ARCADIS Design & Consultancy for natural and built assets

Moorebank Precinct East - Stage 2 Proposal

Construction Traffic Impact Assessment

SIMTA

SYDNEY INTERMODAL TERMINAL ALLIANCE

Part 4, Division 4.1, State Significant Development

December 2016

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MOOREBANK PRECINCT EAST - STAGE 2 PROPOSAL

Construction Traffic Impact Assessment

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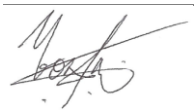
Approver	Michael Yong	

Revision D – Final for Public Display

REVISIONS

Revision	Date	Description	Prepared by	Approved by
A	Nov 2016	Draft – Internal Review	LG	MY
B	Nov 2016	Final - Internal Review	LG	MY
C	Nov 2016	Final for DP&E Adequacy Review	LG	MY
D	Dec 2016	Final for Public Display	LG	MY

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1 INTRODUCTION

Concept Plan Approval (MP 10_0193) for an intermodal terminal (IMT) facility at Moorebank, NSW (the Moorebank Precinct East Project (MPE Project) (formerly the SIMTA Project)) was received on 29 September 2014 from the NSW Department of Planning and Environment (DP&E). The Concept Plan for the MPE Project involves the development of an IMT, including a rail link to the Southern Sydney Freight Line (SSFL) within the Rail Corridor, warehouse and distribution facilities with ancillary offices, a freight village (ancillary site and operational services), stormwater, landscaping, servicing, associated works on the eastern side of Moorebank Avenue, Moorebank, and construction or operation of any part of the project, which is subject to separate approval(s) under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This Environmental Impact Statement (EIS) is seeking approval, under Part 4, Division 4.1 of the EP&A Act, for the construction and operation of Stage 2 of the MPE Project (herein referred to as the Proposal) under the Concept Plan Approval for the MPE Project, being the construction and operation of warehouse and distribution facilities.

This EIS has been prepared to address:

- The Secretary's Environmental Assessment Requirements (SEARs) (SSD 16-7628) for the Proposal, issued by NSW DP&E on 27 May 2016 (Appendix A).
- The relevant requirements of the Concept Plan Approval MP 10_0913 dated 29 September 2014 (as modified) (Appendix A).
- The relevant requirements of the approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (No. 2011/6229, granted in March 2014 by the Commonwealth Department of the Environment (DoE)) (as relevant) (Appendix A).

This EIS also gives consideration to the MPE Stage 1 Project (SSD 14-6766) including the mitigation measures and conditions of consent as relevant to this Proposal.

This EIS has been prepared to provide a complete assessment of the potential environmental impacts associated with the construction and operation of the Proposal. This EIS proposes measures to mitigate these issues and reduce any unreasonable impacts on the environment and surrounding community.

1.1 Purpose of this report

This report supports the Environmental Impact Statement (EIS) for the Proposal (refer to Section 1.3 below for an overview of the Proposal) and has been prepared as part of a State Significant Development (SSD) Application for which approval is sought under Part 4, Division 4.1 of the EP&A Act.

This report has been prepared to address:

- The Secretary's Environmental Assessment Requirements (SEARs) (SSD 16-7628) for the Proposal, issued by NSW DP&E on 27 May 2016.
- The relevant requirements of Concept Plan Approval MP 10_0913 dated 29 September 2014 (as modified).
- The relevant requirements of the approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (No. 2011/6229, granted in March 2014 by the Commonwealth Department of the Environment (DoE)) (as relevant).

The SEARs and the Concept Plan Conditions of Approval relevant to this study, and the section of this report where they have been addressed are provided in Table 1-1 and Table 1-2 respectively.

Table 1-1 Secretary's Environmental Assessment Requirements relevant to this study

Issue	Environmental assessment requirements	Where Addressed in this report
4. Traffic and Transport		
A Traffic Impact Assessment that assesses intersection and road network impacts, including impacts on Cambridge Avenue. The traffic assessment shall;		
4f.	Assess construction traffic impacts, which may include a draft Construction Traffic Management Plan including: I. The identification of haulage routes and the nature of existing traffic on these routes; II. An assessment of construction traffic volumes (including spoil haulage, delivery of materials and equipment to the road corridor and ancillary facilities); and III. Potential impacts to the regional and local road network (including safety and level of service) and potential disruption to existing public transport services and access to properties and businesses	Section 6.2 Section 7 Section 7

Table 1-2 Concept Plan Conditions of Approval and Statement of Commitments relevant to this study

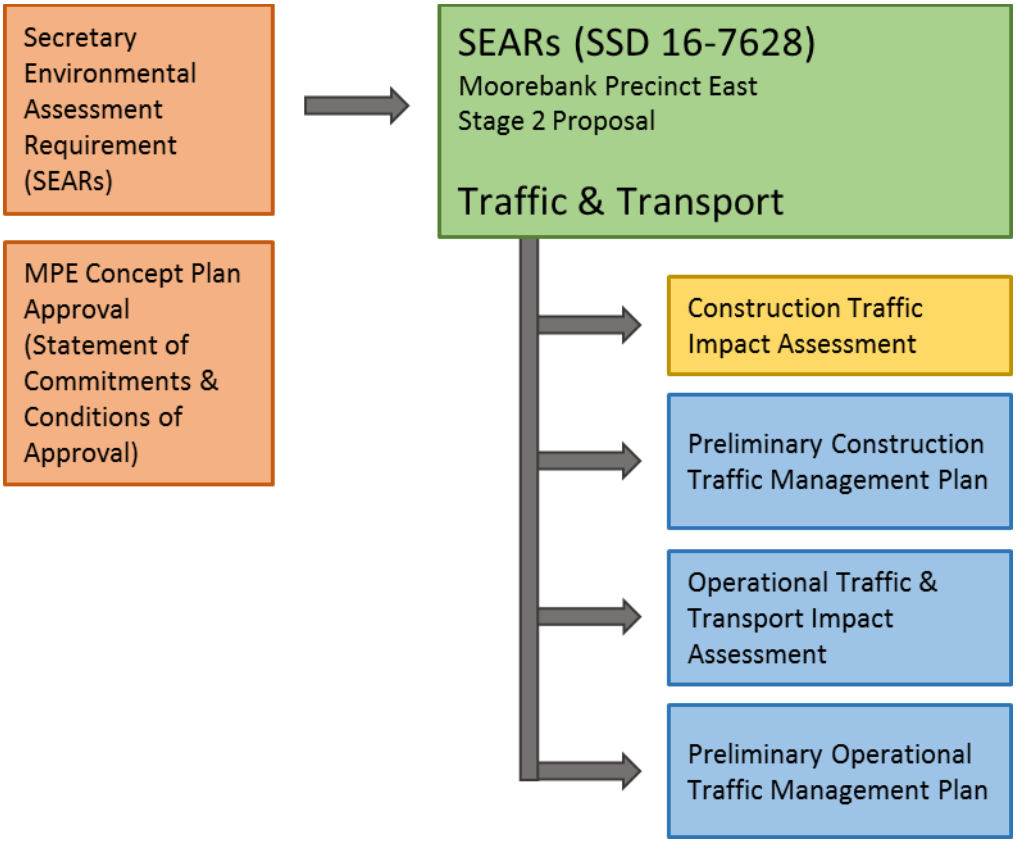
Issue	Environmental assessment requirement	Where Addressedin this report
Traffic and Transport	Any future Development Application shall include a Traffic Impact Assessment that assesses intersection and road network impacts, including impacts on Cambridge Avenue. The traffic assessment shall:	
	a) undertake detailed model analysis commensurate with the stage, to confirm network operation and identify intersection upgrade requirements	Section 7
	c) assess construction traffic impacts, including: i. the identification of routes and the nature of existing traffic on these routes ii. an assessment of construction traffic volumes (including spoil haulage/delivery of materials and equipment to the road corridor and ancillary facilities); and iii. potential impacts to the regional and local road network (including safety and level of service) and potential disruption to existing public transport services and access to properties and businesses	Section 6.2 Section 7 Section 7

Note: No Statement of Commitments are applicable to the CTIA for the Proposal.

1.1.1 Environmental Assessment Requirements (SEARs)

The diagram below illustrates the document structure established for traffic and transport-related reporting for the Proposal. Four standalone reports have been prepared to inform and support the required responses to the SEARs, as well as the Concept Plan Conditions of Approval and Statement of Commitments:

1. Construction Traffic Impact Assessment (CTIA)
2. Preliminary Construction Traffic Management Plan (PCTMP)
3. Operational Traffic and Transport Impact Assessment (OTTIA)
4. Preliminary Operational Traffic Management Plan (POTMP)



This CTIA has been prepared to address the construction-related impacts of the Proposal. It is intended that this CTIA report be read in conjunction with the three other standalone traffic reports prepared for the Proposal, as detailed above.

1.2 Structure of this report

This CTIA has been structured as follows:

- Section 1 provides an overview of the Proposal and details the objectives of the assessment
- Section 2 provides a description of the Proposal site in a regional and local context
- Section 3 provides an overview of the construction methodology for the Proposal, including the construction program, construction activities, construction plant and equipment, construction compounds, construction hours and proposed site access
- Section 4 describes the adopted methodology for the CTIA
- Section 5 outlines the existing traffic conditions near the Proposal, including a description of the road network, traffic volumes and performance of key intersections nearby
- Section 6 describes the expected traffic movements to be generated during construction of the Proposal
- Section 7 details the potential construction traffic impacts of the Proposal on the road network, and identifies measures to mitigate the identified impacts
- Section 8 identified mitigation measures to be implemented during construction to avoid, minimise and mitigate the potential construction traffic impacts identified
- Section 9 provides a conclusion and summarises the outcomes of the CTIA.

1.3 Overview of the Proposal

The Proposal involves the construction and operation of Stage 2 of the MPE Project, comprising warehousing and distribution facilities on the MPE site and upgrades to approximately 1.4 kilometres of Moorebank Avenue between the northern MPE site boundary and 120 metres south of the southern MPE site boundary.

Key components of the Proposal include:

- Warehousing comprising approximately 300,000m^2 GFA, additional ancillary offices and the ancillary freight village
- Establishment of an internal road network, and connection of the Proposal to the surrounding public road network
- Ancillary supporting infrastructure within the Proposal site, including:
  - Stormwater, drainage and flooding infrastructure
  - Utilities relocation and installation
  - Vegetation clearing, remediation, earthworks, signage and landscaping
- Subdivision of the MPE Stage 2 site
- The Moorebank Avenue upgrade would be comprised of the following key components:
  - Modifications to the existing lane configuration, including some widening
  - Earthworks, including construction of embankments and tie-ins to existing Moorebank Avenue road level at the Proposal's southern and northern extents
  - Raking of the existing pavement and installation of new road pavement

  - Establishment of temporary drainage infrastructure, including temporary basins and / or swales
  - Raising the vertical alignment by about two metres from the existing levels, including kerbs, gutters and a sealed shoulder
  - Signalling and intersection works
- Upgrading existing intersections along Moorebank Avenue, including:
  - Moorebank Avenue / MPE Stage 2 access
  - Moorebank Avenue / MPE Stage 1 northern access
  - Moorebank Avenue / MPE Stage 2 central access
  - MPW Northern Access / MPE Stage 2 southern emergency access

The Proposal would interact with the MPE Stage 1 Project (SSD_6766) via the transfer of containers between the MPE Stage 1 IMT and the Proposal's warehousing and distribution facilities. This transfer of freight would be via a fleet of heavy vehicles capable of being loaded with containers and owned by SIMTA. The fleet of vehicles would be stored and used on the MPE Stage 2 site, but registered and suitable for on-road use. The Proposal is expected to operate 24 hours a day, seven days per week.

An overview of the Proposal is shown in Figure 1. To facilitate operation of the Proposal, the following construction activities would be carried out across and surrounding the Proposal site (area on which the Proposal is to be developed):

- Vegetation clearance
- Remediation works
- Demolition of existing buildings and infrastructure on the Proposal site
- Earthworks and levelling of the Proposal site, including within the terminal hardstand
- Drainage and utilities installation
- Establishment of hardstand across the Proposal site, including the terminal hardstand
- Construction of a temporary diversion road to allow for traffic management along the Moorebank Avenue site during construction (including temporary signalised intersections adjacent to the existing intersections) (the Moorebank Avenue Diversion Road)
- Construction of warehouses and distribution facilities, ancillary offices and the ancillary freight village
- Construction works associated with signage, landscaping, stormwater and drainage works.

The footprint and operational layout of the Proposal are shown on Figure 1. More information relating to the construction of the Proposal is provided in Section 3 of this report, and in Chapter 4 of the MPE Stage 2 EIS.

