



# ARDEN AND PARKVILLE COMMUNITY REFERENCE GROUP

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MEETING 14

13 November 2020



Construction partner:



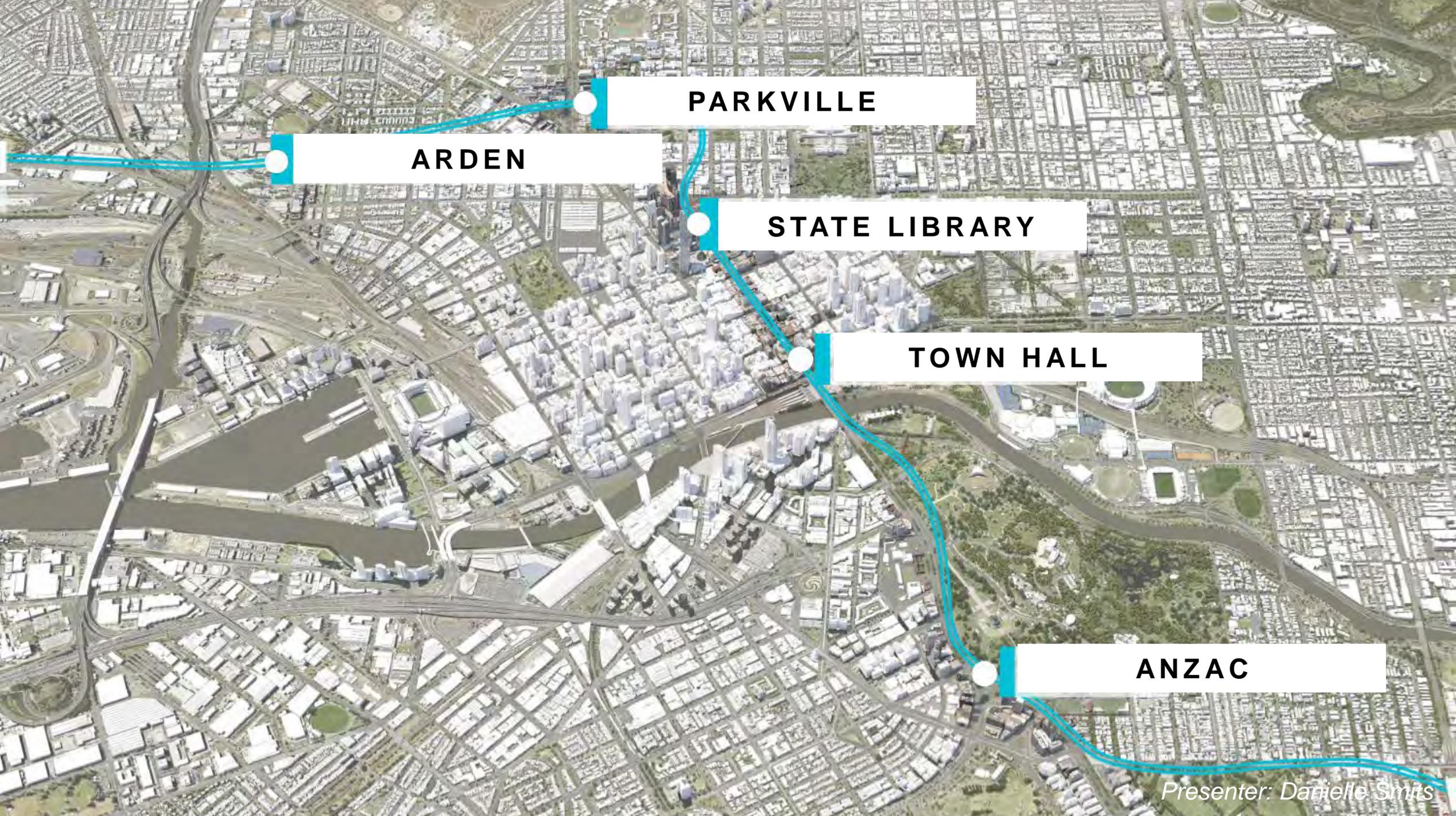
# AGENDA

1. Introductions and welcome
2. Project wide construction update
3. Parkville construction update
4. North Melbourne construction update
5. Tunnelling update
6. Operational noise & vibration
7. Stakeholder and communications update
8. General feedback and items for future discussion
9. Meeting close

# CONSTRUCTION UPDATE – PROJECT WIDE



*Presenter: Danielle Smits*



**ARDEN**

**PARKVILLE**

**STATE LIBRARY**

**TOWN HALL**

**ANZAC**

# STATE LIBRARY STATION

- Excavation of the platform rail tunnels is ongoing; with the rail tunnel top-heading completed
- At the La Trobe Street site, top-down construction is ongoing underneath the suspended ground floor slab
- At the Little La Trobe Street site, excavation of the first basement level has been completed.



