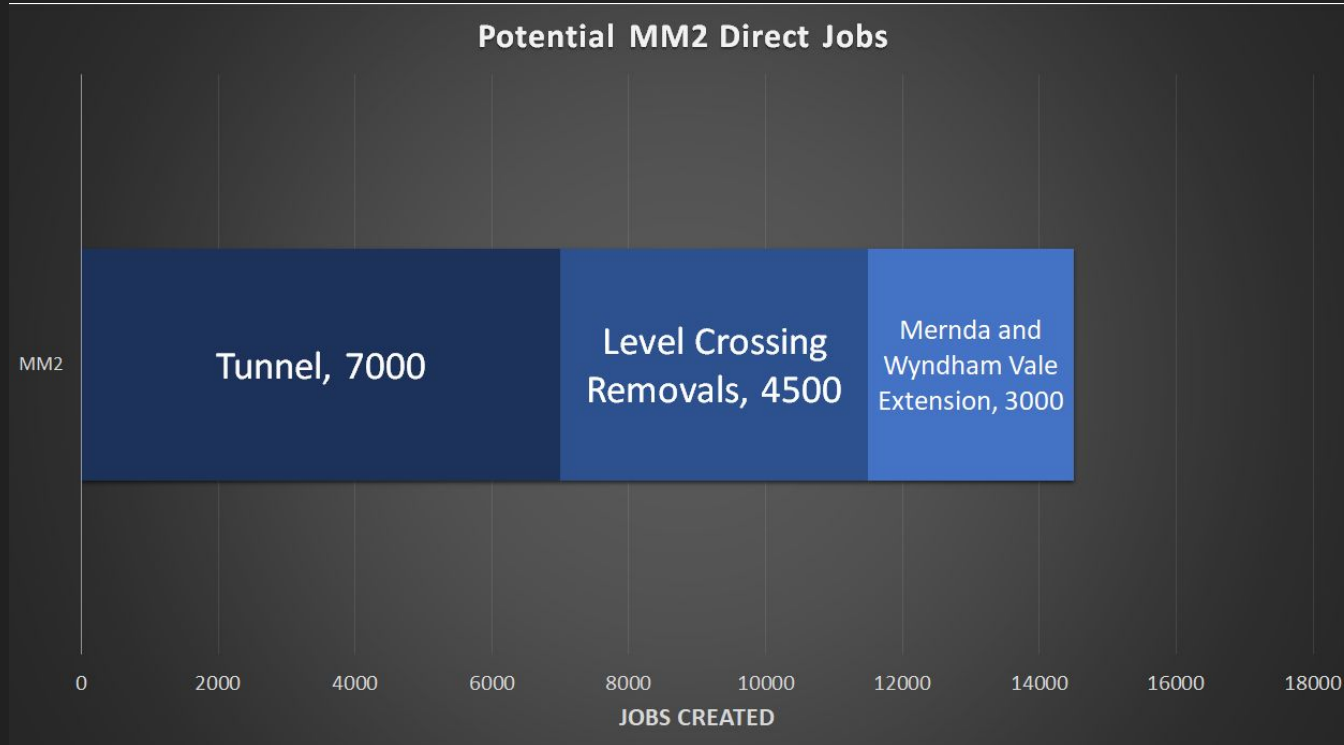
Data Sourced from Metro Tunnel

Level Crossing Removals Are Expected to Create 4500 Jobs



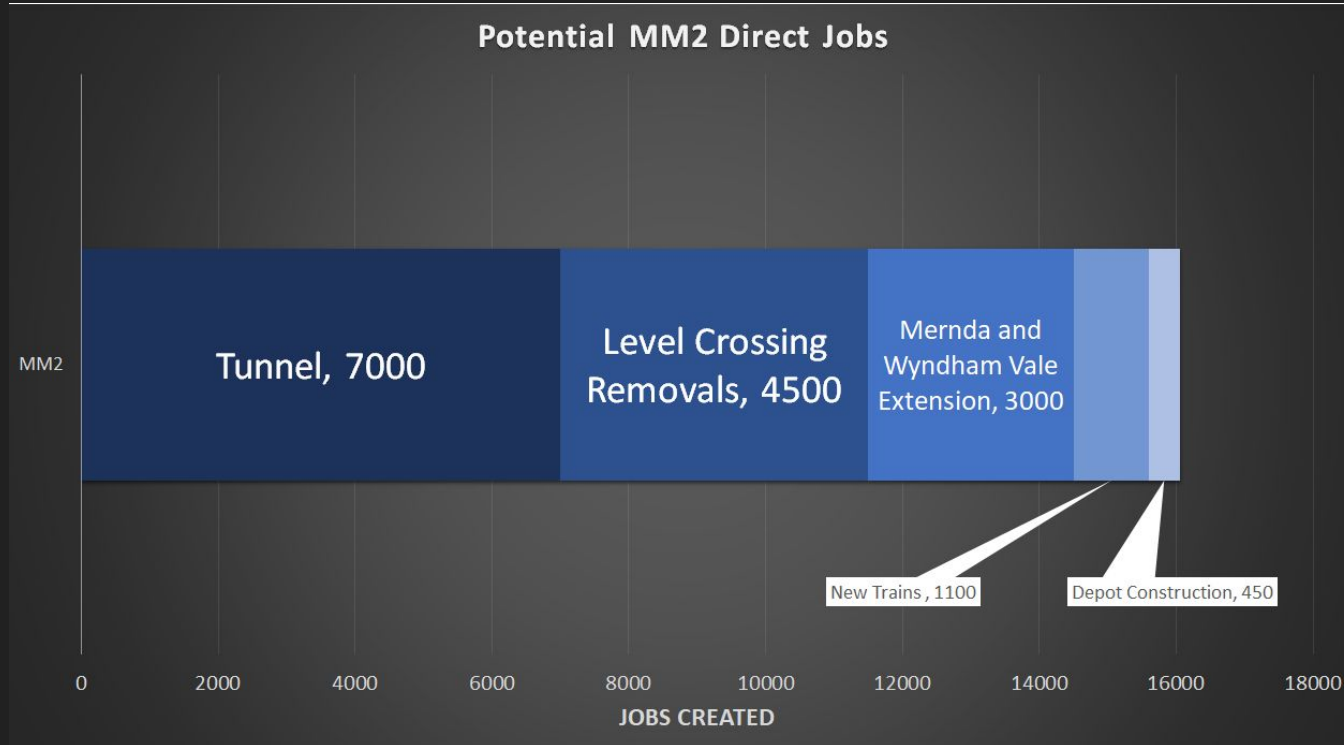
Data Sourced from Metro Tunnel and
