



CBD COMMUNITY REFERENCE GROUP – FEBRUARY 2019

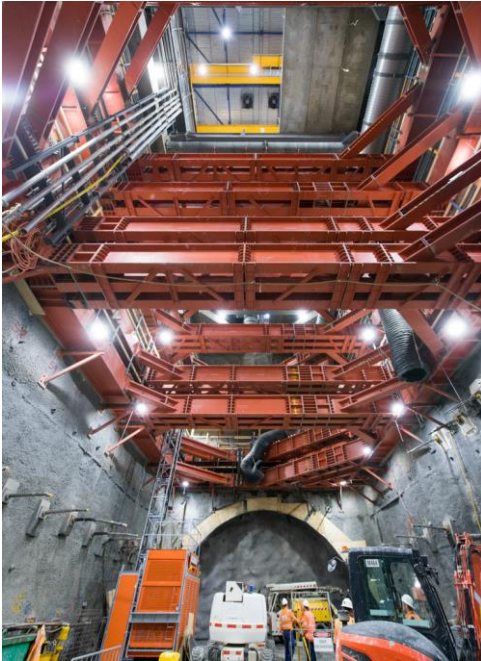
CROSS YARRA PARTNERSHIP

We acknowledge the land on which the Metro Tunnel Project is being delivered, is the traditional land for the People of the Kulin Nation. We respect their spiritual beliefs and acknowledge their ongoing connection with their Country.

We would also like to pay our respect to Elders past, present and future.



ACKNOWLEDGEMENT TO COUNTRY



1. Bluestone recycling update
2. Town Hall Station update
3. State Library Station update
4. CBD Tunnelling
5. CBD truck numbers and routes
6. Town Hall Station waste strategy update



BLUESTONE RECYCLING STRATEGY

BLUESTONE RECYCLING UPDATE

The Metro Tunnel Creative Program has found a use for three cubic metres of bluestone.

- Melbourne Design Week: it will be used in an event that focuses on historic bluestone in Melbourne by two artists (note this program is not out yet)
- Two other artists are interested in using the stone for another exhibition later in the year
- Bluestone will also be used by artists for an exhibition scheduled for 2020

BLUESTONE RECYCLING UPDATE

The Creative Program also reached out to:

- Yarra View Nursery – social enterprise nursery
- Orchard Designs – small local business specialising in bluestone
- Men's Sheds

Interest shown but specified difficulty how to store or use

Other bluestone that has been removed as a part of the project (e.g. street kerbs etc) will be used in future legacy design



TOWN HALL STATION UPDATE



CITY SQUARE UPDATE

CITY SQUARE – INTERNAL SITE WORKS

Activity	Involves	Timing
Piling	<ul style="list-style-type: none"> • 55% piling complete • Ongoing concrete and cage deliveries, crane lifts • Capping beam construction/concreting 	Ongoing – late March 2019
Piling demobilisation – night works	<ul style="list-style-type: none"> • Removal of piling rigs • Flinders Lane temporary 72hr closure • Delivery of 300T crane 	Late March TBC
Deck construction	<ul style="list-style-type: none"> • Delivery and installation of prefabricated steel to be installed and bolted together onsite 	April – August TBC
Acoustic shed construction	<ul style="list-style-type: none"> • 20mt high • Precast concrete cladding panels • Concrete slab removal, 25T excavator with hammer attachment - May TBC 	May – October TBC
Out of hours works	<ul style="list-style-type: none"> • Ongoing extended hours concrete and cage deliveries, crane lifts 	7am to 10pm Monday to Friday, 7am to 4pm Saturday
	<ul style="list-style-type: none"> • Capping beam concreting 	7am to 6pm Saturday 9 February

CITY SQUARE – EXTERNAL WORKS

Activity	Involves	Timing
Collins Street footpath works	<ul style="list-style-type: none">• Modification of the footpath to allow for a driveway into site• Relocating services – nightwork ongoing 4 - 18 February• Removal of hoarding, realignment of the footpath construction of driveway	February - March 2019
Swanston Street footpath works	<ul style="list-style-type: none">• Modification of the footpath to allow for a driveway into site• Location and methodology TBC	April TBC

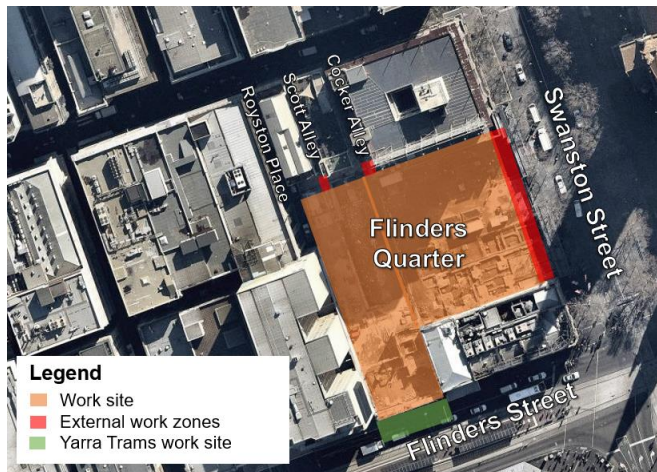


FLINDERS QUARTER UPDATE

FLINDERS QUARTER – INTERNAL SITE WORKS

Activity	Involves	Timing
Demolition completion	<ul style="list-style-type: none"> • KFC Building – basement slab and footings • Port Phillip Arcade – suspended slab and basement slab 	Ongoing – late March 2019
Piling	<ul style="list-style-type: none"> • Piling preparation works – piling platform, material delivery and compaction • Piling rig delivery 1 March TBC • Piling to start 6 March TBC 	Ongoing – late 2019
Out of hours works	<ul style="list-style-type: none"> • Piling preparation works including excavation, concrete pours and spoil removal. 	February/March 2019 <ul style="list-style-type: none"> • 6pm to 10pm

FLINDERS QUARTER – EXTERNAL SITE WORKS



Flinders Quarter external site works

Activity	Involves	Timing
Hoarding and gantry modifications	<ul style="list-style-type: none"> Swanston Street – dayworks 	February 2019
Stabilisation works	<ul style="list-style-type: none"> Scott Alley and Cocker Alley works <ul style="list-style-type: none"> Utility diversion Fencing Excavation and spoil removal Reinstatement Hoarding placement 	Mid February pending stakeholder agreement 2019
Out of hours works	<ul style="list-style-type: none"> Driveway installation works on Swanston Street – complete Flinders Street - Yarra Trams to complete pole removal works and wiring works from 11 Feb 	<p>Complete</p> <p>February 2019</p>



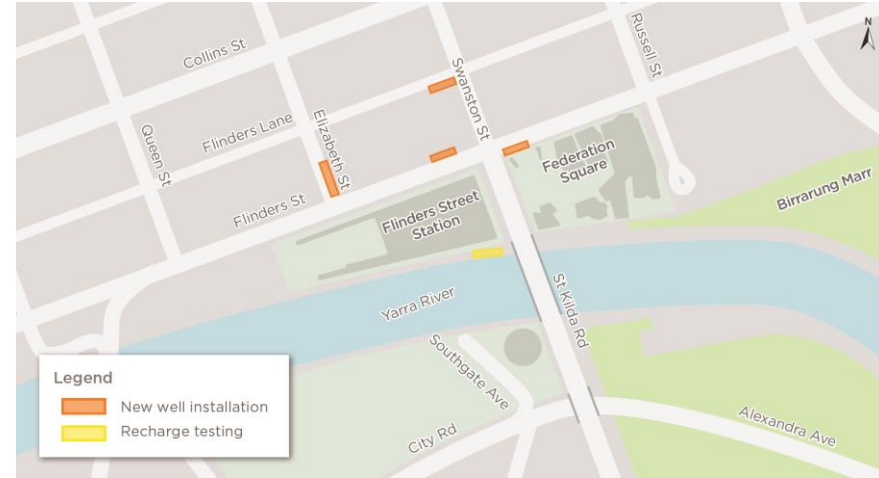
FEDERATION SQUARE UPDATE

FEDERATION SQUARE



Activity	Involves	Timing
Demolition	<ul style="list-style-type: none"> • Ongoing demolition of the former Melbourne Visitor Centre basement • Strutting support installation 	Ongoing – March 2019
Piling preparation	<ul style="list-style-type: none"> • Material delivery and compaction • Piling rig delivery – 6 March TBC 	March 2019
Piling	<ul style="list-style-type: none"> • Concrete and reinforcement deliveries • Piling works • Capping beam construction/concreting 	March – July 2019
Excavation and Deck/Shed Construction	<ul style="list-style-type: none"> • Excavation to commence • Deck installation to commence • Shed construction to commence 	July – Late Nov TBC