*Excavation of the rail tunnels adjacent to the central cavern -*

# TOWN HALL STATION

- Excavation of the central cavern has been completed under Swanston Street
- Excavation of the rail tunnels will commence in early 2021
- Excavation at the City Square site is expected to be completed in late December 2020
- Top-down excavation at the Flinders Quarter site is ongoing.



Central cavern, Town Hall Station – October 2020

# ANZAC STATION

- In September, the final section of the station roof slab was completed
- Excavation and construction of the concourse slab is ongoing for the southern station box
- Excavation of the station entrance for the Shrine of Remembrance is complete, with permanent structure works underway
- Excavation of the tram interchange station entrance has begun
- Reassembly of the TBMs has commenced in the station box for relaunch towards the CBD.



*Excavation to concourse level under St Kilda Road*

# CONSTRUCTION UPDATE - PARKVILLE



*Presenter: Paul Dal Pra*

# CONSTRUCTION UPDATE – GRATTAN STREET EAST

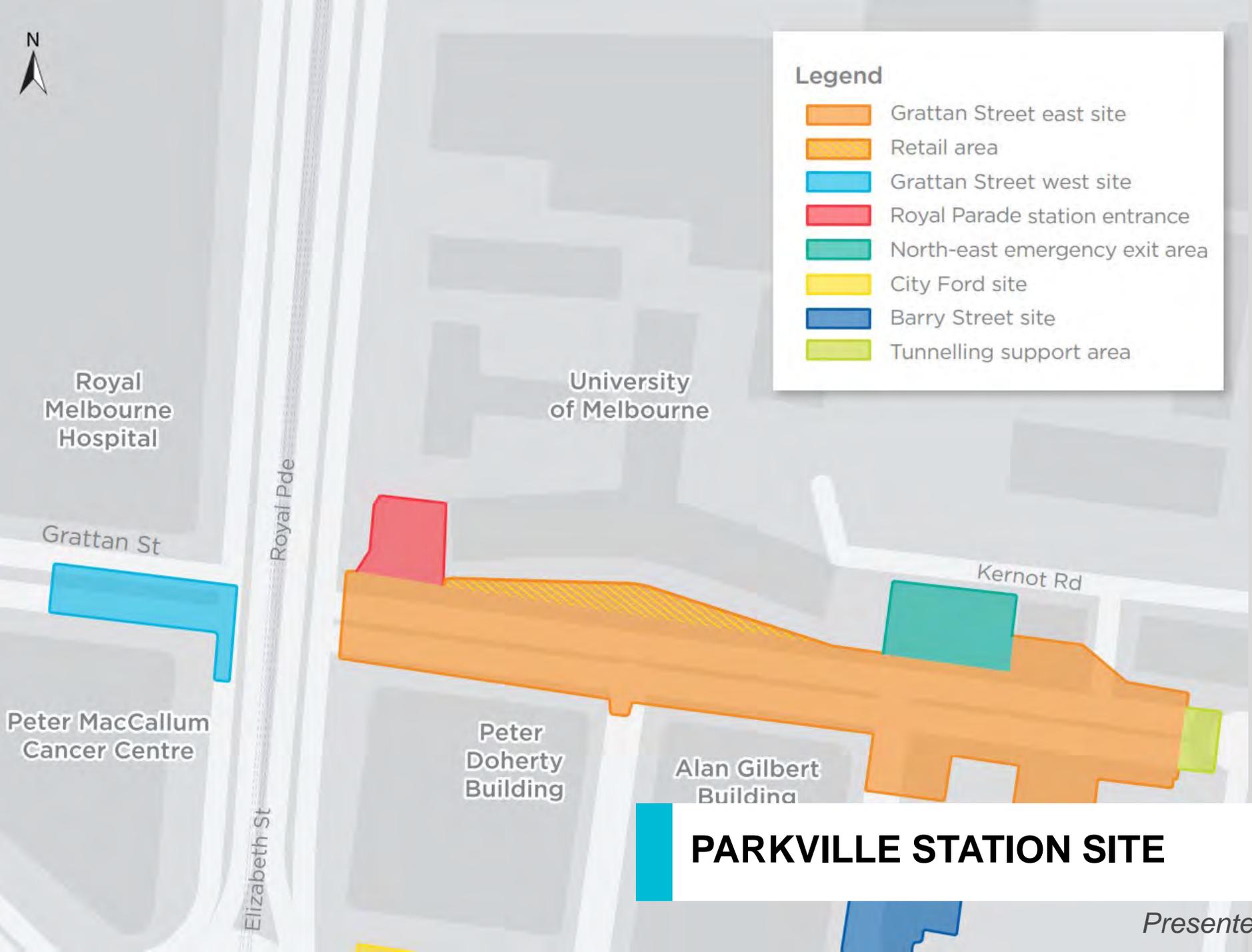


*Presenter: Paul Dal Pra*



**Legend**

- Grattan Street east site
- Retail area
- Grattan Street west site
- Royal Parade station entrance
- North-east emergency exit area
- City Ford site
- Barry Street site
- Tunnelling support area



