

**MELBOURNE METRO RAIL PROJECT ENVIRONMENT EFFECTS STATEMENT**  
**INQUIRY AND ADVISORY COMMITTEE**

**MMRA TECHNICAL NOTE**

**TECHNICAL NOTE NUMBER:** 036  
**DATE:** 19 August 2016  
**PRECINCT:** Western Portal, Tunnels Precinct, Eastern Portal  
**EES/MAP BOOK REFERENCE:** EES Chapter 17; Technical Appendix N – Surface Water

**SUBJECT:** Surface water  
Response to Sections 11.2-11.4 of the 'Preliminary Matters and Further Information' Request.

**NOTE:**

1. This Technical Note responds to the matters identified in Sections 11.2-11.4 of the 'Preliminary and Further Information' request made by the IAC on 25 July 2016 (**Request**).
2. For ease of reference, this Technical Note adopts the topic headings set out in the Request and reproduces the relevant 'references' and 'requests' prior to setting out MMRA's response.

**11.2 Compensatory flood storage – Western Portal**

**(i) Reference**

*Section 17.9.1 of the EES Main Report at p17.20 notes:*

*Construction of the portal and permanent works would result in some loss of floodplain storage. This would be mitigated by providing permanent compensatory flood storage of approximately 9,000 m<sup>3</sup> (cubic metres). Further consultation with Melbourne Water during the detailed design phase would be required to finalise the location of this storage in accordance with the recommended Environmental Performance Requirements.*

**(ii) Request**

*The IAC requests further information on:*

57. *where compensatory flood storage might be located in the general surrounding area.*

**MMRA Response:**

3. This is addressed in the report entitled ‘Western Portal – Compensatory Flood Storage’ attached to John McCrann’s Expert Witness Statement.

**11.3 Automated flood gates – Maribyrnong River**

**(i) Reference**

*Section 17.9.2 of the EES Main Report at p17.20, notes:*

*Accordingly, the portal and tunnels would be designed to provide protection against flooding from the Maribyrnong River — for example, through a retaining wall to provide protection against the one per cent AEP flood event and the installation of automatic flood gates that extend to the full height and width of the portal, providing protection against extreme flood events.*

**(ii) Request**

*The IAC requests:*

58. *information on how the retaining wall and matched automated flood gates would reliably and robustly operate in conjunction with the tunnel portal in times of flood.*

**MMRA Response:**

4. This is addressed in the report entitled ‘Flood Defence Options at Tunnel Portals’ attached to John McCrann’s Expert Witness Statement.

**11.4 Precinct 8: Eastern Portal - use of ‘stop-logs’**

**(i) Reference**

*Section 17.14.1 of the EES Main Report at p17.29 notes:*

*At a minimum, a flood warning system would be implemented to link with existing flood warning systems in the Yarra catchment, such that rail services could be suspended and the tunnel and stations evacuated in advance of an extreme flood. Subject to further flood immunity risk assessment, additional measures such as sandbagging or flood gates could also be put in place to protect the tunnel from flooding in more extreme events during both construction and operation. Currently, it is proposed that the eastern portal incorporate works to allow flood gates in the form of stop logs to be installed across the portal in advance of a flood event. These stop logs would be stored adjacent to the portal.*

**(ii) Request**

*The IAC requests:*

59. *further information on how such 'stop logs' used possibly in combination with sand-bags could be deployed and operate, including reference to any relevant examples from other similar projects.*

**MMRA Response:**

5. This is addressed in the report entitled "Flood Defence Options at Tunnel Portals" attached to John McCrann's Expert Witness Statement.

**CORRESPONDENCE:**

No correspondence.

**ATTACHMENTS:**

No attachments.