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This document should be read in full and no excerpts are to be taken as representative of the findings.

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Planning Permit Trigger Assessment

1 Executive Summary

1.1 Context

Suburban Rail Loop (SRL) is a transformative, city-shaping program of investments and policy initiatives that would change the way people move around Melbourne, boost productivity and deliver urban renewal outcomes for Greater Metropolitan Melbourne. SRL will contribute to the Victorian Government's vision of a 90 km orbital rail loop that will connect every major metropolitan train line from Cheltenham to Werribee and link priority growth precincts, as well as major health, education and employment centres and catalyse urban renewal across Melbourne's middle suburbs.

Given the significant scale of SRL, it is proposed to be developed in multiple stages. The first stage is a rapid rail service between Cheltenham to Box Hill (SRL Stage One) and a stabling facility, known as the Southern Stabling Yard, proposed at Heatherton. The remaining stages are proposed to be developed in subsequent phases.

1.2 SRL Stage One Initial Works

Suburban Rail Loop Authority (SRLA) is seeking to deliver some works and activities ('Initial Works') independently of the primary planning approval (most likely an Environment Effects Statement (EES)) for the SRL Stage One reference project. The Initial Works are proposed at six sites and are required to enable the delivery of SRL Stage One in a timely manner and to minimise disruption to business, residents and road users. It is proposed these works do not form part of the declared 'public works' under Section 3 of the *Environment Effects Act 1978* (EE Act) if the Minister for Planning concludes that the Initial Works are not likely to have a significant effect on the environment. Consistent with the type of 'initial works' detailed in the *Suburban Rail Loop Ministerial Guidelines for Assessment of Environmental Effects* (September 2020), the SRL Stage One Initial Works are:

- Minor utility works to ensure clear and safe access at five station precincts (Clayton, Monash, Glen Waverley, Burwood, Box Hill) and at the Southern Stabling Yard site
- Minor road modifications to improve access at the corner of Ferntree Gully Road and Howleys Road at the Monash site
- Trial techniques to optimise future ground improvement works and site levelling at the Southern Stabling Yard. This site is already subject to large-scale excavation activities and soil movement as part of its existing use. The trials also present an opportunity to test the effectiveness of noise and vibration mitigation measures that could be carried out as part of the future whole-of-site ground improvements for the development of the Southern Stabling Yard.
- Upgrades and modifications to existing power connections, and the installation of new underground power infrastructure to ensure secure power supply.

These Initial Works comprise works and activities that are comparable, in scope and scale, to the routine renewal and maintenance work activities that are standard practice in metropolitan Melbourne and other urbanised areas, or what is currently being undertaken on the Southern Stabling Yard site. The Initial Works do not involve any activity or works that are novel or “out of the ordinary”.

Should SRL Stage One not proceed, the Initial Works would still deliver benefits to the State. The ground improvement works at the Southern Stabling Yard site would result in enhanced infrastructure and improve the development options for State-owned land. The new power connections would deliver additional capacity to the network in the south east, which is at or approaching capacity and would need to be upgraded to support urban growth.

1.3 Summary of findings

A desktop assessment was undertaken of the Initial Works on a site-by-site basis to identify:

- environmental and social values which have the potential to be impacted by the Initial Works
- whether the environmental effects of the Initial Works are potentially significant
- whether further investigation is necessary to assess the magnitude of potentially significant effects.

Following the identification of a potentially significant effect as part of the desktop assessment, detailed impact assessments were undertaken which identified whether site-specific measures to mitigate potential effects were necessary.

The detailed impact assessments concluded that no significant environmental effects would be generated from the Initial Works at any of the station locations with the application of standard management measures.

The outcomes of the impact assessments were used to revise the scope of the Initial Works proposed at the Southern Stabling Yard to minimise potentially significant effects. This included avoiding works in public open space and refining the locations of the ground improvement trials to minimise noise and vibration levels. A monitoring program would be undertaken at key receptors during the trials, to confirm modelled levels or to adapt practices for subsequent trials if actual levels are different than expected.

Site-specific mitigation measures for site levelling at Southern Stabling Yard included:

- flood mitigation works to compensate for the removal of the existing detention basin, including construction of a new flood retention basin on the site, which have been incorporated into the Initial Works scope to mitigate flood impacts to nearby properties and roads south of the site.
- reusing over 85% of spoil as part of reprofiling of the Southern Stabling Yard site. This will significantly reduce the amount of waste soil generated by the works.

Given that most of the Southern Stabling Yard is currently used as an active clean fill landfill, residents in proximity to the site are already familiar with similar earthworks activities such as levelling, stockpiling and reprofiling, which are consistent with the proposed activities as part of Initial Works. SRLA is confident that

these site-specific measures will demonstrate that potentially significant impacts on the environment and surrounding residents, where identified, can be satisfactorily mitigated.

Site-specific mitigation measures at the Southern Stabling Yard site, as well as standard environmental management measures, will be implemented by way of a construction environmental management plan (CEMP) or similar, which will govern the activities undertaken during the Initial Works. Standard management measures are considered appropriate for managing the effects of works at all other locations, which comprise commonplace utility relocation/installation works, and minor alterations to roads at Monash.

1.4 Approval Requirements

The Initial Works will be carried out in accordance with applicable planning and environmental legislation and any statutory approvals required. Primary statutory approvals required for the Initial Works include:

- Planning approval is required at the Southern Stabling Yard for the ground improvement works (existing site works carried out by the land occupier are exempt because it is under an extractive industry works authority), Monash site for the minor intersection upgrade, and Burwood site for power connection works, under the relevant planning schemes.
- A mandatory Cultural Heritage Management Plan (CHMP) is required for the Initial Works at the Southern Stabling Yard and Burwood sites under the *Aboriginal Heritage Act 2006*.

Approvals are not required under the *Heritage Act 2017* and assessments have confirmed that no Matters of National Environmental Significance (MNES) as listed in the *Environment Protection and Biodiversity Conservation Act 1999* are present.

SRLA would seek any approvals in consultation with the appropriate local councils, Victorian agencies and transport network operators to ensure the Initial Works are undertaken in a coordinated manner that minimises disruption to the community.

2 Introduction

Suburban Rail Loop Authority (SRLA) is the delivery authority responsible for the planning and implementation of SRL on behalf of the State Government of Victoria. SRLA has appointed Aurecon Jacobs Mott MacDonald Joint Venture (AJM-JV) as the Technical Advisor to deliver the concept design, impact assessments and planning and environment approvals for the Suburban Rail Loop (SRL).

2.1 Project Context

SRL is a transformative, city-shaping program of interconnected transport projects, precinct plans and precinct development projects supported by *Plan Melbourne 2017-2050 (2017)* (Plan Melbourne) and its vision of a well-connected, polycentric city. SRL will contribute to the Victorian Government's vision of a 90 km orbital rail loop that would connect every major metropolitan train line from Cheltenham to Werribee and link priority growth precincts, as well as major health, education and employment centres and catalyse urban renewal across Melbourne's middle suburbs.

Given the significant scale of SRL, it is proposed to be developed in multiple stages. The first stage is a rapid rail service between Cheltenham to Box Hill (SRL Stage One) and a proposed stabling yard at a site in Heatherton. The remainder of SRL will be developed in subsequent stages. SRLA proposes some Initial Works to enable the delivery of the SRL Stage One works in a timely manner, and to minimise disruption to business, residents and road users.

2.2 Initial Works

Initial Works are defined in the *Suburban Rail Loop Ministerial Guidelines for Assessment of Environmental Effects* (September 2020) as works that may proceed independent of an SRL project's primary planning approval. Initial Works might include relocating or upgrading utilities, site clearance or remediation, building demolition and ground improvement. Approval for Initial Works does not infer approval of works subject to assessment through an EES.

If the proponent of an SRL project wishes to seek approvals for Initial Works independently of a potential EES, the Initial Works need to be excluded from the works that the Minister determines require an EES. The Minister will typically make this determination in circumstances where the Minister is satisfied that:

- the environmental effects of the Initial Works alone are not significant
- the cumulative effects of the Initial Works and the balance of works are capable of being assessed in an EES.

2.3 Purpose of the Document

The purpose of this document is to describe the SRL Stage One Initial Works scope and any potentially significant effects, to inform the Minister for Planning's decision on whether to exclude the Initial Works from the EES process, consistent with the *Suburban Rail Loop Ministerial Guidelines for Assessment of Environmental Effects* (September 2020).

This document therefore aims to demonstrate that the Initial Works will not have, or be capable of having, a significant effect on the environment.

This document describes the Initial Works and their context and summarises the assessments of the environmental, social and economic values that could be impacted by the Initial Works. Where it was considered that standard environmental management measures may not be sufficient to address potentially significant environmental effects of Initial Works, further investigations were completed of some of the Initial Works to evaluate potential effects and design bespoke, site-specific mitigation measures. The outcome of these investigations and the proposed mitigation measures are also described in this document.

This document also provides an overview of statutory approvals required for each of the sites where Initial Works are proposed.

2.4 Approach

The approach taken in this document is to:

- characterise and describe the local site context, scope of the Initial Works, indicative construction methodology and duration, across the six proposed Initial Works locations
- identify and describe environmental and social values at each site potentially at risk from the Initial Works
- evaluate the significance of potential effects of the Initial Works on the identified environmental and social values, and identify the effects that required further investigation and analysis
- describe the findings of these further investigations, and recommended site-specific management measures required during Initial Works to ensure mitigation of potentially significant environmental effects
- describe the approvals required under current relevant planning and environmental legislation for the Initial Works.

3 Scope of Initial Works

SRL Stage One Initial Works are proposed at the Southern Stabling Yard (Heatherton), Clayton, Monash (Notting Hill), Glen Waverley, Burwood and Box Hill. These are the locations of five of the proposed new SRL underground stations and a new train stabling facility at Southern Stabling Yard.

The proposed Initial Works are summarised in Table 3-1.

TABLE 3-1 INITIAL WORKS - SCOPE OF WORKS

LOCATION	INITIAL WORKS	DESCRIPTION OF WORKS
Southern Stabling Yard Clayton Monash Glen Waverley Burwood Box Hill	Utility relocations, installations and protection works	Relocation, protection, installation and/or termination of utility infrastructure (electricity, water, sewer, drainage, gas and communications) at SRL Stage One station locations and the Southern Stabling Yard site (final alignments of new and relocated utilities are subject to design refinement and further consultation with utility service providers).
Monash	Road modifications	Alterations to widen the southern corners of the intersection of Ferntree Gully Road/Howleys Road, to allow for construction vehicle access into Howleys Road. These road modification works are required to enable early works site establishment.
Southern Stabling Yard	Ground improvement works (site levelling and ground improvement trials)	<u>Ground improvement works context</u> Most of the Southern Stabling Yard site is a former sand quarry that is currently being operated as a clean fill disposal site. Based on existing knowledge of the fill extents, depths and material properties, the site is expected to be subject to long-term settlement as the fill slowly consolidates. On this basis, ground improvement works will be required to enable use of the land as a stabling and maintenance facility (and to enable its use as a TBM launch site and for other construction purposes). <u>Site levelling</u> The topography of the southern stabling site varies across the site due to the existing backfilling activities, in order to prepare the site for the proposed rail stabling yards, some of the current site features must be removed and/or modified. This will include, excavation, placement of controlled fill, compaction and levelling the site to RL 30, dewatering activities, as well as the construction of a flood retention basin at the north-east of the Southern Stabling Yard site. <u>Ground improvement trials</u> Ground improvement trials of three methodologies (Piling and Structural Slab, Deep Dynamic Compaction and Surcharge Embankment) will be completed during Initial Works to determine the optimal approach to ground improvement across the Southern Stabling Yard site for implementation in the main works. The trials will also be subject to noise and vibration monitoring to inform mitigation measures to be employed during the comprehensive ground improvement works.
Southern Stabling Yard Burwood Monash	New linear power connections underground (external to the sites)	• Southern Stabling Yard: Installation of new power connection between the Heatherton Terminal Station and the Southern Stabling Yard TBM launch site and installation of a new 66kV T-connection, indicatively along Kingston Road from the Springvale South Zone Substation to provide site connection to the Southern Stabling Yard. • Burwood: Installation of new dedicated 66 kV line from Malvern Terminal Station to Sinnott Street Burwood. • Monash: Installation of a new dedicated 22kV feeder from Notting Hill Zone Substation to Howleys Road, Notting Hill.

SRLA proposes that the decommissioned utilities remain in the ground, and no works will be required to remove underground decommissioned utilities as part of the Initial Works. All construction areas for the utility

works are proposed to be located within road reserves, public land or on land to be acquired by SRLA for the Initial Works. The alignment of new and relocated utilities is subject to refinement and further consultation with utility service providers during design development. Any other services identified during the works will be relocated in collaboration with the service provider.

SRLA proposes to undertake most of the Initial Works during normal working hours, including ground improvement works at the Southern Stabling Yard site. However, some of the minor construction activities such as utility relocations/installations may occur outside of normal working hours to reduce potential traffic detours, lane closures and safety risks.

The following sections 3.1 – 3.7 include site-by-site assessments of the urban context, Initial Works scope, indicative construction methodology and duration, environmental and social values, and site plans for each of the six Initial Works locations.

3.1 Southern Stabling Yard

3.1.1 Site Context

The Southern Stabling Yard site is depicted on Figures 3-1 and 3-2 and is located within the suburb of Heatherton in the municipality of Kingston. Heatherton is approximately 18 kilometres south of Melbourne's CBD. Much of the site forms part of the Kingston green wedge, which is land outside Melbourne's urban growth boundary reserved for agriculture, open space, conservation and other non-urban land uses.

The site consists of privately-owned commercial properties as well as sections of the adjacent Kingston Road, Old Dandenong Road and Dingley Bypass road reserves. The businesses operating at this location include a private dog play park, Nellie Kelly plant nursery and the Delta Group. The surrounding area includes a variety of land uses including residential areas, private golf courses, public open spaces, landfills, quarries, materials recycling facilities and market gardens. Key features within and in proximity of the site include Kingston Walk Linear Reserve, Dingley Bypass, Clayton South Drain and Kingston Heath Golf Club.

Most of the land associated with the Southern Stabling Yard site is the property at 91-185 Kingston Road, Heatherton. The property is owned and operated by Delta Group, and forms part of the land within Work Authority (WA) 383 that is held by Lantrak Developments Pty Ltd, and is already subject to large scale excavation activities and soil movement. Delta purchased the former sand extraction quarry site in 2001. The site comprises three former excavation areas, the Western Extraction area, the Eastern Extraction area and the Central Extraction area. While historically this site was capped with imported refuse, the recent history of the site has been to rehabilitate the site with clean fill in the Western Extraction area.

3.1.2 Initial Works

The proposed Initial Works at the Southern Stabling Yard location are:

Site establishment - construction compound and site vehicle access

A temporary construction compound would be established to support temporary site offices, site personnel car parking, equipment storage and amenity facilities (refer to Figures 3-2 and 3-3). Existing vehicle access from Old Dandenong Road would be utilised for the construction compound. This location was selected to contain amenity impacts within the Southern Stabling Yard site, thus limiting disruption to the community, road users and businesses.

New power connection

- Existing network upgrades and installation of a new underground 66kV cable between the Heatherton Terminal Substation and the proposed southern stabling TBM launch site (indicative alignment), for a total distance of approximately 3400m.

- Installation of a new underground 66kV cable along Heatherton Road/Kingston Road from the Springvale South Zone Substation to provide a site connection at the Southern Stabling Yard (indicative alignment), for a total distance of approximately 2700m.

The new underground 66kV cable is approximately 6km in length between the Heatherton Terminal Substation and the Springvale South Zone Substation, noting this alignment is subject to confirmation with utility service providers. These new power connection works are required to enable preparations for the TBM launch operations within the Southern Stabling Yard site, and to provide power for the future tunnelling operations. Two TBMs are proposed to be launched from the Southern Stabling Yard site in different directions.

Utility relocations

- Minor utility relocations (electricity and telecommunications) being relocated out of Old Dandenong Road away from the Southern Stabling Yard site into Kingston Road reserve and Dingley Bypass, for a total distance of approximately 1300m.
- Minor gas utility relocations from the northern to southern side of the Kingston Road road reserve for a total distance of approximately 290m.
- Relocation of the water and landfill gas pipeline for approximately 130m from the northern to the southern side of the Elder Street road reserve.

These utility relocations are required to enable preparations for the TBM launch site and stabling yard construction. All utility relocations and new power connection works are to be undertaken within the road reserve and may involve some temporary lane closures and construction traffic management measures.

Site levelling

- Earthworks to level the Delta property within the Southern Stabling Yard site to RL 30m. Approximately 85% of the fill will be retained within the Southern Stabling Yard site.
- Dewatering and controlled filling of the existing pond area
- Flood mitigation works involving construction of a flood retention basin at the north-east of the Southern Stabling Yard site, as well as new channels and/or outlet pipes to manage flood impacts and maintain the existing flood regime.