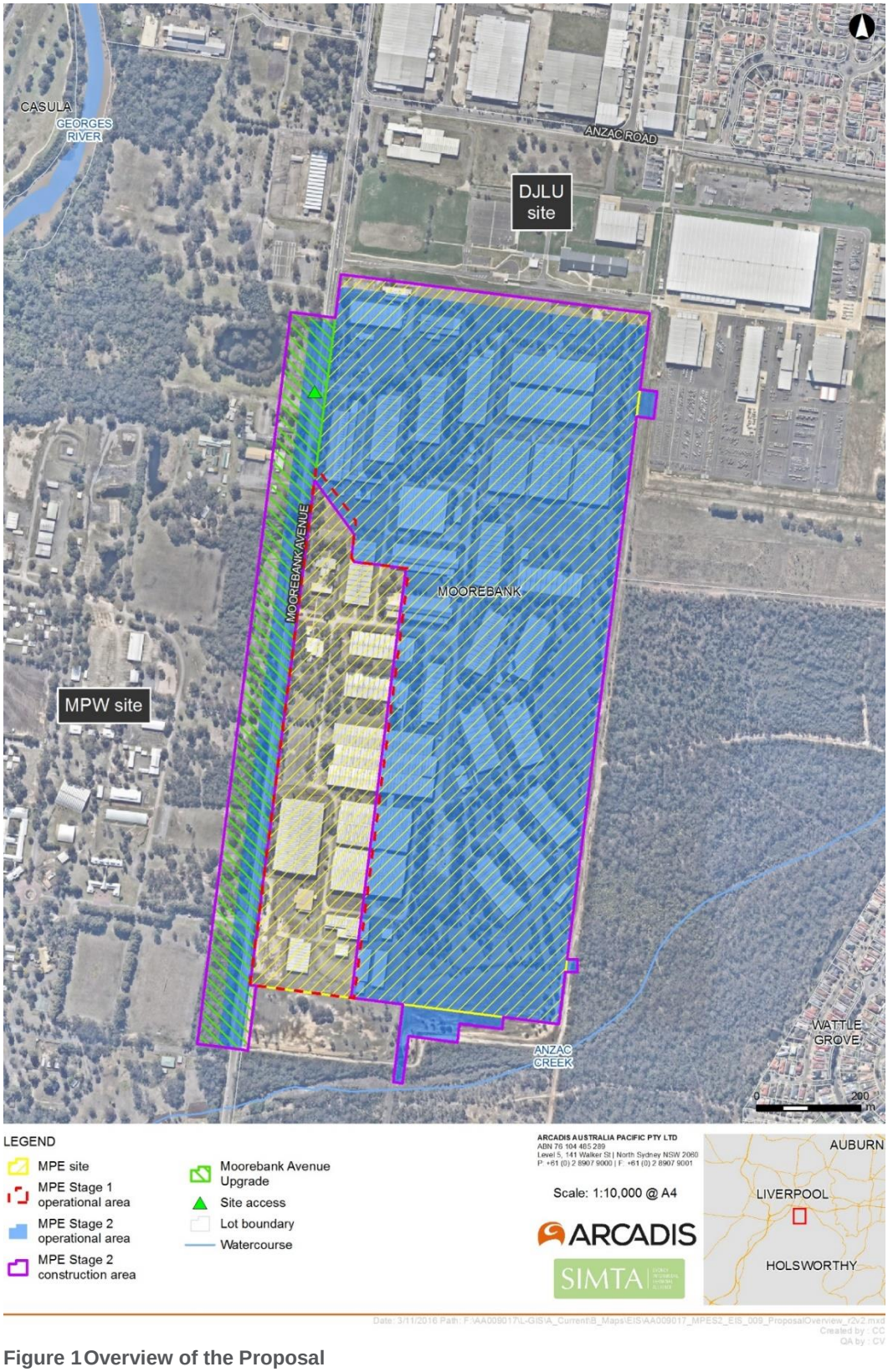


Figure 1 Overview of the Proposal

1.4 Key terms relevant to the Proposal

Table 1-3 provides a summary of the key terms relevant to the Proposal, which are included throughout this report.

Table 1-3 Summary of key terms used throughout this document

Term	Definition
General terms	
The Moorebank Precinct	Refers to the whole Moorebank intermodal precinct, i.e. the MPE site and the MPW site
Moorebank Precinct West (MPW) Project (formerly the MIC Project)	The MPW Intermodal Terminal Facility as approved under the MPW Concept Plan Approval (SSD_5066) and the MPW EPBC Approval (No. 2011/6086).
Moorebank Precinct West (MPW) site (formerly the MIC site)	The site which is the subject of the MPW Concept Plan Approval, MPW EPBC Approval and MPW Planning Proposal. The MPW site does not include the rail link as referenced in the MPW Concept Plan Approval or MPE Concept Plan Approval.
Moorebank Precinct East (MPE) Concept Plan Approval (formerly the SIMTA Concept Plan Approval)	MPE Concept Plan Approval (SSD_0193) granted by the NSW Department of Planning and Environment on 29 September 2014 for the development of former defence land at Moorebank to be developed in three stages; a rail link connecting the site to the Southern Sydney Freight Line, an intermodal terminal, warehousing and distribution facilities and a freight village.
Moorebank Precinct East (MPE) Project (formerly the SIMTA Project)	The MPE Intermodal Terminal Facility, including a rail link and warehouse and distribution facilities at Moorebank (eastern side of Moorebank Avenue) as approved by the Concept Plan Approval (MP 10_0913) and the MPE Stage 1 Approval (14_6766).
Moorebank Precinct East (MPE) Site (formerly the SIMTA Site)	Including the former DSNDC site and the land owned by SIMTA which is subject to the Concept Plan Approval. The MPE site does not include the rail corridor, which relates to the land on which the rail link is to be constructed.
Statement of Commitments (SoC)	Recommendations provided in the specialist consultant reports prepared as part of the MPE Concept Plan application to mitigate environmental impacts, monitor environmental performance and/or achieve a positive environmentally sustainable outcome in respect of the MPE Project. The Statement of Commitments have been proposed by SIMTA as the Proponent of the MPE Concept Plan Approval.
MPE Stage 1 Project-specific terms	
Rail Corridor	Area defined as the 'Rail Corridor' within the MPE Concept Plan Approval.
Rail Link	The rail link from the South Sydney Freight Line to the MPE IMEX Terminal, including the area on either side to be impacted by the construction works included in MPE Stage 1.

Term	Definition
MPE Stage 1	Stage 1 (14-6766) of the MPE Concept Plan Approval for the development of the MPE Intermodal Terminal Facility, including the rail link at Moorebank. This reference also includes associated conditions of approval and environmental management measures which form part of the documentation for the approval.
MPE Stage 1 site	Includes the MPE Stage 1 site and the Rail Corridor, i.e. the area for which approval (construction and operation) was sought within the MPE Stage 1 Proposal EIS.
MPE Stage 2 specific terms	
MPE Stage 2 Proposal/ the Proposal	The subject of this EIS; being Stage 2 of the MPE Concept Plan Approval including the construction and operation of 300,000m^2 of warehousing and distribution facilities on the MPE site and the Moorebank Avenue upgrade within the Moorebank Precinct.
MPE Stage 2 site	The area within the MPE site which would be disturbed by the MPE Stage 2 Proposal (including the operational area and construction area). The MPE Stage 2 site includes the former DSNDC site and the land owned by SIMTA which is subject to the MPE Concept Plan Approval. The MPE site does not include the rail corridor, which relates to the land on which the rail link is to be constructed.
The Moorebank Avenue site	The extent of construction works to facilitate the construction of the Moorebank Avenue upgrade.
The Moorebank Avenue upgrade	Raising of the vertical alignment of Moorebank Avenue for 1.4 kilometres of its length by about two metres, from the northern boundary of the MPE site to approximately 120 metres south of the MPE site. The Moorebank Avenue upgrade also includes upgrades to intersections, ancillary works and the construction of an on-site detention basin to the west of Moorebank Avenue within the MPW site.
Construction area	Extent of construction works, namely areas to be disturbed during the construction of the MPE Stage 2 Proposal (the Proposal).
Operational area	Extent of operational activities for the operation of the MPE Stage 2 Proposal (the Proposal).

2 SITE DESCRIPTION

2.1 Regional context

The MPE site, including the Proposal site, is located approximately 27 km south-west of the Sydney Central Business District (CBD) and approximately 26 km west of Port Botany. The MPE site is situated within the Liverpool Local Government Area (LGA), in Sydney's South West subregion, approximately 2.5 km from the Liverpool City Centre.

The MPE site is located approximately 800 m south of the intersection of Moorebank Avenue and the M5 Motorway. The M5 Motorway provides the main road link between the MPE site, and the key employment and industrial areas within Sydney's west and south-western subregions, the Sydney orbital network and the National Road Network. The M5 connects with the M7 Motorway to the west, providing access to the Greater Metropolitan Region and NSW road network. Similarly, the M5 Motorway is the principal connection to Sydney's north and north-east via the Hume Highway. The regional context of the Proposal is shown on Figure 2.

2.2 Local context

The Proposal site is located approximately 2.5 km south of the Liverpool City Centre, 800 m south of the Moorebank Avenue/M5 Motorway interchange and one kilometre to the east of the SSFL providing convenient access to and from the site for rail freight (via a dedicated freight rail line) and for trucks via the Sydney Motorway Network. The local context of the Proposal is shown in Figure 3.

The land surrounding the Proposal site comprises:

- The MPW site, formerly the School of Military Engineering (SME), on the western side of Moorebank Avenue directly adjacent to the MPE site (subject to the MPW Concept Plan Approval), which is owned by the Commonwealth;
- The East Hills Rail Corridor to the south of the MPE site, which is owned and operated by Sydney Trains;
- The Holsworthy Military Reserve, to the south of the East Hills Rail Corridor, which is owned by the Commonwealth; The Boot Land, to the immediate east of the MPE site between the eastern site boundary and the Wattle Grove residential area, which is owned by the Commonwealth.
- The southern Boot Land, to the immediate south of the MPE site between the southern site boundary and the East Hills Rail Corridor, which is owned by the Commonwealth.

Glenfield Waste Services, south-west of the Proposal is proposing to develop a Materials Recycling Facility on land owned by the Glenfield Waste Services Group within the boundary of the current landfill site at Glenfield. The facility is proposed to recycle a maximum of 450,000 tonnes of material per year. The Glenfield Waste Services Proposal is the subject of a DA (SSD_6249) under Part 4, Division 4.1 of the EP&A Act.

The closest industrial precinct to the Proposal is at Moorebank, comprising around 200 hectares of industrial development. This area includes (but is not limited to) the Yulong and ABB sites to the south of the M5 Motorway and the Goodman MFive Business Park and Miscellaneous industrial and commercial development to the north of the M5 Motorway. The majority of this development is located to the north of the M5 Motorway between Newbridge Road, the Georges River and Anzac Creek. The Moorebank Industrial Area supports a range of industrial and commercial uses,

including freight and logistics, heavy and light manufacturing, offices and business park developments.

There are other areas of industrial development near the Proposal at Warwick Farm to the north, Chipping Norton to the north-east, Prestons to the west and Glenfield and Ingleburn to the south-west.

A number of residential suburbs are located in proximity to the Proposal site. The approximate distances of these suburbs to the MPE Stage 2 site and the Moorebank Avenue site are provided in Table 2-1 below.

Table 2-1 Distance to residential suburbs from the Proposal site

Suburb	Distance to MPE Stage 2 site	Distance to Moorebank Avenue site
Wattle Grove	360 m to the north-east	865 m to the north-east
Moorebank	1300 m to the north	1430 m to the north
Casula	820 m to the west	760 m to the west
Glenfield	1830 m to the south-west	1540 m to the south-west

