



KENSINGTON COMMUNITY REFERENCE GROUP

MEETING 9

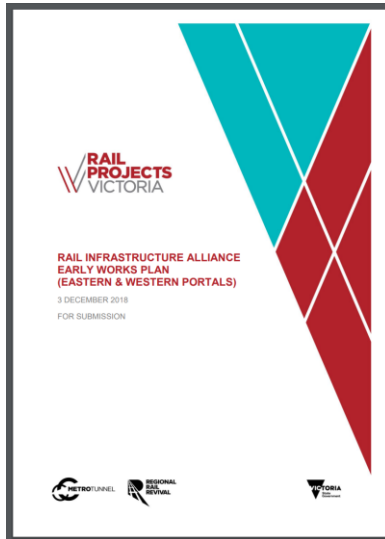
11 FEBRUARY 2020



PLANNING

PREVIOUS APPROVALS

- Early Works Plan amendment approved 24/12/2018
- Site establishment commenced 29/01/2019
- Western Portal Development Plan approved May 2019
- Amended Western Portal Development Plan approved September 2019





DEVELOPMENT PLAN UPDATE

Proposed updates include:

- Minor landscaping and design changes
- Incorporating project land at 1-39 Hobsons Road into the Development Plan area
- Including a small area of Childers Street east of South Kensington station into the Development Plan area to enable access to the rail corridor for maintenance as required

Next steps:

- The amended Development Plan will be available on the Metro Tunnel website for public feedback for 15 business days from Monday 9 March 2020 until 5pm, Friday 27 March 2020
- A community information event will be held in mid-March
- RIA will consider all submissions and make updates where possible before submitting to Minister for consideration
- We will keep CRG informed of process



DESIGN

FLOOD WALL DESIGN TREATMENT

Completed activities

- Curator appointed and is reviewing earlier community feedback
- Shortlisting designers

Next Steps

- Appoint designer to progress concept to final design
- Presentation at 24 March CRG
- Community workshop to meet the designer and provide feedback (Timing TBC)
- Drop-in community information session promoted via letterbox drop and social media (Timing TBC)
- Plan to finalise design in mid-2020



Kensington Artist Impression



INTAKE SUBSTATION DEVELOPMENT PLAN

INTAKE SUBSTATION

- Early Works Plan amendment approved 24/12/2019
- Site establishment commenced 29/01/2020
- Site demolition commenced 5/2/20
- Development Plan will be submitted to Minister for Planning during February

Feedback received during Development Plan public display period:

- Importance of retaining amenity and ecology along the Moonee Ponds Creek corridor
- Importance of minimising tree removal
- Importance of minimising impacts to Moonee Ponds Creek trail





COMMUNITY UPDATE

COMMUNICATION AND ENGAGEMENT

Communication and engagement to support:

Out of hours works

- Offers of respite and relocation
- Targeted works notifications provided to directly impacted residents
- Works notifications and email update provided to wider community
- Meetings with stakeholders

Tunnelling

- Proactive communication with potentially impacted properties

Remaining D-wall work program

- Targeted works notifications provided to directly impacted residents
- Emails provided to key stakeholders and community

Hobsons Road car park usage

- Additional signage placed at car park entrance and station entrance
- Postcard provided to wider community



COMMUNICATION AND ENGAGEMENT

Notifications and communications

- Out of hours works update (19 December 2019)
- Kensington February construction update (20 January)
- TBM breakthrough & retrieval notification (20 January)
- TBM notification letters (various)

Door knocks, meetings, briefings and events

- Extended concrete pour email update (20 January)
- Tunnelling information sessions - potentially impacted businesses/residents (21 January)
- Lloyd Street Business Estate drop-in information session (22 January)
- Lloyd Street Business Estate fortnightly progress meeting (31 January)
- City of Melbourne fortnightly progress meetings (20, 22 January, 3, 5 February)
- One-on-one meetings with community members and businesses throughout January



COMMUNITY ISSUES

Key issues raised during December and January

Out of hours works

- Early commencement of break back works
- Site-based acoustic treatments
- Over-night noise from other sources in Kensington