Ground Improvement Trials

- Due to the existing conditions of the proposed Southern Stabling Yard site, ground improvement is required to enable development of the stabling yard. As part of the Initial Works, SRLA proposes to trial three ground improvement techniques, as set out in Table 3-2.
- Ground improvement trials will be undertaken during normal working hours.

TABLE 3-2 PROPOSED ACTIVITIES FOR GROUND IMPROVEMENT TRIALS

TRIAL TYPE	DESCRIPTION	PROPOSED EQUIPMENT
Piling and Structural Slab	Pile installation and testing. This will occur at six trial sites as shown in Figure 3-2. Two piled slab structural design solutions will be tested as follows: - Test 1 (precast piles) - 30m x 30m suspended flat slab with 5m x 5m piles used for buildings and areas containing multiple tracks. - Test 2 (bored piles) - 3m wide slab with sets of 2 piles spaced at 5m used along lines of single track.	- Impact (driven) and bored precast piles, with dynamic pile testing. - Supported by cranes, excavators, hydraulic hammers, bulldozers, graders, backhoes, vibratory rollers, water carts, loaders, scrapers, articulated dump trucks and haul trucks, water and concrete pumps, and concrete trucks as required. - Quickcut saws, jackhammers, portable generators, chainsaws and vacuum trucks.
Deep Dynamic Compaction	Dropping a heavy weight repeatedly on the ground at regularly spaced intervals. Compaction involving large mass up to 23t in weight from heights of up to 27 m on a grid pattern. This will occur at three trial sites as shown in Figure 3-2.	- Mobile cranes, bulk earthworks excavators, dozers, graders, scrapers, backhoes, water carts, loaders, articulated dump trucks and haul trucks, static and vibrating rollers and compactors, Impact Hammers. - Quickcut saws, jackhammers, portable generators
Surcharging Embankments	Surcharging is a ground improvement technique where an embankment is constructed to higher than the proposed design surface level and left in place for a period to consolidate compressible materials. Surcharging through a trial embankment will involve: - Placing compacted fill to the proposed design surface level - Placing surcharge fill (excess fill) to higher than the design surface level - The embankment would be left in place and compaction monitored for a period of 8 months (no works occurring) - After this period, the surcharge fill (excess fill) will be removed. The embankment footprint area is 64m x 64m = 4,096m² and would be a maximum height of 8m from the levelled site. This will occur at four trial sites as shown in Figure 3-2.	- Bulk earthworks involving excavators, bulldozers, graders, scrapers, backhoes, water carts, loaders, dump trucks and haul trucks, static and vibratory rollers, impact hammers. - Quickcut saws, jackhammers, portable generators.

3.1.3 Indicative Construction Methodology and Duration

Key construction activities will include:

- Site establishment, construction compound and site access:
 - » Set up of construction site hoarding, temporary site offices and car parking, temporary working hardstands.
 - » Vehicle access will be via existing access points off Old Dandenong Road.
 - » General civil works includes drainage works, paving, stormwater pipes and drainage ditches, fencing and gates. These works also include the construction of laydown areas.
- New power supply connection:
 - » Open cut trenching or trenchless methods for the power cable connection. Construction will utilise a combination of dig, lay or bore and backfill.

- Utility relocation:
 - » Clearing and grubbing including the removal of vegetation and trees, where permitted and to the minimum extent necessary.
 - » Open cut trenching or trenchless methods for the utility relocations at depths between 600mm to 1.2m. Construction will utilise a combination of dig, lay or bore and backfill.
- Site levelling:
 - » Excavation using large plant during earthworks similar to what is currently used on site (during normal working hours)
 - » Construction of a water retention basin
 - » Dewatering and controlled filling of pond areas
- Ground improvement trials – refer to details outlined in Table 3-2

Expected constructability durations are:

- Site establishment, construction compound and site access: 6 months
- New power supply connection: 6 months
- Utility relocation: up to 6 months
- Site levelling: 12 – 14 months
 - » Bulk earthworks (excavation and backfill): 12 – 14 months
 - » Dewatering and controlled filling of pond areas: 9 months
- Ground improvement trials: 11 – 12 months
 - » Deep Dynamic Compaction:
 - Intensive Trials: 4 weeks
 - Pre and post site investigations: 4 weeks
 - » Trial piling:
 - Installation of Driven and Bored Piles: 8 weeks
 - Static and Dynamic Testing of Piles: 4 weeks
 - » Surcharge embankment:
 - Pre and post site investigations: 4 weeks
 - Construction and removal of embankment: 10 weeks
 - Trial embankment period (no works): 8 months

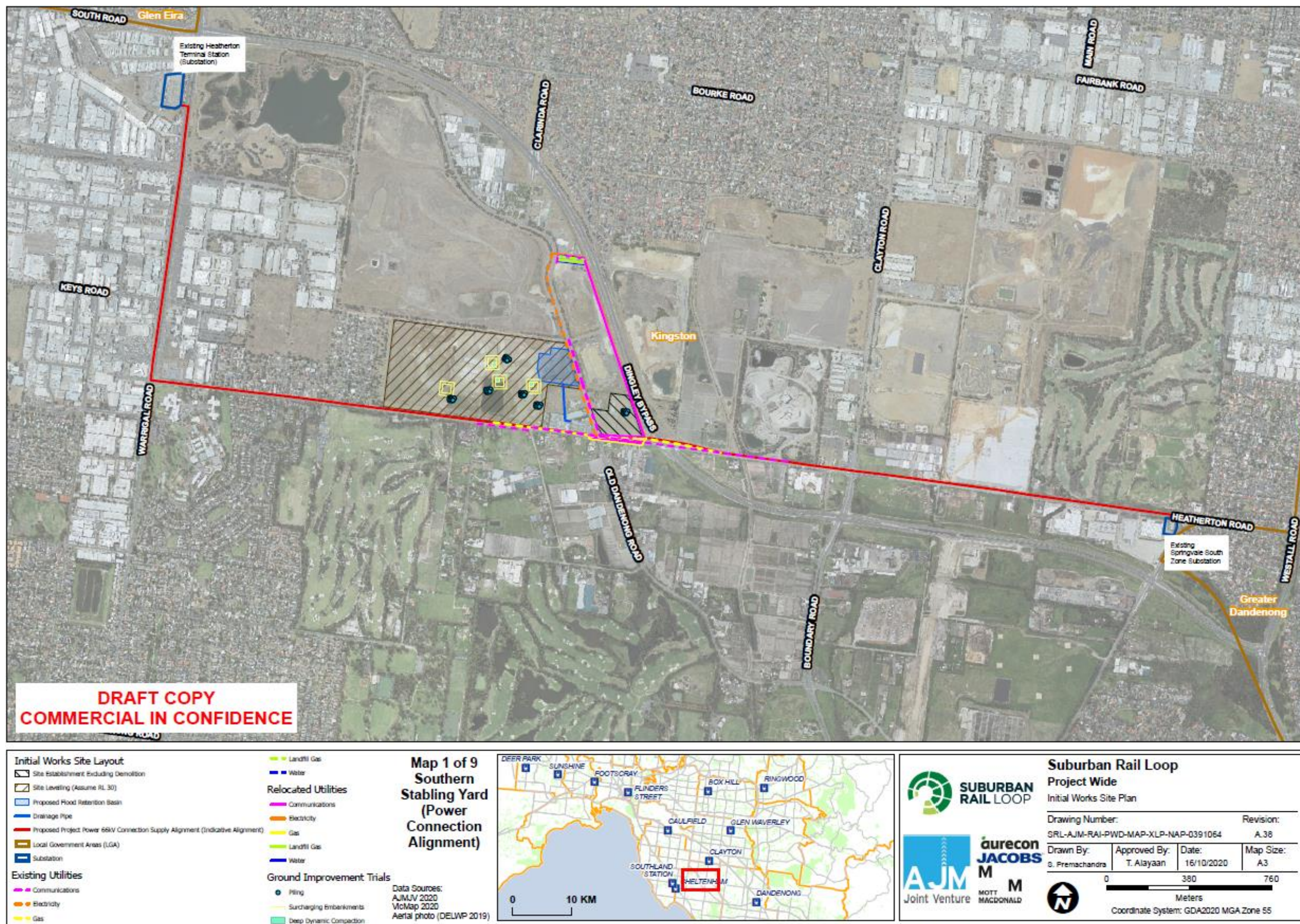
Total duration is approximately 23 – 26 months. The site levelling activity will be completed prior to the start of the ground improvement trials.

Each utility relocation is anticipated to take up to 6 months to complete. Staging of works will be coordinated by SRLA and utility service providers.

3.1.4 Environmental Values

The Southern Stabling Yard site is characterised by existing industry and is located within a highly disturbed setting. A summary of environmental values identified include:

- Kingston Walk Linear Reserve and walking trails offer a passive recreational community asset which includes Henry Street playground, however the Initial Works scope has been developed to avoid direct impacts on the Kingston Linear Walking Trails to the west and north of the Southern Stabling Yard site.
- Most vegetation at the site consists of planted trees along the perimeter of the Delta site and along Old Dandenong Road. The vegetation within the Southern Stabling Yard site is mainly comprised of introduced flora and weeds that have colonised the heavily disturbed land. However, a small number of native vegetation patches are still present on site (refer to Ecology section 4.8 for further details). The site is highly modified and is not considered to support any state or Commonwealth listed threatened flora or fauna. No state or Commonwealth listed threatened ecological communities are present on the site.
- The noise and air amenity of the Southern Stabling Yard site is comparable with areas located in commercial/industries zones due to the presence of industries, landfills, former quarries and other semi-rural activities.
- The area surrounding the site includes low density residential areas adjacent to the western (Nicholas Grove) and southern boundary of the site (Kingston Road). These areas include residential small-town houses and rural homesteads.
- Other community facilities in the vicinity of the site include Kingston Heath Golf Club, and Heatherton Dingley Church. Utility relocation works and new power connection installation will occur on Kingston and Warrigal Roads adjacent to businesses however access will be maintained during construction.
- Areas of Aboriginal cultural heritage sensitivity (CHS) have been identified within parts of the site, although the Southern Stabling Yard location is highly disturbed as a result of its historical use as a former sand extraction quarry site. A CHMP for Initial Works at the Southern Stabling Yard site will be prepared and complied with.
- Ground investigations commenced in August 2020 and will continue (refer to section 4.6 for further impact assessment details). The Delta site has been used for sand mining and subsequent filling, and its contamination status will be determined once the ground investigations have been completed. SRLA will develop a strategy to manage the earthworks, based on the outcomes of the contamination investigations.



3.2 Clayton

3.2.1 Site context

The Clayton site is approximately 18 kilometres south east of Melbourne's CBD within the municipality of Monash. The site consists of sections of Clayton Road and Dunstan Street road reserves within the suburb of Clayton as shown in Figure 3-3.

The surrounding area consists of a variety of land uses including residential, commercial and health areas and local public spaces. Key features in proximity of the site include Meade Reserve (Public Park), Remembrance Gardens, Church of Christ Fellowship, a private childcare centre, Clayton Station and the City of Monash's Clayton Main Hall. The nearby Monash medical precinct includes the Monash Medical Centre, Monash Children's Hospital, Jessie McPherson Private Hospital and Monash House Private Hospital. These areas all sit within the Monash National Employment and Innovation Cluster (NEIC), providing the largest concentration of employment outside the Melbourne CBD. The NEIC includes a framework plan to create jobs, improve transport links and attract investment in the precinct. The Clayton Activity Centre includes the existing Clayton MTM station on Clayton Road.

3.2.2 Initial Works

The proposed Initial Works at the Clayton include:

Relocated utility installation

SRLA proposes to install a new 225mm diameter sewer to a depth of 3-6m in Clayton Road, crossing the existing rail corridor and into Dunstan Street, in preparation for the Clayton station box construction. All works will be undertaken within the road reserve and may involve some temporary lane closures and construction traffic management measures. The existing sewer will remain in situ.

3.2.3 Indicative Construction Methodology and Duration

Key construction activities will include:

- Clearing and grubbing including the removal of vegetation and trees, where permitted and to the minimum extent necessary.
- Open cut trenching or trenchless methods for relocation of the sewer. Construction will utilise a combination of dig, lay or bore and backfill.

The sewer installation is expected to take up to 6 months to complete. This timeframe may be optimised during construction. These temporary, short term Initial Works will progress in a linear manner resulting in minimal periods of activity in front of any single residence or business.

Staging of works and establishment of temporary site facilities to ensure the health, safety and welfare of construction personnel and the public will be coordinated by SRLA and utility service provider. The location

of these temporary site facilities (e.g. equipment storage and amenity facilities) will be sited appropriately to avoid impacts on vegetation, residential amenity and heritage places.

3.2.4 Environmental Values

The Clayton site is located within a predominantly residential area in an urbanised setting, including the Caulfield to Dandenong rail corridor with the newly built elevated Clayton MTM station. The noise and air amenity is consistent with locations in an urban environment close to main roads and a rail corridor.

Community facilities in proximity to construction works on Dunstan Street include a childcare centre and church, requiring traffic management measures. Works will occur on Clayton Road adjacent to retail premises however access to businesses will be maintained.

Clayton Station is listed on the Victorian Heritage Register (H1667) for the architectural significance of its station buildings, which are constructed completely of timber and include decorative features. There are some mature planting of oak and peppercorn trees on the site. Local heritage protection under the Monash planning scheme is also afforded to the trees (HO12) and railway station building (HO13). None of these heritage places will be impacted by the Initial Works sewer installation.

The Initial Works at the Clayton site are not within an area of Aboriginal cultural heritage sensitivity and there are no records of a registered Aboriginal place within 200m of the works area.

No ecological values have been identified within the road reserves. Works will not require any ecological approvals, however some street trees may require works within their tree protection zones. There is no Vegetation Protection Overlay (VPO), Significant Landscape Overlay (SLO), or Environmental Significance Overlay (ESO) present in areas impacted by the works.



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FIGURE 3-3 CLAYTON SITE PLAN

3.3 Monash

3.3.1 Site Context

The Monash site is located near the intersection of arterial roads Blackburn Road and Ferntree Gully Road within the suburb of Notting Hill and forms part of the Monash NEIC. The site consists of sections of the Howleys Road, Ferntree Gully Road, Normanby Road and Gilby Road reserves as shown on Figures 3-4 and 3-5, and is directly adjacent to commercial properties.

The surrounding area encompasses a variety of land uses including residential and commercial areas, warehouses, logistics, advanced manufacturing and research facilities. Key features in proximity of the site include the Monash Community Family Co-operative, Monash Waste Transfer Station, Monash University and the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

3.3.2 Initial Works

The proposed Initial Works at Monash are:

New power connection

- Installation of a new dedicated 22kV feeder from the existing Notting Hill Zone Substation on Gilby Road, in the Ferntree Gully Road reserve to the site on Howleys Road (indicative alignment) for a total distance of approximately 670m.

The new power supply connection works are required to enable preparations for the TBM launch site.

Minor road modifications

- Alterations to widen the southern corners of the intersection of Ferntree Gully Road/Howleys Road.
- No diversions routes are anticipated from the Initial Works site areas, as there are no proposed road closures.

These minor road modification works are required to allow for construction vehicle access into Howleys Road.

Utilities relocation and protection

- Minor utility works consisting of an overhead electricity relocation (from east side to west side of Howleys Road) for a total distance of approximately 475m
- Minor utility works consisting of an overhead electricity relocation (from north side to south side of Normanby Road) for a total distance of approximately 500m
- Relocating overhead electricity and telecommunication further into the pavement of Howleys Road kerb to allow road modifications works to occur.
- Gas protection works on Ferntree Gully Road to enable road modifications to occur

These utility works are required to enable preparations for station box construction.

All works are to be undertaken within road reserve and may involve some temporary lane closures and construction traffic management measures.

3.3.3 Indicative Construction Methodology and Duration

Key construction activities will include:

- New power supply connection:
 - » Open cut trenching or trenchless methods for the power cable connection. Construction will utilise a combination of dig, lay or bore and backfill.
- Minor road modifications:
 - » Minor road alterations will require cut-and-fill activities, pavement works and embankment construction.
 - » Road works will also include installation of safety barriers, asphaltting and line marking, street lighting and temporary Variable Message Signage (VMS) for traffic management purposes.
- Utilities relocation and protection:
 - » Clearing and grubbing including the removal of vegetation and trees, where permitted and to the minimum extent necessary.
 - » Open cut trenching or trenchless methods for the utility works at depths between 600mm to 1.2m. Construction will utilise a combination of dig, lay or bore and backfill.