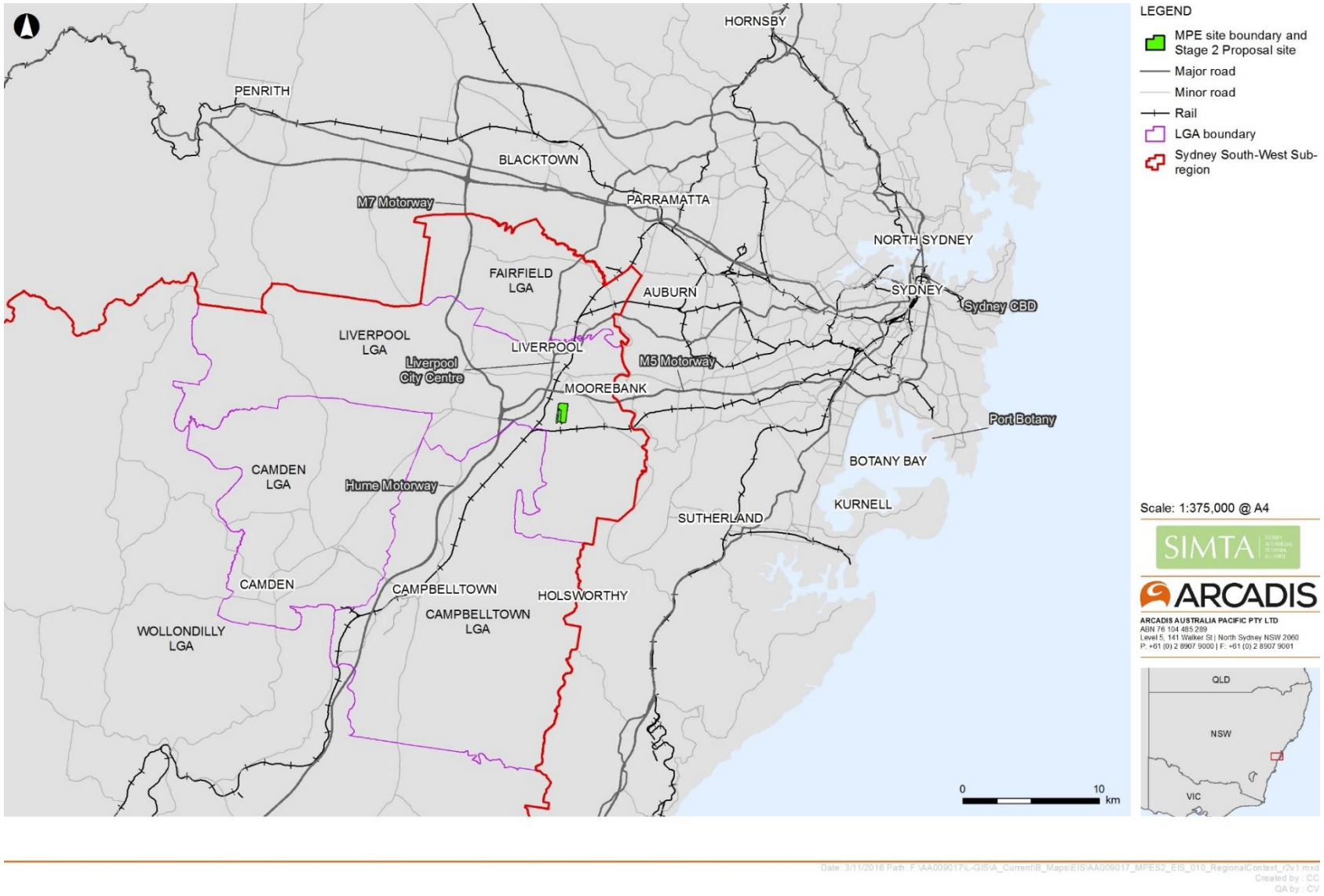


Figure 2 Regional context of the Proposal

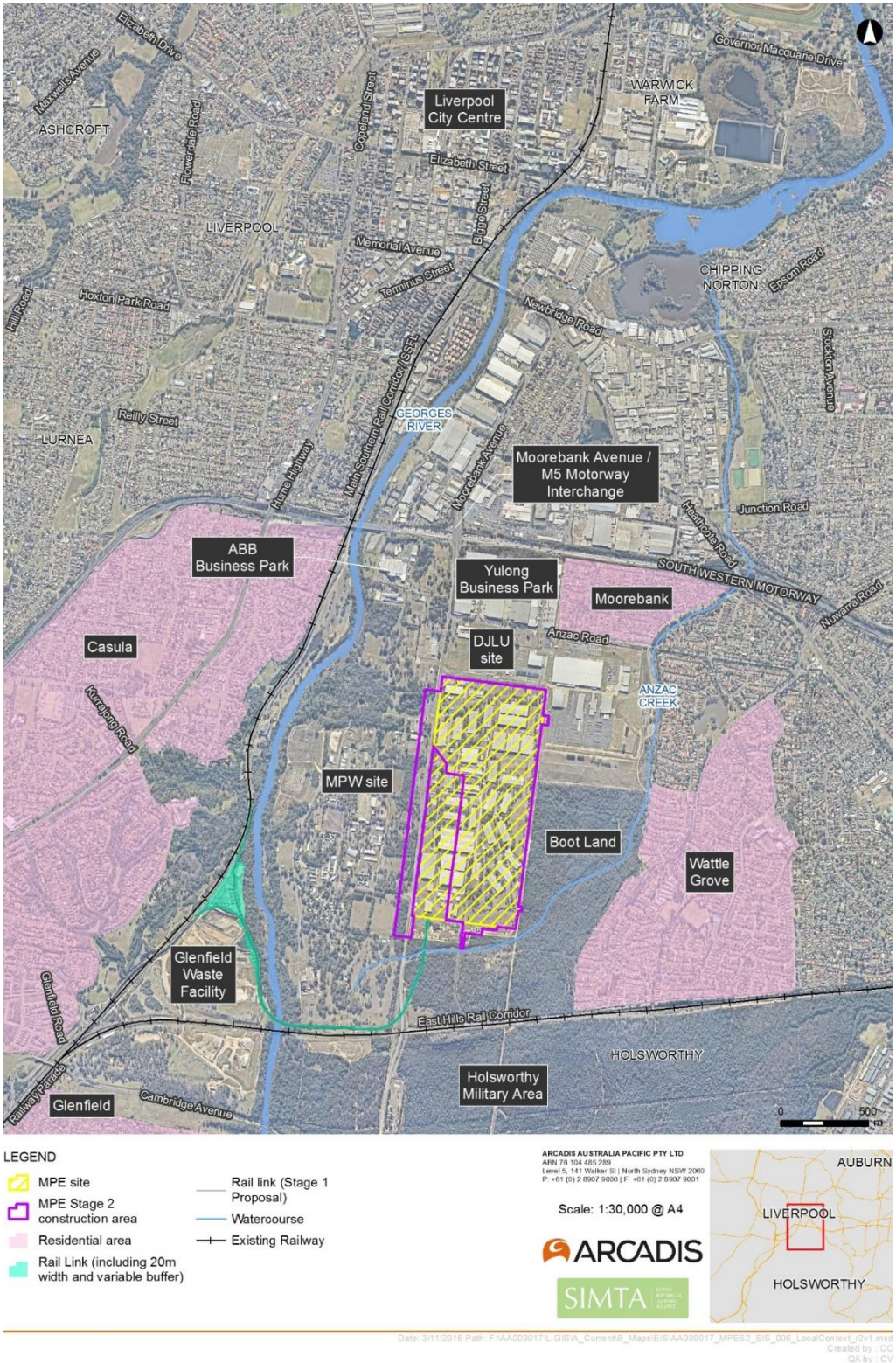


Figure 3 Local context of the Proposal

3 CONSTRUCTION OVERVIEW

3.1 Construction program

Construction of the Proposal is proposed to take between 24 and 36 months, commencing in the final quarter of 2017, with the completion of construction in the third quarter of 2019 (should construction take 24 months). The final construction program will depend on the market demand for warehouses to be constructed on the MPE Stage 2 site.

The indicative construction program (based on a 24-month program) is shown in Table 3-1. The construction works have been divided into seven 'works periods' which are inter-related and would potentially overlap. Subject to confirmation from the construction contractor, the order and staging of these construction works periods may change.

Table 3-1 Indicative construction program (based on a 24-month construction period)

Construction works period	2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Works period A – Pre-construction activities												
Works period B - Site Preparation activities												
Works Period C - Construction of the Moorebank Avenue diversion road												
Works period D - Pavement and intersection works along Moorebank Avenue												
Works period E – Bulk earthworks, drainage and utilities												
Works period F - Construction and internal fit-out of warehousing												
Works period G – Miscellaneous construction and finishing works												

3.2 Construction activities

A summary of the indicative construction works and associated activities proposed to be undertaken during each of these works periods is provided in Table 3-2.

Table 3-2 Construction activities to be undertaken within each construction works period

Construction works period	Activity
Works period A – Pre-construction activities	• Establishment of site access points • Importation of fill for site preparation activities • Installation of site fencing • Remediation, where required.
Works period B - Site preparation activities	• Demolition of existing structures • Clearing of vegetation • Raising and levelling of land (to final operational levels) within which the Main Warehousing Compound would be located • Temporary works, including installation of construction environmental management measures (e.g. erosion and sedimentation controls) • Establishment of construction compound fencing and hoardings • Installation of site offices and amenities • Construction of hardstands for staff parking and laydown areas • Establishment of temporary batch plant and materials crushing plant • Construction of access roads, site entry and exit points and security • Establishment of site haulage roads. • Establishment of construction compound(s)
Works period C: Construction of the Moorebank Avenue diversion road	• Stripping of topsoil within footprint of temporary diversion road • Installation of temporary drainage • Placement of fill and temporary road pavement (e.g. gravel) • Construction of interface between temporary diversion road and existing Moorebank Avenue • Installation of temporary road signage, street lighting and signalling • Transfer of traffic onto temporary diversion road from Moorebank Avenue.

Construction works period	Activity
Works period D – Bulk earthworks, drainage and utilities	• Removal of existing pavement and stripping of topsoil within Moorebank Avenue • Importation, stockpiling and placement of approximately 600,000 m^3 of imported clean fill • Installation of on-site detention (OSD) and drainage infrastructure within the MPE Stage 2 site • Construction of retaining walls • Creation of a road formation by general earthworks (by constructing fill embankments) • Bulk earthworks and raising of the Proposal site to final level, including the terminal hardstand • Utilities relocation and installation • Establishment of hardstand areas. • Internal existing road network modifications to enable continued operations of the site during construction
Works period E – Pavement works along Moorebank Avenue	• Placement of select layer of earthworks material on top of the road formation • Placing and compacting the pavement later (concrete, or concrete and asphalt) over the select layer (consisting of a sub-base and base) and potential sealing with bitumen • Traffic switching from diversion road onto final, raised Moorebank Avenue • Removal of construction traffic management and progressive opening of the internal road and warehouse access roads to traffic • Removal of road surface, road signage, street lighting and signalling from temporary diversion road • Commissioning of Moorebank Avenue.
Works period F - Warehouse construction and internal fit-out	• Foundation and floor slab installation • Erection of framework and structural walls • Installation of roof • Internal fit-out of warehouses (racking and associated services).

Construction works period	Activity
Works period G – Miscellaneous construction and finishing works	• Pavement construction (internal transfer roads and perimeter road), including forming of new kerbs, gutters, medians (where required) and other structures • Line marking, lighting and sign posting • Installation of road furniture, including traffic signs and pavement markers. • Miscellaneous structural construction • Finishing works, including landscaping and general site rehabilitation, where required. • Commissioning of the Proposal • Decommissioning/Demobilisation of the Proposal site, including removal of construction compound(s) and construction environmental controls.

3.3 Plant and equipment

A range of plant and equipment would be required for the construction of the Proposal. A summary of the indicative plant and equipment likely to be utilised is provided in Table 3-3.

Table 3-3 Indicative construction plant and equipment required for construction of the Proposal

Equipment	Construction works period						
	Works period A – Pre-construction activities	Works period B - Site Preparation activities	Works period C: Construction of the Moorebank Avenue diversion road	Works period E - Road and intersection works to facilitate the raising of Moorebank Avenue	Works period D – Bulk earthworks, drainage and utilities	Works period F - Construction and internal fit-out of warehousing	Works period G – Miscellaneous construction and finishing works
Loaders		✓			✓	✓	✓
Static and vibratory rollers, and high energy impact compaction	✓	✓	✓	✓	✓	✓	
Mobile cranes	✓	✓			✓	✓	
Excavators	✓	✓	✓	✓	✓	✓	
Excavators with hammers		✓			✓		
Backhoes		✓			✓	✓	✓

Equipment	Construction works period						
	Works period A – Pre-construction activities	Works period B - Site Preparation activities	Works period C: Construction of the Moorebank Avenue diversion road	Works period E - Road and intersection works to facilitate the raising of Moorebank Avenue	Works period D – Bulk earthworks, drainage and utilities	Works period F - Construction and internal fit-out of warehousing	Works period G – Miscellaneous construction and finishing works
825 Compactor			✓	✓			
Crushing plant		✓			✓		
Batch plant					✓	✓	
Concrete agitators (or similar)		✓			✓	✓	✓
Concrete pumps		✓			✓	✓	✓
Concrete saws					✓	✓	✓
Air compressors					✓	✓	✓
Jackhammers						✓	✓
Dozers		✓	✓	✓	✓		
Mulchers		✓					
20-40 tonne articulated tipper trucks	✓	✓			✓		
Scrapers		✓			✓		
Graders	✓	✓	✓	✓	✓	✓	
Water trucks	✓	✓	✓	✓	✓	✓	✓
Piling rigs					✓	✓	
Forklifts					✓	✓	✓
Small earthmoving equipment	✓				✓	✓	✓
Welder					✓	✓	✓
Road profiler			✓	✓			
Rubber Roller			✓	✓			

3.4 Construction compounds

Temporary construction compounds would be required to support construction of the Proposal. The locations of these compounds are indicative and subject to confirmation by the construction contractor, once appointed.

It is envisaged that construction of the Proposal would require the use of two construction compounds:

- The Warehousing Compound, within the MPE site
- The Moorebank Avenue Compound, within the MPW site and immediately west of Moorebank Avenue.

The location and indicative layout of the construction compounds are shown in Figure 4 and are described in more detail in Section 3.4.1 and Section 3.4.2 below.

3.4.1 Main Warehousing Compound

The main construction compound for the Proposal (herein referred to as the Warehousing Compound) would be located within land proposed to be used as the Stage 1 Proposal's main IMT compound.

It is expected that some additional satellite compounds would be required during the construction of each individual warehouse on the Proposal site; however, the Warehousing Compound would be used for the majority of construction works.

The Warehousing Compound would include:

- A site office(s)
- Staff amenities
- Car parking
- Storage and laydown areas
- Materials testing facilities
- Material crushing facilities
- A concrete batching plant.

The indicative layout of the Warehousing Compound is shown on Figure 4.

3.4.2 Moorebank Avenue Compound

The Moorebank Avenue Compound would be located on the western side of Moorebank Avenue, in an existing area of hardstand within the MPW site. This area was previously used as a staff car park and as such, is characterised by large areas of level paved / hardstand surfaces and narrow garden beds that support a small number of trees.

The Moorebank Avenue Compound would include, site offices, car parking, and equipment storage and laydown areas, with some materials such as pre-cast culverts being temporarily stored within the compound area on occasion. The entrance to this compound would be generally at the location of the existing intersection off Moorebank Avenue.

No stockpiles are proposed to be located within the Moorebank Avenue Compound. Some materials such as pre-cast culverts may be temporarily stored within the compound area on occasion. The location of the Moorebank Avenue Compound is shown on Figure 4.