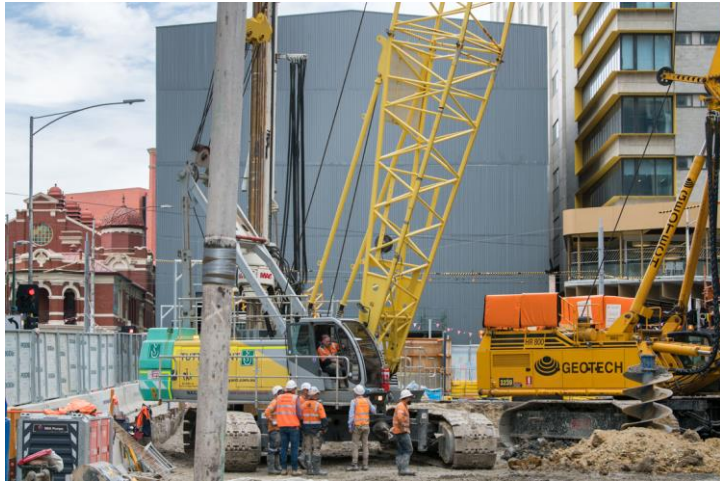
	Groundwater well installation	Recharge Testing
What	<ul style="list-style-type: none"> Installing four groundwater wells Temporary worksites Localised traffic and pedestrians changes during works 	<ul style="list-style-type: none"> Recharge testing occurs at existing well locations Connection to a water supply will need to be established Localised traffic and pedestrian changes during works
When	<ul style="list-style-type: none"> 7am – 6pm 10pm – 6am <p>For certain well locations, out of hours work is required to minimize disruption</p>	<ul style="list-style-type: none"> 24/7 for 1-2 weeks <p>Out of hours work is required in order to complete the tests</p>





STATE LIBRARY STATION UPDATE

FRANKLIN STREET EAST UPDATE



Franklin Street West, with Franklin Street East Acoustic Shed in the background, October 2018

Activity	Involves	Timing
Site establishment	<ul style="list-style-type: none"> • Lifting staff facilities into site (three levels) • Scrubber install • Alimak install • Decking planks • Steel delivery for stairs and ramps 	December 2018 – February 2019
Excavation of shaft and adit	<ul style="list-style-type: none"> • Roadheader delivery • Lowering the shaft • Excavating the adit under Swanston Street 	February – October 2019

FRANKLIN STREET WEST UPDATE



Franklin Street West, October 2018

Activity	Involves	Timing
Piling	<ul style="list-style-type: none"> 50% complete at approx. 35-45 m Reinforcement and concrete delivers 	Ongoing – March 2019 <ul style="list-style-type: none"> 7am – 6pm 6pm – 10pm (concrete pouring)* <i>*if required</i>
Excavation preparation	<ul style="list-style-type: none"> Capping beam works Excavating 2 metres Building a deck 	March – June 2019
Excavation	<ul style="list-style-type: none"> Excavating 30m below ground 	From June 2019

A'BECKETT STREET SITE UPDATE



A'Beckett Street Shed, January 2019

- Jane, the roadheader, has completed the top portion of the underground passenger connection (adit) for State Library Station
- Jane has excavated more than 30 metres towards Swanston Street
- The adit will be lowered five metres as the roadheader makes its way again towards Swanston Street as it takes the first bench of the adit

LITTLE LA TROBE STREET SITE UPDATE



12 – 16 Little La Trobe Street, October 2018

Activity	Involves	Timing
Demolition	<ul style="list-style-type: none"> Demolition of two buildings remaining Changed traffic conditions in Little La Trobe and Literature Lane 	Ongoing – March 2019
Service relocation works	<ul style="list-style-type: none"> Service works in Literature Lane and Little La Trobe Street prior to piling 	From March 2019
Archaeology	<ul style="list-style-type: none"> Using a small excavator and hand tools to excavate the area 	April – June 2019

LITTLE LA TROBE STREET SITE UPDATE



Little La Trobe and La Trobe Street site map

LA TROBE STREET SITE UPDATE



La Trobe Street piling stage map

Activity	Involves	Timing
Piling (Stage 2) - perimeter	<ul style="list-style-type: none"> • Piling preparation (crushed rock deliveries) • Piling rig delivery • Reinforcement deliveries • Concrete deliveries 	February 2019 – Q2 2020
Excavation (Stage 1)	<ul style="list-style-type: none"> • Excavating down 37 metres for cavern access 	From February 2019
Service relocations on La Trobe Street	<ul style="list-style-type: none"> • Stormwater, water main, low voltage, telecom relocations • Various closures (e.g. slow lane, fast lane, full) over two month period 	April 2019 for approx. 2 months