JJ Holland park flooding

- Recent heavy rainfall



CONSTRUCTION UPDATE

CONSTRUCTION PROGRAM

| Activity | Feb | Mar | Apr | May | Jun | Jul |
|--|------------|------------|------------|------------|------------|------------|
| TBM retrieval shaft construction | Dark Grey | Light Blue | Light Blue | Light Blue | Light Blue | Light Blue |
| Tunnelling – Arden to Kensington | Grey | Grey | Light Blue | Light Blue | Light Blue | Light Blue |
| TBM retrieval | Dark Grey | Dark Grey | Dark Grey | Light Blue | Light Blue | Light Blue |
| Cross passage ground improvement reinstatement | Grey | Grey | Light Blue | Light Blue | Light Blue | Light Blue |
| Cross passage construction (underground works) | Light Blue | Light Blue | Light Blue | Dark Grey | Dark Grey | Dark Grey |
| Diaphragm wall construction | Grey | Grey | Grey | Grey | Grey | Light Blue |
| Capping beams | Dark Grey | Dark Grey | Dark Grey | Dark Grey | Dark Grey | Dark Grey |
| Tunnel entrance propping/excavation/base slab | Grey | Grey | Grey | Grey | Grey | Grey |
| Rail corridor works | Light Blue | Dark Grey | Light Blue | Dark Grey | Light Blue | Light Blue |
| RIA tunnel entrance roof slab | Light Blue | Light Blue | Light Blue | Grey | Grey | Light Blue |

Program is indicative and subject to change



WHAT'S BEEN COMPLETED

- TBM retrieval shaft dividing wall
- TBM retrieval shaft access ramp
- Completed approach structure concrete base slab
- 98 of 148 D-wall panels
- Relocated concrete barriers and construction of access ramps



TBM RETRIEVAL SHAFT WATERPROOFING



TBM RETRIEVAL SHAFT CONSTRUCTION



DIVIDING WALL AND RECEPTION SEAL



BARRIER REALIGNMENT PREPARATION



ENVIRONMENTAL MANAGEMENT

CYP - AIRBORNE NOISE MITIGATION

Why doesn't the Western Portal site have an acoustic shed?

- Airborne noise mitigation measures are determined through the Construction Noise and Vibration Impact Assessment (CNVIA)
- Not appropriate for construction activities undertaken
- Limited by site constraints

What has CYP put in place to limit noise impacts?

- Delineated worksite from rail corridor – reduced high impact night works
- Implementing quieter work methods
- Eliminating noisy equipment
- Community consultation including offer of at receiver mitigations.