# PARKVILLE STATION SITE

# GRATTAN STREET EAST PROGRAM

Activity	Nov	Dec	Jan	Feb	Mar	Apr
Permanent structure works (concrete pours & associated activities)	Grey	Grey	Grey	Grey	Grey	Grey
Royal Parade station entrance excavation and strutting	Grey	Grey	Grey	Grey	Light Blue	Light Blue
Royal Parade station entrance - tension piles	Light Blue	Light Blue	Grey	Grey	Light Blue	Light Blue
Retail area excavation	Grey	Grey	Grey	Grey	Light Blue	Light Blue
Staged pile removal	Grey	Grey	Grey	Grey	Grey	Grey
TBM support activities (launch frame / deck removal)	Grey	Grey	Grey	Light Blue	Light Blue	Light Blue
North-east emergency exit excavation and associated works	Grey	Grey	Grey	Grey	Grey	Light Blue
Service relocations – goods lift	Grey	Grey	Light Blue	Light Blue	Light Blue	Light Blue
TVS East shaft / Goods lift works – piling, strutting & excavation	Light Blue	Light Blue	Grey	Grey	Grey	Grey
TVS West / Chiller Café – piling, excavation, & associated works	Light Blue	Light Blue	Light Blue	Light Blue	Grey	Grey



Presenter: Paul Dal Pra

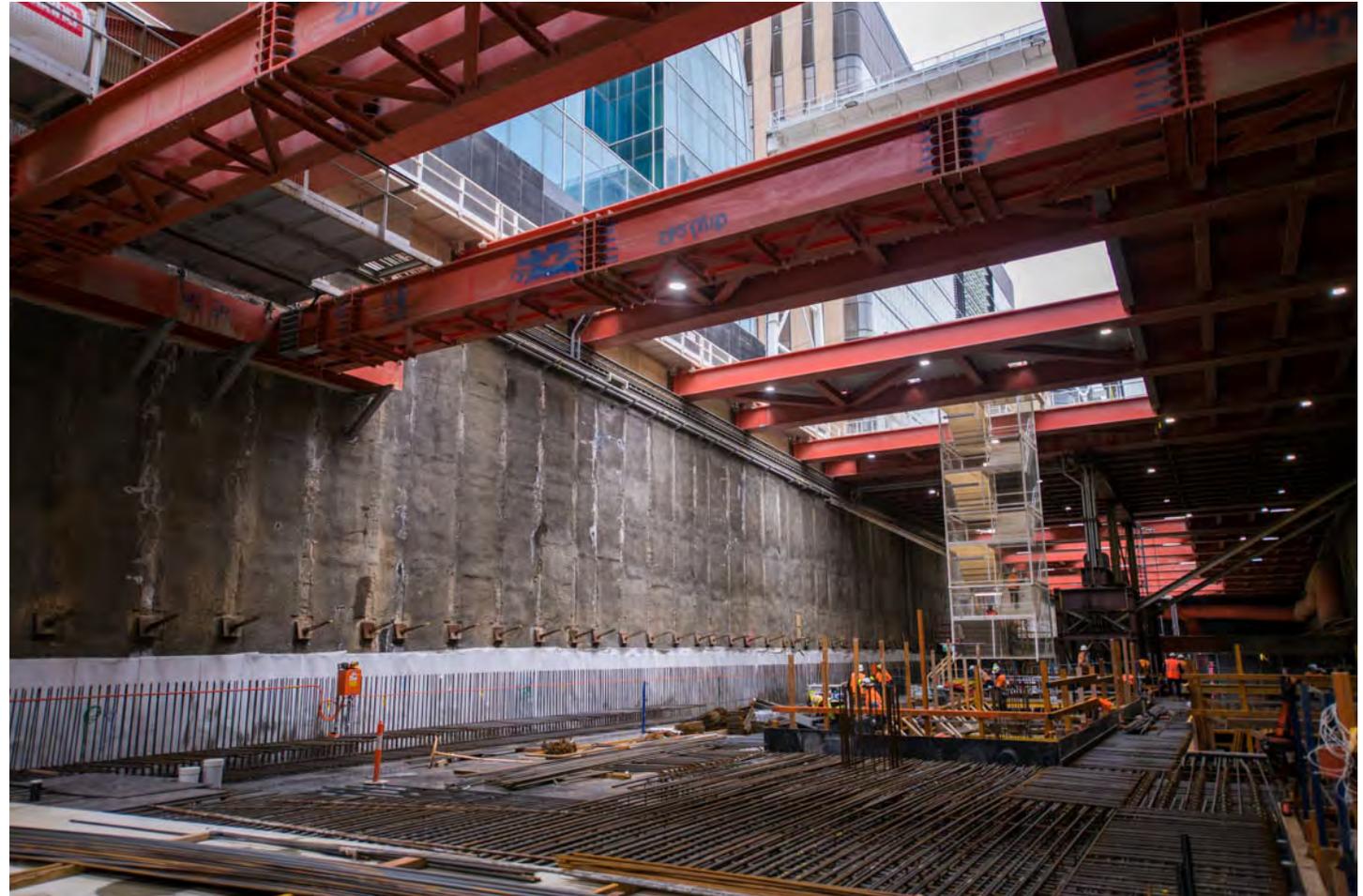
# PERMANENT STRUCTURE WORKS

## Station levels

- B4 suspended slab – complete
- B3 / B2 suspended slabs – completed with the exception of TBM impacted areas
- B1 suspended slab – commenced