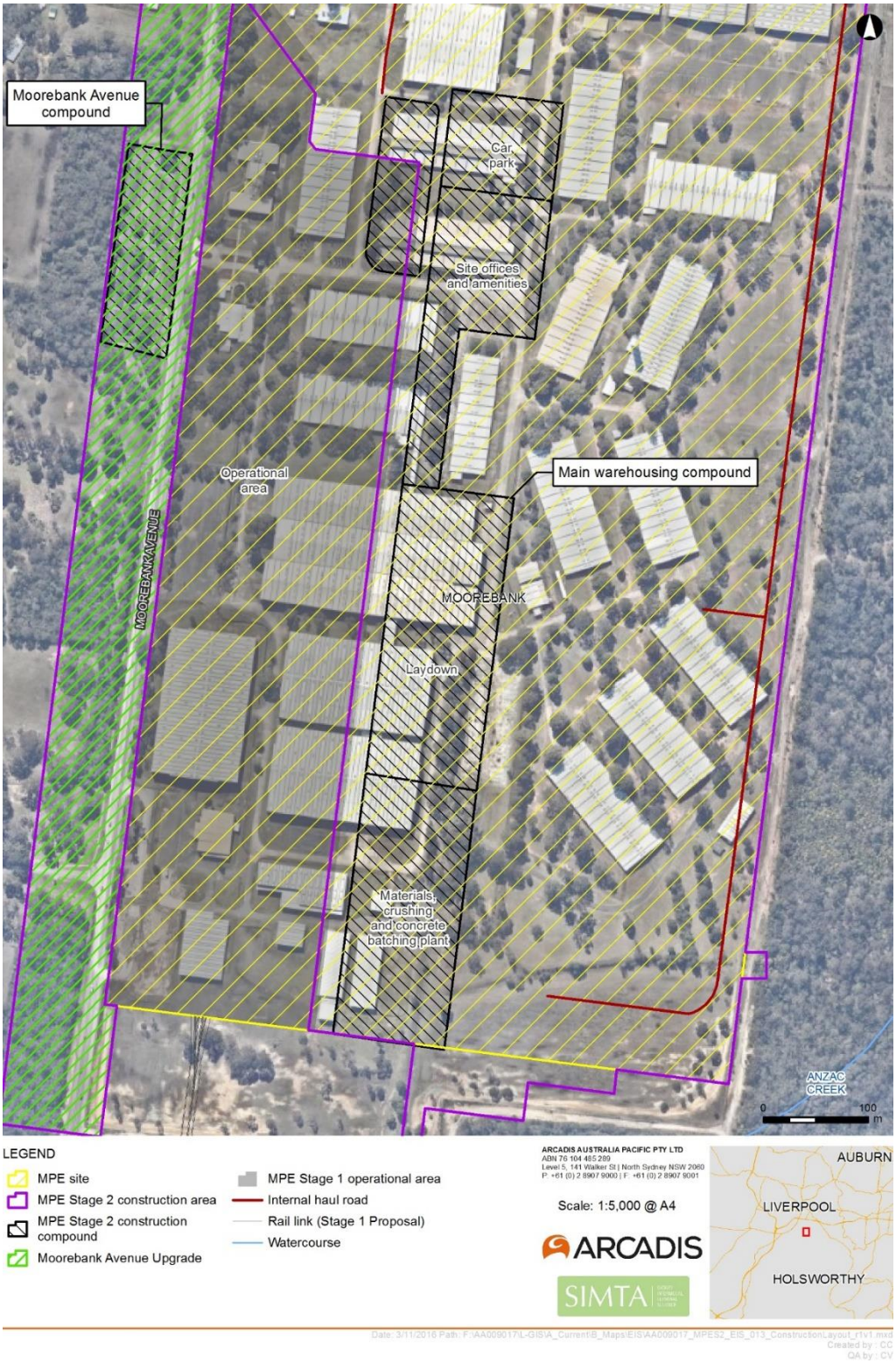


Figure 4 Overview of the construction layout for the Proposal

3.5 Construction hours

Construction works would generally be undertaken during standard daytime construction working hours, being:

- 7 am to 6 pm, Monday to Friday
- 8 am to 1 pm, Saturday
- No works on Sunday or Public Holidays.

Bulk earthworks activities and construction works to facilitate the Moorebank Avenue upgrade during peak construction periods may be undertaken outside of standard construction hours, but not during the night-time (i.e. 10pm to 7am).

The proposed construction hours for activities associated with bulk earthworks and construction of the Moorebank Avenue upgrade are summarised in Table 3-4.

Table 3-4 Construction hours for activities associated with bulk earthworks and the Moorebank Avenue upgrade

Construction activity	Construction hours	
	Weekdays	Saturdays
Material Delivery	6am-10pm	7am-6pm
Direct placement	7am-10pm	8am -6pm
Stockpiling	7am-6pm	7am-6pm
Crushing	7am-6pm	8am-1pm
Moorebank Avenue upgrade	6am – 10pm	7am – 6pm

Some additional construction works would be undertaken outside of standard daytime construction working hours, subject to consultation with the relevant authorities and in accordance with the *Interim Construction Noise Guidelines* (DECC, 2009), including:

- Any works which would not result in audible noise emissions at any nearby sensitive receptors
- The delivery of oversized plant and/or structures that police or other authorities determine require special arrangements to transport along public roads
- Emergency work to avoid the loss of lives, property and/or to prevent environmental harm
- Maintenance and repair of public infrastructure where disruption to essential services and/or consideration of worker safety do not allow work within standard construction hours
- Public infrastructure works that shorten the length of the project and are supported by noise-sensitive receivers
- Construction works where it can be demonstrated and justified that these works are required to be undertaken outside of standard construction hours
- Any other work as approved through the Construction Noise and Vibration Management Plan.

3.6 Construction site access

Construction access to the MPE Stage 2 site would be via the intersection proposed to be used as the operational site access point, which is shown on Figure 5 below. Access to this intersection would be via one of the following:

- the former DSNDC intersection from Moorebank Avenue in its existing configuration
- the Moorebank Avenue diversion road, via a temporary intersection
- the final operational intersection for the MPE Stage 2 site from the upgraded Moorebank Avenue.

The configuration of this site access point would vary through each construction works period, depending on the construction activities being undertaken at the time, and the associated staging. A summary of the indicative form of access to the MPE Stage 2 site during construction is summarised in Table 3-5 below. The format of access during construction would be refined and confirmed during the detailed design phase of the Proposal and managed in accordance with a Construction Traffic Management Plan (CTMP).

A conceptual layout of the Moorebank Avenue diversion road and the temporary access arrangements is shown on Figure 6 below.

Table 3-5 Construction Site Access per Works Period

Works Period	Moorebank Avenue layout		
	Existing Moorebank Avenue	**Moorebank Avenue diversion road**	**Upgraded Moorebank Avenue**
Works period A – Pre-construction activities	✓		
Works period B - Site preparation activities	✓		
Works period C: Construction of the Moorebank Avenue diversion road		✓	
Works period D – Bulk earthworks, drainage and utilities		✓	
Works period E – Pavement works along Moorebank Avenue		✓	
Works period F - Warehouse construction and internal fit-out			✓
Works period G – Miscellaneous construction and finishing works			✓

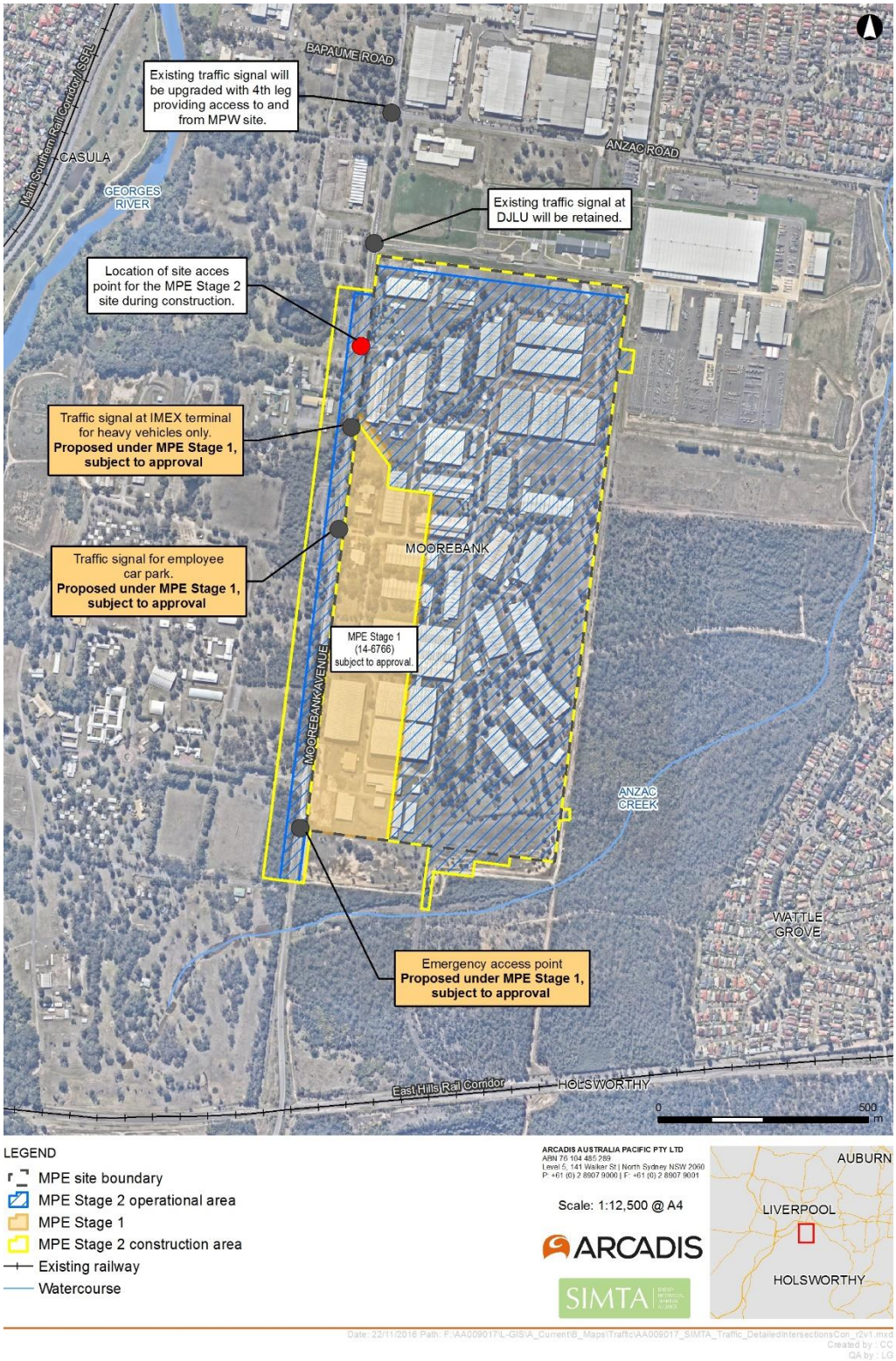


Figure 5 Location of MPE Stage 2 Site Access point

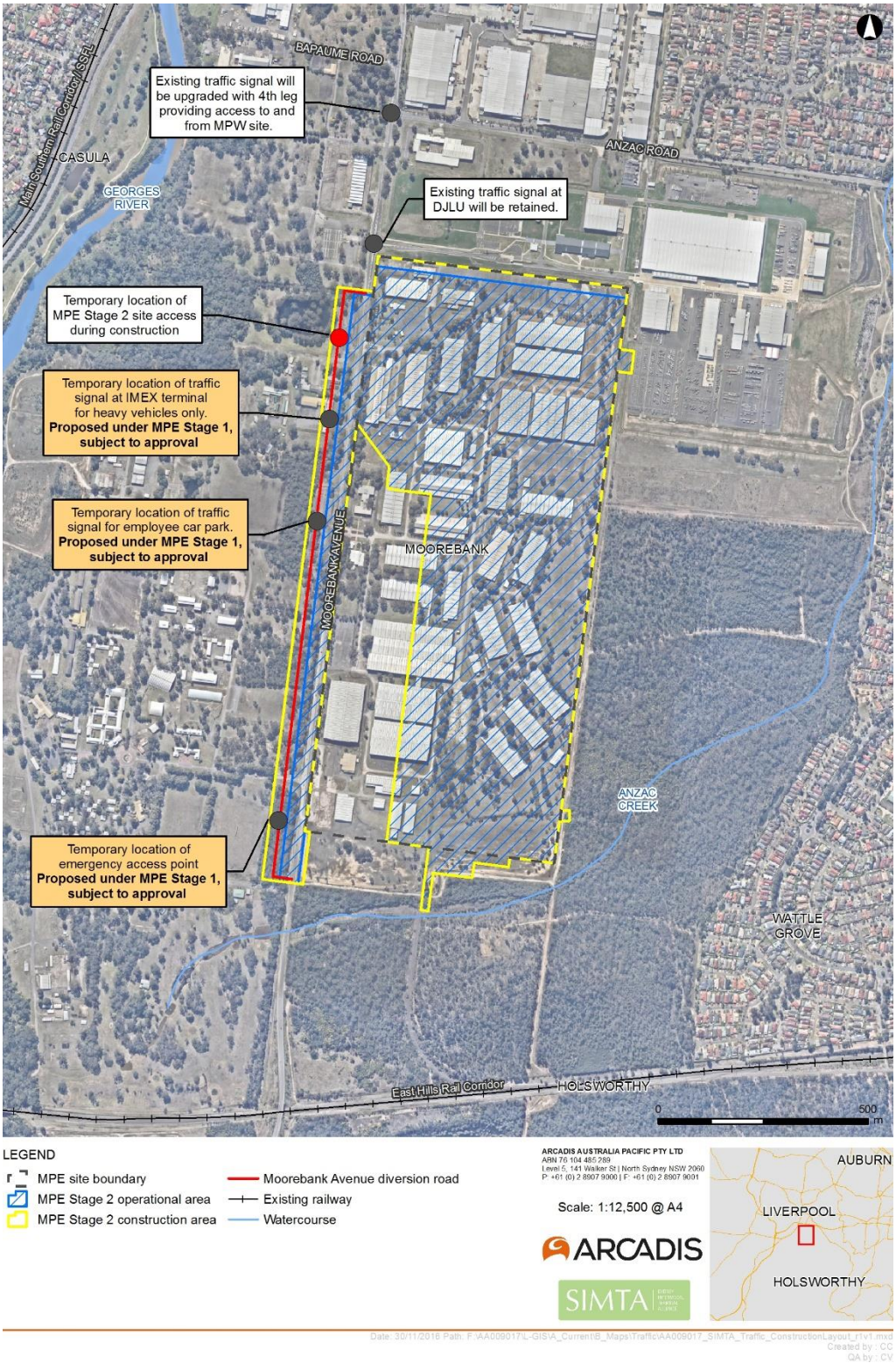


Figure 6 Conceptual layout of the Moorebank Avenue diversion road during construction

4 METHODOLOGY

To undertake the CTIA, the following methodology was adopted.

1. Increase existing 2015 background traffic volumes to the 2018 assessment year using growth rates used for the LMARI Aimsun model
2. Estimate the peak construction traffic generation for the Proposal and cumulative scenarios. The worst-case peak construction periods have been assessed for the Proposal and cumulative scenarios.
3. Used SIDRA Intersection software (Version 7.0.5.6563) to determine the performance of the impacted intersections with the addition of Proposal and cumulative traffic scenarios

Sections 4.1 and 4.2 identify the scenarios modelled and the adopted performance criteria.