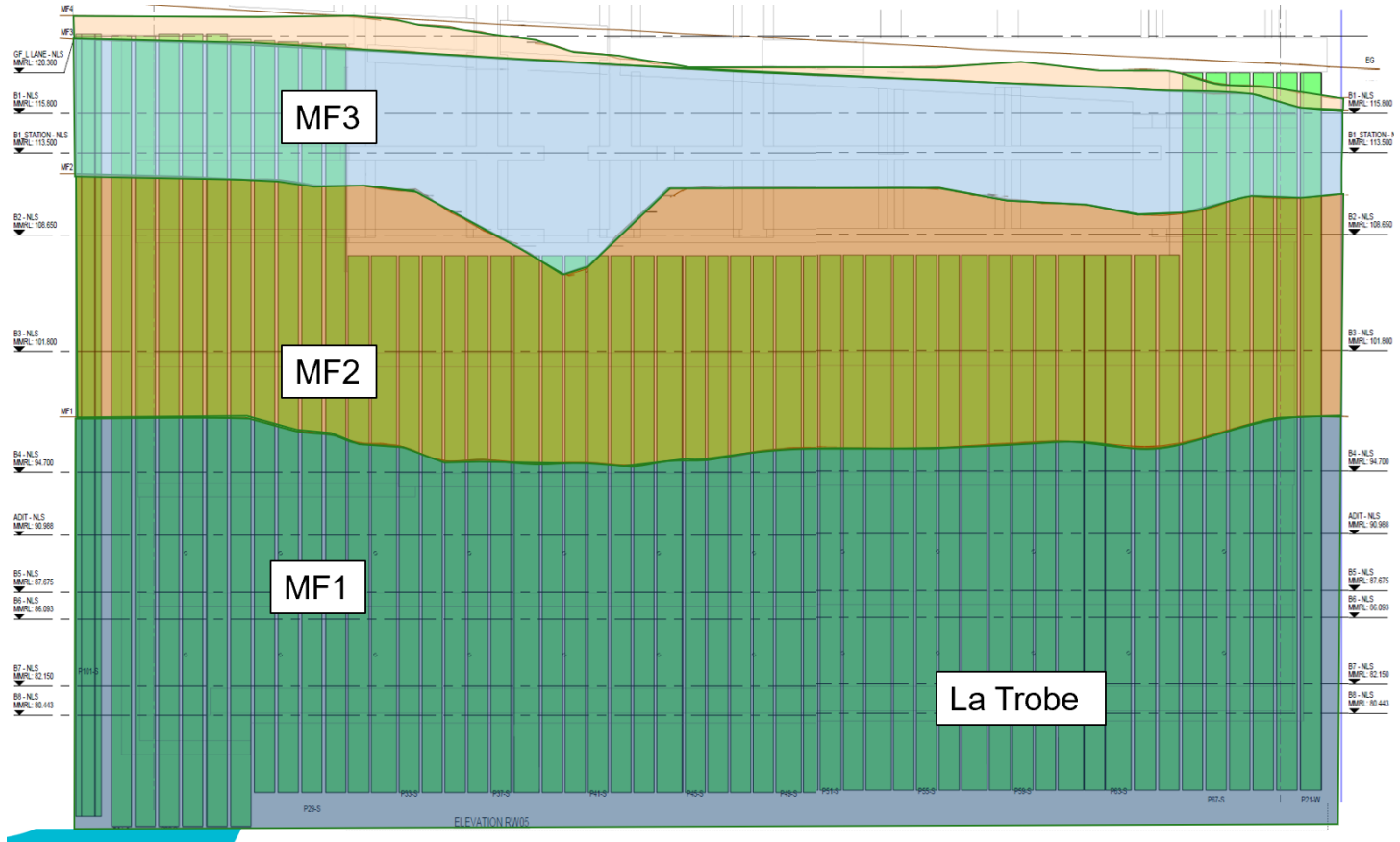
TUNNELLING

Ground conditions:

- Fill, over
- Colluvium of Quaternary age – Elizabeth Street Formation, over
- Residual soil developed on the Melbourne Formation, over
- Weathered bedrock – Melbourne Formation (Sud).
- Melbourne Formation Levels 1 and 2



Melbourne formation



ROADHEADERS AND TBMS



Jane, the Roadheader



Tunnel Boring Machine



A'Beckett Street Shed, January 2019



Example of tunnel boring machine tunnelling

WHY WE'RE USING ROADHEADERS FOR CAVERN EXCAVATION



Town Hall Station Concept Image



State Library Station Concept Image

Roadheaders

- November 2018 - tunnelling in the CBD commenced with roaderheader #1 'Jane'
- 2019 - additional roadheaders

4 Tunnel Boring Machines (TBMs)

- 2 start in the West section and head further West then towards the CBD
- 2 start in the East section and head further East then towards the CBD

West TBMs

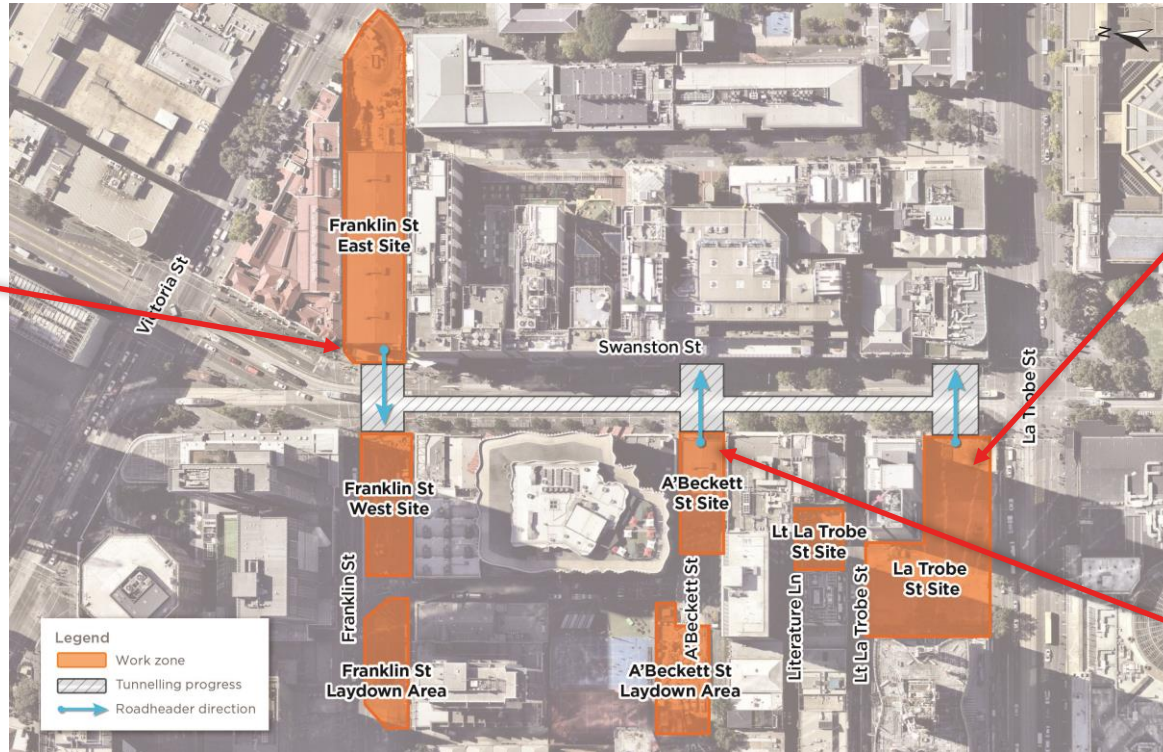
- Early 2019 - delivery to site in North Melbourne for assembly
- Mid 2019 - launch from North Melbourne towards Kensington
- Late 2019 - arrive Kensington for retrieval then launch from North Melbourne towards Parkville
- 2020 – arrival at Parkville then towards CBD

East TBMs

- Mid 2019 – delivery to site in Domain for assembly
- Late 2019 - launch from Domain towards South Yarra
- Mid 2020 – arrival at South Yarra for retrieval then launch from Domain towards CBD