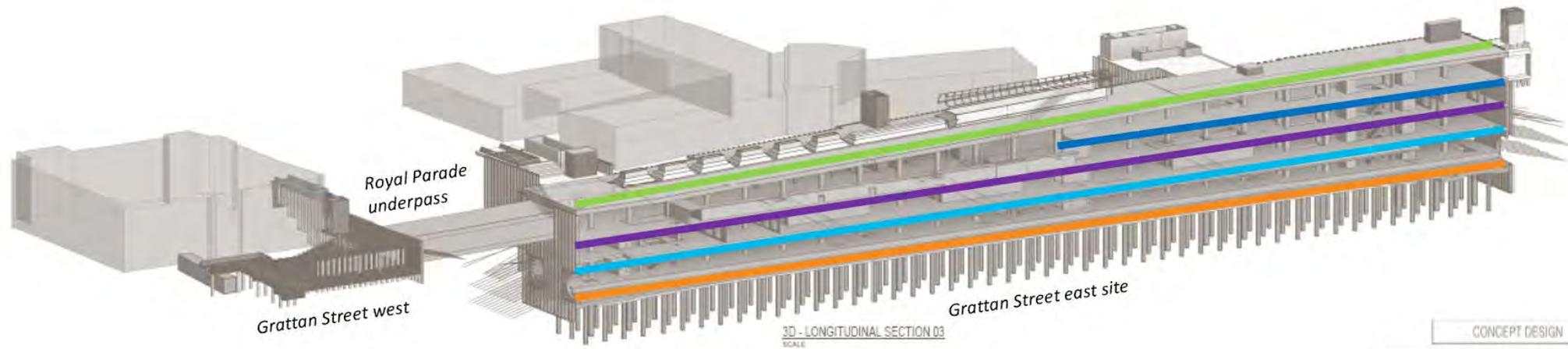
## Walls and columns

- B4-B3 – complete
- B3-B2 – completed with the exception of TBM impacted areas
- B2-B1 – underway



*Permanent structure works*

# PERMANENT STRUCTURE WORKS CONT.



- Roof slab
- B1 slab
- B2 slab
- B3 slab
- B4 slab

*\*Please note – wall linings and columns are completed in advance of suspended slab works across all levels*

# ROYAL PARADE STATION ENTRANCE

- S2 level strut installation is ongoing
- Tension piles to be installed from early 2021
- Permanent structure works in 2021.



*Royal Parade station entrance*

# RETAIL AREA WORKS

- Excavation is ongoing
- Following excavation, permanent structure works will commence.



*Retail area excavation*

# NORTH-EAST EMERGENCY EXIT

- Timber hoarding installed in late October
- Excavation commenced this week
- First excavation drop will be 1.5 metres
- Works are staged with the main box permanent structure works
- Excavation and strut installation will continue once roof slab works adjacent are complete. Total excavation depth will be 9 metres.