4.1 Modelling scenarios

Traffic impacts from construction of the Proposal have been assessed for two scenarios, as described in Table 4-1 below. Traffic flow diagrams for both Scenario 1 and Scenario 2 are provided in Appendix A.

Table 4-1 Adopted CTIA Scenarios

Scenario	Description	Configuration of nearby key intersections
1	Background traffic and the Proposal during peak construction (i.e. concurrent construction of works periods D, E and F in 2018). Access to the Proposal site would be via the temporary MPE Stage 2 Site Access on the Moorebank Avenue diversion road. Scenario 1 also includes traffic from existing operational warehouse tenants on the MPE site	• Moorebank Avenue / M5 Motorway – unchanged from current configuration • Moorebank Avenue / Anzac Road – unchanged from current configuration • Moorebank Avenue / DJLU Access – unchanged from current configuration • Moorebank Avenue / MPE Stage 2 Site Access – accessible from the diversion road built for Moorebank Avenue upgrades
2	Background traffic and Cumulative construction traffic (i.e. the peak construction period would occur concurrently with MPE Stage 1 construction, MPW Stage 1/Early Works construction, MPW Stage 2 construction and the construction of the Proposal in the second quarter of 2018.) Access to the Proposal site would be via the temporary MPE Stage 2 Site Access on the Moorebank Avenue diversion road.	• Moorebank Avenue / M5 Motorway – unchanged from current configuration • Moorebank Avenue / Anzac Road – altered conditions assumed during construction of the upgraded intersection under MPW Stage 2 • Moorebank Avenue / DJLU Access – unchanged from current configuration • Moorebank Avenue / MPE Stage 2 Site Access –

Scenario	Description	Configuration of nearby key intersections
		accessible from the diversion road built for Moorebank Avenue upgrades

4.2 Intersection Performance Criteria

The performance of the key intersections near the Proposal was determined using SIDRA (Version 7 at the time of undertaking the assessment) traffic modelling software. The Level of Service (LoS) criteria used for the intersection assessment is as per the "*Guide to Traffic Generating Developments*" published by the Roads and Traffic Authority (RTA) of New South Wales, Australia (draft version 2.2 of October 2002). The level of service criteria for intersection performance used in this CTIA is provided in **Error! Reference source not found.**.

Table 4-2 Level of Service Criteria for Intersection Capacity Analysis

Level of Service (LoS)	Average Delay per Vehicle (sec/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	<14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	>70	Unsatisfactory with excessive queuing	Unsatisfactory with excessive queuing

Source: RTA Guide to Traffic Generating Developments

5 EXISTING CONDITIONS

5.1 Road network

The MPE Stage 2site is located on the eastern side of Moorebank Avenue to the south of Anzac Road, in Moorebank in south-west Sydney. It is expected that the majority of traffic associated with the construction of the Proposal would access the Proposal site from the M5 Motorway and Moorebank Avenue. The key roads on the road network surrounding the MPE Stage 2 site are summarised in Table 5-1 below.

Table 5-1 Existing key roads on the road network adjacent to the MPE site

Road	Road Hierarchy	Characteristics
M5 South West Motorway	Motorway	The M5 South West Motorway (M5 Motorway) is a 22 km tolled road, with generally three lanes in each direction between Camden Valley Way, Prestons and King Georges Road, Beverly Hills. The M5 Motorway It is operated by Interlink Roads and forms part of the M5 transport corridor, which is the main passenger, commercial and freight route between Sydney Airport, Port Botany and south west Sydney. The M5 Motorway is also a key part of the Sydney Orbital Network; a series of interconnected roads that link key areas of the Greater Sydney Metropolitan Region (GMR).
Moorebank Avenue	Local Road / Private Road	Moorebank Avenue is currently a two lane undivided road (one lane in each direction) between the M5 Motorway and Cambridge Avenue to the south of the Proposal site. To the north of the M5 Motorway, Moorebank Avenue is generally a four lane undivided road. Moorebank Avenue provides a north-south link between Liverpool and Glenfield, and also forms a grade separated interchange with the M5 Motorway, north of the Proposal site. North of the M5 Motorway, Moorebank Avenue is a State Road. Moorebank Avenue between theM5 Motorway and Anzac Road is owned and maintained by Liverpool City Council. Moorebank Avenue between Anzac Road and Cambridge Avenue (including the portion of Moorebank Avenue in Moorebank Avenue site) is a privately owned road located on Commonwealth land that is publicly accessible.
Anzac Road	Local Road	Anzac Road is an east-west oriented local road that connects Moorebank Avenue and Heathcote Road. It provides access to Moorebank Business Park and the residential area of Wattle Grove. Anzac Road is generally a two-lane undivided road.

Road	Road Hierarchy	Characteristics
Bapaume Road	Local Road	Bapaume Road is an east-west local road that connects Moorebank Avenue to the industrial complex (ABB site). Bapaume Road is generally a two-lane undivided road, which is owned and maintained by Liverpool City Council.
Cambridge Avenue	Local Road	Cambridge Avenue is a local road which connects Moorebank Avenue from the south to Macquarie Fields through to Campbelltown. It is generally a two lane road (one lane each direction) and is owned and maintained by Campbelltown City Council. Cambridge Avenue crosses the Georges River via a low level narrow bridge (subject to flooding).

5.2 Traffic volumes

Traffic count surveys were undertaken for the MPE Stage 1 and Roads and Maritime's wider Liverpool Moorebank Arterial Road Investigations (LMARI) traffic model in 2015 and have been used for this CTIA where relevant. Table 5-2 below shows existing peak hour traffic volumes on Moorebank Avenue, Anzac Road and Cambridge Avenue.

In the AM peak, the highest traffic volumes on Moorebank Avenue, south of Anzac Road was observed in the northbound direction, and were more than double the volume of vehicles travelling southbound. In the PM peak, the highest traffic volume Moorebank Avenue, south of Anzac Road was observed in the southbound direction, and were almost double the volume of vehicles travelling northbound. The peak traffic flows on Cambridge Avenue (east of Canterbury Road) were found to be similar to Moorebank Avenue. During the AM peak, traffic movements along Anzac Road were considerably greater in the eastbound direction than the westbound direction. However, in the PM peak, similar traffic movements were observed in the eastbound and westbound directions,

During the construction of the MPE Stage 2 proposal, it is expected that existing warehouses in the north of the MPE Stage 2 Site would continue to operate and as such have been included in this CTIA.

Detailed traffic volumes along Moorebank Avenue from the traffic survey counts are included in Appendix A of this report.

Table 5-2 Peak hour traffic volumes on key roads near the Proposal in 2015

Locations	AM Peak (8-9am)		PM Peak (5-6pm)	
	NB/EB(1)	SB/WB(1)	NB/EB(1)	SB/WB(1)
Moorebank Ave, south of Anzac Rd	950	430	450	840
Anzac Rd, east of Moorebank Rd	720	490	510	520
Moorebank Ave, north of Cambridge Avenue	920	360	350	920
Cambridge Avenue, east of Canterbury Road	960	330	340	930

Note: (1) Northbound (NB), Eastbound (EB), Southbound (SB), Westbound (WB).

5.3 Level of service at key intersections

Table 5-3 summarises the performance of key intersections near the Proposal site at the following intersections for 2018 AM and PM peak periods:

- Moorebank Avenue/ Anzac Road
- M5 Motorway/ Moorebank Avenue
- Moorebank Avenue/ MPE Stage 2 Site Access
- Moorebank Avenue/ DJLU Access

All four intersections near the Proposal are expected to operate at an acceptable level of service during the AM and PM Peak in 2018.

For the existing situation (without the construction traffic), the SIDRA model predicts a LoS B at the Moorebank Avenue/Anzac Road intersection in both the AM and PM peak. The model indicates that the M5 Motorway/Moorebank Avenue intersection is operating at LoS B in the AM peak and at LoS C in the PM peak. The Moorebank Avenue/DJLU Access intersection is expected to operate at LoS A in the AM and PM peak periods.

Table 5-3 Level of service for AM and PM peaks (2018)

Intersection*	AM Peak (8-9am)		PM Peak (5-6pm)	
	Average Delay (seconds)	LoS	Average Delay (seconds)	LoS
Moorebank Avenue / Anzac Road	18	B	17	B
M5 Motorway / Moorebank Avenue	24	B	30	C
Moorebank Avenue / MPE Stage 2 Site Access	Existing conditions not modelled due to intersection not being currently operational			
Moorebank Avenue / DJLU Access	7	A	6	A

Note (*) Based on existing intersection signals and layout

6 CONSTRUCTION TRAFFIC GENERATION

6.1 Construction traffic movements

Construction vehicles would be accessing and egressing the site from the north of the site only via Moorebank Avenue and the proposed construction access point proposed shown in Figure 5 of Section 3.6.

Construction traffic volumes have been estimated based on the construction activities that would generate the most amount of traffic. Table 6-1 below summarises the number of construction vehicle movements for the Proposal, for both heavy (truck) and light vehicles, to and from the construction site each weekday for the peak construction period.

The construction vehicle movements presented in Table 6-1 are considered representative of a worst-case construction traffic scenario, which is expected to occur in 2018 where works periods D, E and F overlap and construction activities on the Proposal site are assumed to peak.

Table 6-1 Estimates of Daily Construction Vehicle Movements for the Proposal

Construction activity	Construction works period			Total Daily Vehicle Trips for the Proposal (two-way)	
	D	E	F	Heavy Vehicles	Light Vehicles
Fill Haulage	✓	✓		734	60
Moorebank Avenue upgrade	✓	✓		232	200
Warehouse Construction and fitout			✓	56	168
			Total	1,022	428

6.2 Construction traffic distribution and haulage route

6.2.1 Light vehicle distribution

Approximately 90% of light vehicle movements would access and egress the Proposal site and travel along Moorebank Avenue to the north of the Proposal site to the M5 Motorway and surrounding road network. The remaining 10% of light vehicles are expected to use Anzac Road.

6.2.2 Heavy vehicle distribution/haulage route

All heavy vehicles are expected to access and egress the Proposal site and travel along Moorebank Avenue to the north of the Proposal site to the M5 Motorway and surrounding road network. It is anticipated that heavy vehicles would use the gazetted heavy vehicle routes to access the Proposal site. No heavy vehicles would use Anzac Road. There is expected to be a small number of truck movements via Cambridge Avenue for disposal of unsuitable material to the Glenfield Waste Facility if required.

6.3 Peak hour traffic generation

The CTIA has assumed that on weekdays during the peak construction period (i.e. 2018), the majority of construction staff would arrive at the Proposal site during the AM peak period (between 5am and 7am) and would depart the Proposal site during the PM peak (between 3pm and 5pm). Some lunchtime movements are also anticipated.

Heavy vehicle movements each weekday during construction are assumed to be evenly distributed over an approximate 11-hour period (7 am to 6 pm), with the exception of the fill haulage which is anticipated to operate over an extended 16-hour period between 6am and 10pm. Temporal weekday distribution of staff cars and construction trucks for construction works periods D, E and F are shown on Figure 6.

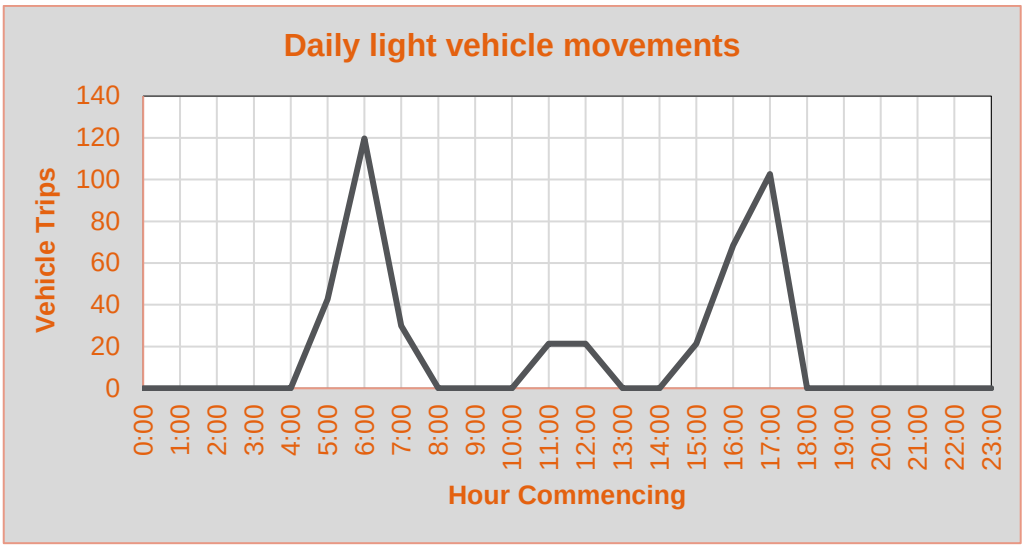
Table 6-2 below summarises weekday AM (one hour) and PM (one hour) construction traffic movements to and from the Proposal site. The estimated number of hourly truck movements varies between 44 and 67 truck trips (2-way) depending on the time of day. The highest number of truck trips is expected to be between the hours of 7am and 6pm with 67 truck trips (2-way) per hour. The highest number of light vehicle trips is expected to be 120 light vehicle trips (2-way) per hour between 6am and 7am.

During the peak construction period it is expected that approximately 67 trips (2-way) would be travelling to and from the site during the AM peak hour. Approximately 169 trips (2-way) would be travelling to and from the site during PM peak hour.

This estimation represents the predicted peak traffic generation which is representative of a worst-case scenario where construction works periods D, E and F may overlap (refer to Section 3.1 and Section 6.1 for more information).