STATE LIBRARY – 2019 LOOKAHEAD

Delivering additional roadheader in February to start cavern excavation

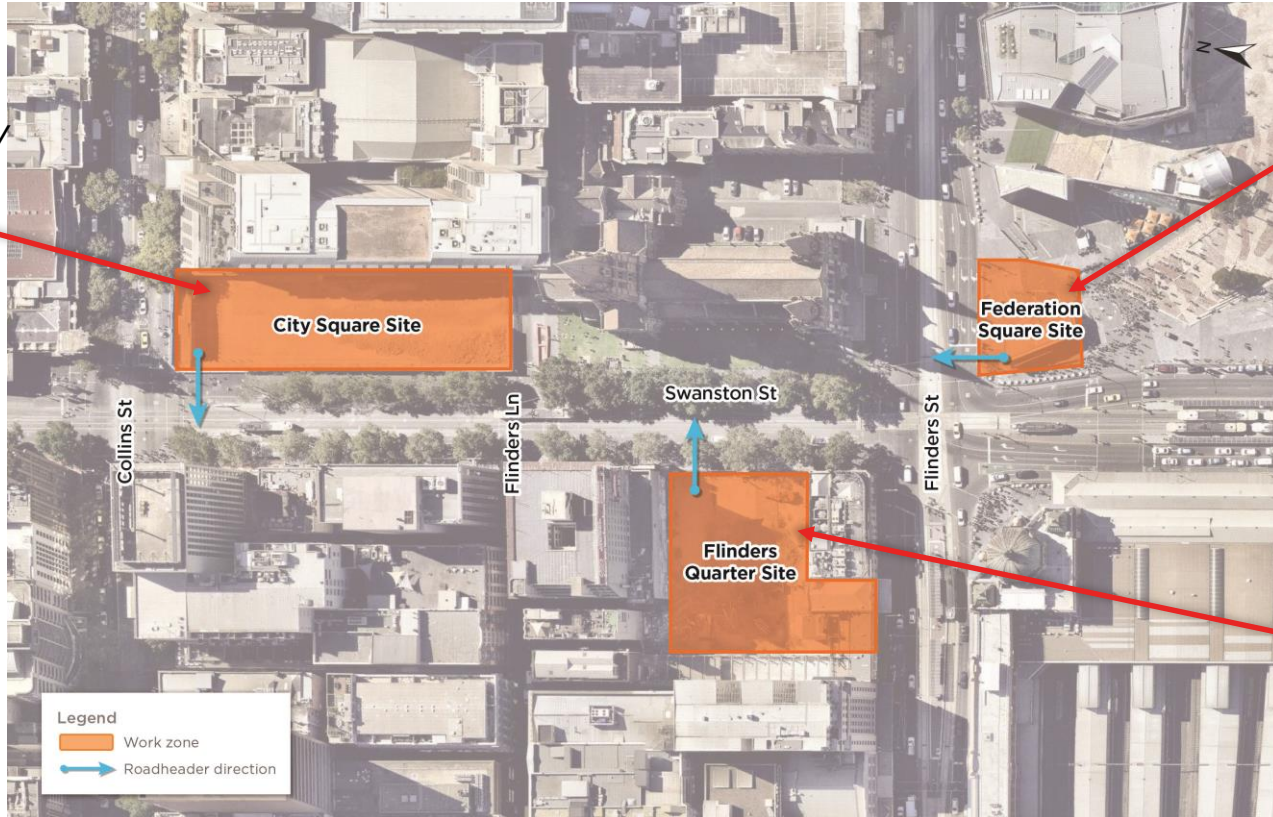


Currently excavating cavern access shaft

Jane has excavated 30 metres under Swanston Street

TOWN HALL – 2019 LOOKAHEAD

Roadheader delivery in late 2019



Roadheader delivery in late 2019

Roadheader delivery in late 2019

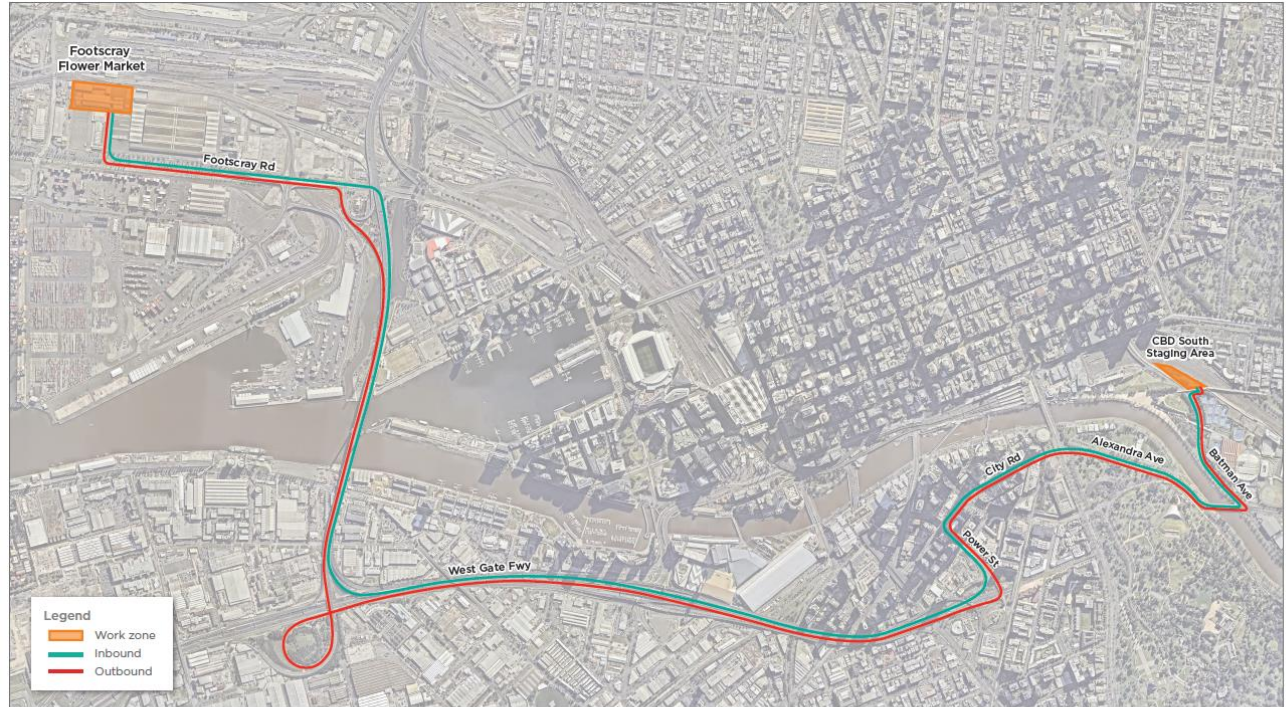


CBD TRUCK NUMBERS AND ROUTES

TRUCK NUMBERS

- Truck numbers will vary daily depending on the type of activity being undertaken and the schedule for deliveries from suppliers
- Truck numbers are dependent on what stage each site is up to, including how the sites are being used
- Approximated daily expected truck numbers for 2019:
 - Federation Square: 10 – 30
 - Flinders Quarter: 15 – 30
 - City Square: 15 – 40
 - La Trobe Street: 10 – 20
 - A 'Beckett Street: 40 – 80
 - Franklin Street West: 10 – 15
 - Franklin Street East: 20 – 55

FLOWER MARKET TO CBD SOUTH STAGING AREA



*Route subject to change.

CBD SOUTH STAGING AREA TO CITY SQUARE



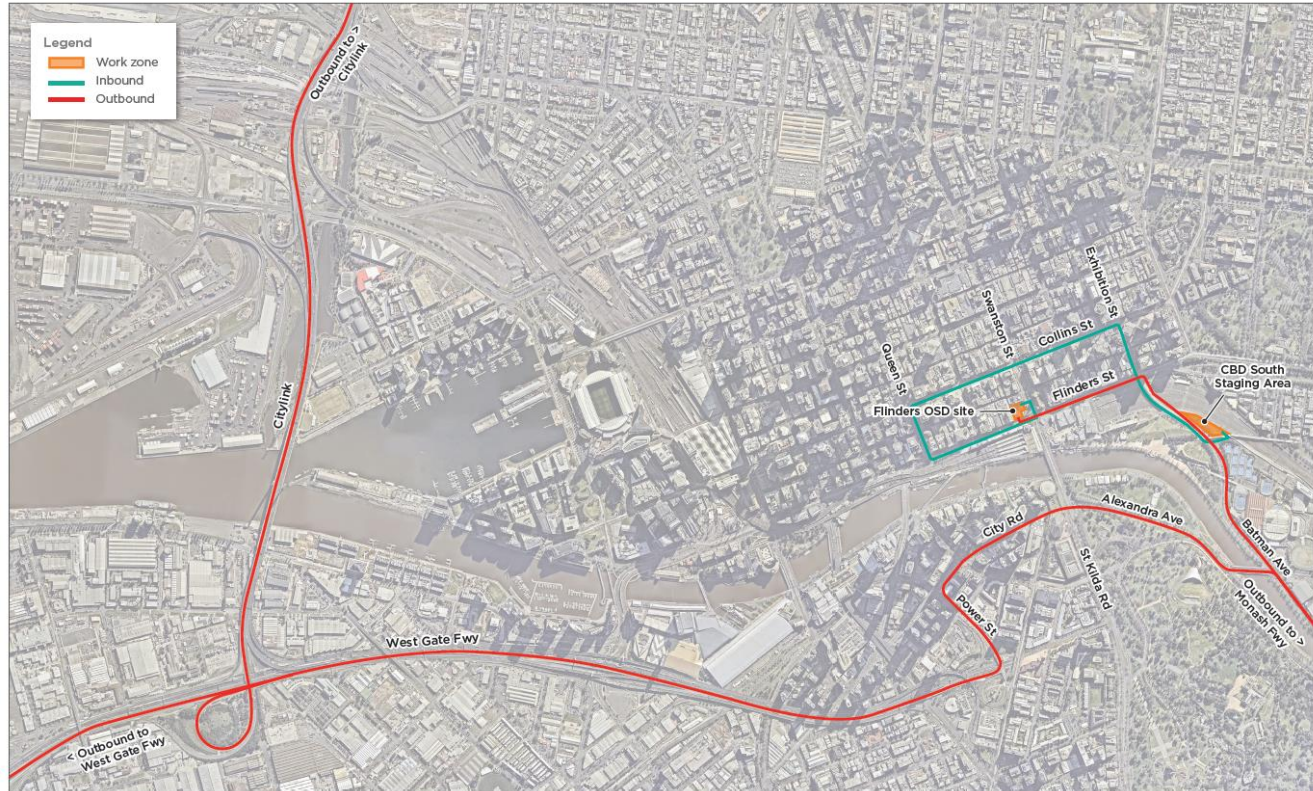
*Route subject to change.