Expected constructability durations are:

- New power supply connection: up to 6 months
- Minor road modifications: 1 month
- Utilities relocations and protection works: 3 – 6 months

Total duration is anticipated to be up to 6 months, noting that the new power connection, utilities works and road modifications are anticipated to be completed concurrently. These temporary, short term new power supply and utilities works will progress in a linear manner resulting in minimal periods of activity in front of any single property.

Staging of works and establishment of temporary site facilities to ensure the health, safety and welfare of construction personnel and the public will be coordinated by SRLA and utility service providers. The location of these temporary site facilities (e.g. equipment storage and amenity facilities) will be sited appropriately to avoid impacts on vegetation and business operations.

3.3.4 Environmental Values

The site and locality are characterised by a number of nationally significant company headquarters and research facilities within the Monash NEIC. Commercial land is the predominant land use in the locality, and the site is located within an industrialised and highly disturbed setting. The noise and air amenity is consistent with locations in an urban environment close to main roads and commercial business parks.

Community facilities in proximity to utility relocation works on Normanby Road includes Monash Community Family Co-Operative and Monash University. All works occurring on Gilby, Ferntree Gully, Howleys and Normanby Roads are adjacent to commercial premises, however access to businesses will be maintained.

No ecological values have been identified within the road reserves. Works will not require any ecological approvals, however some street trees may require works within their tree protection zones. There is no Heritage Overlay (HO), Vegetation Protection Overlay (VPO), Significant Landscape Overlay (SLO) or Environmental Significance Overlay (ESO) present in areas impacted by the works.

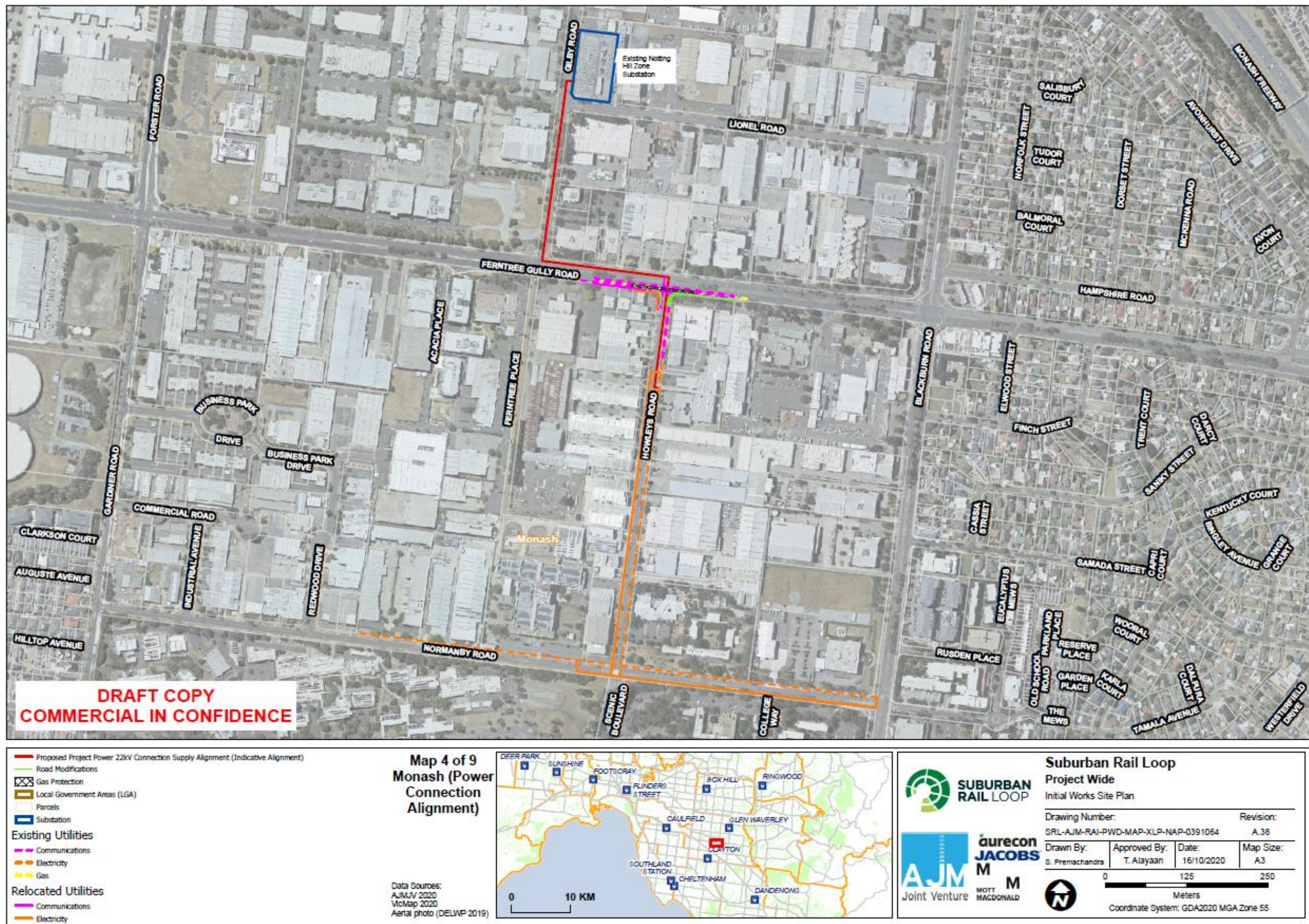


FIGURE 3-4 MONASH SITE PLAN (1 OF 2)

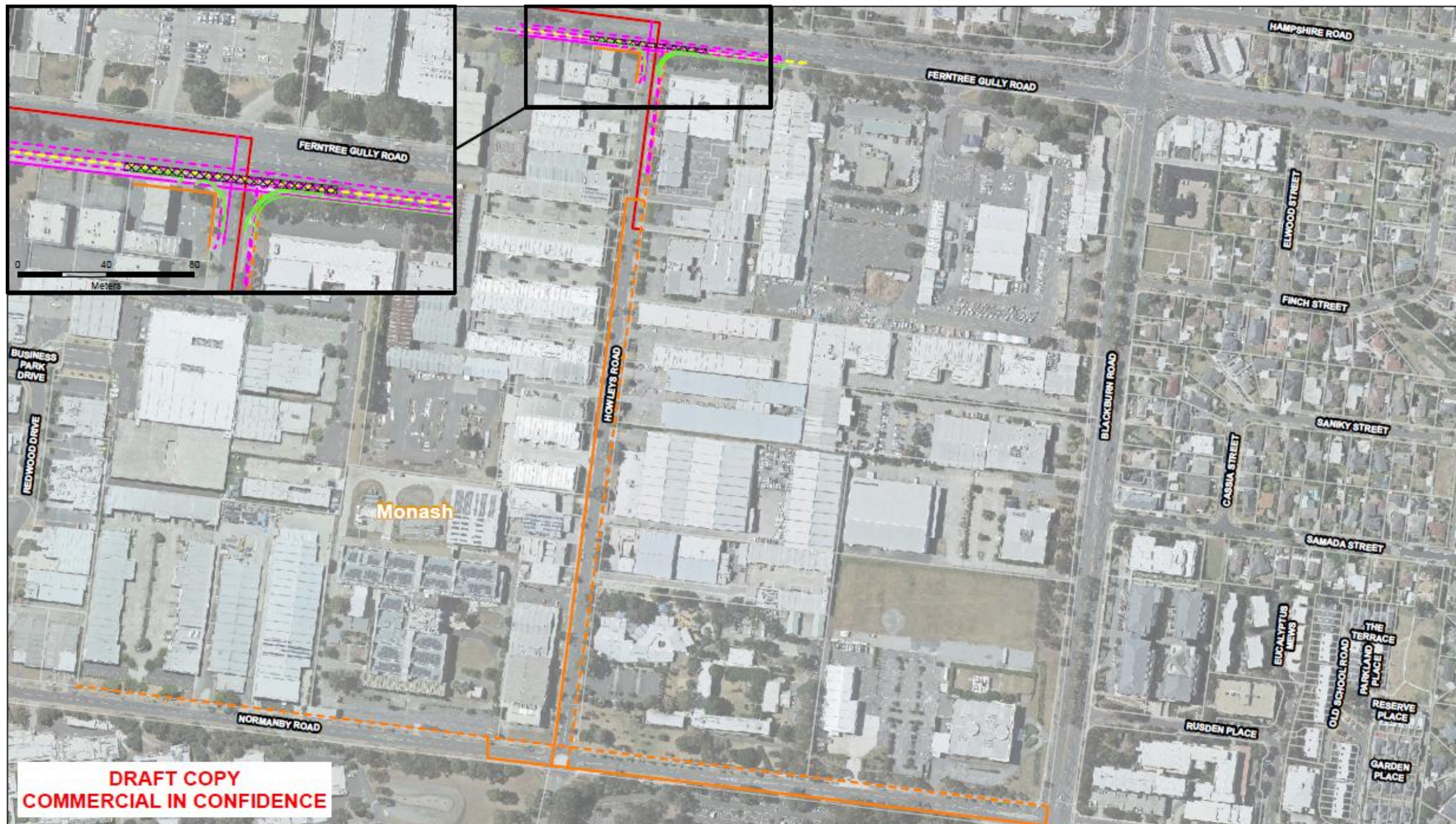


FIGURE 3-5 MONASH SITE PLAN (2 OF 2)

3.4 Glen Waverley

3.4.1 Site Context

The Glen Waverley site is depicted on Figure 3-6 and is located within the suburb of Glen Waverley in the municipality of Monash. Glen Waverley is approximately 19 kilometres south east of Melbourne's CBD. The site consists of sections of Coleman Parade, Montclair and Bogong Avenues, Myrtle Street and Kingsway road reserves, as well as a small section of the MTM rail corridor near Glen Waverley Station. Much of the land adjacent to these local roads is currently used for off-street car parking.

The surrounding area includes a variety of land uses including residential areas, commercial areas, civic buildings, schools and childcare facilities. Retail, community services and transport land uses are the predominant land use across the site. Key features in proximity of the site include Glen Waverley Station (including terminus for the MTM Glen Waverley line), Glen Waverley commercial centre including The Glen Shopping Centre, the Monash City Council civic building and Glen Waverley Secondary College.

3.4.2 Initial Works

The proposed Initial Works at Glen Waverley consist of a series of utility relocations and installations:

- Relocation of overhead/underground electricity and telecommunications out of Montclair Avenue to underground in the unnamed rear laneway (parallel to Kingsway), Bogong Avenue and Myrtle Street, for a total distance of approximately 370m.
- New underground electricity installation at either end of Montclair Avenue to maintain power supply to the existing Montclair/ Myrtle mounted substation and Montclair/ Glendale substation, for a total distance of approximately 100m.
- New underground telecommunications installation connected at either end of Montclair Avenue to maintain current communication network configurations, for a total distance of approximately 100m.
- Relocation of overhead electricity and telecommunications from the western side of Myrtle Street to underground on the eastern side of Myrtle Street, for a total distance of approximately 80m.
- Relocation of electricity, telecommunications, water and gas utilities from the southern side of Coleman Parade to northern side of Coleman Parade and within the VicTrack rail corridor, for a total distance of approximately 120m.

These utility works are required to enable preparations for the Glen Waverley station box construction. All works are to be undertaken within the existing rail corridor or road reserve and may involve some temporary lane closures and construction traffic management measures.

3.4.3 Indicative Construction Methodology and Duration

Key construction activities will include:

- Clearing and grubbing including the removal of vegetation and trees, where permitted and to the minimum extent necessary.

- Open cut trenching or trenchless methods for the utility relocations at depths between 600mm to 1.2m for electricity, water and telecommunication utilities. Construction will utilise a combination of dig, lay or bore and backfill.
- Open cut trenching or trenchless methods for the utility relocations at depths between 2m to 3m for sewer and gas utilities. Construction will utilise a combination of dig, lay or bore and backfill.
- Removal of decommissioned overhead electricity and telecommunications assets.

Each utility relocation/installation is anticipated to take up to 6 months to complete with works undertaken concurrently. The utility works proposed will result in temporary, short term impacts and will progress in a linear manner resulting in minimal periods of activity in front of any single property.

Staging of works and establishment of temporary site facilities to ensure the health, safety and welfare of construction personnel and the public will be coordinated by SRLA and utility service providers. The location of these temporary site facilities (e.g. equipment storage and amenity facilities) will be sited appropriately to avoid impacts on vegetation, residential amenity, business operations and road users.

3.4.4 Environmental Values

The Initial Works site is characterised by paved roads and footpaths and is located within an urbanised setting adjacent to commercial and residential areas. Construction activities will need to be managed to reduce any impact on the amenity of residents, diminishing their ability to enjoy their dwelling or use it as they do currently. Reduced or temporary loss of access to residences due to traffic management or construction activities will also need to be carefully managed.

Community facilities in proximity to the construction works include the Glen Waverley Uniting Church and Glen Waverley Library. All works occurring on Coleman Parade, Montclair Avenue, and Bogong Avenue, adjacent to retail premises, however access to businesses will be maintained.

No areas of Aboriginal cultural heritage significance were identified in the Initial Works area.

No ecological values have been identified within the road reserves. Works will not require any ecological approvals, however some street trees may require works within their tree protection zones. There are no Heritage Overlay (HO), Vegetation Protection Overlay (VPO), Significant Landscape Overlay (SLO) or Environmental Significance Overlay (ESO) present in areas impacted by the works.

The noise and air amenity is consistent with locations in an urban environment close to main roads and a rail corridor.

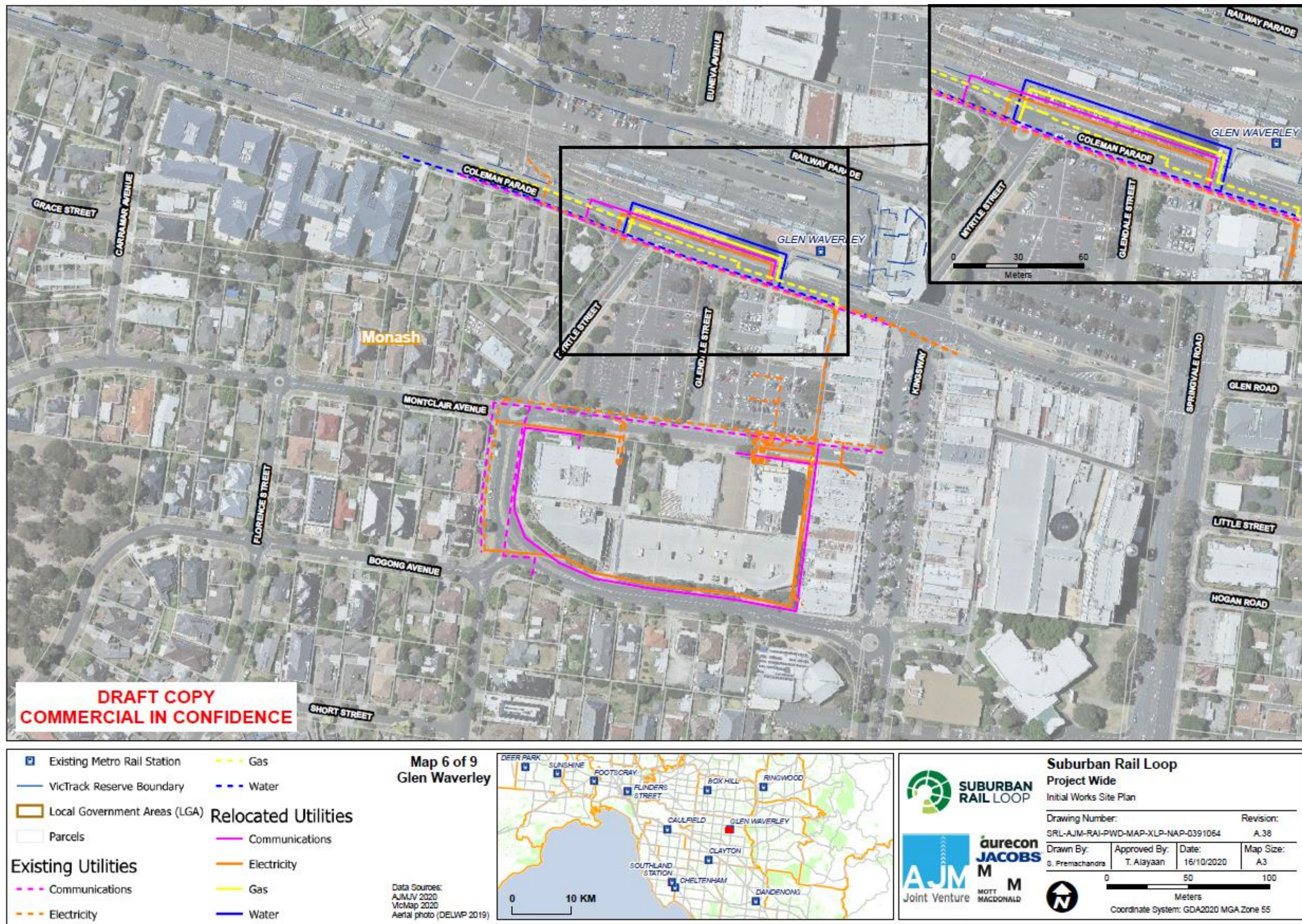


FIGURE 3-6 GLEN WAVERLEY SITE PLAN

3.5 Burwood

3.5.1 Site Context

3.5.1.1 Burwood Site

The Burwood site is depicted on Figure 3-7 and is located within the suburb of Burwood in the municipality of Whitehorse. Burwood is approximately 14 kilometres east of Melbourne's CBD. The site consists of the Burwood Highway, Highbury Road, Sinnott Street and McComas Grove reserves. The general area includes a variety of land uses including residential and commercial areas, public open spaces and education facilities. Key features within proximity of the site include Gardiners Creek Reserve and Local History Park (Public Park), Sinnott Street Reserve (public park), Bennettswood Reserve, Zinfra head office and depot and Deakin University. Residential land is the major land use within the area. Small neighbourhood activity centres are scattered throughout the area.