TUNNELLING

TBM PROGRESS

North Melbourne to Kensington

TBM Joan

- 1098 metres
- 640 rings installed

TBM Meg

- 864 metres
- 503 rings installed



TBM VIBRATION MODEL - VIBRATION

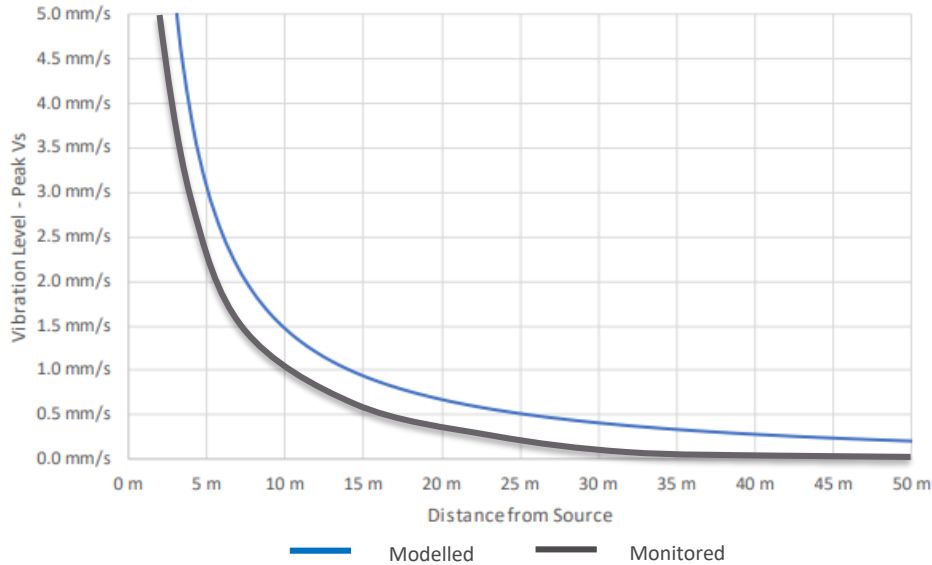
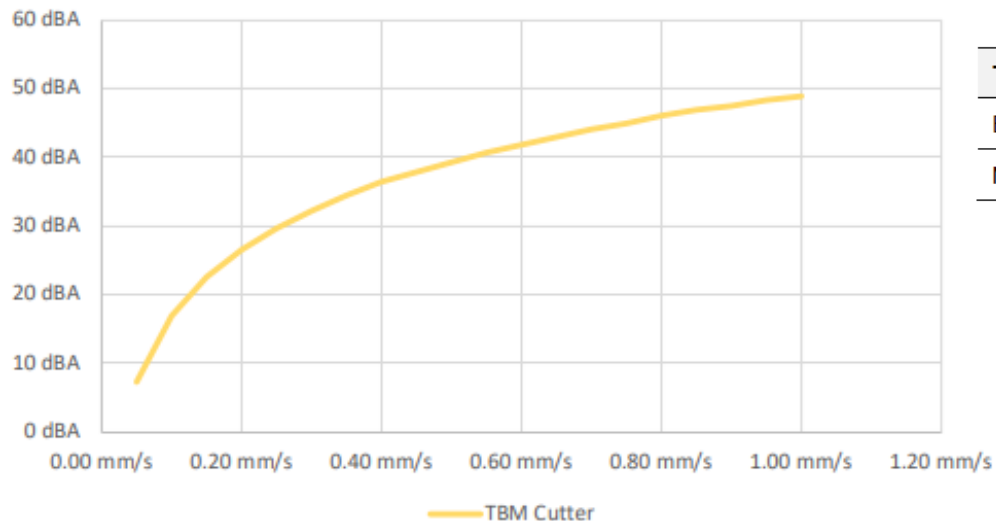


Table NV8-1: Short-term vibration on structures

| Type of structure | Vibration at the foundation, mm/s (Peak Component Particle Velocity) | | | Vibration at horizontal plane of highest floor at all frequencies |
|--|--|------------|--------------------------|---|
| | 1 - 10 Hz | 10 - 50 Hz | 50 - 100 Hz ¹ | mm/s (Peak Component Particle Velocity) |
| Type 1: Buildings used for commercial purposes, industrial buildings and buildings of similar design | 20 | 20 - 40 | 40 - 50 | 40 |
| Type 2: Dwellings and buildings of similar design and/or occupancy | 5 | 5 - 15 | 15 - 20 | 15 |
| Type 3: Structures that have a particular sensitivity to vibration e.g. heritage buildings | 3 | 3 - 8 | 8 - 10 | 8 |