CBD SOUTH STAGING AREA TO FEDERATION SQUARE



*Route subject to change.

ROUTE 1: CBD SOUTH STAGING AREA TO FLINDERS QUARTER



*Route subject to change.

ROUTE 2: CBD SOUTH STAGING AREA TO FLINDERS QUARTER



*Route subject to change.

ROUTE 3: CBD SOUTH STAGING AREA TO FLINDERS QUARTER



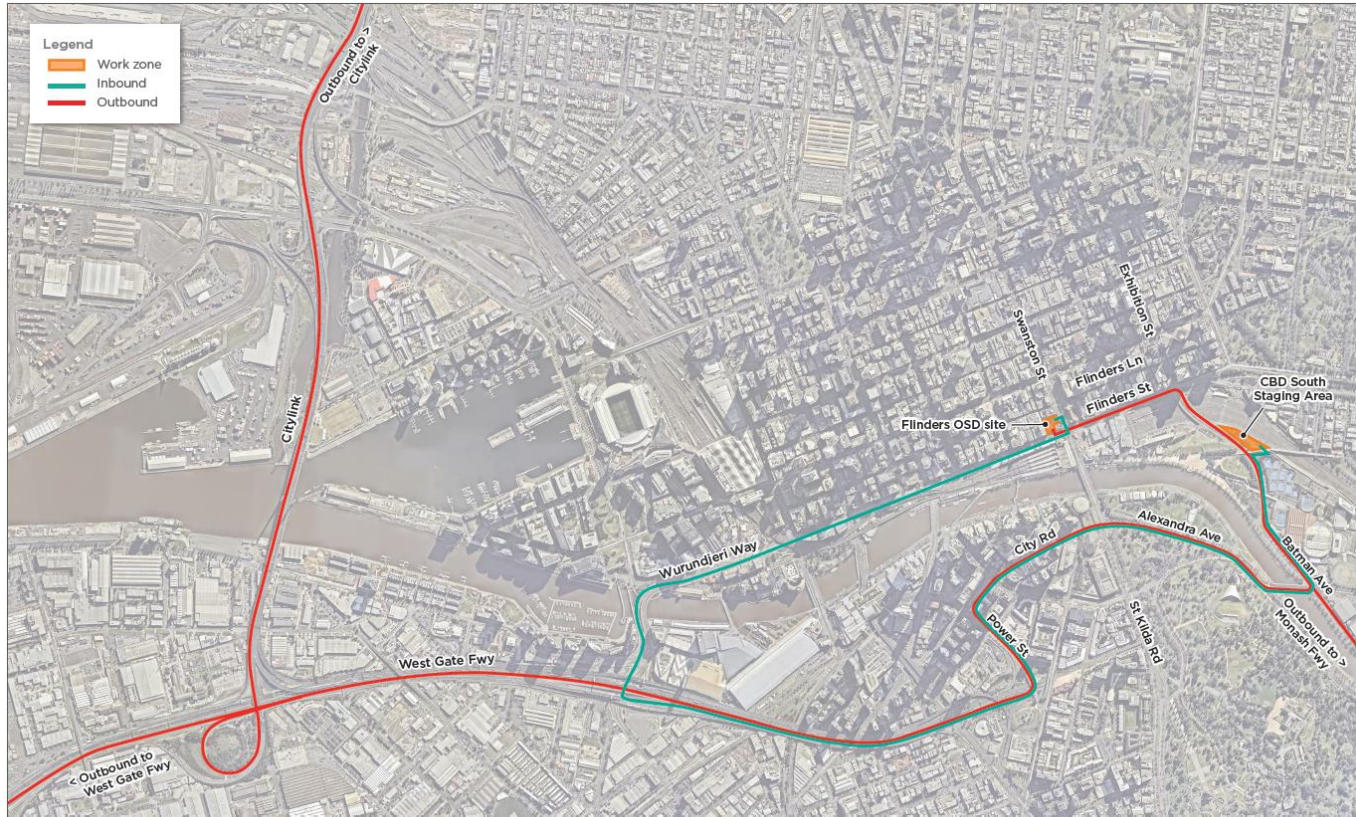
*Route subject to change.

ROUTE 4: CBD SOUTH STAGING AREA TO FLINDERS QUARTER



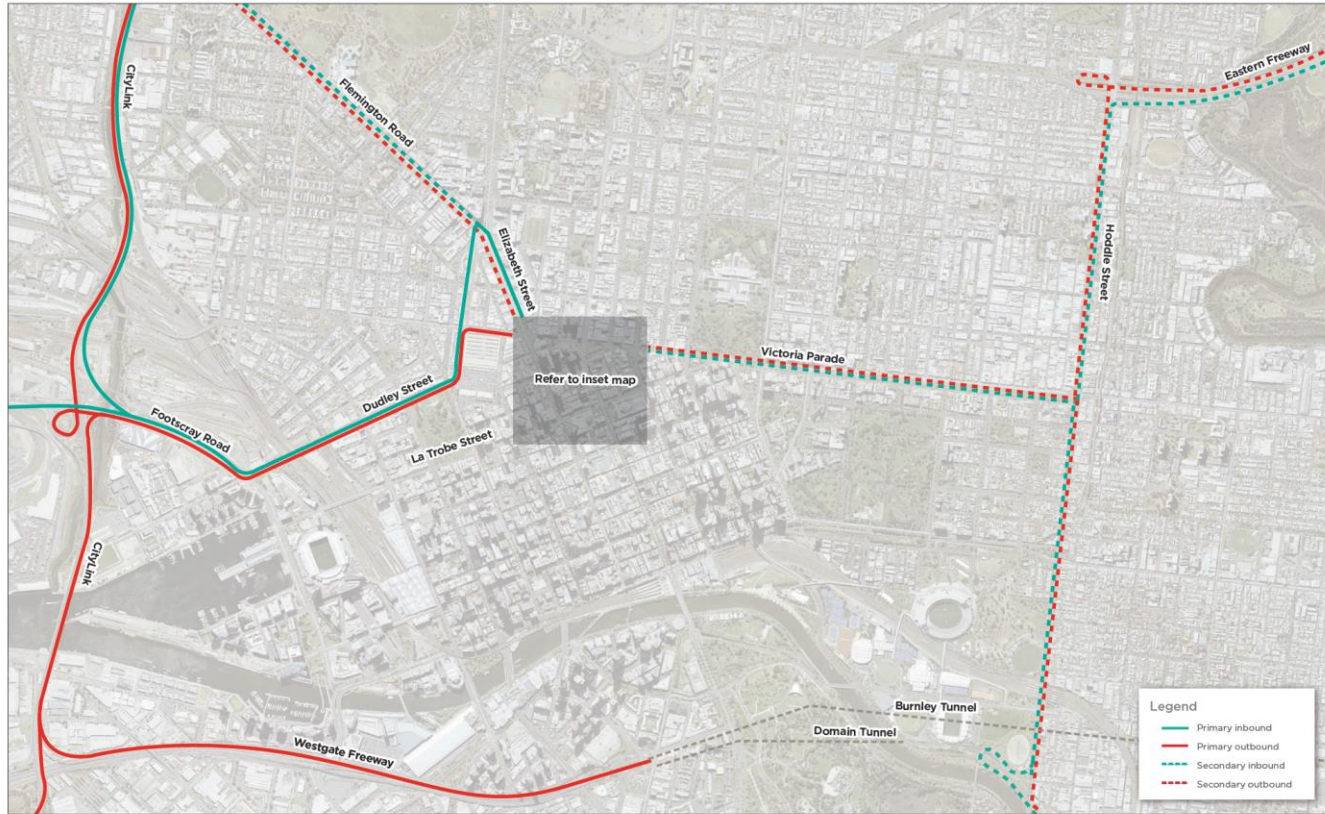
*Route subject to change.

