Light Horse Interchange Warehouse Facility (Lot 7) - Flood Assessment

Customer	Charter Hall
Project	A11579
Deliverable	002
Version	01
	19 May 2022

Document Control

Document Identification

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Project No	A11579
Deliverable No	002
Version No	01
Version Date	19 May 2022
Customer	Charter Hall
Classification	BMT (OFFICIAL)
Synopsis	Flood assessment for the proposed Light Horse Interchange Warehouse Facility (Lot 7).

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Amendment Record

The Amendment Record below records the history and issue status of this document.

Version	Version Date	Distribution	Record
00	04 May 2022	AT&L	Initial Report
01	19 May 2022	AT&L	Revised Report

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1 Introduction

BMT Commercial Australia Pty Ltd ("BMT") recently completed a flood impact assessment (FIA) for the modified Light Horse Interchange Business Hub (LHBH) masterplan as part of the Modification of Development (MOD1) State Significant Development application (SSD-9667) on behalf of Charter Hall. The details of the FIA are documented in the 'Light Horse Interchange Business Hub, Eastern Creek - Modification No.1 Masterplan - Flood Impact Assessment' (BMT, 2022) (reference: R.A11579.001.01_FIA.pdf).

Lot 7 forms part of the LHBH proposed development site. It is bounded by the proposed estate road to the north and west, Lot 6 to the south, the proposed bioretention basin (Lot 8) to the east. The project comprises the construction of a warehouse or distribution centre development including the following key components:

- Maximum building height of 15 metres
- 41,840 m2 Warehouse
- 985 m2 Ancillary office (2 storey)
- 2 x Dock office: 48m2 and 47m2
- Provisional office 390m2 (2 storey)
- On-site parking will be provided for 206 vehicles.
- 24/7 operations
- No manufacturing as part of the use.

The purpose of this report is to demonstrate that the flood impacts of Lot 7 are consistent with the flood impacts for the modified LHBH MOD1 masterplan FIA and hence are therefore consistent with the SSD-9667 approved flood conditions documented in 'Light Horse Interchange Business Hub Flood Assessment' (BMT, 2019); thereby addressing the standard industry specific Planning Secretary's Environmental Assessment Requirements (SEARs) and the SSDA-9667 conditions, as outlined in Table 1.1.

Table 1.1 Compliance Table

Key Issue No. & Description	Issue & Assessment Requirements	How It Is Addressed	Section in This Report
SEARs Item 14. Flooding Risk	Identify any flood risk on-site having regard to adopted flood studies, the potential effects of climate change, and any relevant provisions of the NSW Floodplain Development Manual	This flood impact assessment report provides information about the flood behaviour and risks within the site.	Section 3.2
SEARs Item 14. Flooding Risk.	Assess the impacts of the development, including any changes to flood risk on-site or off-site, and detail design solutions and operational procedures to mitigate flood risk where required	This flood impact assessment summarises the methodology and outcomes of flood impact assessment of the development.	Section 3.3

Key Issue No. & Description	Issue & Assessment Requirements	How It Is Addressed	Section in This Report
SSDA-9667. Part B1. Soil and Water	All building floor levels must be no lower than the 1% Annual Exceedance Probability flood plus 500 millimetres (mm) of freeboard.	This report demonstrates compliance with this requirement.	Section 3.2
SSDA-9667. Part B2. Soil and Water	Any structures below the 1% Annual Exceedance Probability flood plus 500 mm of freeboard must be constructed from flood compatible building components.	It is recommended that this requirement be complied with having regard to the predicted flood behaviour within the site.	Section 3.2
SSDA-9667. Appendix B. Item 6. Mitigation Measures, Stormwater and Flooding	A site-based flood emergency management plan will be prepared prior to construction of the industrial buildings, including flood warning and emergency response opportunities to be adopted within the individual tenant emergency management plans for the future buildings.	It is recommended that a Flood Emergency Management Plan (FEMP) be prepared prior to the construction of industrial buildings within Lot 7.	Section 3.2

This report is structured as follows:

- Section 2 provides a description of the site locality and modified development masterplan.
- Section 3 provides a summary of the flood modelling methodology and results for local and mainstream flooding (including relevant flood maps).
- Section 4 presents the conclusions of the flood impact assessment.
- Section 5 provides a list of references cited in the FIA report.