EPR NV8 criteria

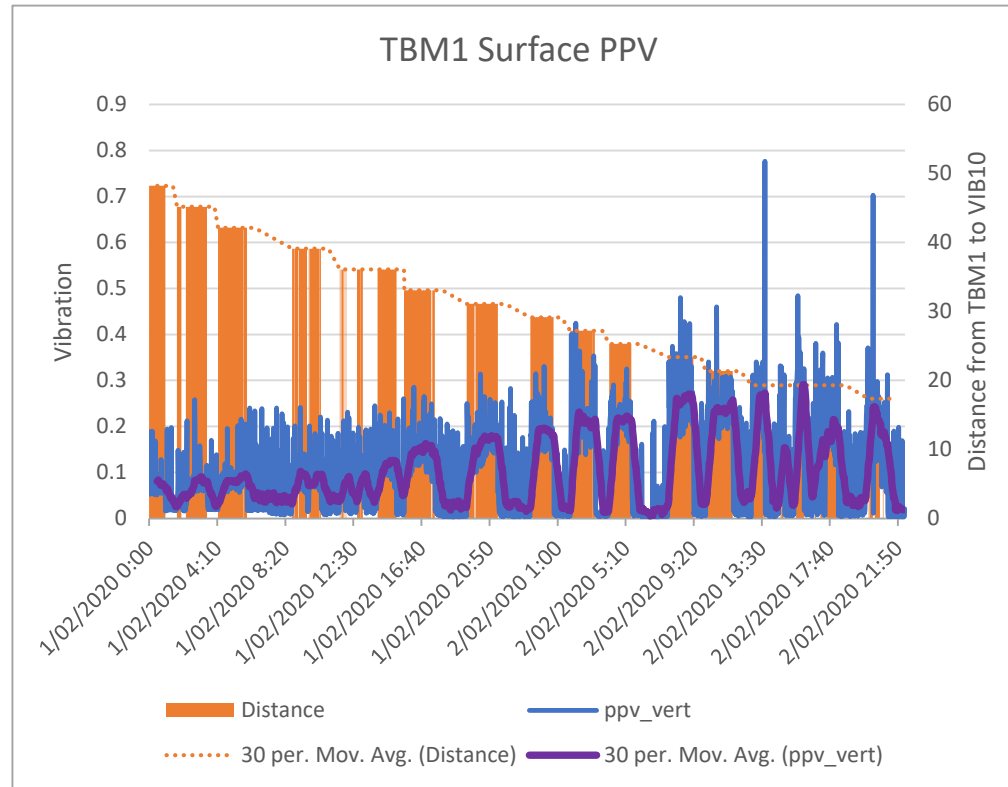
TBM MODELLING – REGENERATED NOISE



| Time Period | Internal $L_{Aeq,15min}$, dB |
|----------------------|-------------------------------|
| Evening, 6pm to 10pm | 40 |
| Night, 10pm to 7am | 35 |

EPR NV13 criteria

TBM VIBRATION MONITORING





TBM RETRIEVAL

TBM RETRIEVAL

Preparatory works

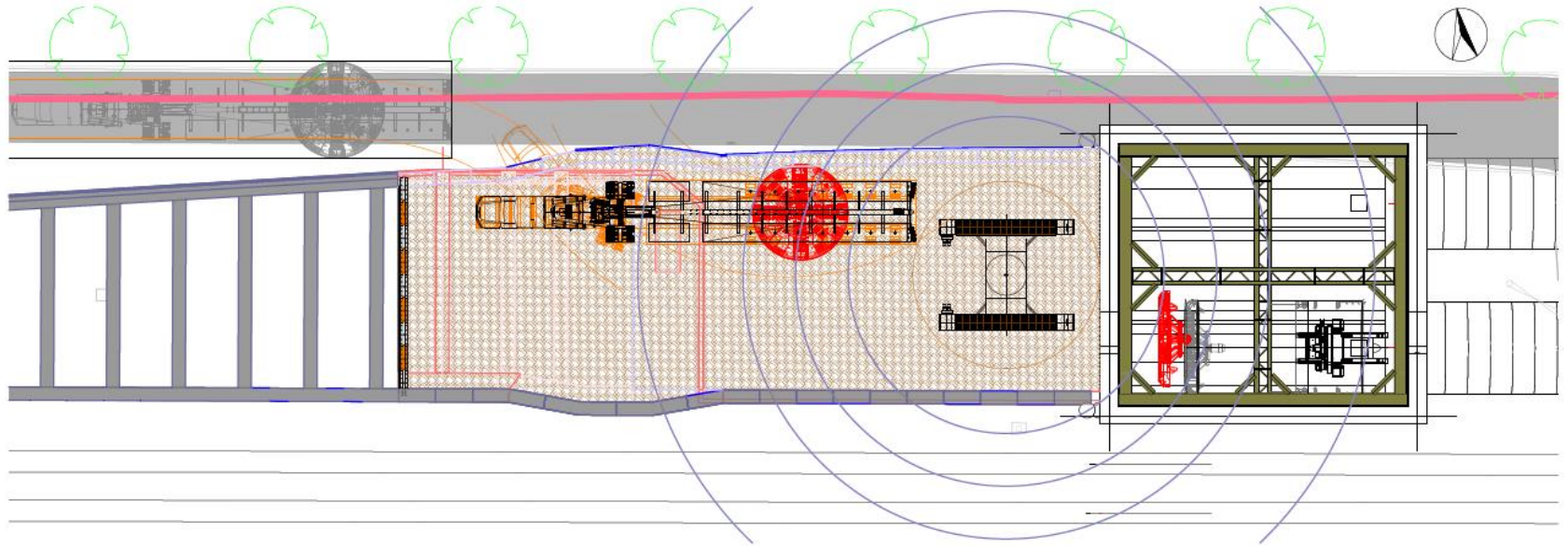
- Delivery of oversized equipment, including a 400T crawler crane, to site
- Access ramp construction on the western side of the retrieval shaft
- Minor tree trimming along transport route (Kensington and Macaulay roads)