ROUTE 5: CBD SOUTH STAGING AREA TO FLINDERS QUARTER

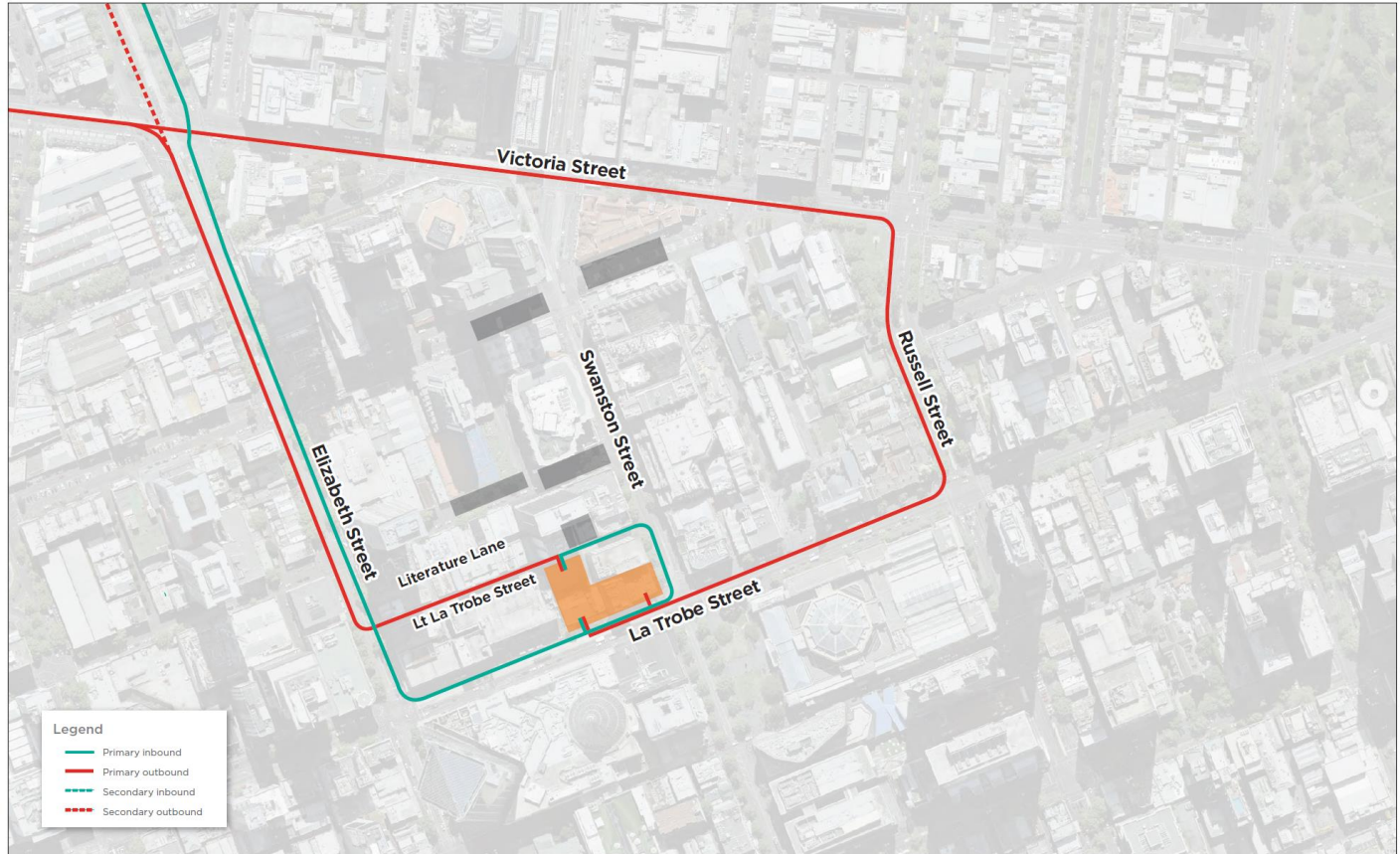


*Route subject to change.