3.5.1.2 Burwood to Malvern Proposed Underground Power Connection Alignment

The Burwood to Malvern proposed underground power connection alignment is depicted on Figure 3-8 and passes through the municipalities of Whitehorse, Monash and Stonnington. The indicative alignment runs within road reserves and traverses the Glen Waverley rail corridor, through a highly urbanised environment and is subject to confirmation with utility service providers. The locality consists predominantly of residential and commercial land uses and activity centres, and public open spaces. Key features in proximity of the alignment include Gardiners Creek Reserve, the existing rail corridor on the Glen Waverley line, and Holmesglen institute of TAFE in Chadstone.

3.5.2 Initial Works

The proposed Initial Works at Burwood are:

Utility relocations:

- Installation of a sewer pipeline in the McComas Grove and Burwood Highway road reserve for a total distance of approximately 170m.
- Relocation of overhead communications from Burwood Highway to underground into Burwood Highway road reserve for a total distance of approximately 220m.
- Relocation of overhead electricity powerline from the southern side of Burwood Highway to underground into the southern Burwood Highway road reserve for a total distance of approximately 175m.
- New communications and electricity utilities to be installed at the corner of Highbury Road and Sinnott Street to prepare land for future substation that will provide new power supply to the Burwood TBM launch site.

The existing redundant utilities are proposed to be decommissioned and remain in situ, with the exception of overhead power lines which will be removed.

These utility works are required to enable preparations for the Burwood station box construction.

New power connection

- Installation of a new dedicated underground 66kV cable from the existing Malvern Terminal Station on Waverley Road, Chadstone to Sinnott Street, Burwood for a total distance of approximately 4.7km (indicative alignment shown on Figure 3-9). These works are proposed within the road reserve and rail corridor.

These new power supply connection works are required to enable preparations for a proposed TBM launch site at Burwood. Underground installation is a standard practice within the electricity distribution industry, and mirrors typical utility installation works that are routinely undertaken by utility service providers in metropolitan Melbourne. The proposed works are not expected to involve any activity or works that are novel or out of the ordinary. All works are to be undertaken within the road reserve/rail corridor and may involve some temporary lane closures and construction traffic management measures.

3.5.3 Indicative Construction Methodology and Duration

Key construction activities will include:

Utility relocations:

- Open cut trenching or trenchless methods for the utility relocations at depths between 600mm to 1.2m. Construction will utilise a combination of dig, lay or bore and backfill.
- Clearing and grubbing including the removal of vegetation and trees, where permitted and to the minimum extent necessary.

New power connection:

- Open cut trenching or trenchless methods for the power cable connection. Construction will utilise a combination of dig, lay or bore and backfill.
- Clearing and grubbing including the removal of vegetation and trees, where permitted and to the minimum extent necessary.

Expected constructability durations are:

- Utility relocations: 3 – 6 months
- New power supply connection: 4 – 7 months

Total duration is anticipated to be up to 12 months. The utility relocations and new power connection works proposed will result in temporary, short term impacts and will progress in a linear manner resulting in minimal periods of activity in front of any single property.

Staging of works and establishment of temporary site facilities to ensure the health, safety and welfare of construction personnel and the public will be coordinated by SRLA and utility service providers. The location

of these temporary site facilities (e.g. equipment storage and amenity facilities) will be sited appropriately to avoid impacts on vegetation, residential amenity, business operations and road users.

3.5.4 Environmental Values

The Burwood site is characterised by the existing Burwood Highway arterial road corridor, proximity to modified water courses and public open space, and is located within an urbanised setting. A summary of environmental values identified include:

- Vegetated areas in proximity to the site and underground 66kV new power supply connection alignment are highly modified, and are largely comprised of planted amenity trees and small patches of native vegetation (which will be avoided).
- The indicative underground 66kV new power supply works between the Malvern Terminal Station to Burwood site will occur within the road reserve adjacent to retail and residential premises, however access to businesses and residents will be maintained. Potential disruption to road users will be minimised using construction traffic management measures. Some street trees may require works within their tree protection zones.
- Community facilities with no direct impacts in proximity to construction works include a playground, BBQ and picnic shelter, Burwood community garden, a school and Deakin University. Works will occur on Burwood Highway, Highbury Road, Sinnott Street and McComas Grove adjacent to retail and residential premises, however access to businesses and residents will be maintained.
- The nearby heritage place HO281 'Burwood Skyline Drive-In Cinema' at Burwood, which includes structures and mature trees located adjacent to the site and corridor, will be avoided.
- The site is located within an area of Aboriginal cultural heritage sensitivity due to the proximity of Gardiners Creek Reserve. However, Gardiners Creek has been concrete lined and channelised.
- Gardiners Creek Reserve public open space is a passive recreational asset to the community in an area with limited alternatives. The reserve is used for cycling and pedestrian activity for both leisure and commuter purposes. Access will be maintained to avoid severing social networks.
- The noise and air amenity is consistent with locations in an urban environment close to main roads.

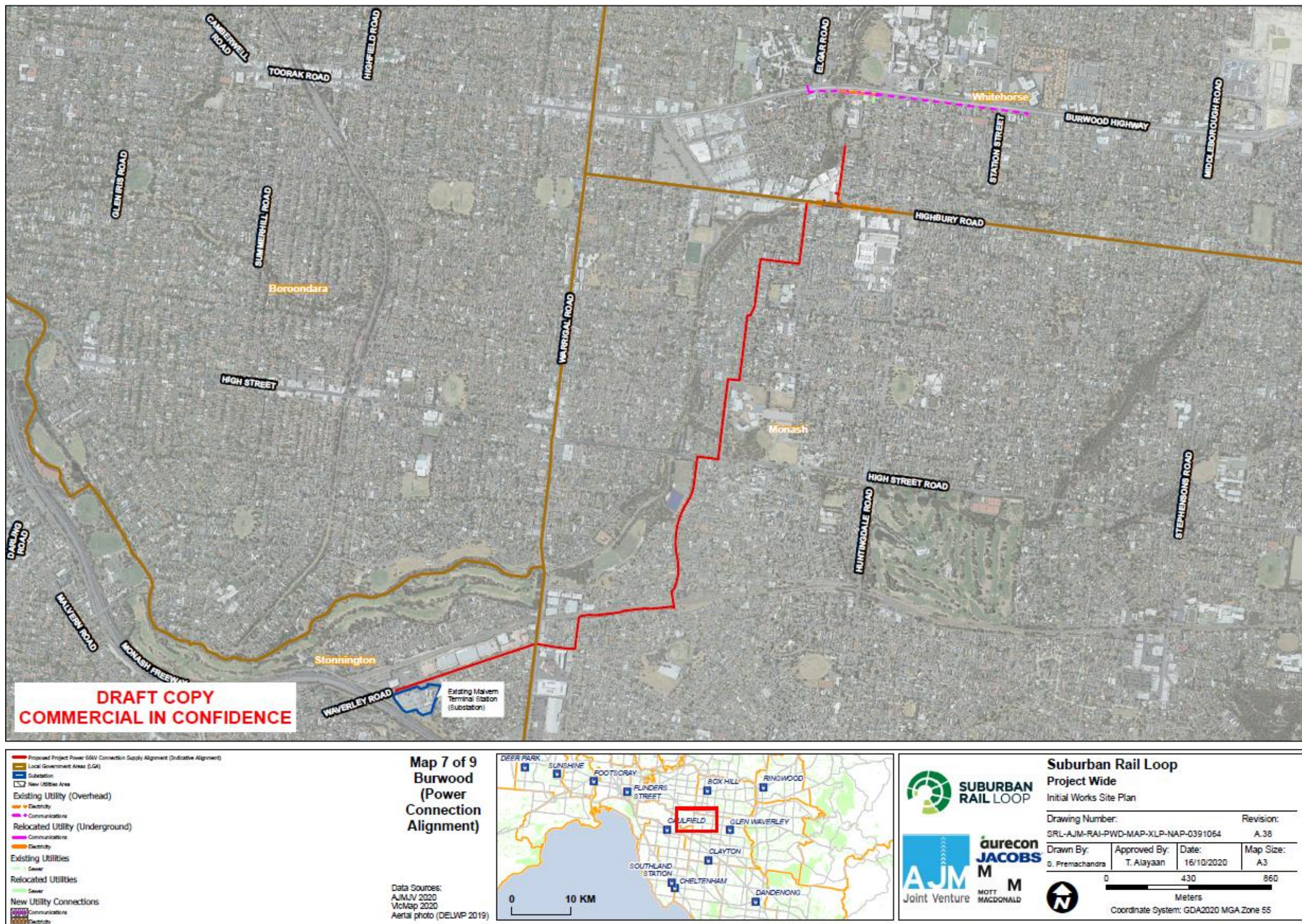


FIGURE 3-7 BURWOOD SITE PLAN (1 OF 2)

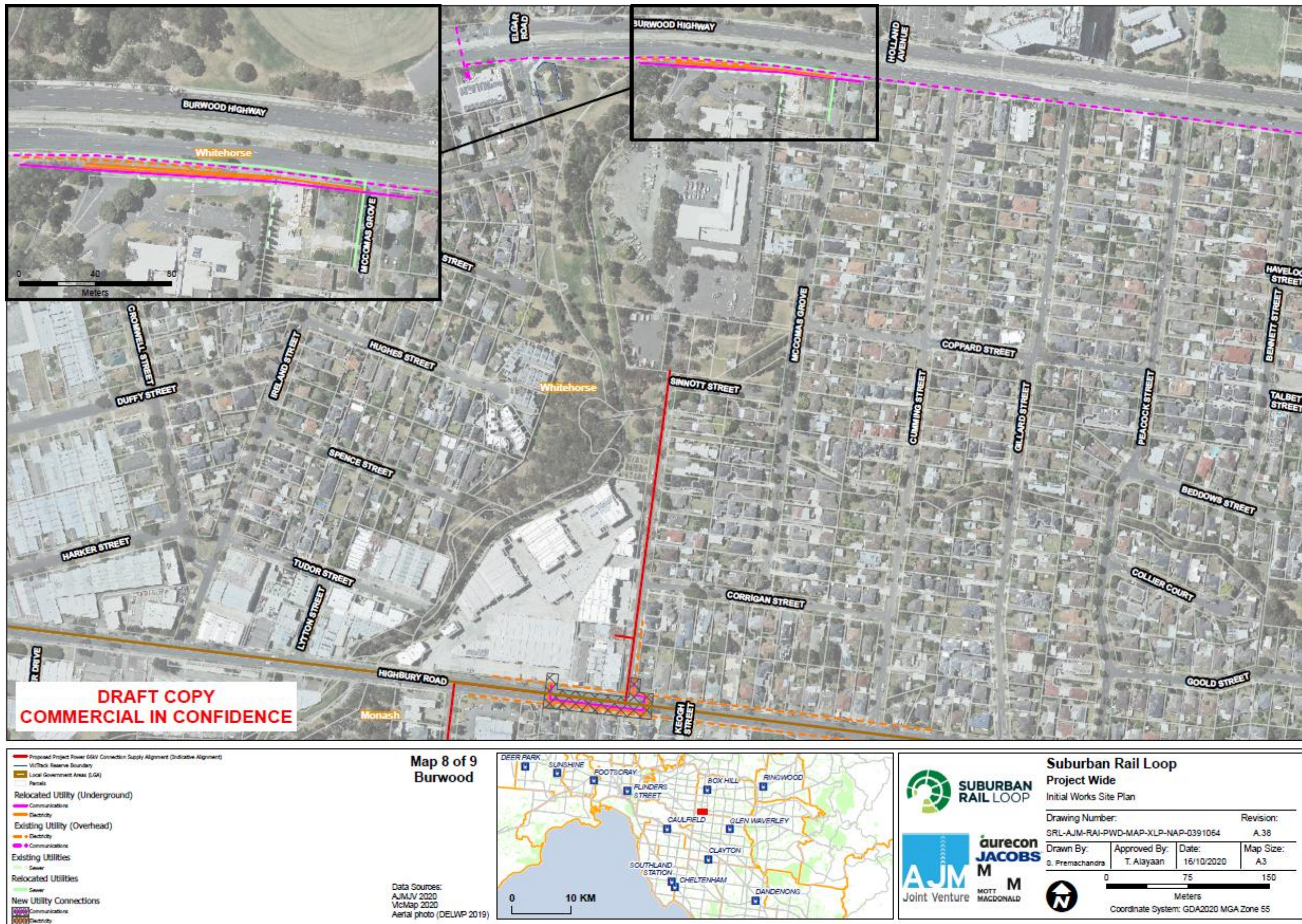


FIGURE 3-8 BURWOOD SITE PLAN (2 OF 2)

3.6 Box Hill

3.6.1 Site Context

The Box Hill site is depicted in Figure 3-9 and located within the suburb of Box Hill in the municipality of Whitehorse. Box Hill is approximately 14 kilometres east of Melbourne's CBD. The site comprises sections of the Whitehorse Road, and Bamfords Lane reservations.

The surrounding area includes a variety of land uses including residential and commercial/retail areas, public open spaces, employment areas (offices), education facilities and hospitals. Key features within and in proximity of the site include the Box Hill Gardens, Box Hill Station, Tram Route 109 Terminus and Bus Terminal, Box Hill Commercial Centre, City of Whitehorse memorial in the centre median strip, and Box Hill and Epworth Eastern Hospitals. Box Hill Metropolitan Activity Centre is a regionally significant activity centre and has experienced significant high-density development in the last ten years. Large residential towers are located along Station Street and Whitehorse Road.

3.6.2 Initial Works

The proposed Initial Works at Box Hill are:

Utility relocation:

- The existing overhead electricity to be relocated as an underground power connection within the Whitehorse Road reservation, including the centre median strip. The newly located underground electricity supply will extend from Whitehorse Road into Bamfords Lane.

The decommissioned overhead electricity supply will be removed from site.

These utility works are required to enable preparations for the Box Hill station box construction. All works are to be undertaken within the road reserve and may involve some temporary lane closures and construction traffic management measures. No street tree removal is required to facilitate these works.

3.6.3 Indicative Construction Methodology and Duration

Key construction activities would include:

- Clearing and grubbing including the removal of vegetation and trees, where permitted and to the minimum extent necessary.
- Open cut trenching or trenchless methods for the power utility relocations at depths between 600mm to 1.2m. Construction will utilise a combination of dig, lay or bore and backfill.

The expected construction duration for the electricity utility relocation works is up to 6 months. The utility relocations would result in temporary, short term impacts and progress in a linear manner resulting in minimal periods of activity in front of any single property.

Staging of works and establishment of temporary site facilities to ensure the health, safety and welfare of construction personnel and the public will be coordinated by SRLA and utility service providers. The location of these temporary site facilities (e.g. equipment storage and amenity facilities) will be sited appropriately to avoid impacts on vegetation, residential amenity, business operations and road users.

3.6.4 Environmental Values

The Box Hill site is characterised by an urban precinct in a highly disturbed setting, punctuated by the existing Lilydale/Belgrave rail corridor and Whitehorse Road which becomes the Maroondah Highway. Nonetheless, it includes the following environmental values:

- Several surrounding local heritage places listed in the Whitehorse planning scheme, but not impacted, including:
 - » HO244 – Box Hill Commercial Area
 - » HO91 – Former Colonial Gas Association Building at 942-946 Whitehorse Road, Box Hill
 - » HO92 – Former Railway Hotel at 950-956 Whitehorse Road, Box Hill
 - » HO93 – 958-964 Whitehorse Road, Box Hill
 - » HO116 – Former State Savings Bank at 953 Whitehorse Road, Box Hill
- The Whitehorse Road Linear Reserve is a tree-lined boulevard that provides a distinctive landscape character and amenity and is used by the community and staff from nearby retail and office employment areas as a passive open space for recreation.
- The Arboricultural assessment identified eight high value and 25 moderate value trees in the centre median strip on Whitehorse Road nearby to where the electricity relocation works are proposed. The arboricultural value is a single descriptor that encapsulates the size, condition, useful life expectancy and landscape contribution of an individual tree. Removal of street trees for Initial Works will be avoided.
- There is no Vegetation Protection Overlay (VPO), Significant Landscape Overlay (SLO) or Environmental Significance Overlay (ESO) present in areas impacted by the works.
- Community facilities in proximity to construction works include the Box Hill tram route 109 interchange (stop 58) and City of Whitehorse memorial in the centre median strip. Works will occur on Whitehorse Road, however access to businesses and residents will be maintained, including Wong's Lucky Bar Chinese restaurant that will not be affected by the Initial Works.
- The noise and air amenity is consistent with locations in an urban environment close to main roads and a rail corridor.