Retrieval works

- Cleaning and disassembly of the TBM cutterhead and front and middle shield sections inside the retrieval shaft
- Lifting and loading of cutterhead and front and middle shield sections out of the retrieval shaft
- Transportation of the TBM gantries back through the constructed tunnel
- Oversized TBM parts to be transported at night, subject to permit conditions

TBM RETRIEVAL

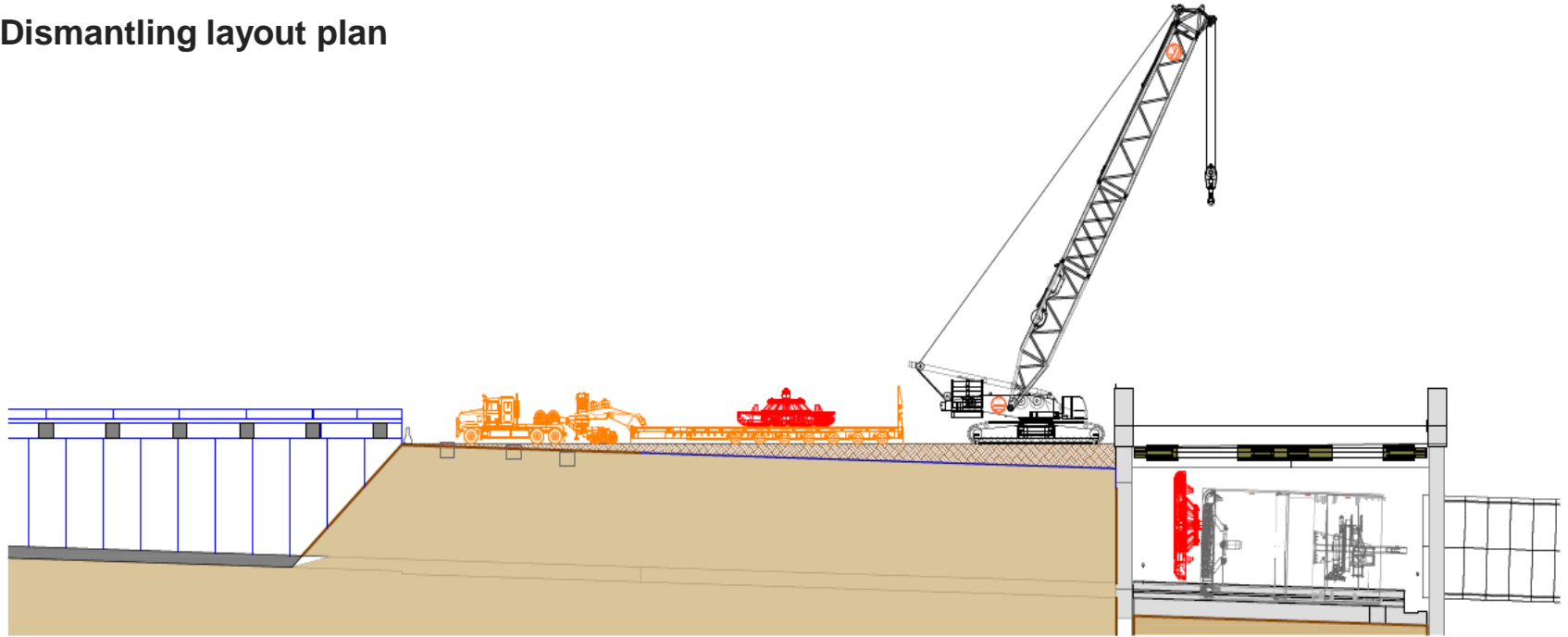
Retrieval site layout



Indicative only

TBM RETRIEVAL

Dismantling layout plan



Indicative only

TBM RETRIEVAL – TRANSPORT ROUTES



Indicative only



TUNNELLING COMMUNICATIONS AND ENGAGEMENT

Communications to potentially impacted properties

- TBM arrival four week out letters
- One-on-one resident meetings
- Tunnelling information sessions
- TBM 1 one week out notification letters
- TBM 2 one week out notification letters