*Excavation at the north-east emergency exit area*

# TUNNELLING SUPPORT WORKS

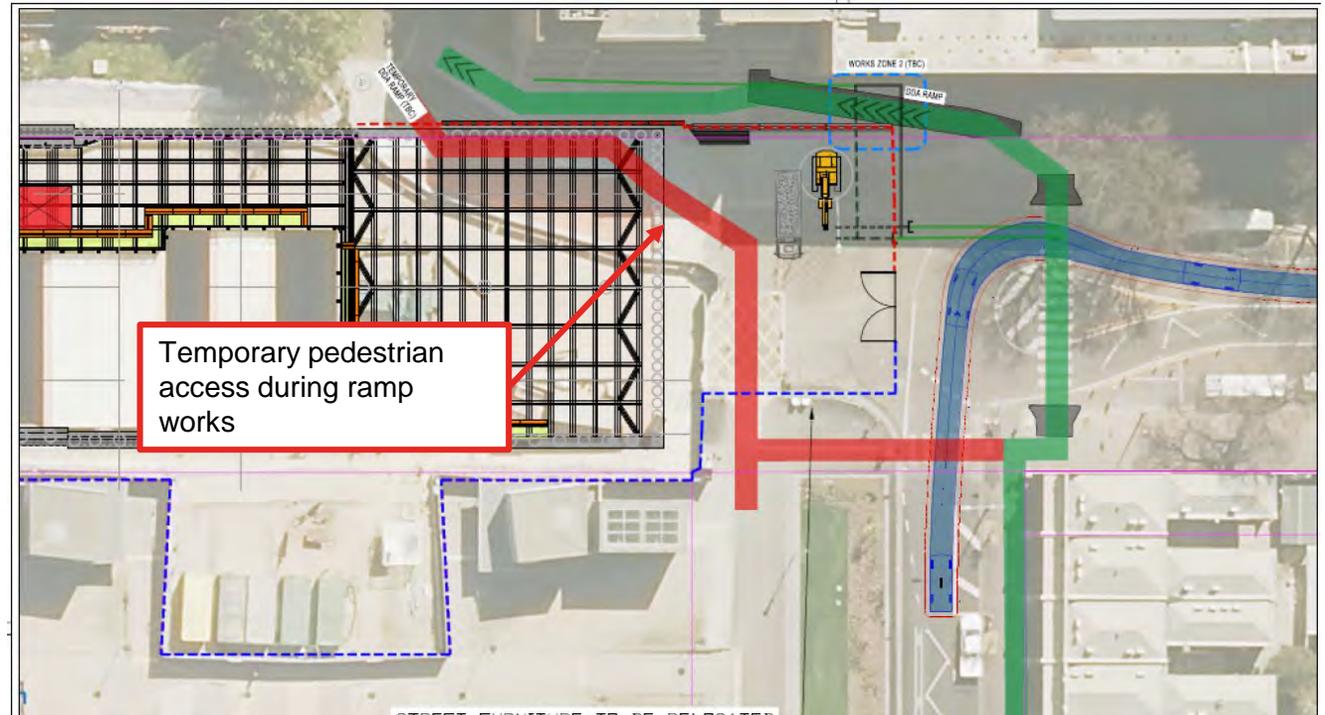
- Works are ongoing on the base slab to support TBM operations
- Launch frames will be dismantled and removed from the station box over late November/December.