Table 6-2 Weekday AM and PM Peak hour construction traffic movements (2018) due to the Proposal

Peak Construction Period – Works Periods D, E and F	AM Peak (8-9am)			PM Peak (5-6pm)		
	Truck Trips	Car Trips	Total Trips (2-way)	Truck Trips	Car Trips	Total Trips (2-way)
Fill Haulage for MPE Stage 2	43	0	43	43	14	57
Raising of Moorebank Avenue	19	0	19	19	48	67
Warehouse Construction	5	0	5	5	40	45
Total Peak Construction	**67**	**0**	**67**	**67**	**102**	**169**



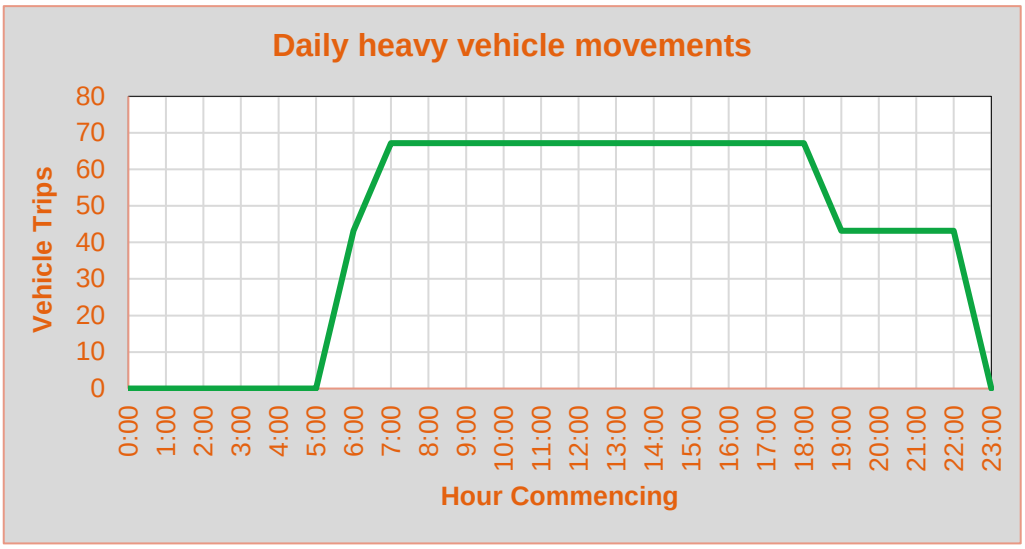


Figure 7 Temporal weekday distribution of staff cars and construction trucks

7 CONSTRUCTION TRAFFIC IMPACT ASSESSMENT

7.1 Proposal construction traffic impacts (Scenario 1)

The predicted average delays and LoS at key intersections near the Proposal during the peak construction period is summarised in Table 7-1. The results of the SIDRA analysis indicate that key intersections near the Proposal would operate at an acceptable LoS during the AM and PM peak periods.

7.2 Cumulative construction traffic impact (Scenario 2)

The predicted average delays and LoS at key intersections near the Proposal during the peak construction period in a cumulative scenario is summarised in Table 7-2.

The results of the SIDRA analysis indicate that key intersections near the Proposal would operate at an acceptable LoS during the AM and PM peak periods in the cumulative scenario.

Table 7-1 Intersection performance during construction – Scenario 1 (2018)

Intersections	Intersection Configuration	AM Peak				PM Peak			
		Without construction*		With construction*		Without construction		With construction*	
		Average Delay (seconds)	LoS	Average Delay (seconds)	LoS	Average Delay (seconds)	LoS	Average Delay (seconds)	LoS
Moorebank Avenue / MPE Stage 2 Site Access	Existing	7	A	12	A	6	A	10	A
Moorebank Avenue / DJLU Access	Existing	N/A^	N/A^	4	A	N/A^	N/A^	5	A
Moorebank Avenue / Anzac Road	Existing	18	B	31	C	17	B	23	B
M5 Motorway / Moorebank Avenue	Existing	24	B	31	C	30	C	31	C

Note:

*Assessed against the peak construction period. Refer to Section 3.1 and 6.1 for more information

^The existing conditions of the Moorebank Avenue / MPE Stage 2 Site Access intersection has not been modelled as the intersection is not currently operational.

Table 7-2 Intersection performance during construction – Scenario 2 (2018)

Intersections	Intersection Configuration	AM Peak				PM Peak			
		Without construction of the Proposal		With construction*		Without construction		With construction*	
		Average Delay (seconds)	LoS	Average Delay (seconds)	LoS	Average Delay (seconds)	LoS	Average Delay (seconds)	LoS
Moorebank Avenue / MPE Stage 2 Site Access Road	Existing	7	A	12	A	6	A	10	A
Moorebank Avenue / DJLU Access Road	Existing	N/A^	N/A^	4	A	N/A^	N/A^	5	A
Moorebank Avenue / Anzac Road	Upgraded Signal with 4th leg providing access to MPW site	18	B	39	C	17	B	44	D
M5 Motorway / Moorebank Avenue	Existing	24	B	34	C	30	C	39	C

Note:

*Assessed against the peak construction period. Refer to Section 3.1 and 6.1 for more information

^The existing conditions of the Moorebank Avenue / MPE Stage 2 Site Access intersection has not been modelled as the intersection is not currently operational.

7.3 Access / egress

Access and egress to the construction compounds are proposed off Moorebank Avenue via an existing signalised intersection, as described in Section 3.6. However, should a larger vehicle require access to the site, such as low loaders, a traffic controller would be used to allow larger trucks to encroach across the access road where required and would also ensure sufficient time to complete their turning manoeuvre is provided. Sufficient signage would be installed to ensure unauthorised vehicles do not enter the site. The existing local accesses along Moorebank Avenue would be maintained during construction with mitigation measures implemented, if necessary.

7.4 Potential carriageway closures

There is the potential that a section of Moorebank Avenue would need to be closed from time to time, for short periods, to undertake diversionary works during the Moorebank Avenue upgrade. These works would be defined in a CTMP for the Proposal, which would include details of signage and diversion plans to ensure the safe operation of the Moorebank Avenue through traffic.

Where proposed in areas of Moorebank Avenue that are not privately owned, road closures would be undertaken in accordance with a road occupancy licence, issued under the *Roads Act 1993*.

7.5 Public transport

There is currently one bus service (i.e. Route 901) in the proximity of the Proposal site, with the service operating along Moorebank Avenue from Anzac Avenue. There is one service in each peak hour that runs past the Proposal site. Given that the majority of construction activities would be contained on the Proposal site it is considered unlikely that there would be any significant impacts to public transport services. However, due to the proposed upgrading of Moorebank Avenue, two existing bus stops are likely to be impacted. Consultation with TfNSW and the relevant bus operator would be undertaken accordingly to determine the location of temporary bus stop locations, if required.

7.6 Road access restrictions

Road access restrictions would be applied to ensure all construction related heavy vehicles are not travelling through nearby residential areas to access the Proposal site. In particular, operational restrictions and signposting developed in conjunction with Council and local residents will be implemented to ensure no construction related heavy vehicles can travel along Anzac Avenue through the Wattle Grove residential area.

Site operation and logistics plans would take this restriction into consideration when planning deliveries and haul routes, and the restriction on travelling along Anzac Road would be reinforced during site induction training for truck operators. This will ensure sensitive local residential roads are protected from amenity impacts associated with heavy vehicle movements and arterial roads are utilised.

7.7 Access for emergency vehicles

It is proposed that all access points for the site be made available for emergency vehicle access should the need arise. This would be considered as part of the site safety and incident management plans.

8 MITIGATION MEASURES

A PCTMP has been provided in Appendix K of the MPE Stage 2 EIS. It is intended that this would form the basis of the CTMP to be prepared as a part of the Construction Environmental Management Plan (CEMP) for construction of the Proposal by the construction contractor, once appointed. The CTMP would detail the management controls to be implemented during construction to avoid or minimise impacts to traffic, pedestrian and cyclist access, and the amenity of the surrounding environment. The CTMP would be approved by the DP&E prior to commencement of construction and would be implemented for the duration of construction of the Proposal. Key initiatives that would be included as part of the CTMP include:

- Review of speed restrictions along Moorebank Avenue and implementation of a maximum 40 km per hour construction zone along Moorebank Avenue along with additional signposting of speed limitations to reinforce reduced speed limits during construction of the Proposal
- Installation of specific warning signs on approach to, and at entrances to, the construction site to warn existing road users of entering and exiting construction traffic
- Establishing pedestrian exclusion zones and walking routes/crossing points which integrate within the existing pedestrian network
- Distribution of day warning notices to advise local road users of scheduled construction activities and associated traffic movements.
- Installation of appropriate traffic controls and warning signs for areas identified where potential safety risk issues exist
- The promotion of car-pooling for construction staff and other shared transport initiatives during the construction phase
- Management and coordination of the transportation of materials to maximise vehicle loads and therefore minimise vehicle movements
- Traffic Control Plans (when and where required) will be prepared for the road network surrounding the Proposal, including all primary and secondary access points and any requirements for temporary road closures of Moorebank Avenue for diversion works
- Traffic Control Plans (TCP) will be produced for specific construction staging scenarios, depicting vehicle, pedestrian, bus and cyclist restrictions and protection measures.

The mitigation measures relating to construction traffic would also include implementation of a community information, awareness program that would be initiated prior to construction and would include:

- Implementation of traffic management measures to:
  - restrict the use of Anzac Road through Wattle Grove to access the site
  - restrict the use of Cambridge Avenue through Glenfield to access the site (other than for the use of accessing the Glenfield Waste Facility)
- Measures to ensure that the local residents and adjoining properties are fully aware of the construction activities, with particular regard to construction traffic accessing the site.
- Identify communication protocols for community feedback on issues relating to construction vehicle driver behaviour and construction traffic related matters.

9 CONCLUSION

This CTIA Report has been prepared by Arcadis Asia Pacific Pty Ltd (Arcadis) for the Proposal to identify potential traffic impacts that may result from construction of the Proposal, and recommend mitigation measures to avoid, minimise and mitigate these impacts.

The results of the CTIA indicate that the traffic associated with construction of the Proposal and the cumulative construction scenario would not have an adverse impact on the performance of key intersections near the Proposal and would operate at an acceptable LoS during the AM and PM peak periods.

Temporary construction traffic impacts would be managed with the implementation of a CTMP, which would document management controls to be implemented during construction to avoid or minimise impacts to traffic, pedestrian and cyclist access, and the amenity of the surrounding environment. A PCTMP has been prepared as part of the submission of the MPE Stage 2 EIS (refer to Appendix K). This PCTMP would be further developed and finalised as a part of the final CEMP, which would be submitted for approval by NSW DP&E prior to the commencement of construction.

APPENDIX A

Traffic Flow Diagrams

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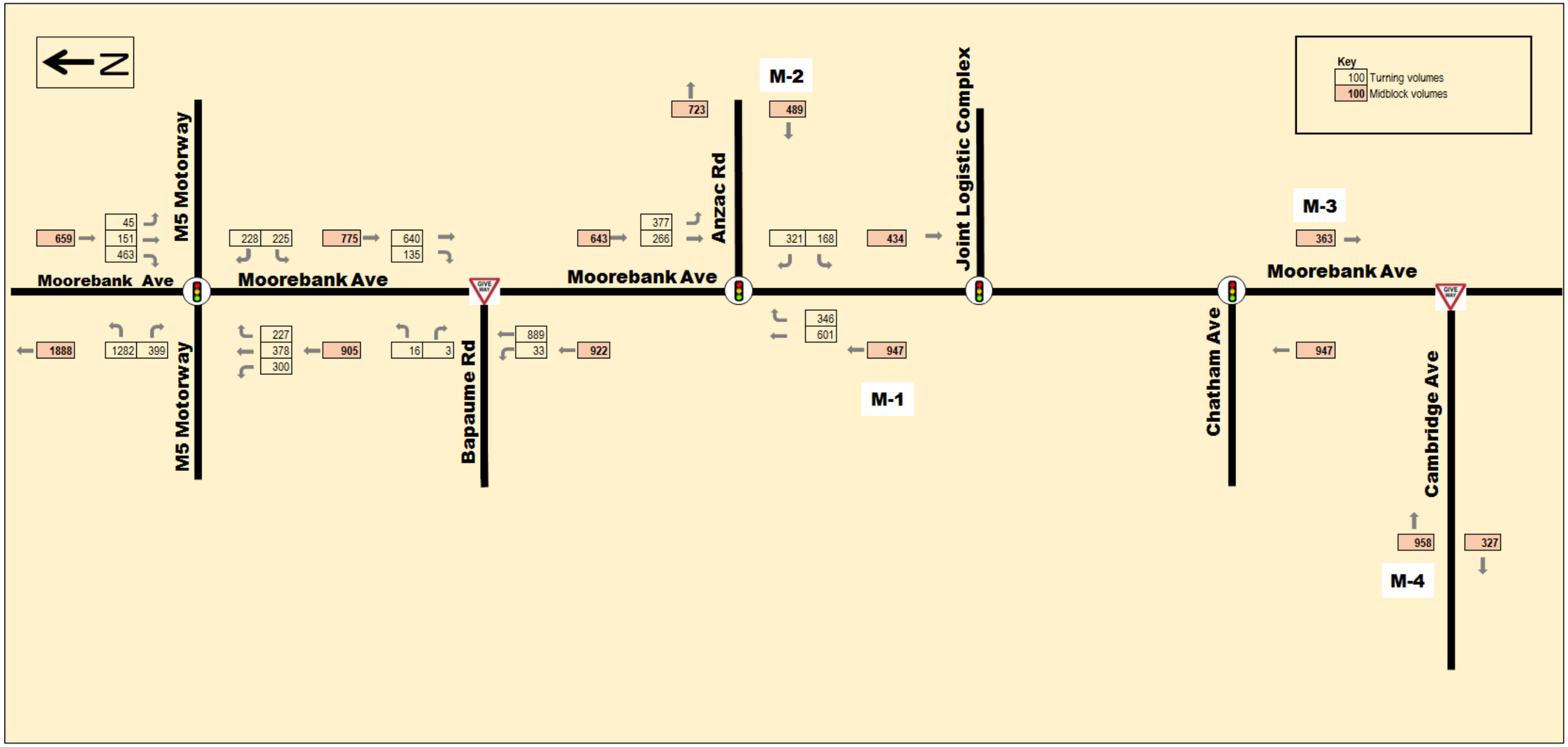