TRUCK HAULAGE ROUTES – CBD NORTH

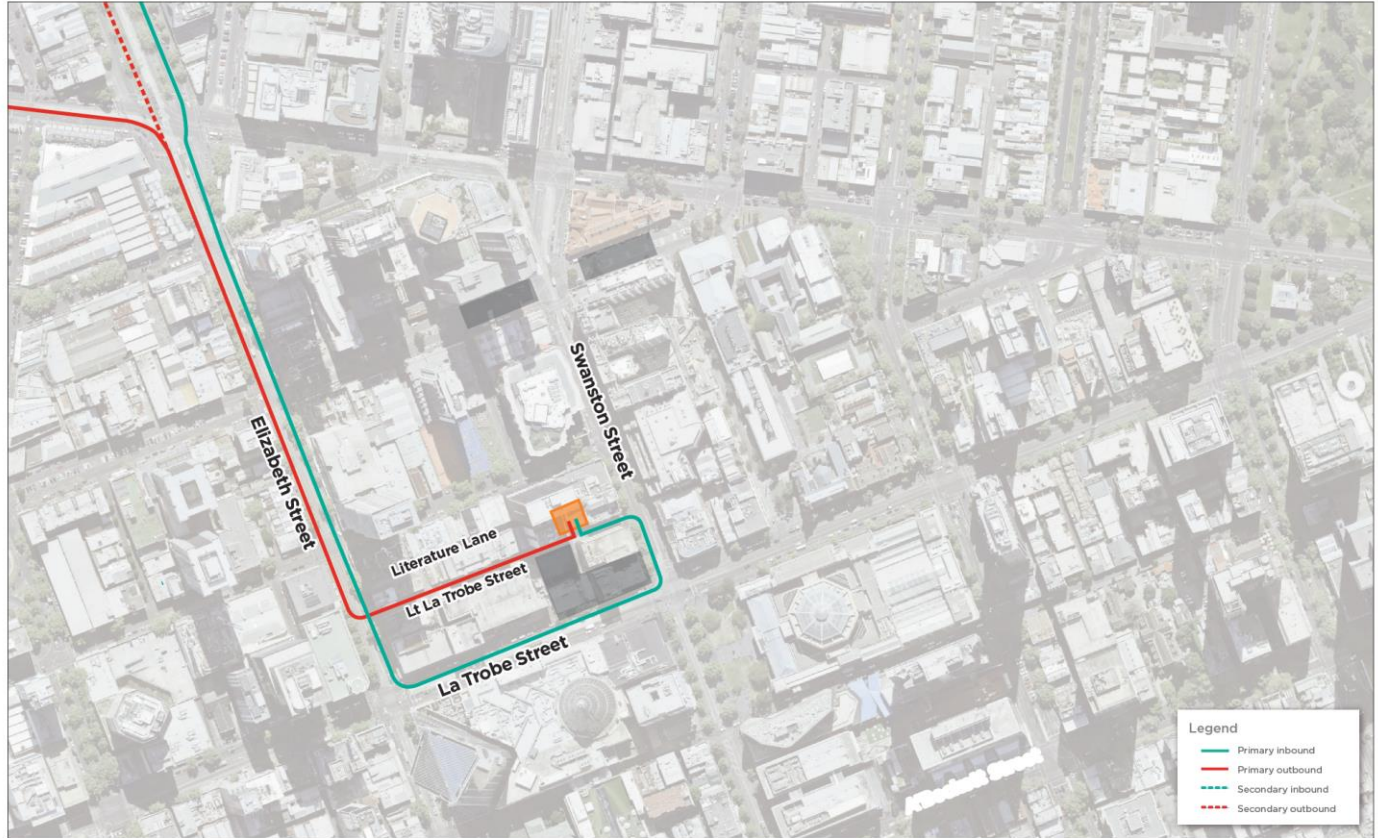


LA TROBE STREET HAULAGE ROUTE



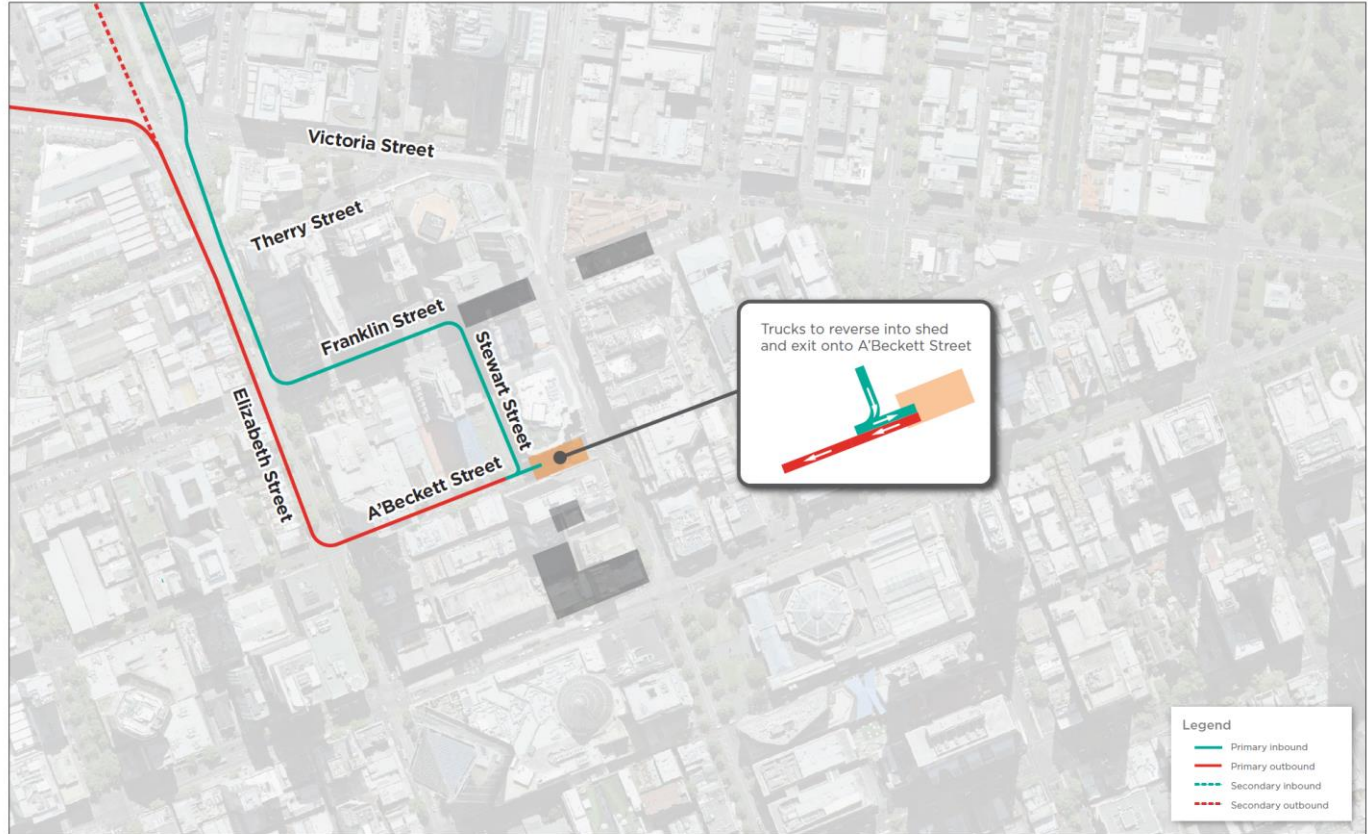
Indicative only

LITTLE LA TROBE STREET



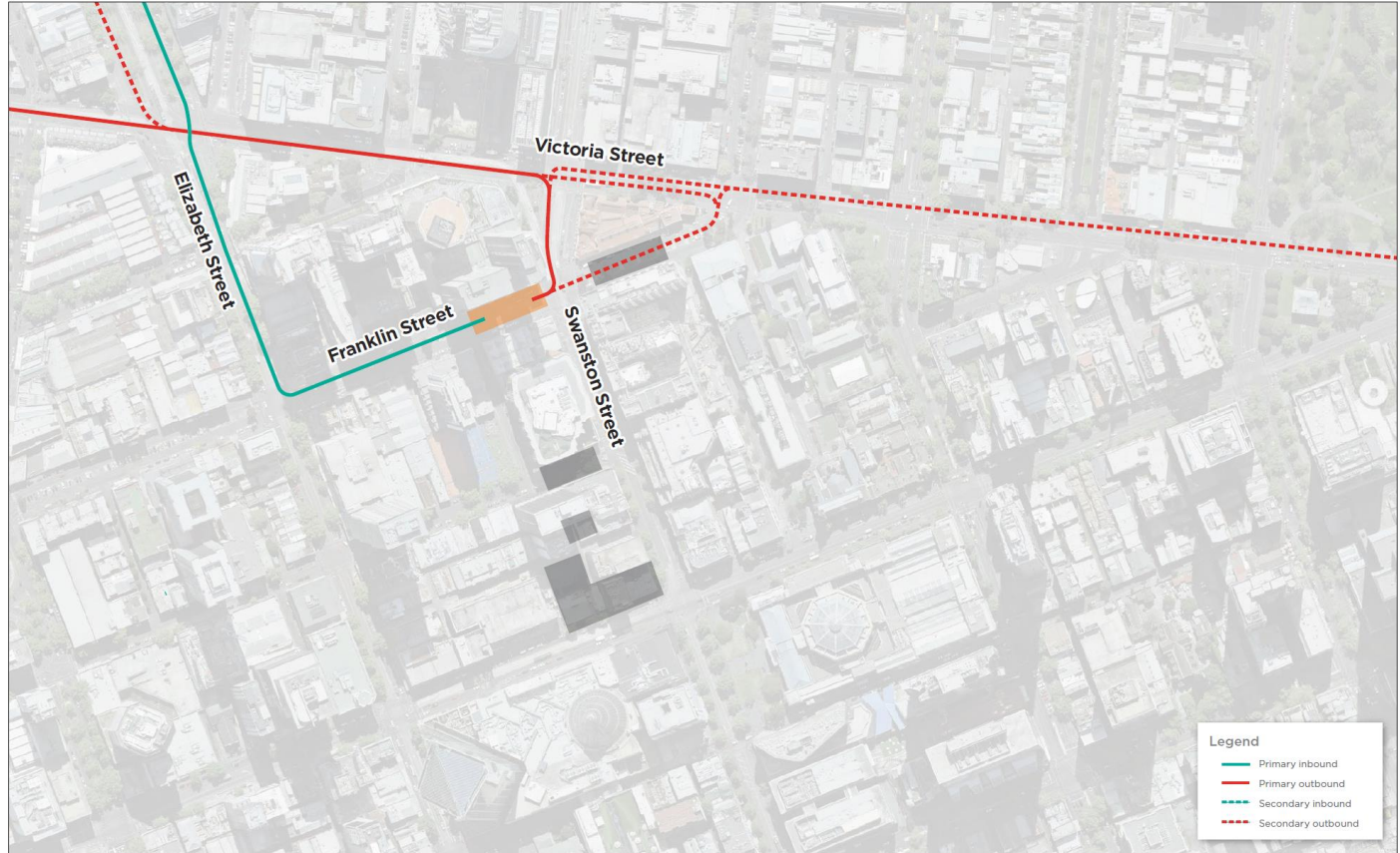
Indicative only

A'BECKETT STREET