2 Site Locality and Development Plans

The site locality map is shown in Figure 2.1. The modified LHBH masterplan (as per Nettletontribe's Drawing No. 12493_DA010 [P4], dated 18-05-2022) is shown in Figure 2.2. The development plan for Lot 7 (as per Nettletontribe's Drawing No. 12493_DA011 [P4], Date 12-05-2022) is shown in Figure 2.3.

The total site area of Lot 7 is approximately 6.74 hectares. The development will comprise warehouses and associated amenities, two storey office, on-grade dock offices and a 206-space carpark. AT&L prepared the bulk earthworks (BEW) design for entire LHBH (including Lot 7). Figure 2.4 shows the BEW levels for Lot 7 which nominates a pad level of 48.85m AHD and finished floor level (FFL) of 49.20 mAHD as per ATL's Drawing Number 20-795-C3003[A] dated 18-05-2022).

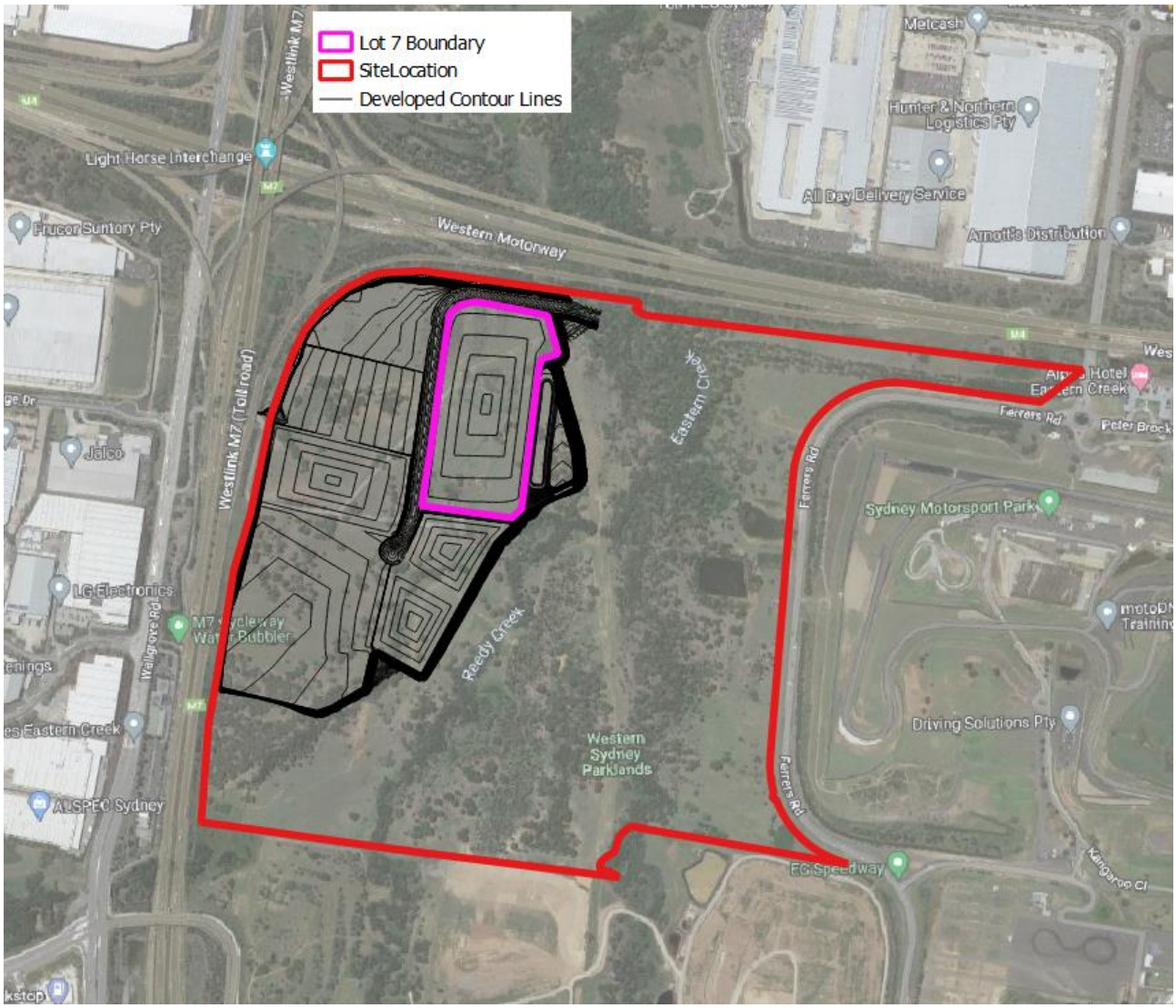


Figure 2.1 Site Locality

Figure 2.2 Overall LHBH Modified Masterplan (Nettletontribe, May 2022)

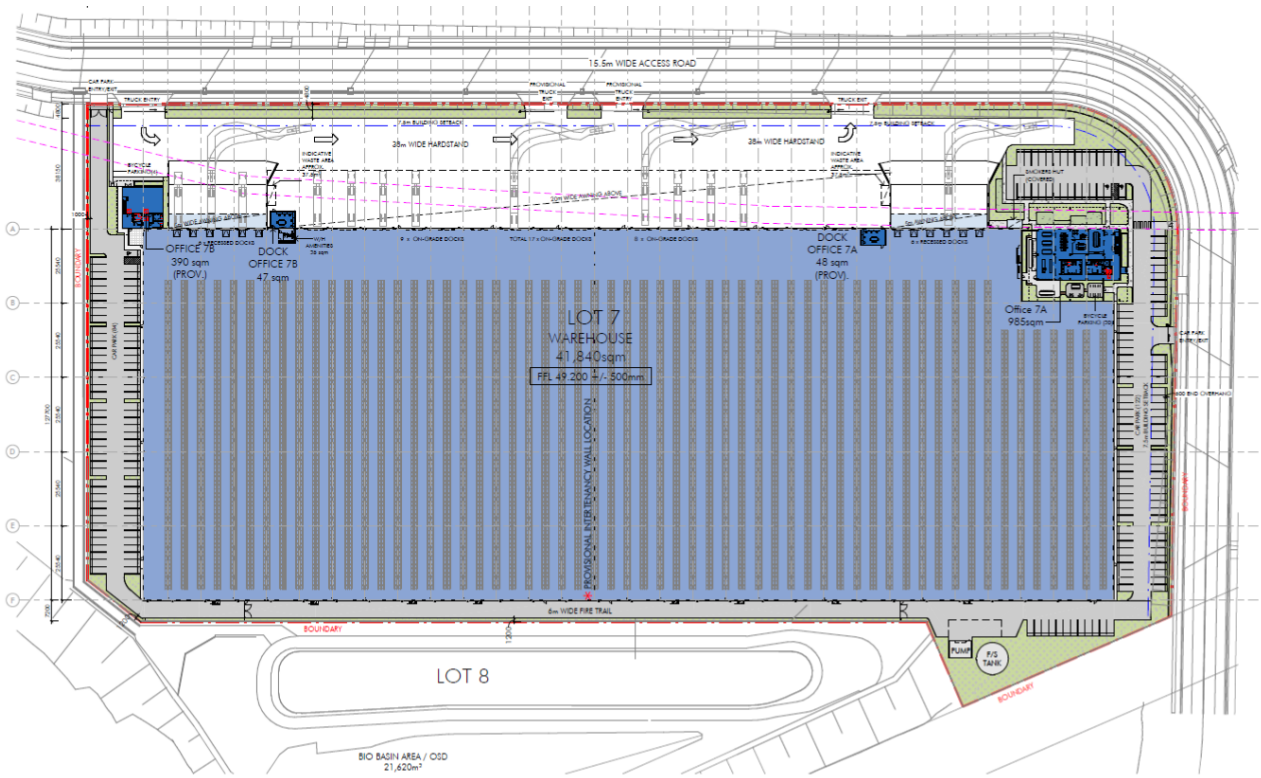


Figure 2.3 Lot 7 Development Plan (Nettletontribe, May 2022)