*TBM 1 relaunch frame at the eastern end of the Grattan Street east site*

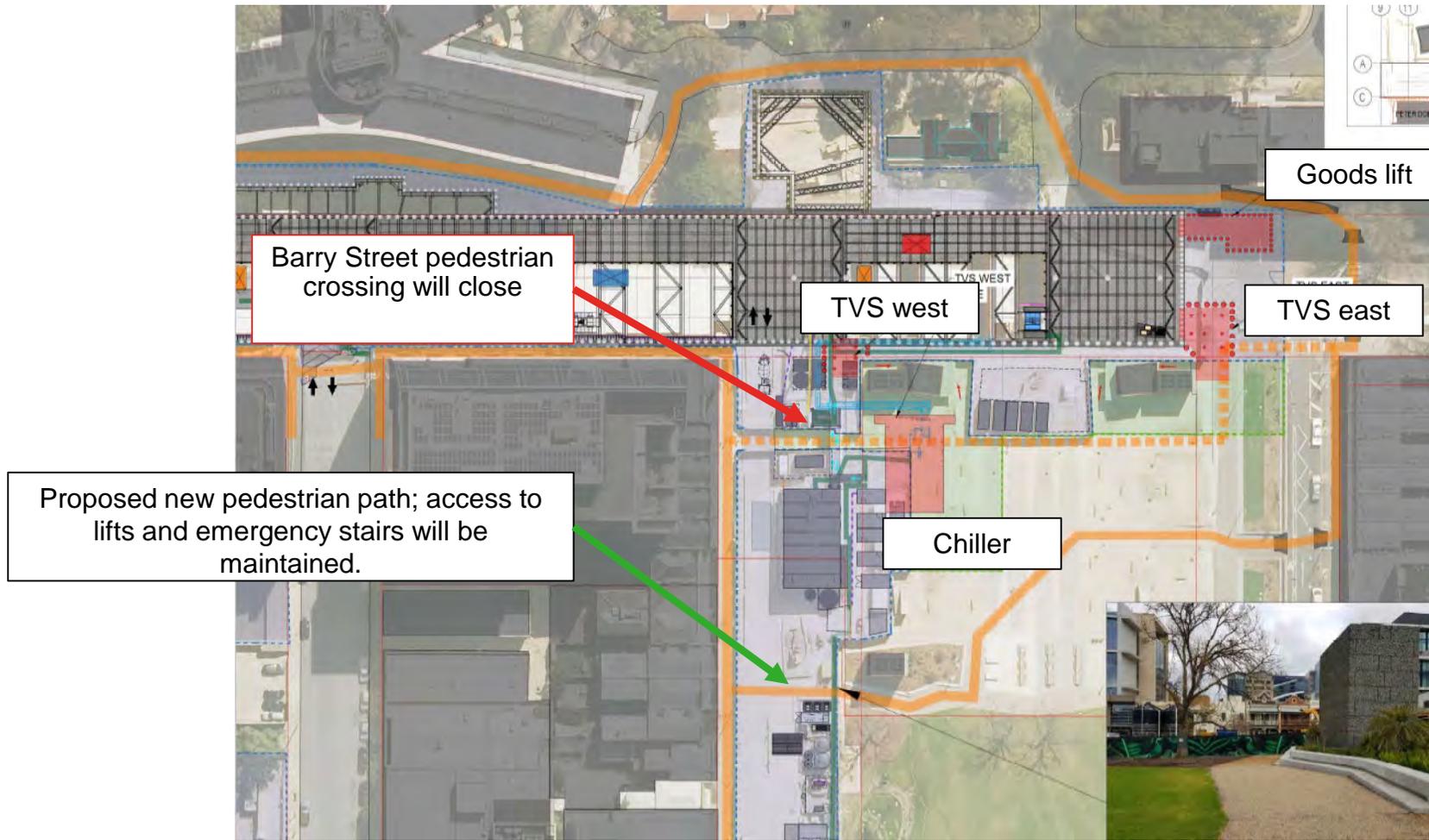
# SERVICE RELOCATIONS

- Service relocation involve relocating drainage and gas in preparation for Goods Lift construction in 2021
- Localised pedestrian diversions will be required due to temporary closure of the University of Melbourne's Engineering Building undercroft ramp
- Site boundary will be adjusted.



*Indicative traffic and pedestrian arrangement for service relocations*

# PROPOSED CHANGES AT GRATTAN STREET EAST FROM 2021



*Indicative only; subject to change*



Presenter: Paul Dal Pra

# CONSTRUCTION UPDATE – GRATTAN STREET WEST



*Presenter: Paul Dal Pra*

# GRATTAN STREET WEST PROGRAM

Activity	Nov	Dec	Jan	Feb	Mar	Apr
Service works (HV pit construction and services tie-in)	Active	Active	Light	Light	Light	Light
Road reinstatement	Light	Active	Active	Light	Light	Light
Establishing traffic arrangements for stage 2	Light	Light	Active	Active	Light	Light
Site establishment	Light	Light	Active	Active	Active	Light
Stage 2 construction	Light	Light	Light	Light	Active	Active



Presenter: Paul Dal Pra

# ELIZABETH STREET/ROYAL PARADE SERVICE LANE CLOSURE

- On 5 November, the Elizabeth Street/Royal Parade northbound service lane was closed until late December 2020
- The closure is to facilitate:
  - Underground service relocations
  - Construction of an electrical service pit on the Royal Parade roadside
  - Station entrance works (e.g. pile top removal)



*Service lane closure in December 2019*

# TREE REMOVALS AND HERITAGE

- Upcoming tree removals:
  - P006 - November 2020
    - Required to enable HV relocation works
  - P007 - November 2020
    - Required to enable Stage 2 site establishment & piling works
  - P008 - November 2020
    - Required to enable Stage 2 site establishment & piling works
    - Heritage tree approved for removal by Heritage Victoria
- Current approvals/endorsements:
  - Stage 4 submission to Heritage Victoria for endorsement for West Box works