Figure 8 Existing AM peak 1 hour flows (vehicles) in 2015

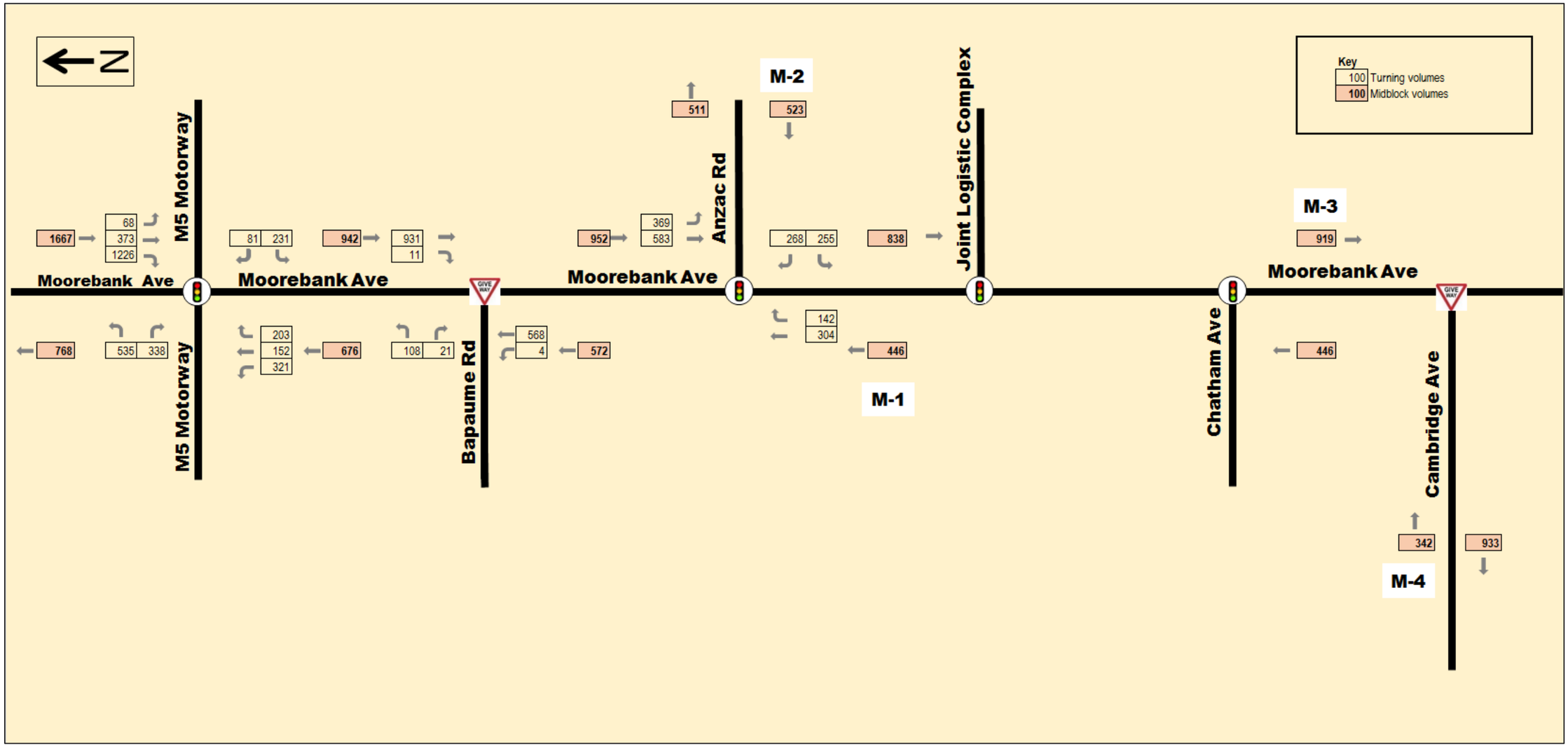

Figure 9 Existing PM peak 1 hour flows (vehicles) in 2015

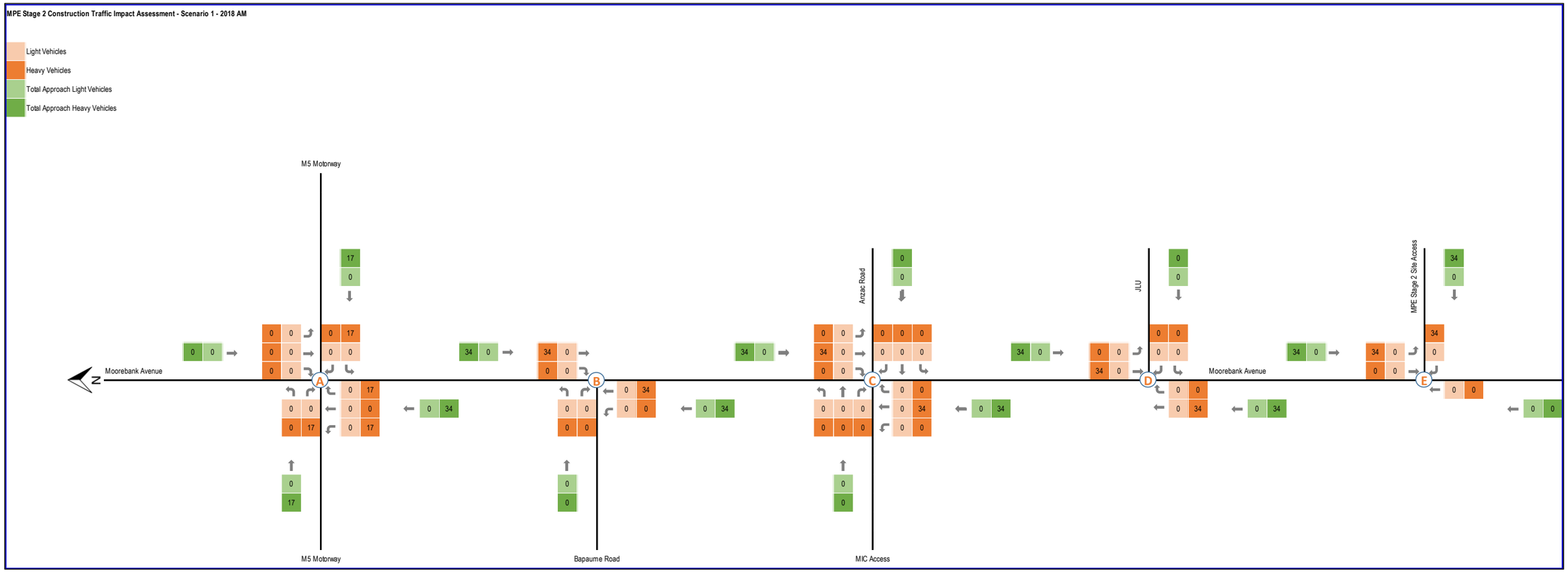

Figure 10 MPE Stage 2 construction – Scenario 1 AM peak one hour construction traffic volumes

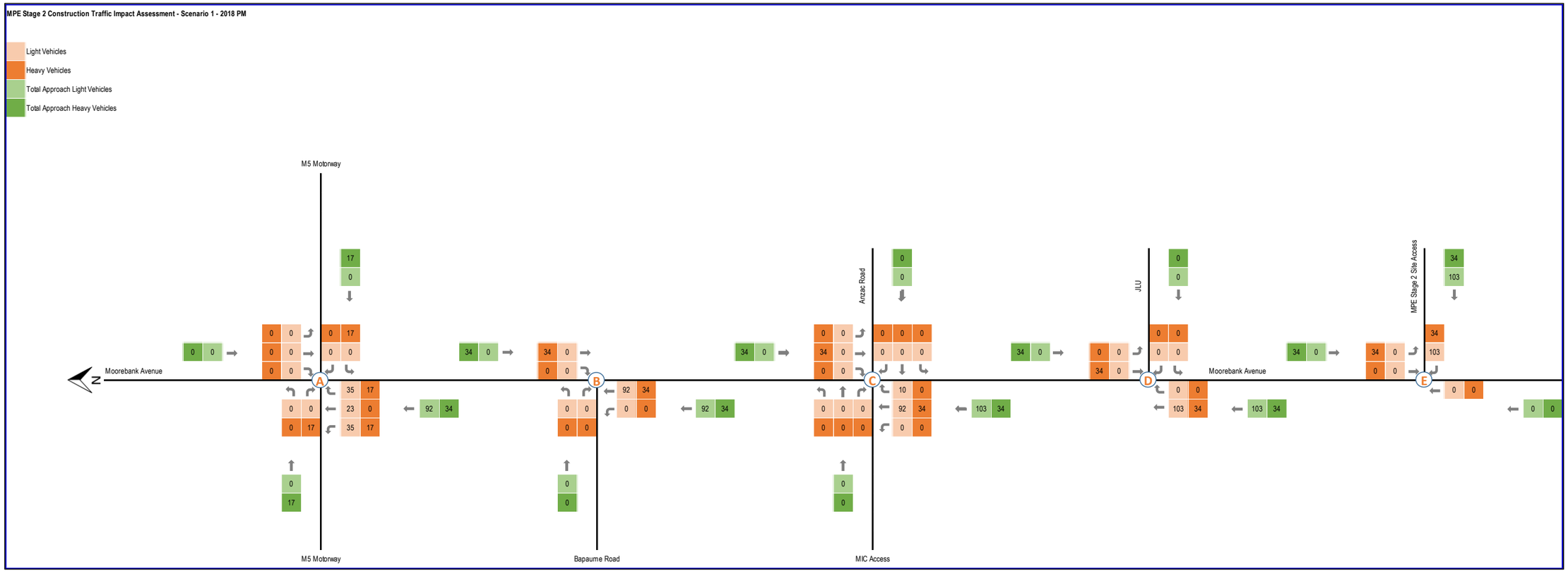

Figure 11 MPE Stage 2 construction – Scenario 1 PM peak one hour construction traffic volumes

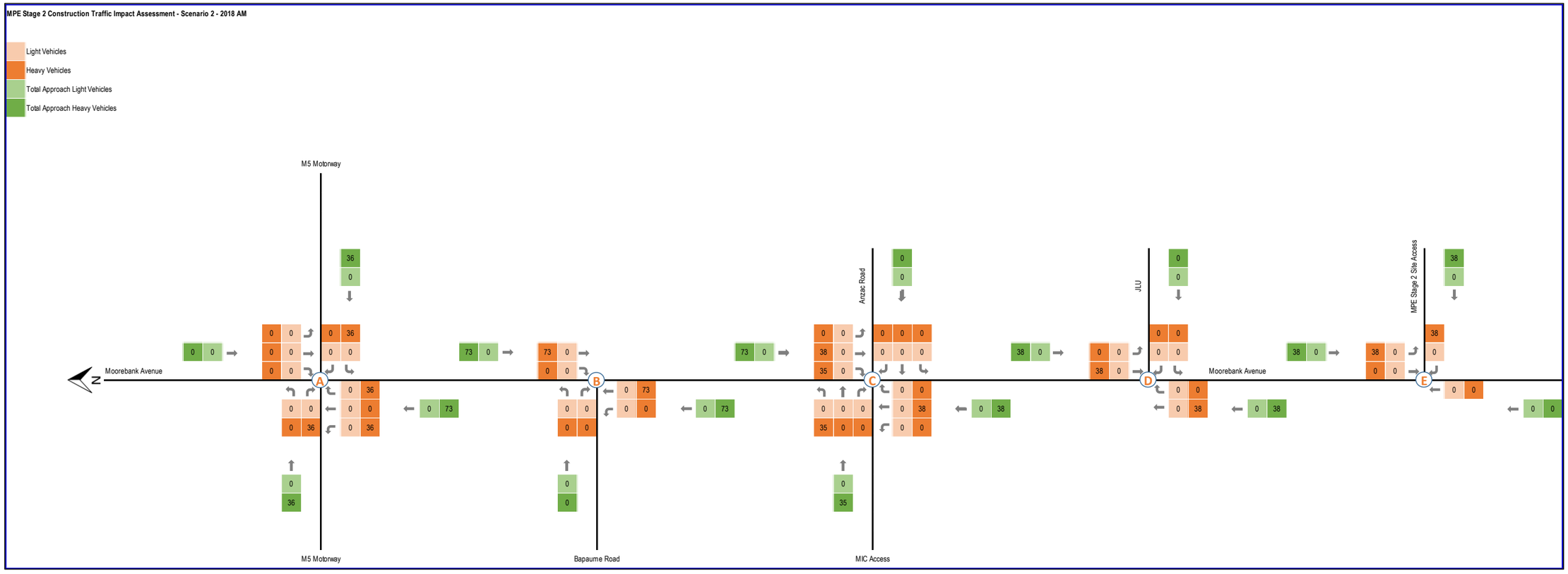

Figure 12 MPE Stage 2 construction – Scenario 2 AM peak one hour construction traffic volumes