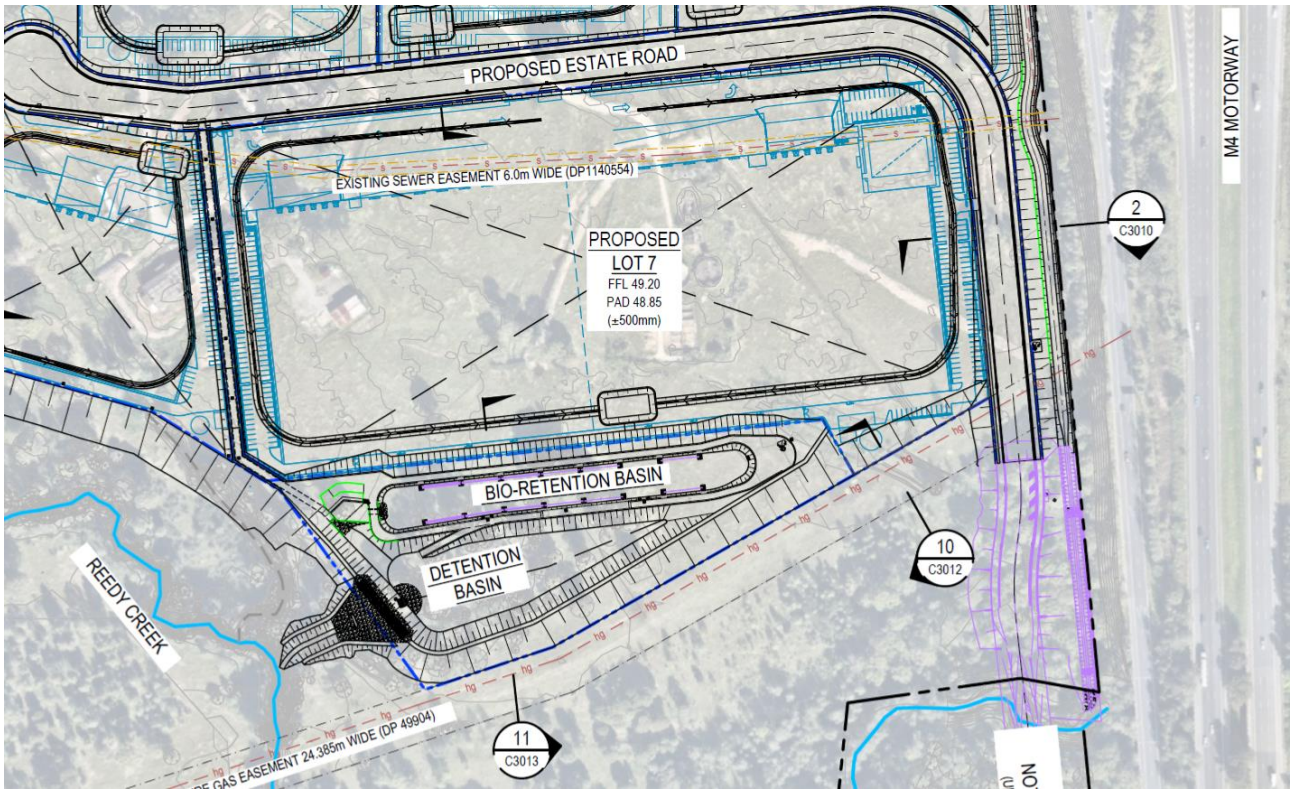


Figure 2.4 Lot 7 Proposed BEW Levels (AT&L, May 2022)

3 Flood Behaviour and Impact Assessment

3.1 Introduction

BMT (2022) documents the FIA for the modified LHBH masterplan, including details of the methodology and outcomes of both local and mainstream flood modelling for pre-development and post-development conditions for the 1% AEP, 0.2% AEP and probable maximum flood (PMF) events. The following sections provide a summary the post-development flood behaviour with respect to Lot 7.

3.2 Lot 7 Post-Development Flood Behaviour

Flood modelling from BMT (2022) demonstrated the following outcomes with respect to Lot 7:

- Peak flood levels along Reedy Creek at the south-east corner of Lot 7 are predicted to be 45.30 mAHD and 47.45 mAHD for the 1% AEP and PMF events, respectively. Therefore, the proposed pad level and FFL within Lot 7 (i.e., 48.85m and 49.20m AHD, respectively) are 1.4 m to 1.75 m higher than the PMF peak flood level.