Victoria's Big Build

Line Extensions Will Create An Additional 3000 Jobs



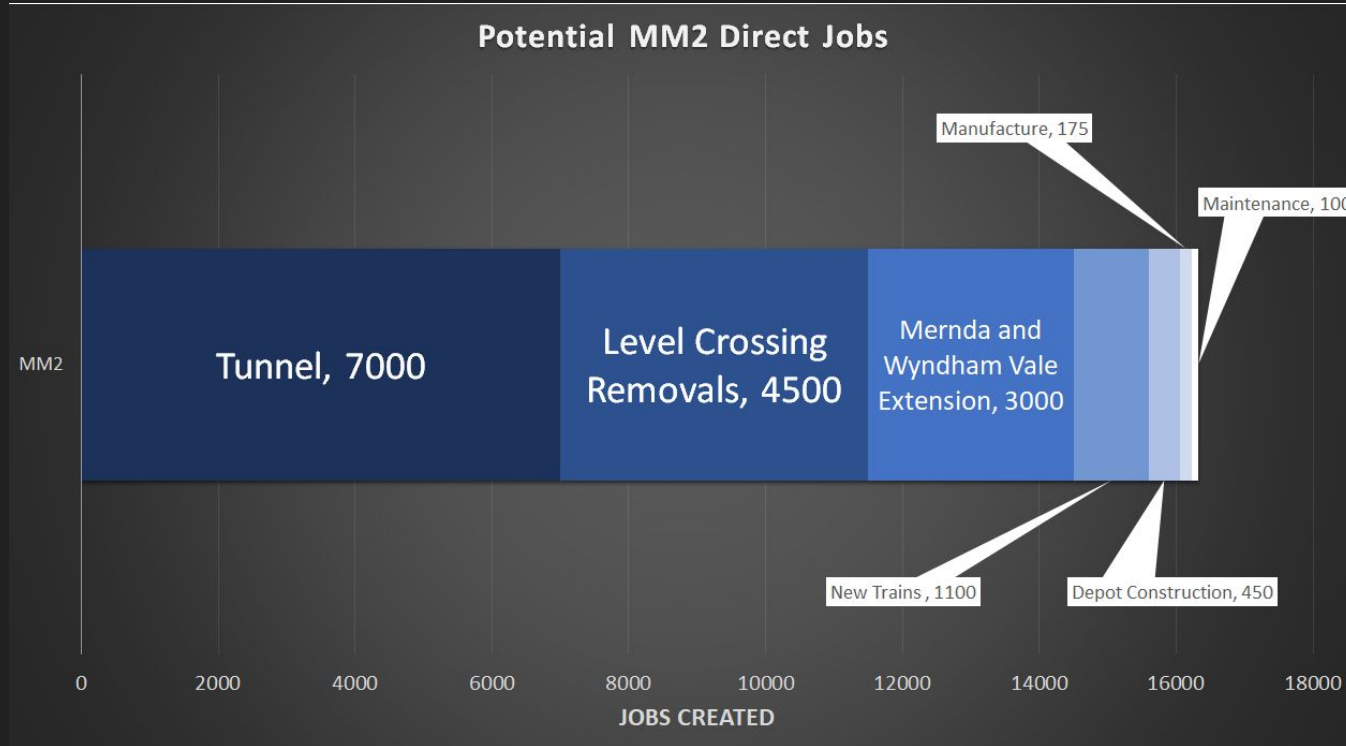
Data Sourced from Metro Tunnel and
Victoria's Big Build