Tunnelling information sessions – North Melbourne to Kensington (second round)

- Lloyd Street Business Estate owners'/tenants' sessions – 10 December, 21 January
- Lloyd Street Business Estate drop-in session – 22 January
- UNISON housing drop-in session – 12 December
- Ormond, Childers, Altona Street residents' sessions – 12 December, 21 January
- Kensington community drop-in session – 12 December



DECLINE STRUCTURE CONSTRUCTION

DECLINE STRUCTURE - FEBRUARY WORKS



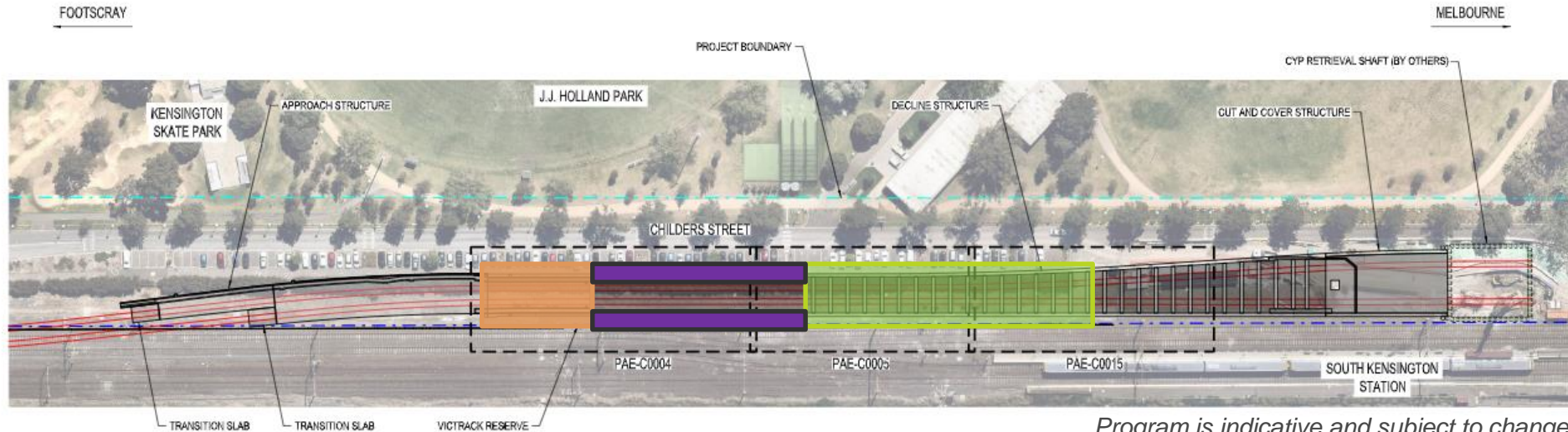
D-walls



Capping beams



Excavation, drainage and concreting works



DECLINE STRUCTURE - MARCH WORKS



D-walls