- The access road crossing Eastern Creek and linking Ferrers Road and the development Lots is predicted to be flood-free up to and including the 0.2% AEP flood.

- From a local flooding perspective, the lot is flood-free up to and including the 0.2% AEP event. In a PMF event, the lot is predicted to be inundated with a maximum flood category of H2 (low hazard) based on AIDR (2017) classification, as shown in Figure 3.1.

Given the above, any structures below the 1% Annual Exceedance Probability flood plus 500 mm of freeboard should be constructed from flood compatible building components in accordance with the requirements of SSDA-9667(Part B2. Soil and Water).

Also, given the potential for Lot 7 to be inundated during the local event and the access road during mainstream PMF event, it is recommended that a Flood Emergency Management Plan (FEMP) be prepared prior to the construction of industrial buildings within Lot 7 in accordance with the requirements of SSDA-9667(Appendix 2, Mitigation Measures, Stormwater and Flooding, Item 6).

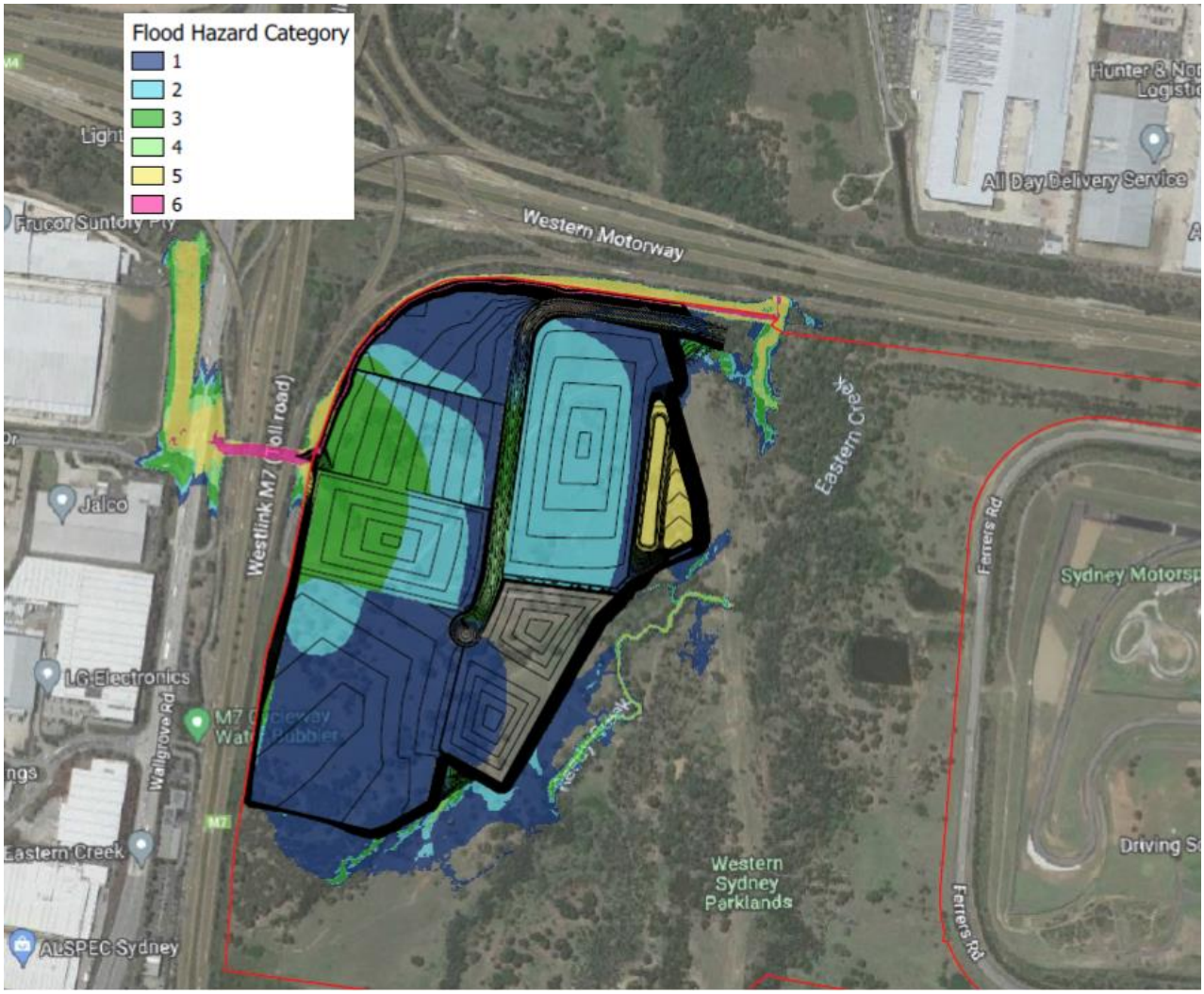


Figure 3.1 Local Flood Event PMF Peak Flood Hazard Map

3.3 Peak Flood Level Impacts

BMT (2022) demonstrated that the flood impacts of the modified masterplan for LHBH (containing Lot 7) are generally consistent with the approved flood conditions documented in BMT (2019) and hence comply with SEARs requirements and approved conditions for SSD-9667.

For local flood events, the overall proposed development is predicted to result in negligible peak flood level impacts and no nuisance flooding in the M7 corridor or within the adjoining properties west of the site where the local flood event is more critical than the mainstream flood event.

4 Conclusions

On behalf of Charter Hall, BMT prepared this FIA with respect to Lot 7 of the proposed LHBH development site. This FIA demonstrates the following outcomes with respect to Lot 7:

- The proposed pad level and FFL of Lot 7 are at least 1.4 m higher than the mainstream peak PMF level.