New Trains and Depots Could Create 1550 Jobs



Data Sourced from Metro Tunnel and
Victoria's Big Build

MM2 Could Create More Than 16,000 Direct jobs



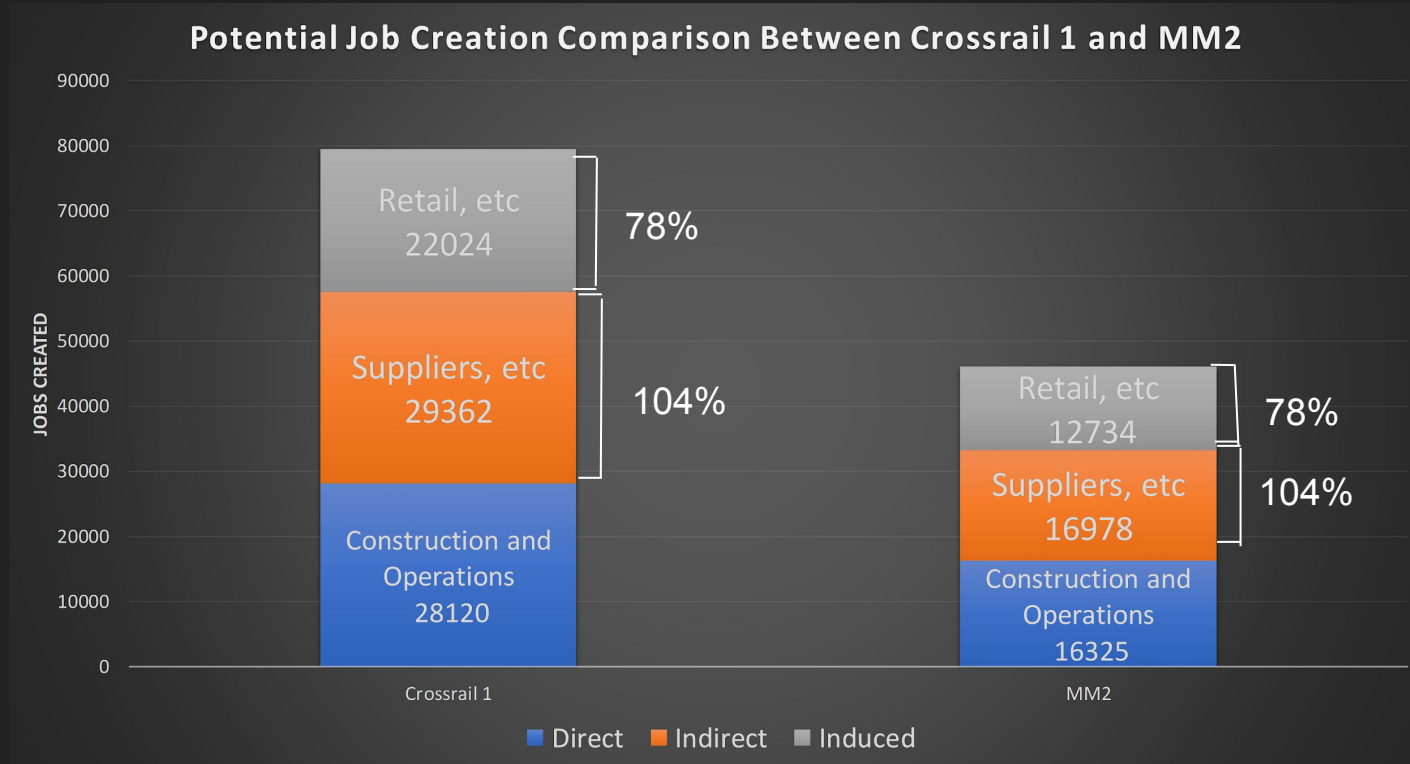
Recommendation for Future Analysis:

Likely to be more factors

Some direct and indirect jobs may go away after project is complete

Data Sourced from Metro Tunnel, Victoria's Big Build and Victoria's Department of Transport.

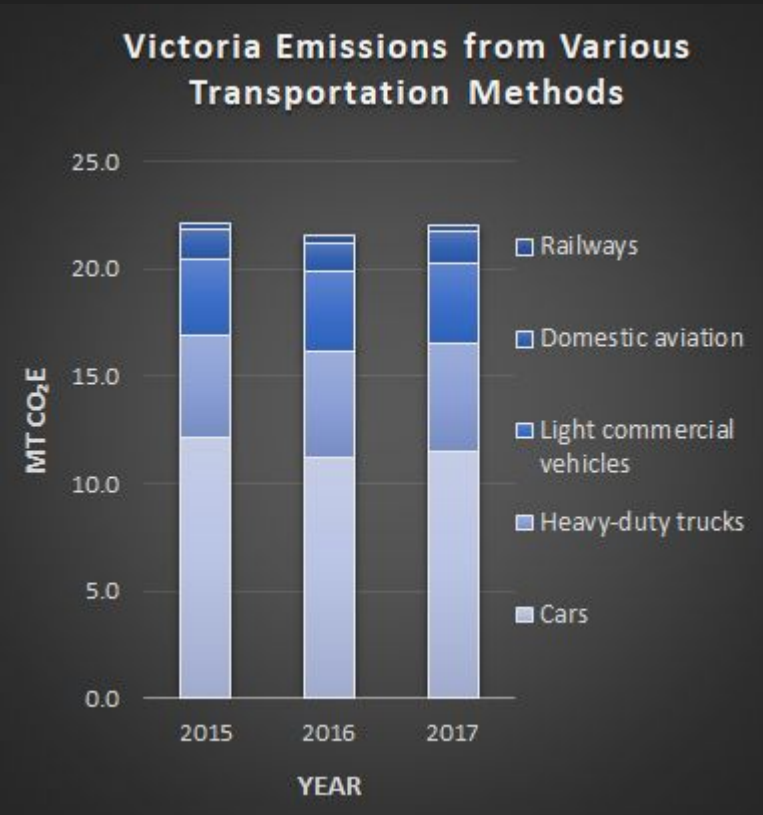
MM2 Could Create a Total of 46,000 jobs



Data Sourced from
London Government,
Metro Tunnel,
Victoria's Big Build
and Victoria's
Department of 41
Transport

Environment & Personal Health

Public Transit Brings in Health & Environmental Benefits



In addition to the cost savings, time savings, and other benefits, personal health and environment are also positively impacted

- Train emissions per passenger kilometre is more than **three times less** than that of car travel
- “There are potentially **large population-level health gains** to be made” by switching from private to **public transit**” ([BMJ](#))

Informational Repository



Visual Message



Resources

➤ Website

- <https://sites.google.com/view/melbournemetro2/>

➤ Video

- https://www.youtube.com/watch?v=QyO89BUt8Q&feature=emb_logo

➤ GetOnBoard

- <https://www.getonboard.org.au/mm2>

Acknowledgments

We would like to thank our sponsor, Friends of the Earth Melbourne, and their representative for this project: Claudia Gallois. We would also like to thank John Stone for his assistance. This project would not have been possible without both Claudia and John's help with the resources they provided.

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Questions?