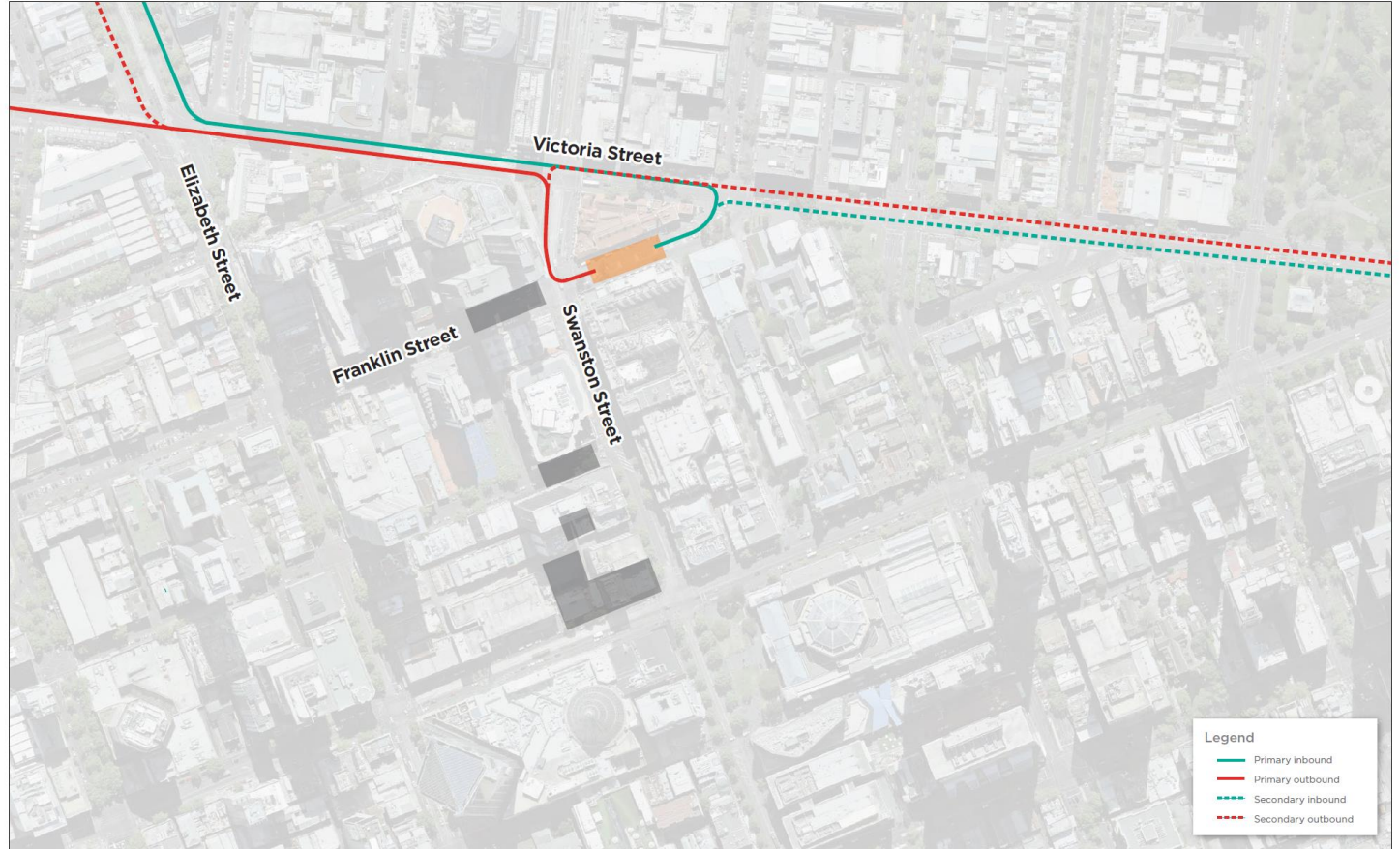
Indicative only

FRANKLIN STREET WEST



Indicative only

FRANKLIN STREET EAST

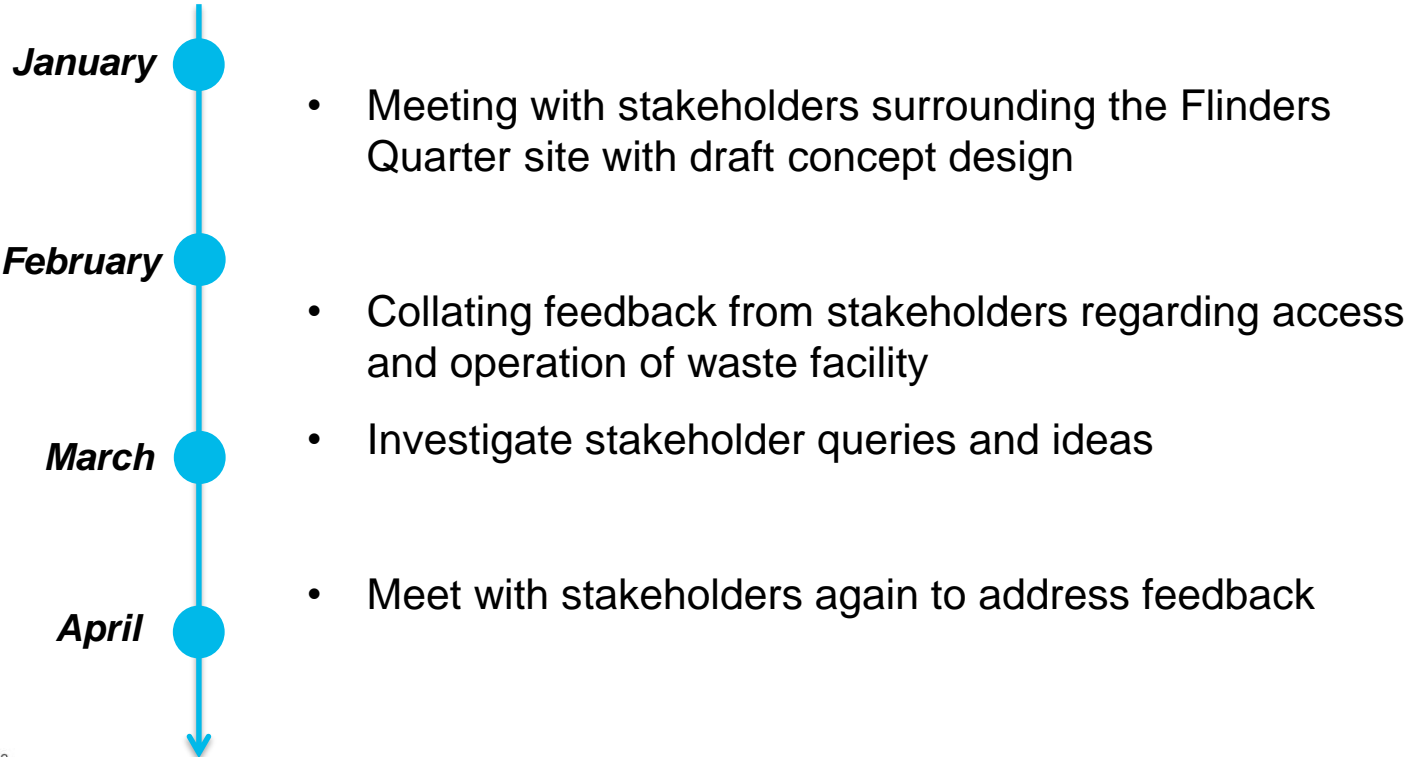


Indicative only



TOWN HALL STATION WASTE STRATEGY UPDATE

WASTE STRATEGY UPDATE





QUESTIONS?