# TREE REMOVALS



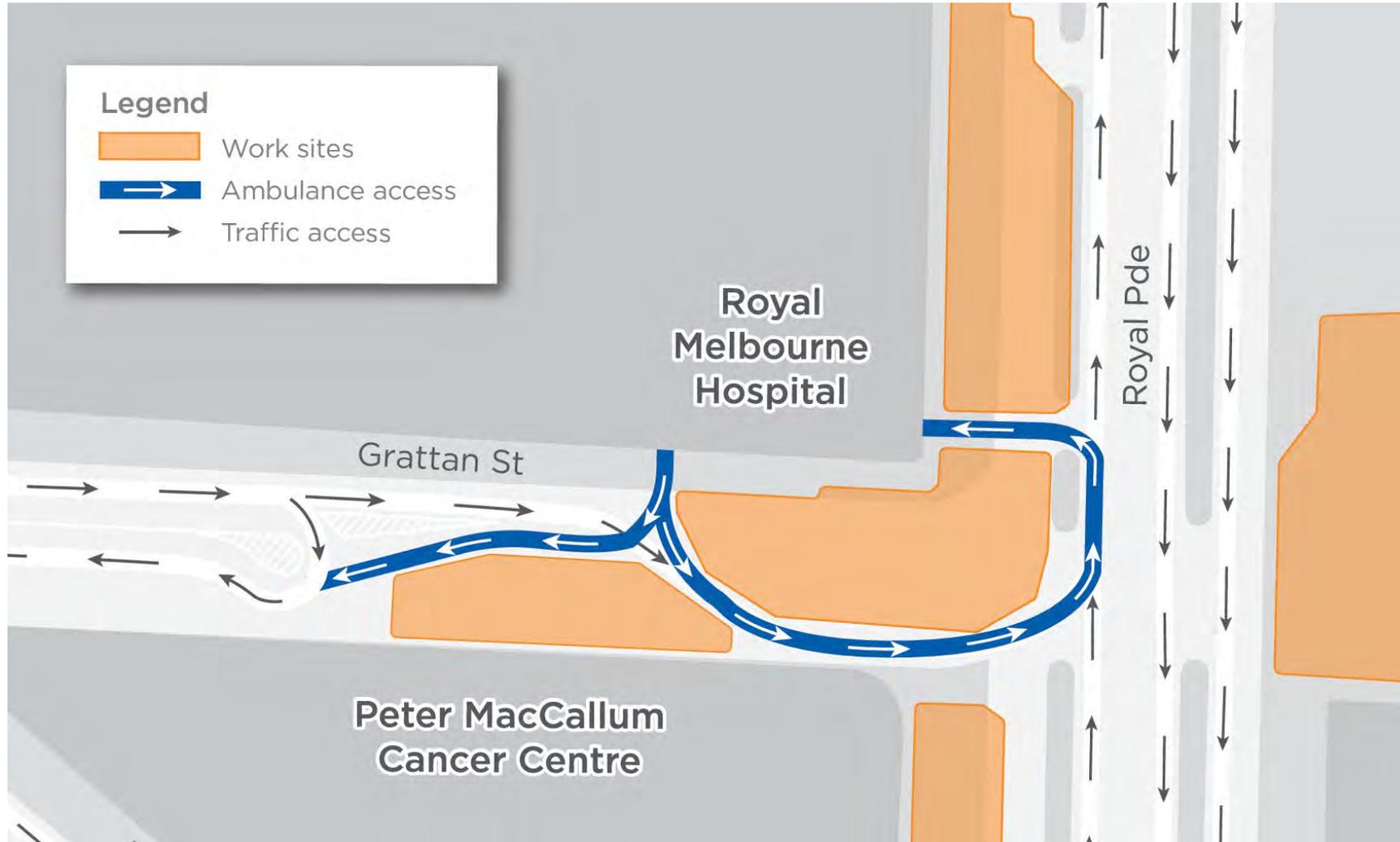
# STAGE 2 (NORTH BOX) CONSTRUCTION

- Detailed planning is underway for stage 2 activities, including piling, excavation and permanent structure construction
- Consultation is ongoing with key stakeholders to mitigate construction impacts.



*Grattan Street west – piling works – June 2020*

# STAGE 2 CONSTRUCTION PROPOSED TRAFFIC



*Indicative only; subject to change*

# STAGE 2 CONSTRUCTION OVERVIEW

- Site establishment
- Piling
- Excavation and associated works (e.g. shotcrete)
- Roof slab construction
- Excavate underneath roof slab to base slab
- Pour base slab and walls/columns
- Mechanical, electrical and plumbing fit-out.

# CONSTRUCTION UPDATE – NORTH MELBOURNE



# NORTH MELBOURNE PROGRAM

Activity	Nov	Dec	Jan	Feb	Mar	Apr
Concourse slab construction	█					
West box inner wall construction	█	█	█	█	█	█
East box inner wall construction	█	█				
Roof slab construction	█	█	█	█	█	█
Driven piling (foundation reinforcement)			█	█		
Service proving (Laurens Street)	█	█	█	█	█	█
West (station) building construction			█	█	█	█
Intake substation construction	█	█	█	█	█	█
Cross passage construction	█	█	█	█	█	█

*Program is indicative and subject to change*



Presenter: Kim Mas

# CONCOURSE SLAB CONSTRUCTION

- Full concourse slab has now been poured
- The concourse level will serve as the connection point between the station entrance and platform level



*The completed concourse slab*

# STATION INNER WALL AND COLUMN CONSTRUCTION

- Station box lining walls are 87% complete
- West box core walls are 90% complete
- Two elliptical columns and six rectangular columns are still to be poured. All circular columns have been poured.



*Station inner walls and columns*

# ROOF SLAB CONSTRUCTION

- Four out of 11 bays have been poured to date
- The remaining seven pours will occur between November 2020 and March 2021
- Struts are removed directly after each concrete pour to allow for the commencement of future building construction. All S2 level struts have been removed.



