MELBOURNE METRO RAIL PROJECT ENVIRONMENT EFFECTS STATEMENT INQUIRY AND ADVISORY COMMITTEE

MMRA TECHNICAL NOTE

TECHNICAL NOTE NUMBER:	070
DATE:	5 October 2016
PRECINCT:	Arden Station Precinct
EES/MAP BOOK REFERENCE:	EES Map Book 3 of 15 (Horizontal Alignment Plans)
SUBJECT:	Response to the 'Matters for further consideration and/or clarification' request dated 12 September 2016 (xv) Arden Precinct

NOTE:

1. This Technical Note has been prepared to respond to issues raised by the Inquiry and Advisory Committee (**"IAC"**) in the 'Matters for further consideration and/or clarification' request dated 12 September 2016.

2. For ease of reference, this Technical Note sets out each relevant request made by the IAC followed by a response from MMRA.

Request:

3. The IAC has requested:

   The City of Melbourne suggested that MMRA should investigate alternative sites for the substation to be located within the Arden Precinct (reference to Mr Moore's evidence on p22). Has there been any further consideration of the alternative sites for the substation within the Arden Precinct, if so, has MMRA consulted with the VPA regarding these site/s.

Response:

4. This Technical Note briefly explains the need for the substation and the key constraints and benefits for each of the three options. It then outlines why Option 1 (the preferred option in the Concept Design) is still preferred, such that the alternative options have not been considered further by MMRA.

Need for the substation

5. Train systems such as Melbourne Metro run on 22kV electrical supply. The proposed substation is required to transform the 66kV power, which is available from the nearby West Melbourne Terminal Station (**"WMTS"**), and step it down to 22kV to provide power to Melbourne Metro, including Arden station.

6. The benefits of locating the substation within the Arden Station Precinct are:
    a) close proximity to the WMTS (where the power supply would be sourced);
    b) close proximity to the proposed Arden station (where power is required); and
    c) the availability of the amount of land required (2000m^2).

7. The three potential locations set out in the EES were selected by MMRA because they each satisfy these criteria.

Consideration of Options

8. During 2015, a number of workshops were held with key stakeholders (MPA (now VPA), PTV, Metro Trains and MMRA) to ascertain their views about the various potential locations for the sub-station and the station.

9. City of Melbourne (**"CoM"**) was kept informed of this process through regular precinct meetings with MMRA and through review of the draft EES.

Why Option 1 was preferred

10. Option 1 (north of Arden Street) is the preferred location because it achieves a balance between minimising construction impacts, future-proofing network upgrades, and minimising the impact on the broader urban renewal of the precinct.

11. This option is preferred over Option 2 because:
    a) it has more potential to accommodate power upgrades and future infrastructure co-location;
    b) the site is not located on the tunnel alignment, and therefore would not impact MMRP tunneling works;
    c) it is the better site in terms of ease of maintenance, ease of construction and minimising construction risk; and
    d) the above factors make it more cost effective than Option2.

12. CoM has indicated that this site is its least preferable option based on it resulting in a 'long blank wall fronting Langford Street'. The design of the substation has yet to be undertaken (subject to a site being selected), so there would be scope to address CoM's concern. In this regard, the design

could incorporate the necessary 'intake substation' infrastructure within a building that responds to the adjoining public realm, including the properties on the east side of Langford Street.

13. This approach would be consistent with the objectives of the Urban Design Strategy which aims to facilitate integration between Melbourne Metro infrastructure and the redevelopment of the surrounding areas, while providing a high degree of amenity before and during the wider development of the site.

14. It is also noted that this site is 2,800m^2 in area, in which case it is expected the substation (typically up to 2000m^2) may not occupy the entire site. Consequently, the remainder of the site could be used in a way that integrates with the adjoining streetscape.

Consideration of Option 2

15. Option 2 (adjacent to the North Melbourne Traction Sub-Station (**"NMTSS"**)) was the second preference as it is located the shortest distance from the WMTS and Arden Station, and would have the least impact on development potential in the precinct.

16. The site was not preferred over Option 1 because:

    a) a substation would be more difficult to construct in this location (construction path for large and heavy vehicles, potential rail occupation and enabling works for delivery of the 50T 20MVA transformers);

    b) it would involve greater construction risk (construction around a live NMTSS); and

    c) it would be more difficult to maintain (access to the transformers).

17. These issues arise due to:

    a) the substandard access to the site available from Arden Street under CityLink between the piers (using part of the existing bicycle path);

    b) less land to co-locate with other electricity infrastructure (being constrained by train lines and other infrastructure); and

    c) the substation being directly above part of the Melbourne Metro tunnel (which, due to geological conditions, may have implications for the tunnel structure), thereby making the substation more expensive to construct.

Consideration of Option 3

18. Option 3 (South of the Arden Government Land parcel) was the least preferred option. The site would offer similar benefits to Option 1 in terms of ease of construction, minimal impact on MMRP tunneling works and minimising construction risk. However, it would have the most impact on development potential within the Arden Precinct.

19. In addition, the site was not preferred over Option 1 because:

    a) it would be located the furthest away from the WMTS and Arden Station (increasing the conduit infrastructure requirements);

    b) the cable route would have greater impact on existing services and development potential; and

    c) there is less certainty associated with the timing of the land availability due to existing VicTrack leases.

20. MMRA therefore is of the view that it should not be recommended as a preferred option by the IAC.

Conclusion

21. For the reasons outlined above, MMRA maintains that Option 1 is the preferred location for the substation. Consequently, other options have not been considered further since the EES was prepared.

22. MMRA notes that the design outcome has yet to be determined and, should the Option 1 site be selected, the design would have to respond to the adjoining street and public realm in a sensitive manner in accordance with the Urban Design Strategy. MMRA considers this would not result in a long blank wall as suggested by CoM.

CORRESPONDENCE: No correspondence.

ATTACHMENTS: No attachments.