4 Environmental Assessment

4.1 Desktop Assessment

The Initial Works have the potential for localised environmental and socio-economic impacts. A desktop assessment was undertaken of the Initial Works on a site-by-site basis to:

- identify and describe environmental and social values potentially at risk from the Initial Works
- evaluate the significance of potential effects of the Initial Works on the identified environmental and social values, and identify the effects that required further investigation and analysis

Desktop assessments were undertaken by technical subject matter experts in each field with consideration of the following environmental, social and planning issues:

- Land use and planning
- Business and economic
- Transport and traffic
- Social and community
- Landscape and visual
- Air quality
- Noise and vibration
- Surface water
- Groundwater
- Contaminated land
- Cultural heritage (Aboriginal and historical)
- Ecology and arboriculture

The outcomes of the desktop assessment are summarised in Table 4-1. The table indicates which issues required further investigations, and at which specific Initial Works locations the further investigation should be focussed (where a tick indicates further investigations are required).

This desktop assessment also informed the scope of further investigations required to understand these potential significant effects. This included the significance of those effects, and an assessment of whether the effects required design refinement and/or site-specific mitigation measures.

TABLE 4-1 DESKTOP ASSESSMENT – ISSUES SUMMARY REQUIRING FURTHER INVESTIGATION

INITIAL WORKS	LAND USE AND PLANNING	BUSINESS AND ECONOMIC	TRANSPORT AND TRAFFIC	SOCIAL AND COMMUNITY	LANDSCAPE AND VISUAL	AIR QUALITY	NOISE AND VIBRATION	SURFACE WATER	GROUNDWATER	CONTAMINATED LAND	ABORIGINAL CULTURAL HERITAGE	HISTORICAL HERITAGE	ECOLOGY AND ARBORICULTURE
Southern Stabling Yard													
Utility Relocations	✓						✓			✓	✓		✓
Site Levelling and Ground Improvement Works	✓						✓	✓		✓	✓		✓
New Power Connection	✓						✓			✓	✓		✓
Clayton													
Utility Installation	✓						✓						
Monash													
Utility Relocations and Protection	✓						✓						
Minor Road Modification	✓						✓						
New Power Connection	✓						✓						
Glen Waverley													
Utility Relocations	✓						✓						
Burwood													
Utility Relocations	✓						✓				✓		✓
New Power Connection	✓						✓				✓		✓
Box Hill													
Utility Relocations	✓						✓						

4.2 Issues Requiring Further Investigation

The desktop assessment identified several activities at the Initial Works sites with a potential impact on a number of environmental aspects that required further investigation to more fully understand potential effects and the significance of those effects, and to assess whether the effects can be managed through standard management measures (which are described in Section 5.1.2) and/or site-specific management measures. Potentially significant effects identified by the desktop assessment as requiring further investigation include:

- Land use planning
 - » Inconsistency with state and local strategic land use planning policy at the Southern Stabling Yard site
 - » Temporary loss of passive open space and community/recreation facilities
- Noise and Vibration
 - » Air borne noise impacts during construction works
 - » Ground borne vibration impacts during ground improvement works, particularly at the Southern Stabling Yard site
- Surface Water
 - » Changes to the flood regime due to Initial Works at the Southern Stabling Yard site
- Contaminated land
 - » Disturbance and management of potentially contaminated soil during Initial Works, primarily at the Southern Stabling Yard site
 - » Release of vapours and/or ground gases from contaminated soil at the Southern Stabling Yard site
- Aboriginal cultural heritage
 - » Disturbance or destruction of known and unknown Aboriginal cultural heritage
- Ecology and Arboriculture
 - » Removal of native vegetation for Initial Works
 - » Existing landscape and environmental values at risk from tree removal.

Detailed impact assessment investigations were undertaken for each of the effects listed above. The environmental specialists prepared targeted methodologies for assessing the potentially significant effects of the Initial Works, carried out these assessments, better-defined the potential effects, and recommended site-specific mitigation measures for managing these potential effects. Further information about these investigations and their conclusions are presented in sections 4.3 to 4.9.

All other matters listed in Table 4-1 (i.e. where no box is ticked) were considered to not constitute a potentially significant effect on the environment. The effects on these environmental values are modest, temporary, localised and/or reversible. The Initial Works would not require people exposed to these effects to adapt or change their behaviour, and any alteration or disturbance to the environment are within the limits of natural variability and can be appropriately addressed through the implementation of standard management measures.

4.3 Land Use Planning

4.3.1 Impacts Assessed

A land use impact assessment was undertaken to assess potential impacts on land use planning considerations of the proposed program of Initial Works. The assessment:

- Identifies the impacts of the Initial Works from a land use planning perspective

- Considers whether these impacts are acceptable and whether they will have a potentially significant effect on the environment, as per the referral criteria in the Ministerial Guidelines under the EE Act
- Identifies appropriate environmental management measures to address the residual land use planning impacts of the Initial Works.

4.3.2 Methodology

In order to determine and characterise potential direct and indirect impacts on land uses and strategic planning policy, a land use and planning impact assessment was prepared for the Initial Works. The assessment investigated the impacts at each of the Initial Works sites that relate to temporary occupation of the land for construction purposes.

The methodology for the land use and planning impact assessment included:

- Site visit to evaluate and validate visual evidence
- A review of existing aerial photography and online mapping services to complement the baseline land use assessment.
- A review of the planning policy framework and planning controls including the relevant planning scheme (zones, overlays and particular provisions), recent planning scheme amendments and current strategic planning work, frameworks and proposed planning scheme amendments.
- Assessment of the land required for the Initial Works, including its current uses and sensitivities.
- An assessment of the potential implications for existing and future land uses from the construction of the Initial Works and potential constraints on, or changes to, existing or future land use.
- An assessment of the works against planning permit triggers (refer to Appendix A) in order to identify key values such as heritage buildings and provide recommendations for environmental management measures.

4.3.3 Land Use Planning Impact Assessment Findings

Southern Stabling Yard

- Temporary occupation of public road reserves will be required for the utility relocations at Heatherton. The works will involve partial lane closures and traffic management measures at Warrigal Road, Kingston Road, Heatherton Road, Dingley Bypass, Old Dandenong Road and Elder Street South. The occupation could result in a lack of access to the road and footpath during the time of construction, although the works are considered typical day-to-day works and will progress in a linear manner resulting in minimal periods of activity in front of any single property.
- The Public Acquisition Overlay 2 (PAO2) that applies to the land, the South East Green Wedge Management Plan and the Local Planning Policy Framework depict the intended use of the Southern Stabling Yard site to be for public open space as part of the Kingston City Council Chain of Parks. The ground improvement works are intended to prepare the land for SRL Stage One. Consequently, the works will result in a change in land use from a quarry, clean fill site, residential dwellings, dog park and nursery to a construction area for future railway purposes. Most of the Initial Works would occur on the parts of the Southern Stabling Yard site that are currently used for clean filling. The Initial Works and change in land use to a temporary construction area will not preclude the ability for the site to be used as open space in the future, should the stabling yard not be developed at this location.

- Loss of passive open space and community/recreation facilities was identified as a potential impact, and therefore the Initial Works scope has been modified to avoid direct impacts on the Kingston Linear Walking Trail to the west and north of the site. However, minor works are required in an isolated area near the existing drain along the east-west Henry Street trail to mitigate the potential for off-site flooding. Short term, temporary disruption (no greater than several days) to the trail access might occur, to ensure the health and safety of the public.
- Overall, it is considered that the impacts on land use are temporary and there will be no ongoing adverse land use impacts at this location associated with the Initial Works. The ground improvement works would result in enhanced usability of the land and improve the development options for the State-owned land, should the stabling yard not be developed at this site.
- Based on this assessment, the effect of these Initial Works is not considered significant from a land use planning perspective.

Clayton

- Temporary occupation of public road reserves will be required for the utility relocation at Clayton. The works will involve partial lane closures and traffic management measures. The occupation could result in a lack of access to the road and footpath during the time of construction, although the works will progress in a linear manner resulting in minimal periods of activity in front of any single property.
- The temporary occupation will not result in any permanent change in land use and all road reserves will be reinstated following the works.
- For these reasons, the effect of Initial Works on this site is not considered significant from a land use planning perspective.

Monash

- The relocation of existing utilities will be occurring within public road reservations. The works will involve partial lane closures and traffic management measures. The occupation could result in a lack of access to the road and footpath during the time of construction, although the works will progress in a linear manner resulting in minimal periods of activity in front of any single property.
- The minor road modifications to change access to Ferntree Gully Road from Howsley Road are anticipated to require temporary occupation of the intersection and result in partial lane closures during the works. However, access to adjacent properties will be maintained during the Initial Works.
- The temporary occupation will not result in any permanent change in land use and all road reserves will be reinstated following the works.
- For these reasons, the effect of Initial Works on this site is not considered significant from a land use planning perspective.

Glen Waverley

- Temporary occupation of public road reserves and a small section of the existing MTM rail corridor will be required for the utility relocations. The works will involve partial lane closures and traffic management measures. The occupation could result in a lack of access to the road and footpath during the time of construction, although the works will progress in a linear manner resulting in minimal periods of activity in front of any single property.
- The temporary occupation will not result in any permanent change in land use and all road reserves will be reinstated following the works. Overall, the utility relocations at Glen Waverley will not have an impact on the existing land uses.

- For these reasons, the effect of Initial Works on this site is not considered significant from a land use planning perspective.

Burwood

- The relocation of existing utilities and construction of a new power connection to the south of the Burwood site to the existing Malvern Terminal Station are proposed to occur predominantly within road reservations with a small section of the new power supply to occur in the Glen Waverley line rail corridor and the installation of a sewer in Burwood Highway and McComas Grove, Burwood. Subject to roads being reinstated to the same standard, there are no permanent impacts associated with these works at Burwood or along the new power connection alignment between Malvern Terminal Substation and the Burwood site.
- The utilities relocation and installation of a 66kV underground line for a new power connection between Malvern Terminal Substation and the Burwood site would only require the temporary occupation of public land and is likely to include partial lane closures and traffic management measures. Access to adjoining properties would be maintained. The temporary occupation will not result in any permanent change in land use and all road reserves will be reinstated following the works.
- Accordingly, the effect of these works are not considered significant from a land use planning perspective.

Box Hill

- The relocation of existing minor utilities (electricity supply) is proposed to occur within public road reservations and require partial lane closures along Whitehorse Road during the works.
- These works would require the temporary occupation of public land. Access to adjoining properties would be maintained at all times, and the works would have no permanent impact on current and potential future use and development of land.
- The Whitehorse Road Linear Reserve is a tree-lined boulevard that provides a distinctive landscape character and amenity and is used by the community and staff from nearby retail and office employment areas as a passive open space and recreation facility. Initial Works will be temporary and contained to a small section of the centre median strip that forms the long, linear reserve.
- Therefore, the effect of these works are not considered significant from a land use planning perspective.

4.3.4 Proposed Management and Mitigation Measures

Southern Stabling Yard

- Initial Works have been refined to avoid loss of passive open space impacts to the Kingston Linear Walking Trails to the west and vegetation north (Henry Street) of the site that provide landscape buffers from surrounding areas to the site and active open space / thoroughfares for the local community, noting that minor works to the Henry Street trail to treat flooding is required and will likely require temporary closure of this trail for several days.

4.3.5 Summary of Key Land Use Effects

The proposed Initial Works have been revised to avoid impacts on the Kingston Linear Walking Trails adjacent to the Southern Stabling Yard site. It is considered that the Initial Works do not preclude the ability for the Southern Stabling Yard to be utilised for other land uses in the future, such as future open space, in accordance with Kingston City Council's strategic planning.

Public access will be maintained during the utility relocation works, and there are no potentially significant land use effects as a result of all other Initial Works elements.

4.4 Noise

4.4.1 Impacts Assessed

Airborne noise

The desktop impact assessment identified the following potential airborne noise impacts.

- Noise impacts associated with conventional or minor construction activities including:
 - » Minor utility relocations at all Initial Works sites
 - » Installation of new power connections at Southern Stabling Yard, Monash, and Box Hill sites
 - » Minor road modifications at Monash
 - » Traffic associated with the project including delivery and removal of materials
- Potential noise associated with (intensive) ground improvement works at Southern Stabling Yard site:
 - » Site levelling (earthworks)
 - » Ground improvement trials

Most of the Initial Works will be undertaken during normal working hours, including the proposed ground improvement works at the Southern Stabling Yard site. However, some of the minor construction activities such as utility relocations may be conducted outside of normal working hours due to practicability requirements. This might involve works that would pose a risk to life or property if conducted during normal working hours, or that may risk a traffic hazard during daytime hours. These unavoidable works outside normal working hours will still need to be conducted in a manner that does not result in unreasonable noise.

Ground borne noise

Ground borne noise, also known as regenerated noise, is an associated effect of the vibrations that occur on hard surfaces within buildings or enclosed space that radiate noise. Ground borne noise is usually associated with tunnelling projects when equipment such as drilling rigs operate underground. Ground borne noise is usually not a significant disturbance to building occupants during daytime periods due to higher ambient air borne noise levels that mask ground borne noise emissions. However, when ambient noise levels are often much lower during the night, ground-borne noise is more prevalent.

Given that Initial Works are limited to surface works (no tunnelling activities) and the works will occur during the daytime, the possible effects of regenerated noise have not been modelled as the effects are considered to be inconsequential.

4.4.2 Methodology

To understand the potential construction noise impacts associated with the Initial Works, the assessment has been undertaken against the following guidelines:

- *EPA Publication 1254 Noise Control Guidelines* (relevant criteria shown in Table 4-2 below).
- *EPA Publication 480 (February 1996) Environment Guidelines for Major Construction Sites*.

TABLE 4-2 NOISE CRITERIA FROM EPA PUBLICATION 1254

PERIOD	WORK HOURS	NOISE CRITERIA
Normal Working Hours	• 7am to 6pm Monday to Friday • 7am to 1pm Saturdays	There are no limiting noise criteria for the Daytime period, however there is still a proposed duty to minimise noise impacts on the surrounding environment.
Evening Period & Weekend Period	• 6pm to 10pm Monday to Friday • 1pm to 10pm Saturdays • 7am to 10pm Sundays and Public Holidays	Noise levels at any residential premises not to exceed background noise level by: • 10 dB(A) or more for up to 18 months after project construction commencement; and • 5 dB(A) or more after 18 months
Night Period	• 10pm to 7am Monday to Sunday	Noise inaudible within a habitable room of any residential premises.

Given that *EPA Publication 1254 Noise Control guidelines* places no restriction on construction noise during normal working hours, Subjective Noise Descriptors have been developed to establish normal working hours noise benchmarks and provide context to the predicted (modelled) noise levels. The Subjective Noise Descriptors are derived based on local knowledge of background noise levels and the sound power data of the typical equipment used on construction sites sourced from Australian Standard AS 2436-2010 (R2016) *Guide to noise and vibration control on construction, demolition and maintenance site*.

TABLE 4-3 SUBJECTIVE NOISE DESCRIPTORS FOR NORMAL WORKING HOURS

NOISE LEVEL	DESCRIPTION
45 dB LAeq	Typical noise level in a quiet library. Similar to the ambient noise levels in areas well away from arterial roads.
55 dB LAeq	Typical noise level in an open office. Similar to the ambient daytime noise levels in typical suburban areas.
65 dB LAeq	Typical noise level from a loud conversation. Similar to the ambient daytime noise levels in areas adjacent to arterial roads.
75 dB LAeq	Typical noise level from a truck passby at 20 metres. Similar to the noise levels that may be experienced if a neighbour was carrying out external renovation works on a property.
85 dB LAeq	Typical noise level from a truck passby at 5 metres. Similar to the noise levels that may be experienced if a neighbouring property was being demolished.

Noise background levels were determined based on results of attended monitoring carried out near the Initial Works sites in accordance with the *Victorian State Environment Protection Policy Control of Noise from Commerce, Industry and Trade (SEPP N-1)*.