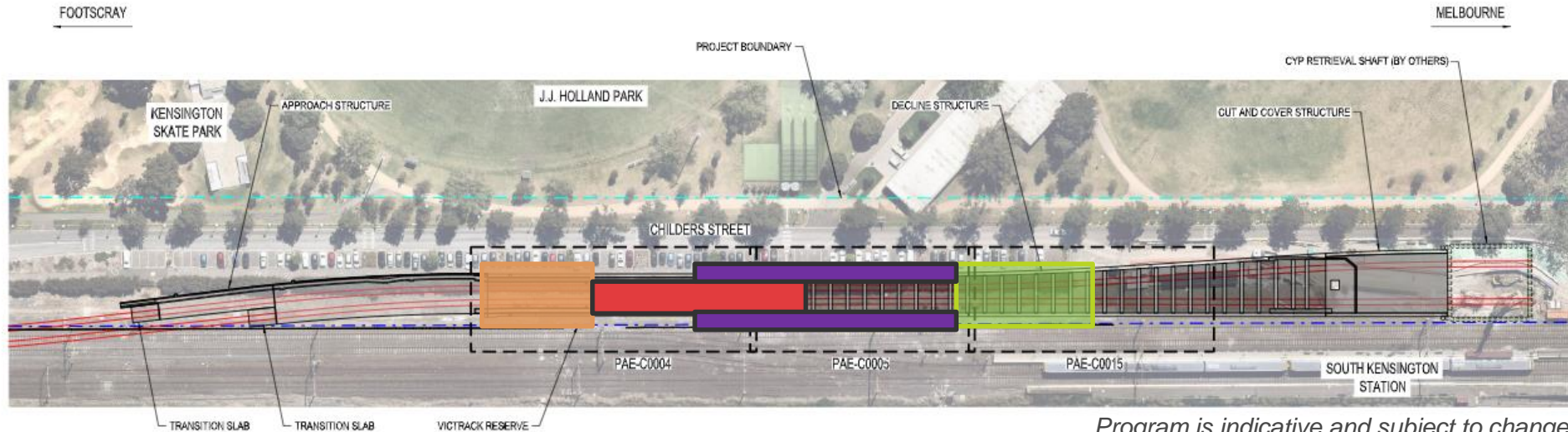
Install temporary propping



Capping beams



Excavation, drainage and concreting works



DECLINE STRUCTURE - APRIL WORKS



D-walls



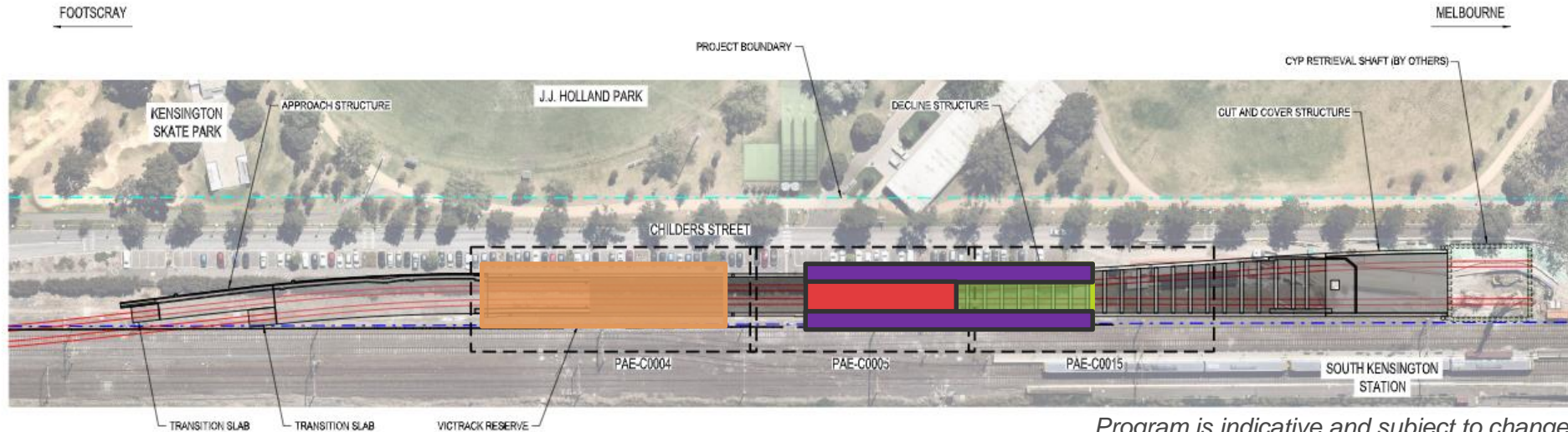
Install permanent propping



Capping beams



Excavation, drainage and concreting works





**TEMPORARY PROPPING
EASTERN PORTAL**



OTHER ITEMS?



Western Portal

South Kensington

Arden

Parkville

North Melbourne

State Library

Melbourne Central

Parliament

Flagstaff

Town Hall

Southern Cross

Flinders Street

Richmond

Anzac

South Yarra

Eastern Portal

Cranbourne / Pakenham Line

Sunbury Line