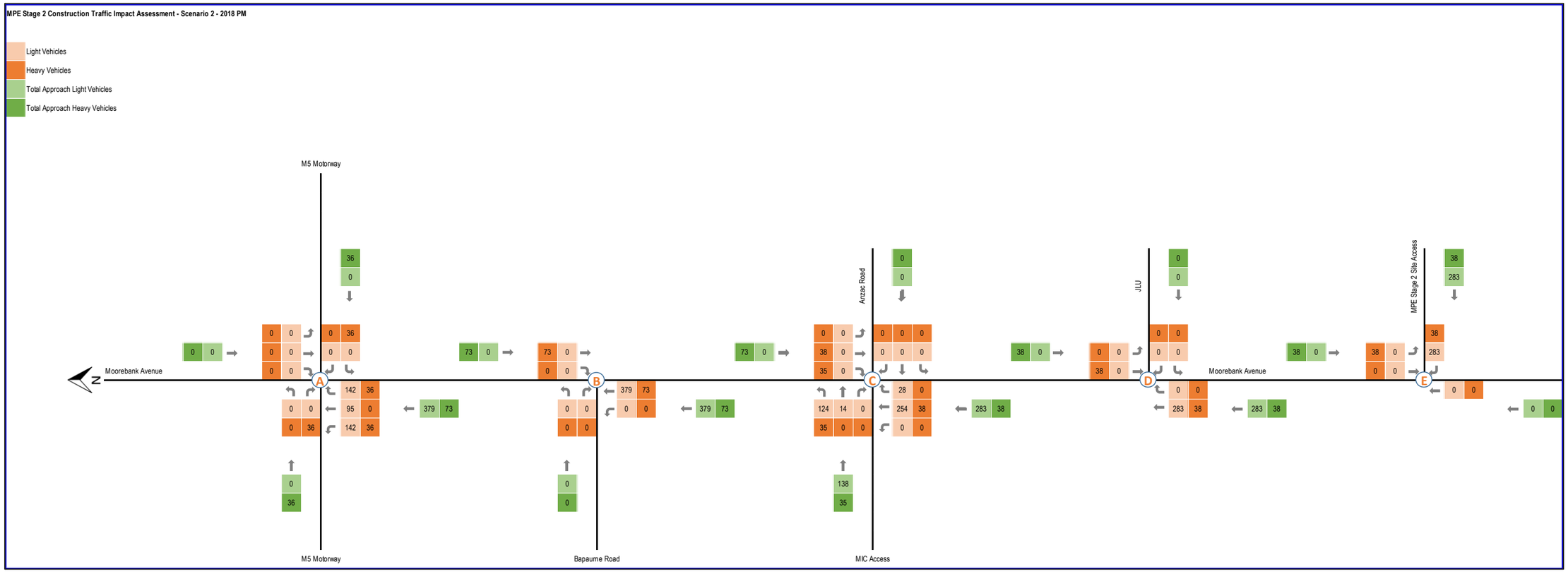

Figure 13 MPE Stage 2 construction – Scenario 2 PM peak one hour construction traffic volumes

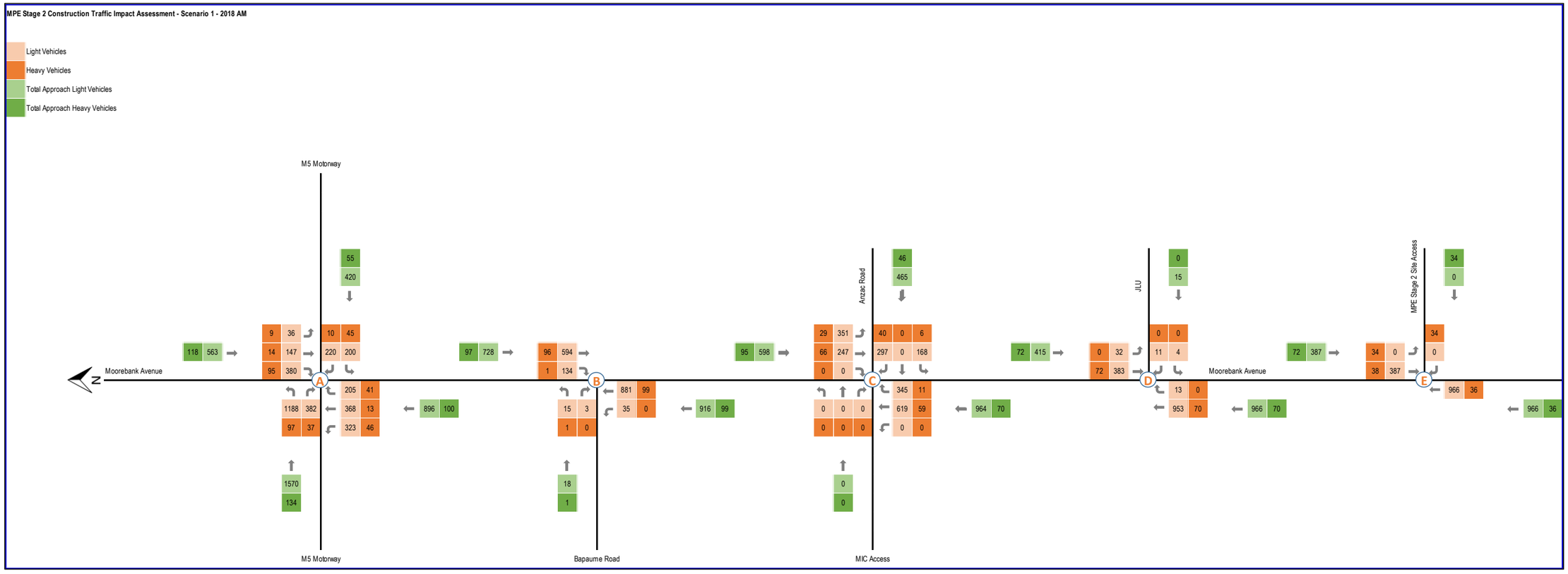

Figure 14 MPE Stage 2 construction – Background + Scenario 1 AM peak one hour traffic volumes

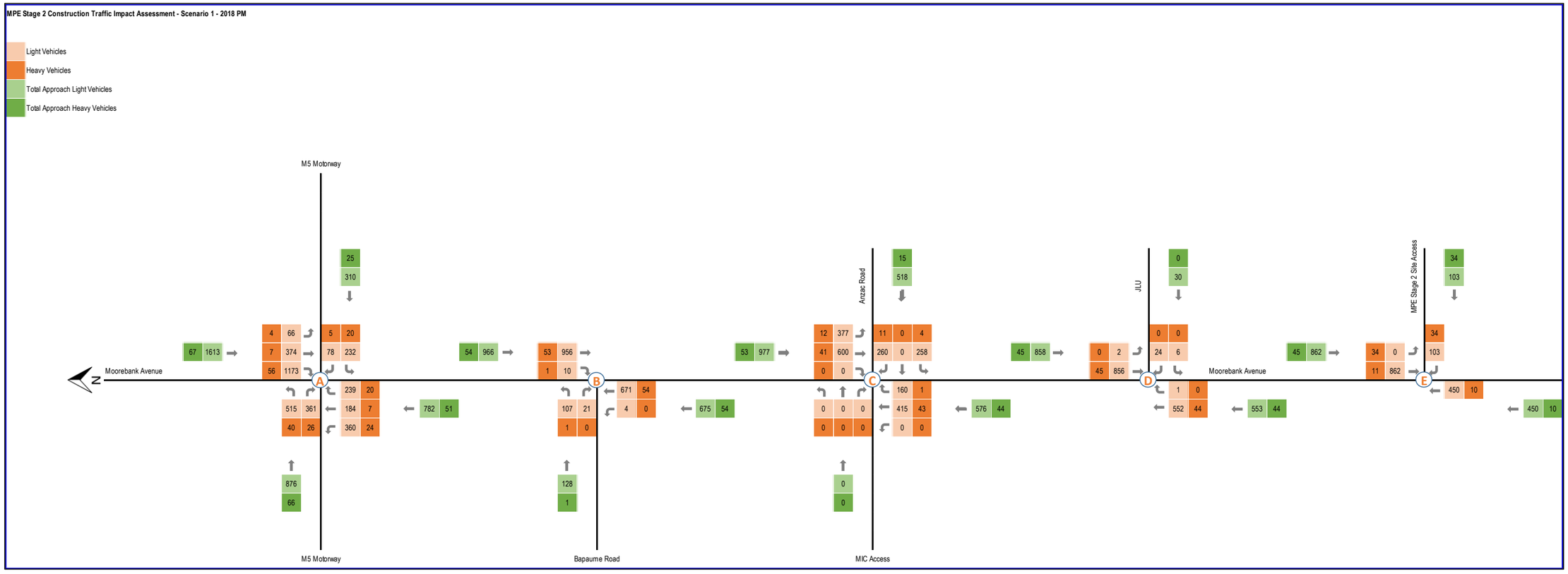

Figure 15 MPE Stage 2 construction – Background + Scenario 1 PM peak one hour traffic volumes

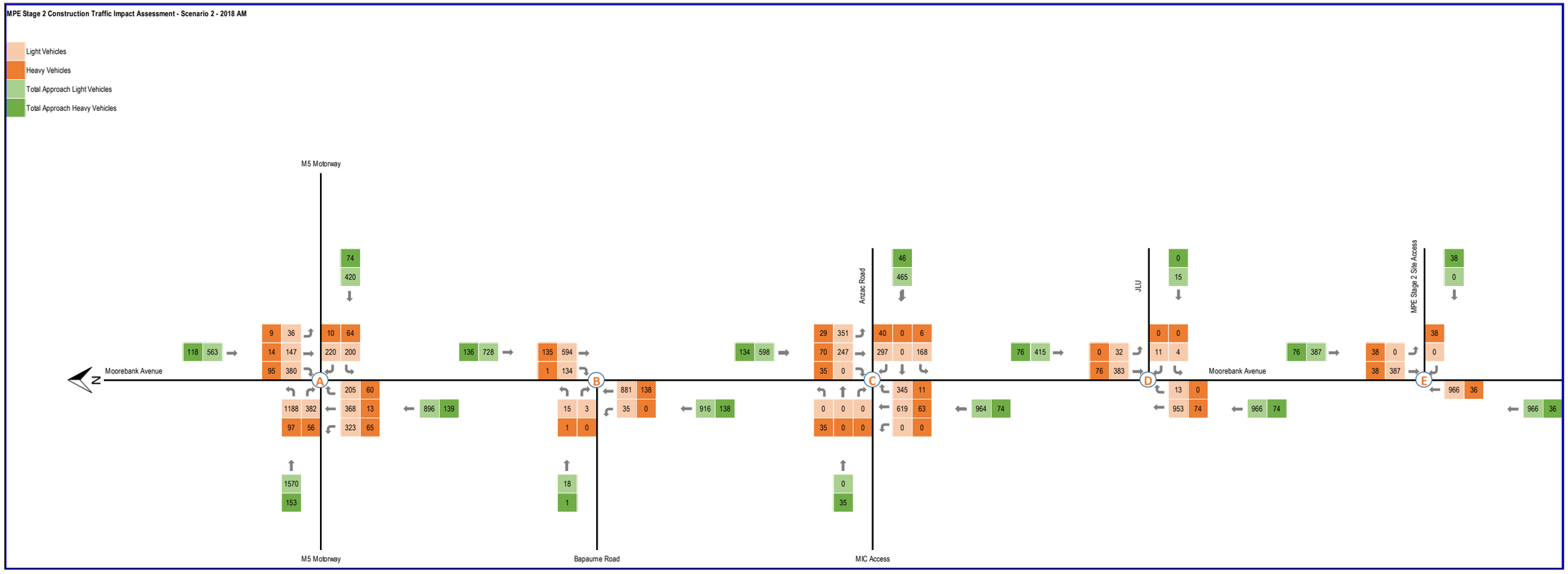

Figure 16 MPE Stage 2 construction – Background + Scenario 2 AM peak one hour traffic volumes

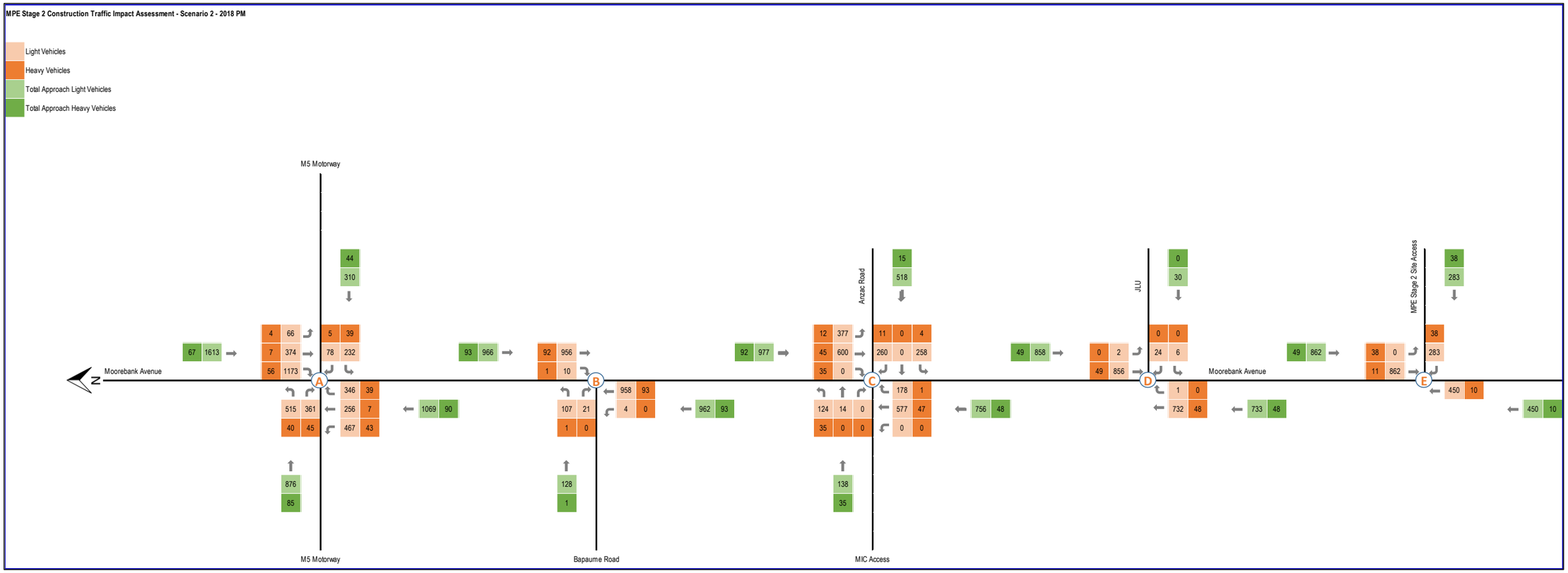

Figure 17 MPE Stage 2 construction – Background + Scenario 2 PM peak one hour traffic volumes