- The access road between Ferrers Road and the development lots is predicted to be flood-free up to and including the 0.2% AEP flood.
- For local flood conditions, Lot 7 is flood-free up to and including the 0.2% AEP flood. The lot is predicted to be inundated in the PMF, with a maximum PMF hazard categorisation of H2 (low hazard).
- The flood impacts of the modified masterplan (containing Lot 7) are considered to be generally consistent with the flood conditions and impacts for the approved SSD-9667 assessment as documented in BMT (2019). From a local flood perspective, the overall proposed development is not predicted to result in an adverse increase in peak flood level (nuisance flooding) in the M7 corridor or within adjoining properties west of the site where the local flood event is more critical than the regional flood event.
- Given the potential for Lot 7 to be inundated during the local event, and the access road during mainstream PMF event, it is recommended that a Flood Emergency Management Plan (FEMP) be prepared prior to the construction of industrial buildings within Lot 7 in accordance with the requirements of SSDA-9667, Appendix 2, Mitigation Measures, Stormwater and Flooding, Item 6.
- Any structures below the 1% Annual Exceedance Probability flood plus 500 mm of freeboard should be constructed from flood compatible building components in accordance with the requirements of SSDA-9667(Part B2. Soil and Water).

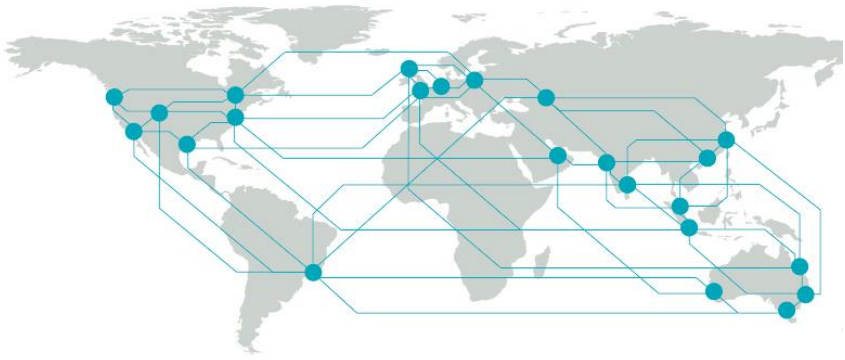
5 References

AIDR. (2017) Guideline 7-3 Flood Hazard (supporting documentation for the implementation of Australian Disaster Resilience Handbook 7 Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia).

BMT. (2022). Light Horse Interchange Business Hub, Eastern Creek - Modification No.1 Masterplan - Flood Impact Assessment.

BMT. (2019). Light Horse Interchange Business Hub Flood Assessment.

Bureau of Meteorology (BOM). (2003) The Estimation of Probable Maximum Precipitation in Australia: Generalised Short-Duration Method.



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