Measured noise levels in areas adjacent to the Southern Stabling Yard site have been used to define Noise Catchment Areas (NCAs) as shown in Figure 4-1. Measured noise levels during the Day period when works are proposed to occur are:

- Residential areas
 - » NCA1: Northern end of Nicholas Grove: 45 LAeq
 - » NCA2: Southern end of Nicholas Grove: 61 LAeq
 - » NCA3: Elder Street, Clarinda: 60 LAeq
- Residential/ Rural areas
 - » NCA4: Northern end of Pietro Road (along Kingston Road): 58 LAeq
 - » NCA5: Southern end of Pietro Road (along Kingston Road): 47 LAeq

The measured background noise levels vary across all other Initial Works sites. Day period measurements are as follows:

- Clayton 49 – 57 dB LAeq
- Monash 50 – 53 dB LAeq
- Glen Waverley 48 – 58 dB LAeq
- Burwood 40 – 57 dB LAeq
- Box Hill 46 – 60 dB LAeq

The noise assessment has been undertaken using two methodologies, to reflect a nuanced approach to the proposed works at Southern Stabling Yard compared with the remaining five sites. The two methodologies are described in Table 4-4 below:

TABLE 4-4 NOISE ASSESSMENT METHODOLOGIES

ASSESSMENT TYPE	ASSESSMENT METHODOLOGY
Noise impacts associated with minor construction activities	• Established existing noise environment at each site • Established indicative construction noise benchmarks • Developed construction noise level predictions at distances for the various types of works • Assessed potential impacts of the works against indicative construction noise benchmarks

ASSESSMENT TYPE	ASSESSMENT METHODOLOGY
Noise associated with ground improvement activities at Southern Stabling Yard site	- Established existing background, using existing noise measurements for sensitive land uses around the site (refer to NCA). - Established indicative construction noise benchmarks - Establishment of a study area for surface noise. - Developed an acoustic model, using SoundPLAN modelling software. - Noise levels for the various ground improvement options have been predicted for sensitive land uses and assessed against construction noise benchmarks.

4.4.3 Noise Impact Assessment Findings

Noise associated with Initial Works (other than ground improvement works)

The noise assessment evaluated the typical worst-case predicted noise levels associated with construction activities associated with the utilities relocations at all sites, minor road modifications at the Monash site and excludes the ground improvement activities at the Southern Stabling Yard. The assessment indicates that construction noise levels of 57 – 64 dB LAeq could be expected when the works are within 200 m of sensitive land uses and where there is no intervening shielding. This level is comparable to the typical ambient road traffic noise level adjacent to arterial roads. When works occur within 15 – 50 m of sensitive land uses, there may be the potential for noisier phases of works to result in construction noise levels of 75 dB LAeq and above for a short period of time, which would be comparable to the noise level expected during extensive renovation works or demolition works on a neighbouring residence.

This is not unusual for the type of works proposed for the Initial Works, which are typical, every-day construction activities that occur throughout Melbourne. In many cases, particularly for utility relocations and road modifications, works will progress in a linear manner, resulting in active work locations to be in an immediate area for a short time, mitigating the potential impact. The predicted noise levels illustrate that standard noise management measures should be implemented for the works such as notification of residents/businesses and careful scheduling of works.

Except for unavoidable works, noise from construction works during weekend/evening work hours and the night period must meet the weekend/evening and night period specified in the EPA noise guideline shown in Table 4-2. Unavoidable works involve works that would pose a risk to life or property if conducted during Normal Working Hours, or that may risk a major traffic hazard during daytime hours.

The location, timing and duration of unavoidable works will be carefully considered before proceeding, and all reasonable and feasible noise management measures should also be implemented to manage undesirable noise levels. Where required, offers of respite for residents may be considered, such as alternative accommodation during the night works to directly affected residents, who might experience some prolonged nuisance at night.

Noise associated with ground improvement works at Southern Stabling Yard site

The predicted noise levels for the ground improvement works are highest during earthworks activities with the modelled outcome showing noise levels are not expected to exceed 70 dB LAeq as shown in the modelling output in Figure 4-1, a noise level similar to the noise levels that may be experienced if a neighbour was carrying out external renovation works on a property. While the earthworks are typically quieter than the other activities, this reflects the fact that these works will extend across the Southern Stabling Yard site and, therefore, some of these works will occur in areas that are closest to the noise-sensitive land uses for a short period of time (i.e. several days). The highest noise levels for the earthworks would only occur for those periods during which they are undertaken in relative proximity to noise-sensitive uses.

Furthermore, given that most of the Southern Stabling Yard site is an active clean fill landfill, residents in proximity to the site are already familiar with similar earthworks activities such as levelling, stockpiling and reprofiling that are currently part of the landfill operations.

Predicted noise levels for the more significant deep dynamic compaction and piling works are lower than earthworks, due to the substantial distance between the nominated trial sites and the nearest noise-sensitive land uses. Noise levels from the works are expected to generally be comparable to the daytime ambient noise levels in most Noise Catchment Areas (NCAs), with higher noise levels possible from impact piling and deep dynamic compaction when occurring in the closest nominated trial areas to noise-sensitive uses in NCA4 directly south of the site. Despite this, noise levels are not expected to exceed 67 dB LAeq for any of these works, which is a noise level similar to ambient noise levels adjacent to an arterial road. Predicted deep dynamic compaction noise levels are depicted in Figure 4-2 and these works will take up 8 weeks to complete. Piling works will take up to 12 weeks to complete.

The primary noise management measures would involve limiting works to normal working hours. This is particularly important for noisy activities that consist of impulsive noise, such as the impact piling and deep dynamic compaction activities. Additionally, the distance at which noisier trial activities are carried out should be maximised, a measure already incorporated into the proposal for the ground improvement works. This involved modelling multiple trial locations and varying scenarios, altering mass loads and heights, whilst maintaining the minimum prerequisites required to achieve the desired ground improvement requirements (i.e. compaction, ground stability and noise exposure levels).

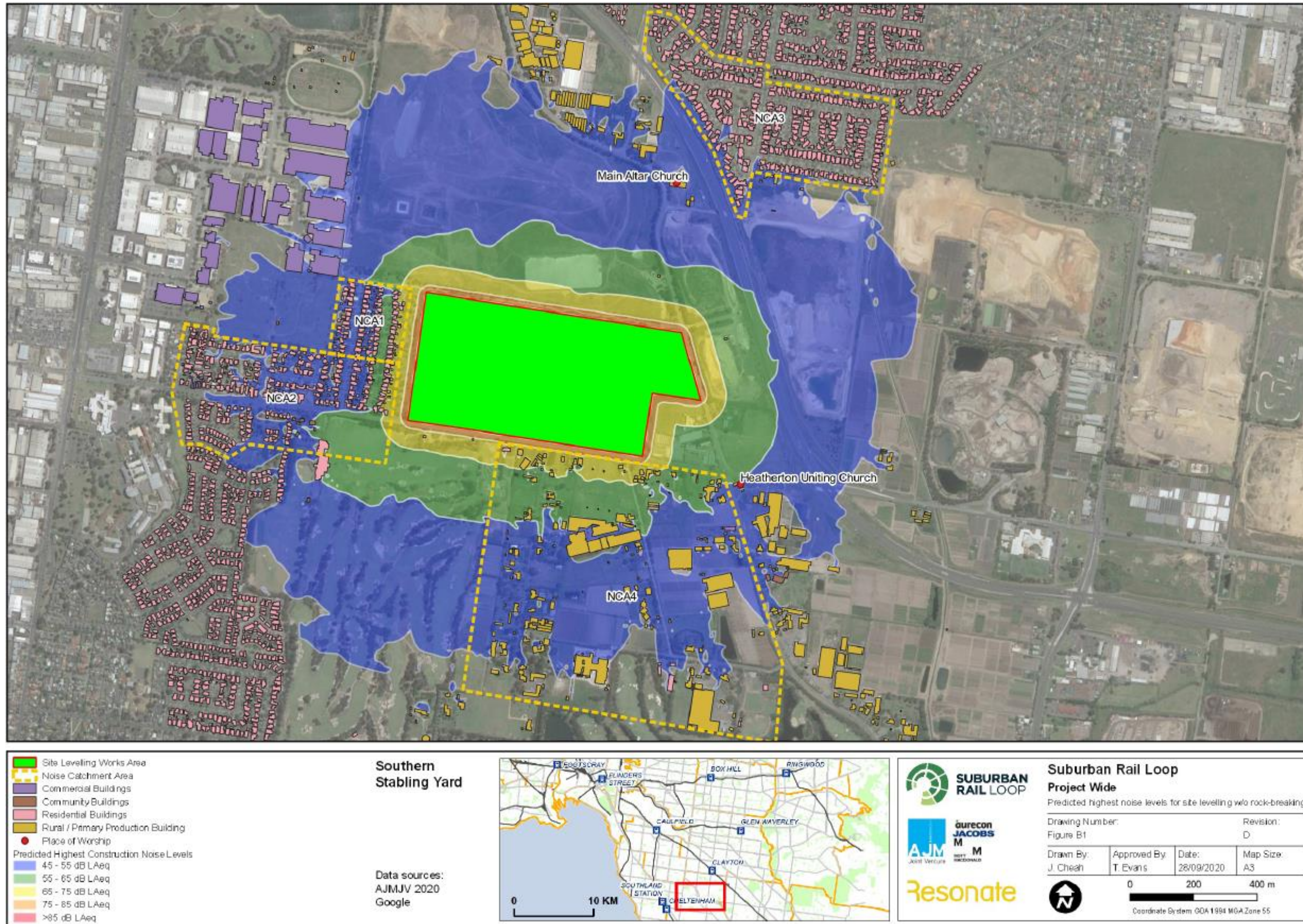


FIGURE 4-1 EARTHWORKS NOISE IMPACT LEVELS

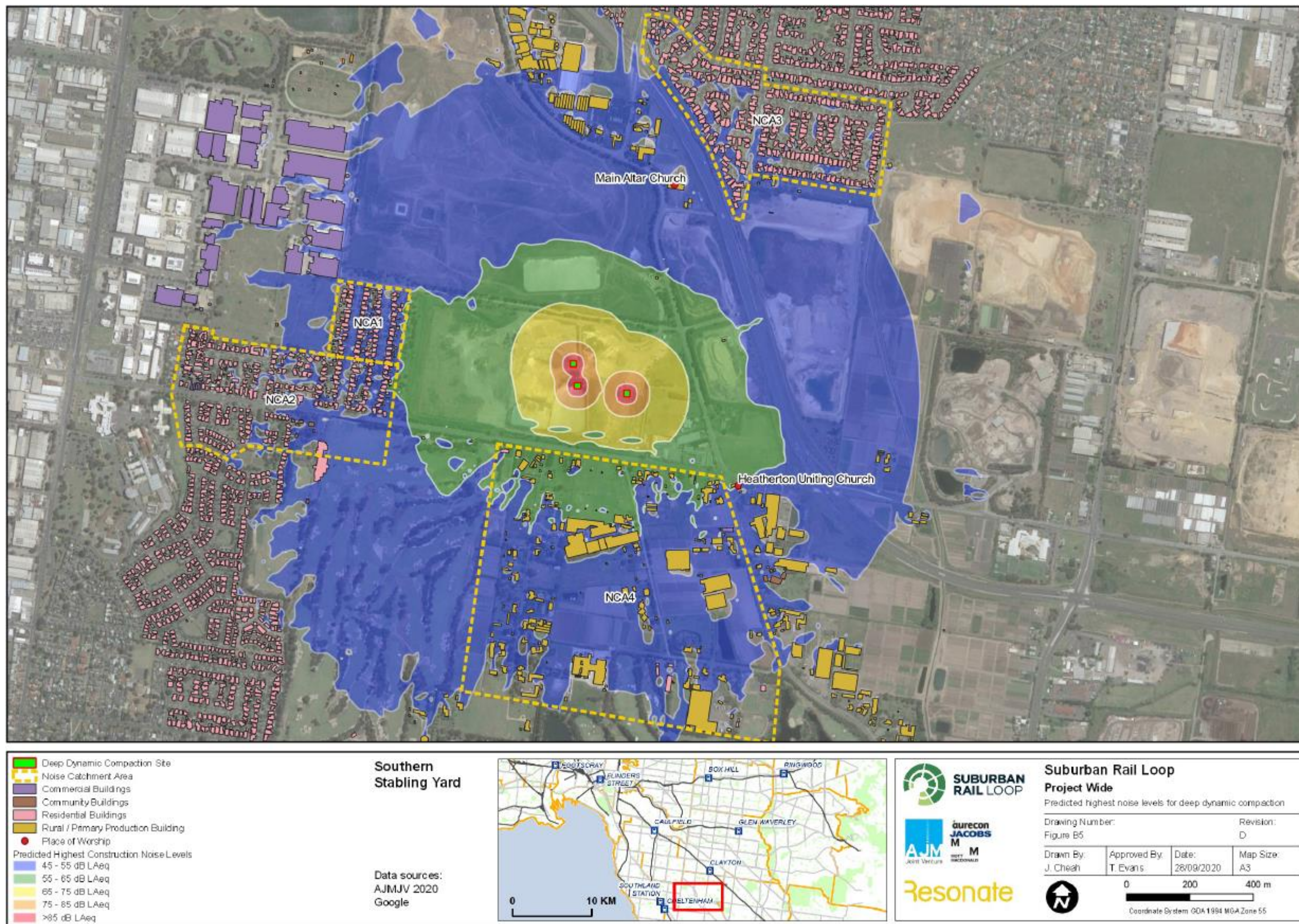


FIGURE 4-2 DEEP DYNAMIC COMPACTION NOISE IMPACT LEVELS

4.4.4 Proposed Management and Mitigation Measures

With the implementation of reasonable and feasible management measures, the construction noise impact of the works will be able to be controlled in accordance with the Noise Control Guidelines. Noise management and mitigation measures include:

Standard mitigation measures

- Unless works are unavoidable, or works are defined as low-noise or managed impact in accordance with the Noise Control Guidelines, works will be restricted to Normal Working Hours
- A consultation and notification procedure will be implemented that notifies sensitive land uses of potential noise impacts in advance of the works and provides information on the expected noise levels and duration
- Temporary shielding of noisy activities using acoustic curtains or hoarding, or acoustic enclosures around stationary items of plant, will be typical practice.
- Site and equipment management measures include:
 - » Planning traffic flow, parking and loading/unloading areas to avoid the need for reversing vehicles near residential areas.
 - » Loading and unloading of materials occurring as far as possible from residential areas.
 - » Site access points, roads and construction traffic routes will be located as far as possible from residential areas.
 - » Locating site sheds and worker amenity blocks as far as possible away from residential areas.
 - » Restricting construction traffic speed to 20 km/h across the sites.
 - » Restrict construction traffic to designated roads.
 - » Locate plant and equipment to take advantage of barriers provided by existing site features and structures e.g. utilising the existing earth mound (approximately 2 m high) at the western edge of the Southern Stabling Yard site
 - » Implement mufflers/silencers on plant and equipment.
 - » Undertake regular maintenance of plant and equipment, including silencers, to ensure that noise emissions do not increase over time. Servicing, refuelling and warm-up to be undertaken during standard construction hours
 - » Where required offers of respite for residents may be considered, such as alternative accommodation during the night works, to residents who might experience some temporary nuisance.

Site specific mitigation measures (ground improvement works)

- Selection of trial sites to maximise distance to residences as much as is feasible. This has been done through the current site selection process with a minimum separation distance of 100 m to piling activities and over 200 m proposed to deep dynamic compaction activities.
- Commence noisier works (e.g. impact piling and deep dynamic compaction) furthest from residences and undertake noise monitoring to confirm noise emissions from these sources are consistent with modelled predictions, and adapt activities as necessary if the measured emissions are higher. Undertake 'soft starts' where possible by commencing the Deep Dynamic Compaction works with lower

drop heights. Review noise management measures following the results of the noise monitoring and re-implement any measures if required.

- To confirm noise predictions, an extensive noise monitoring program will be implemented. This program will also inform the management and implementation of the full ground improvement works and major construction works for SRL Stage One development. The results of the monitoring will better describe and quantify more accurately the baseline noise levels near the site and, in particular, noise impacts to nearby sensitive receptors as well as enable a robust noise profile to be generated for the existing site and surroundings.

4.4.5 Summary of Key Noise Impacts

Most of the Initial Works are typical of construction activities that are undertaken on a regular basis throughout Melbourne. These works have the potential to produce higher levels of noise when occurring near residential land uses, although this is not generally expected to persist for long periods of time given the nature of the works. Construction noise levels will be managed through the implementation of standard noise management measures set out in Section 4.4.4.