*Roof slab (west box)*

# DRIVEN PILING (FOUNDATION REINFORCEMENT)

- 31 driven piles will be installed in the north east corner of the station box and one pile in the south east corner
- Piles will reinforce the station building foundation (where the building sits outside of the station box)
- Driven piling to commence early 2021
- Driven piling works will only be undertaken during normal construction hours (7am – 6pm Monday to Friday and 7am to 1pm Saturday)



Arden Station model



Arden Station model illustrating the position of piles beneath the entrance (in red)

# SERVICE PROVING (LAURENS STREET)

- From November, service proving will occur for the future permanent relocation of services adjacent to the station site. These works will continue until early 2021
- Service proving will occur at the intersection of Queensberry and Laurens Street and the intersection of Arden and Laurens Street
- Planning is underway for the closure of the footpath on the western side of Laurens Street from early 2021 until September 2023. This closure will support service proving works and ongoing station construction

# WEST (STATION) BUILDING CONSTRUCTION

- Work will commence on the new Arden Station maintenance building in early 2021
- The maintenance building will be located at the western end of the station box
- Works will take approximately six months



*Arden Station model – station entrance (foreground), skylights (middle), maintenance building (background)*

# INTAKE SUBSTATION CONSTRUCTION

- Foundation structure pits now complete
- Foundation structure continues and is due for completion by late December 2020
- Building works to commence early 2021
- Undertrack bore works rescheduled until 2021



*Foundation pits under construction*

# CROSS PASSAGE CONSTRUCTION

- Cross passage 5 (Lothian Street) – excavation is complete. Waterproofing works are ongoing. Permanent lining FRP works are expected to commence before the end of the month
- Cross passage 6 (Hotham Gardens) - excavation is complete. Waterproofing works will commence next week
- Cross passage 7 (corner of Errol and O'Shanassy streets) – break in at eastbound tunnel is complete and excavation has commenced
- Cross passage 8 (Villiers Street) – break in at eastbound tunnel and commencement of excavation are expected in mid-November (late next week or early the following week)
- Cross passage 9 (Flemington Road) – break in at eastbound tunnel and commencement of excavation are expected in late November



*Cross passage waterproofing and invert (floor slab) complete*

# WHAT'S HAPPENING AT ARDEN STATION

## Out of hours works (Arden Station site)

- 6pm –10pm (evening works), Monday to Friday
  - Primary structure construction (including concrete pours), as required
  - Strut removal, as required
- 10pm – 7am (night works), Monday to Friday
  - Over-size equipment deliveries to and from site and use of a crawler crane to unload deliveries
  - After 6pm, construction vehicles will enter and exit via Arden Street wherever possible
- 24 hours, seven days a week
  - Tunnelling, slurry treatment plant, grout pump and segment facility operation
  - Trucks transporting excavated material from site
  - Cross passage construction between Arden and Parkville

# TUNNELLING



# TBM PROGRESS

## TBM Joan

- Broke through at Parkville Station 27 August 2020
- Relunched from Parkville Station 15 October 2020

## TBM Meg

- Broke through at Parkville Station 19 September 2020
- Relunched from Parkville Station 4 November 2020



**EASTBOUND TUNNEL**

# OPERATIONAL NOISE AND VIBRATION



# OPERATIONAL NOISE AND VIBRATION

- The operational ground borne noise and vibration modelling has been completed
- An operational noise and vibration impact assessment is different to a construction noise and vibration impact assessment. It includes multiple inputs from other parties and has differing assumptions
- The model forms part of a formal design package and has been reviewed by the Independent Reviewer, MTM and RPV, accordingly
- The outcome of the resulting report is to determine a suitable trackform design based on the results to ensure compliance with the relevant Project EPRs.

# STAKEHOLDER AND COMMUNICATIONS UPDATE



# ENGAGEMENT AND COMMUNICATIONS UPDATE

## NORTH MELBOURNE AND PARKVILLE

### Notifications and communications

- North Melbourne – cross passages 6, 7 and 8 construction works notifications (2 and 14 October)
- North Melbourne – November Construction Update (4 November)
- Parkville – October/November Construction Update (13 October)
- Parkville – Service Lane Closure Works Notification (28 October)
- Parkville – weekly update to key stakeholders

### Door knocks, meetings, briefings and events

- North Melbourne – fortnightly meetings with City of Melbourne (16 September, 30 September, 14 October, 28 October, 11 November)
- North Melbourne – Mauri ANZ (George Weston Foods) monthly briefing (October, 5 November)
- Parkville - fortnightly meetings with Peter MacCallum Cancer Centre, Melbourne Health, University of Melbourne, City of Melbourne; monthly meetings with Graduate House
- Parkville Precinct Reference Group – 24 November

# ENGAGEMENT AND COMMUNICATIONS UPDATE

## NORTH MELBOURNE AND PARKVILLE

### Community issues and enquiries or key stakeholder engagement

- Grattan Street west station entrance construction
- Grattan Street east – TVS shaft and Goods Lift works

### Upcoming engagement

- Cross passage construction (ongoing)
- Laurens Street footpath closure

# QUESTIONS?





# NEXT MEETING

Friday 5 February 2021



*Presenter: Chris Lovell*



Western Portal

South Kensington

Arden

Parkville

North Melbourne

Melbourne Central

State Library

Flagstaff

Parliament

Town Hall

Southern Cross

Flinders Street

Richmond

Anzac

South Yarra

Eastern Portal

Sunbury Line

Cranbourne / Pakenham Line