Potentially significant noise impacts on the amenity of a small number of residences in Heatherton could arise as a result of the ground improvement works at Southern Stabling Yard site. These noise levels would be comparable to road traffic noise levels near an arterial road for a limited period of time. Furthermore, given that most of the Southern Stabling Yard site is an active clean fill landfill, residents near the site are already familiar with similar earthworks activities such as levelling, stockpiling and reprofiling that are currently part of the landfill operations. The noise impacts of the ground improvement trials will be managed by implementing the site-specific noise management and mitigation measures set out in Section 4.4.4.

For these reasons, these Initial Works will not have a significant effect on the environment from a noise perspective.

4.5 Vibration

4.5.1 Impacts Assessed

Most of the Initial Works would result in vibration levels commensurate with 'business as usual' construction work such as utility relocations and road modifications. The impact assessment identified that elevated vibration levels for most of the Initial Works is not uncommon, however, these are standard construction activities progressing in a linear fashion and will only occur for a relatively short duration near to sensitive land uses.

Ground improvement works proposed at Southern Stabling Yard site, could lead to potential vibration impacts on structures and amenity, and therefore the ground improvement trials (a component of ground improvement works) were assessed in further detail. However vibration impacts associated with site levelling activities was considered to be negligible, due to the nearest sensitive receptors (residents west and south of the Southern Stabling Yard site) being located at a distance of more than 50 m away from the site, and the predicted vibration levels from the use of site levelling equipment such as excavators is expected to be

less than 0.3mm/s at this distance This vibration level would be imperceptible and is similar to the vibration levels the residents experience from current earthworks activities that are presently part of the site landfill operations.

The ground improvement trials consist of three methodologies, Piling, Deep Dynamic Compaction and Surcharge Embankment:

- Surcharge Embankment works may require up to 12 months to complete. This consists of 14 weeks to construct the embankment and complete site investigations, with the following 8 month period required for the surcharge fill to remain in place and allow compressible materials to settle.
- Deep Dynamic Compaction and Piling may take up to eight and 12 weeks respectively to complete and will be conducted during normal working hours. The duration of works includes time required for mobilisation, site investigations, completion of the trials and demobilisation. The sequencing activities will be staggered in order to carry out the trials and allow time for data collection as well as site investigations. Therefore, works that would increase vibration levels will be limited to four weeks for deep dynamic compaction and up to eight weeks for piling works throughout the entire 12 week period.

4.5.2 Methodology

In order to assess the potential vibration impacts associated with the ground improvement trials at the Southern Stabling Yard site on amenity and infrastructure, a purpose-designed vibration model for the Initial Works has been developed. Reference vibration levels used to develop the model have been based on previously published literature from other infrastructure projects.

The reference vibration data was collated by measuring the level of vibration at a range of distances from the vibration sources and analysing information to develop relationships between the equipment, distance, and vibration level. The modelled vibration effects have been subsequently analysed and compared against Australian Standard AS2436:2010 “*Guide to noise and vibration control on construction, demolition and maintenance sites*” which refers to the following international standards and guidelines.

- AS2187.2-2006, “*Australian Standard Explosives Storage and Use of explosives*”, Australian Standards, SAI Global
- BS5228-2:2009 “*Code of practice for noise and vibration control on construction and open sites Part2: Vibration*”, British Standard
- BS7385-2: 1993, “*Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration*” British Standard
- DIN4150-3:1999, “*Structural vibration Part 3: Effect of vibration on structures*”, German Standards ICS91.120.25

Suggested vibration levels for amenity and the different infrastructure types that could apply to the Initial Works is presented below:

Amenity (Human comfort) based on British Standard BS5228-2:2009:

- Less than 0.30mm/s (Imperceptible)

- 0.3mm/s – 0.90mm/s (Slightly perceptible)
- 0.9mm/s – 2mm/s (Distinctly perceptible)
- 2mm/s – 4mm/s (Strongly perceptible)
- 4mm/s – 8mm/s (Disturbing)

Infrastructure (Structural damage) based on British Standard BS7385-2: 1993:

- Residential properties (excluding heritage buildings): 10mm/s
- Commercial properties: 25 mm/s
- Licenced oil pipeline infrastructure: 20 mm/s.

Note: The 1mm/s limit represents the lowermost level of perceptible vibration for most people. As a comparison, a level of 1mm/s equates to movement of the surface of water in a glass.

4.5.3 Vibration Impact Assessment Findings

The analysis confirms that the planned works with the different equipment will be compliant with the vibration criteria for preventing infrastructure damage. The Deep Dynamic Compaction trials involving the larger weights and drop heights generate vibration approaching the proposed infrastructure criteria. Although the works are modelled not to cause any damage to adjacent properties, they will be perceptible to some residents along Nicholas Grove and Kingston Road. The vibration levels will vary from imperceptible to very strongly perceptible. The maximum impact occurs from the largest modelled energy drop mass of 23 tonne for the Deep Dynamic Compaction trials which could generate vibration up to 5mm/s ('disturbing' criteria) at occupied properties along Kingston Road (modelling results shown in Figure 4-3).

The Deep Dynamic Compaction works with the high energies (larger drop weights and heights) will generate vibration levels range from 1 to 5mm/s ('distinctly perceptible to disturbing criteria') for an intermittent period of eight weeks. Whilst the vibration is modelled to be compliant with criteria preventing building damage, in some scenarios, the vibration might cause nuisance for some at properties located at Nicholas Grove and Kingston Road during the trial period.

Vibration from the driven displacement piles at key locations was also assessed, as it will also generate vibration levels of 0.9mm/s ('distinctly perceptible criteria'). Vibration from the bored piers are negligible and will have no impact in terms of possible damage or a reduction in amenity (modelling results shown in Figure 4-4 and Figure 4-5).

Vibration resulting from the excavator activities associated with constructing the embankments and earth works is minimal with no properties modelled to receive perceptible levels of vibration.

The design and location of the ground improvement trials has been informed by, and adapted to, the noise and vibration modelling results. This involved modelling multiple trial locations and varying energies, whilst

maintaining the minimum prerequisites required to achieve the desired ground improvement requirements (i.e. compaction and ground stability).

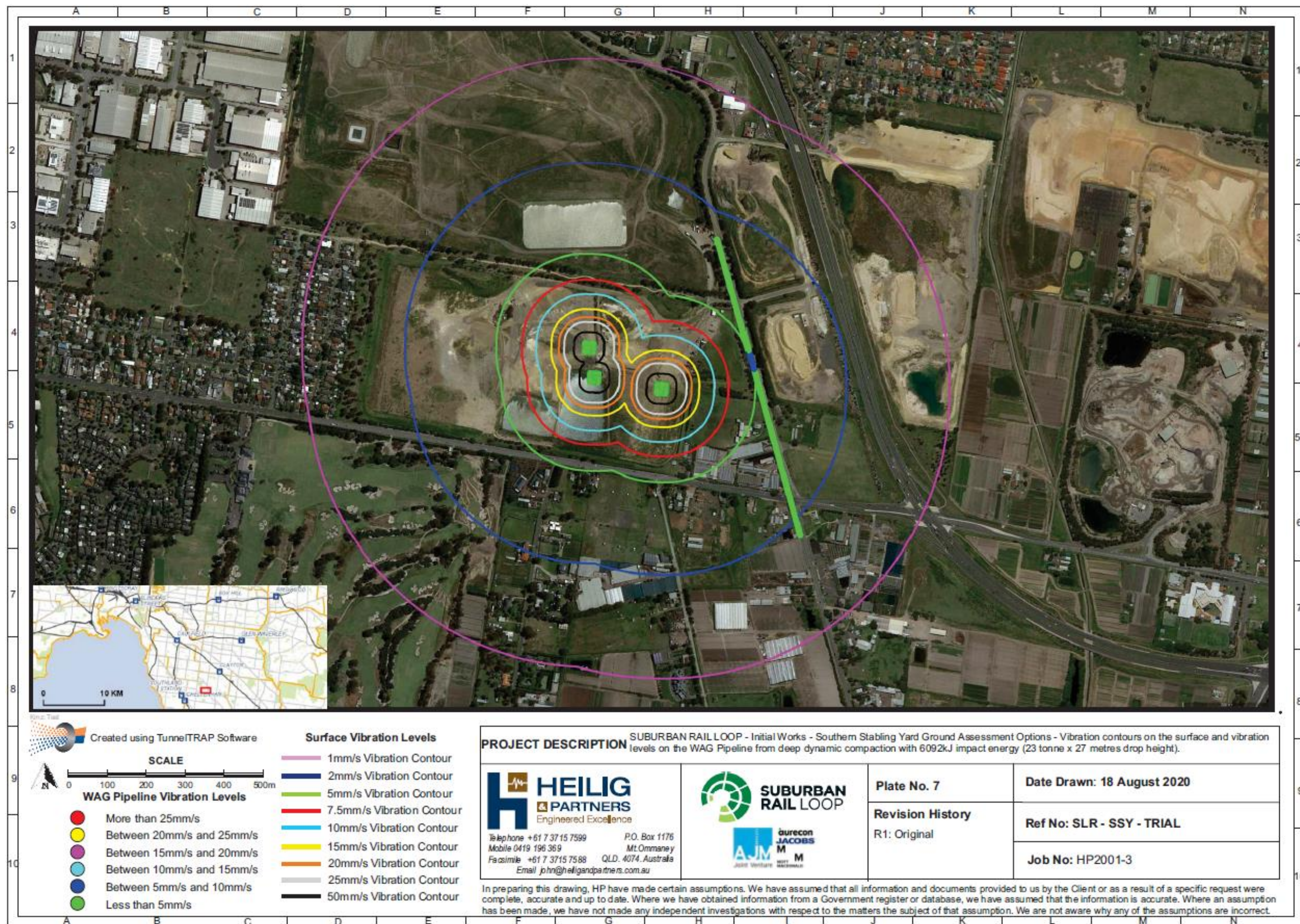


FIGURE 4-3 DEEP DYNAMIC COMPACTION VIBRATION IMPACT LEVELS

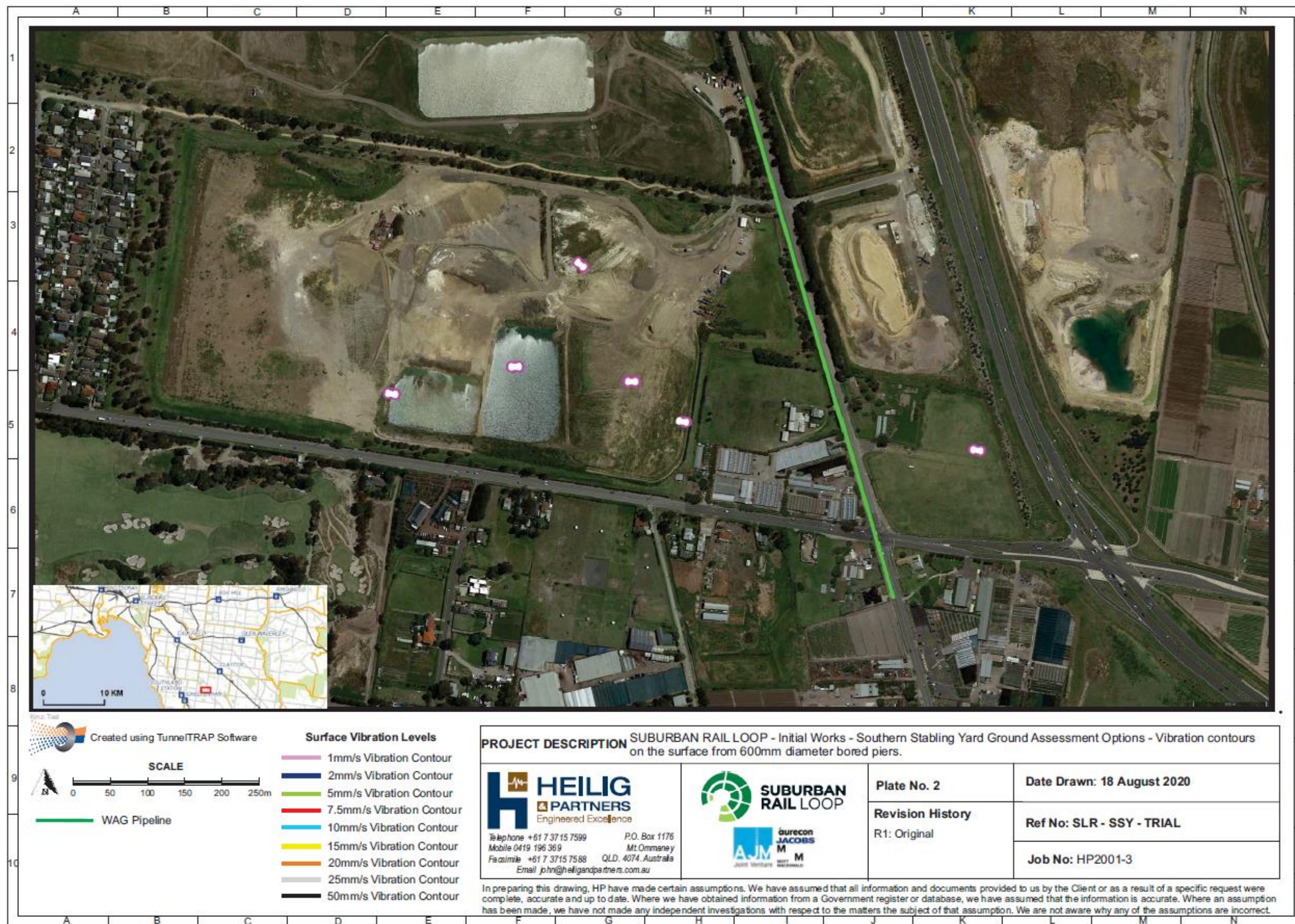


FIGURE 4-4 BORED PIERS VIBRATION IMPACT LEVELS

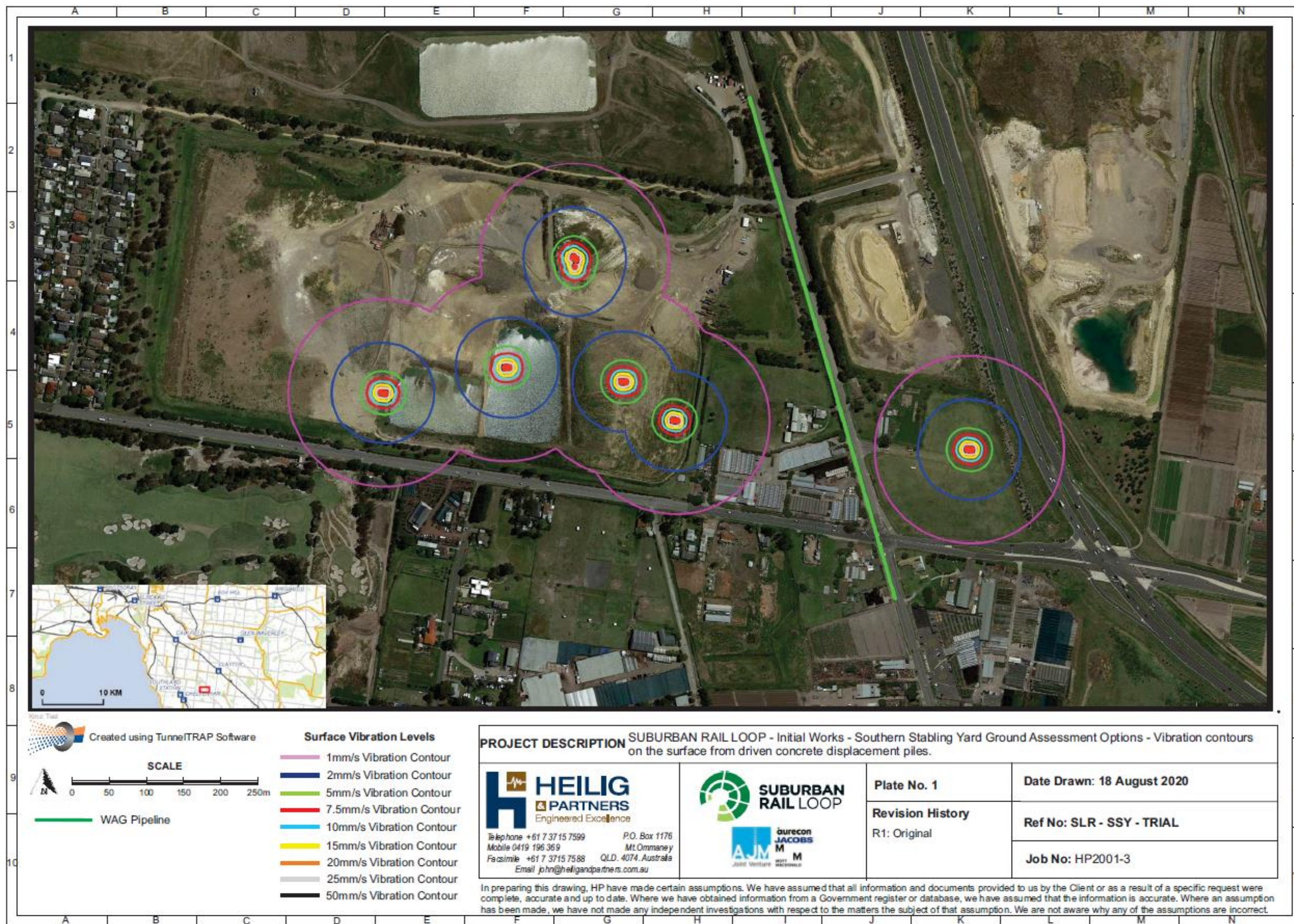


FIGURE 4-5 DRIVEN DISPLACEMENT PILES VIBRATION IMPACT LEVELS

4.5.4 Proposed Mitigation Measures

By implementing the measures described below, the vibration impact of the works will be controlled in accordance with the Australian Standards, AS2436-2010 – “Guide to noise and vibration control on construction, demolition and maintenance sites”. Site-specific vibration management measures include the following:

- Provision of 3-metre-wide by 3-metre-deep cut-off trench to interrupt the direct transmission path of vibrations between source and receptors during deep dynamic compaction trials. Utilising this method may result in a 30% reduction in vibration levels. The use of open trenches is a simple and cost effective method for protecting structures from excessive vibrations. However, this approach has some limitations, including the fact that achieving desired results requires that the trench depth be relatively deep due to heterogenous soil profiles across the site. The location of the trench will be within the Southern Stabling Site.
- An active vibration monitoring program will be implemented on site.
 - » Commence trials (e.g. impact piling and deep dynamic compaction) furthest from residences and undertake vibration monitoring to confirm vibration from these sources are consistent with modelled predictions, and adapt activities as necessary if the measured emissions are higher
 - » Should the vibration behave differently than expected, any adjustments to the practices will be implemented in advance of any damage or loss of amenity. This active monitoring approach promotes compliance with the proposed standards and reduces impacts by ensuring that any elevated levels of vibration are recognised and adjustments to the practices are immediately introduced (e.g. review operating procedures, timing and frequency).
 - » The vibration monitoring program will confirm the effectiveness of the proposed mitigation trench and enable the physical characteristics of the proposed trench (e.g. depth, width slope) to be altered if necessary.
 - » The vibration monitoring program will inform the overall site investigations, supplying key inputs required as part of geotechnical program. This program will determine the optimum approach to ground improvement across the Southern Stabling Yard site. Proposed vibration monitoring locations are shown in Figure 4-6.
- A consultation and notification procedure will be implemented that enables notification to sensitive land uses of potential vibration impacts in advance of the works and provides information on the expected noise levels and duration.
- In the event of reduced efficacy of the proposed mitigation measures, offers of respite will be provided, such as alternative accommodation for the duration of the intensive trials, to residences who might experience some nuisance.



FIGURE 4-6 PROPOSED VIBRATION MONTORING LOCATIONS

4.5.5 Summary of Key Vibration Impacts

Ground improvement trials at the Southern Stabling Yard site have the potential to produce intermittent vibration levels of up to 5 mm/s for a period of two weeks during daytime at residences along Kingston Road. Although the works are modelled not to cause any damage to adjacent properties, they will be distinctly perceptible or disturbing to some people for a short period of time.

Amenity impacts will be addressed through the implementation of an active vibration monitoring program (automated vibration monitoring), to enable immediate feedback to key personnel, allowing them to adjust the ground improvement activities in real time. By starting the trials at the furthest distance from the residents, it will also be possible to validate the modelled vibration impacts and assumptions about the effectiveness of vibration mitigation measures without having significant effects on residences. Furthermore, a cut off trench will be installed, which may result in a 30% reduction in vibration levels.

Based on these proposed measures, the ground improvement trials are not predicted to have a significant effect on the environment from a vibration perspective.

4.6 Surface Water

4.6.1 Impacts Assessed

The utility relocation, new power connection and minor road modifications are considered typical of business-as-usual construction activities that are not expected to change the surface water flows within the immediate environs of the works. However, the desktop impact assessment identified potential significant impacts associated with changes to the flood regime due to ground improvement works at the Southern Stabling Yard

site. These potentially significant impacts were investigated in further detail to determine the extent of these impacts and to develop design mitigation measures.

4.6.2 Methodology

The hydrological impact assessment methodology focused on quantifying the likely impacts on flood water levels, flows and velocities that arise from the Initial Works at the Southern Stabling Yard. The site is located near surface water features including the on-site detention basin, drains and other surface water bodies adjacent to the site.

The assessment was supported by hydraulic and hydrologic modelling that provided flood flows and levels for the 1% AEP flood event (100-year Average Recurrence Interval flood event) in order to quantify the size and severity of the impact and recommend suitable mitigation options. Pre-existing flood conditions (the 'base case') model is shown in Figure 4-7.

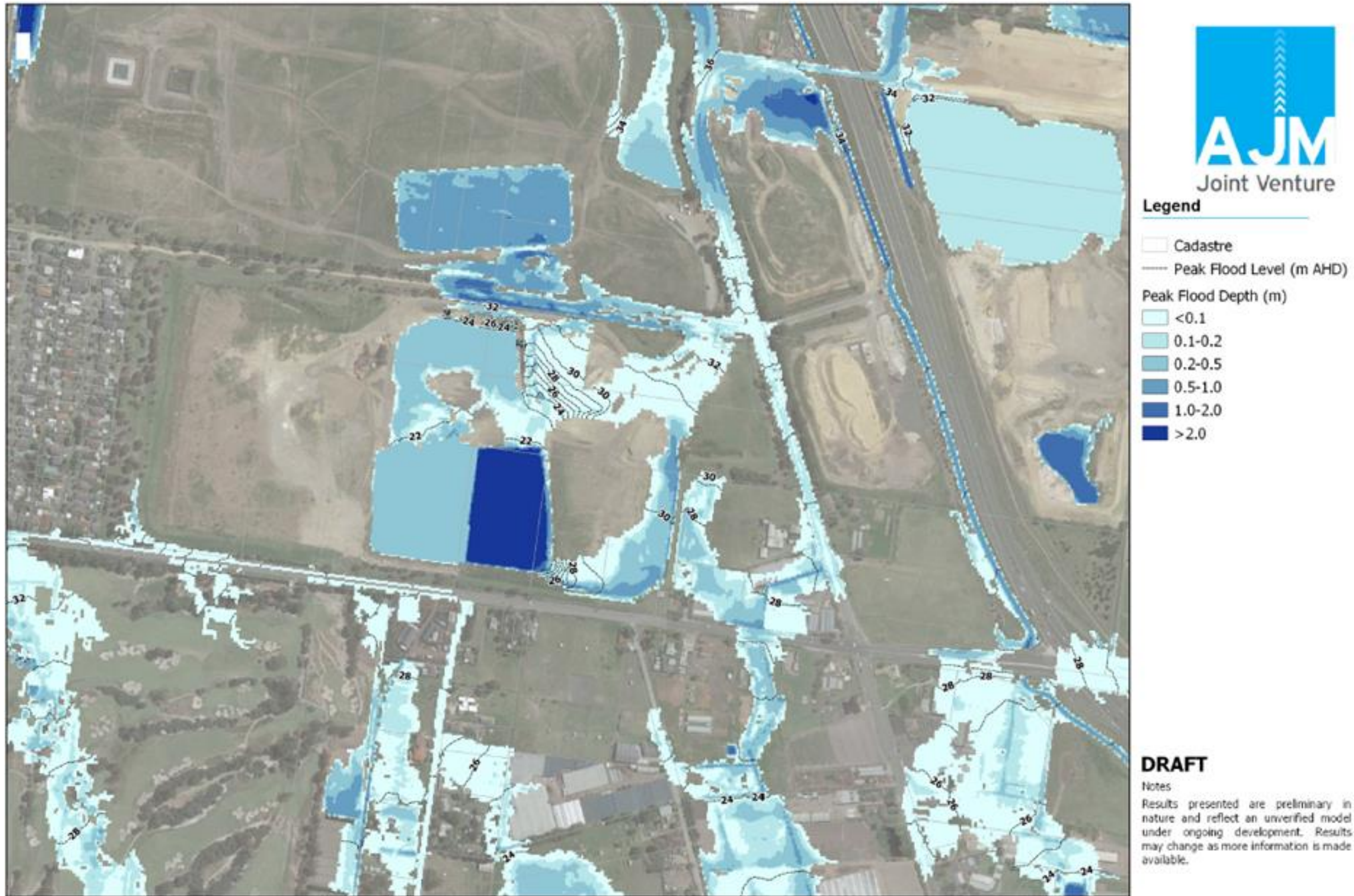


FIGURE 4-7 SURFACE WATER EXISTING CONDITIONS

4.6.3 Surface Water Impact Assessment Findings

The analysis of the hydrological model identified changes to the on-site surface water flow disruption would be triggered by the removal of a major storage pond (detention basin) that currently exists on the proposed Southern Stabling Yard site, which is used to manage the on-site storm drainage. Furthermore, the modelling indicated that the pond also stores floodwaters that enter the site from the north during the 1% AEP flood event. This means that the removal of the pond, combined with site levelling across most of the site, could be expected to cause flood displacement that might impact on residential and industrial properties south of the site. Figure 4-8 shows the modelled result of unmitigated flooding impacts.

Given the ground improvement works have the potential to impact the existing flooding regime at the Southern Stabling Yard site and neighbouring properties (i.e. an afflux up to 50mm in locations), the management and mitigation measures presented in section 4.6.4 are proposed in order to mitigate the impacts in compliance with Melbourne Water's Standards for infrastructure in flood-prone areas.

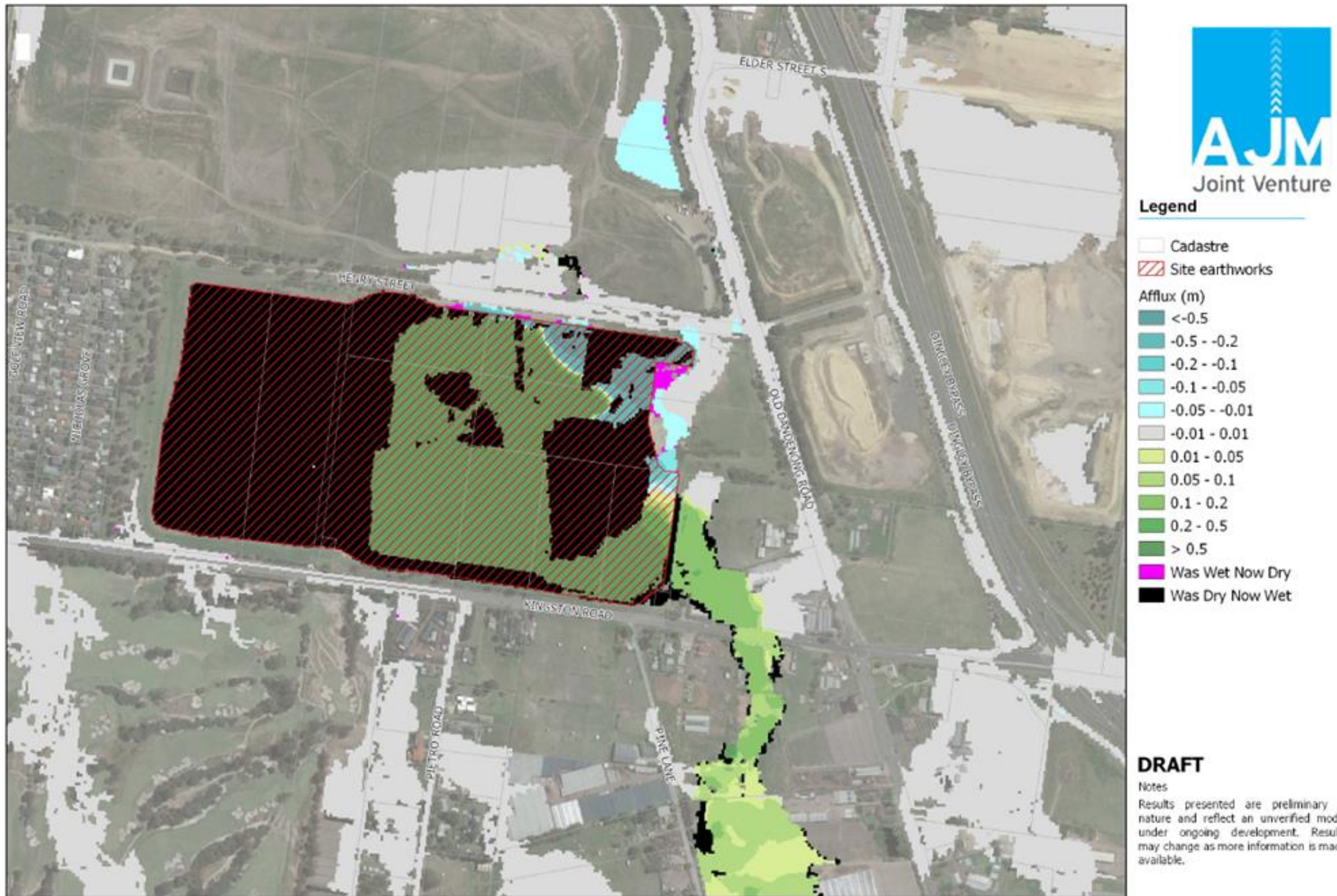


FIGURE 4-8 SURFACE WATER UNMITIGATED IMPACTS

4.6.4 Proposed Mitigation Measures

The potential flooding impacts at the Southern Stabling Yard can be managed and mitigated by implementing the design solutions listed below. The proposed design solution consists of the following key design elements:

- Construction of a flood retention basin at the northeast corner of the site (at the Henry Street/Old Dandenong Road intersection). Dimensions were estimated based on the available land area and the volume of overland floodwaters to be stored in the 1% AEP flood event.
- Construction of a new channel at the northern boundary of the site to capture excess floodwater from Henry Street (and Heatherton Sands) and route this to the flood retention basin.
- Construction of an outlet to Kingston Road via outlet pipe with a 750mm diameter.

The flood impacts were remodelled to evaluate the effectiveness of the proposed flood mitigation measures listed above. The modelled outcome is shown in Figure 4-9, which shows a demonstrable reduction in the predicted afflux, and therefore no properties or infrastructure will be impacted by flooding as a result of the Initial Works.

4.6.5 Summary of Key Surface Water Impacts

A potentially significant surface water impact has been identified at Southern Stabling Yard, which, if unmitigated, would result in increased flood depths affecting residential properties, sections of Kingston Road and industrial areas. The proposed management and mitigation measures will appropriately address any potential flooding impact, mainly through the construction of a flood retention basin at the north-east of the Southern Stabling Yard site.

Based on these proposed measures, the ground improvement works at the Southern Stabling Yard site are not predicted to have a significant effect on the environment from a surface water perspective.

4.7 Contaminated Land

4.7.1 Impacts Assessed

The utility relocation, new power connections and minor road modifications are activities considered typical of business-as-usual construction activities that will generate limited amounts of spoil. A contaminated land desktop assessment concluded that the contaminant levels within the natural soil profile of all six Initial Works sites, will generally meet the Fill Material Criteria defined in the IWRG, with localised areas of Category C material. Waste soils/spoil generated from these minor construction activities can be appropriately managed in accordance to standard environmental management measures, including by applying the procedures for the testing, transportation and disposal or treatment of contaminated spoil in the IWRG and the *Environment Protection (Industrial Waste Resource) Regulations 2009*.

However, the desktop assessment identified the following potential contaminated land impacts requiring further assessment:

- Disturbance and management of potentially contaminated soil during Initial Works at the Southern Stabling Yard site.
- Release of vapours and/or ground gases from historical landfill practices at the Southern Stabling Yard site.

4.7.2 Methodology

Several information sources were reviewed to build an understanding of the environmental setting and land use history of the Southern Stabling Yard site and its surroundings, and the potential for contaminated soil and / or groundwater to be encountered. Information reviewed included:

- Geological Survey of Victoria, 1974
- Australian Soil Resource Information System (ASRIS) (CSIRO)
- Environmental audit reports and Publicly available directories
- EPA Priority Sites Register
- EPA register of Groundwater Quality Restricted Use Zone

- Melbourne Water Base Plans (MWBP).

Following identification of contaminants of interest, an intrusive site investigation programme was developed to determine the level of potential contamination within and in proximity of the Southern Stabling Yard site. The intrusive investigation of soils commenced in late August 2020 and is currently ongoing. Results from the current investigation will supplement the available data and contribute to developing a better understanding of the site conditions overall. However, there is sufficient data available from the desktop assessment and preliminary results of the site investigations to evaluate the potential significance of contamination-related effects and the most appropriate way to address those effects.

4.7.3 Contaminated Land Assessment Findings

Historical and current land uses

The property at 91-185 Kingston Road, Heatherton that forms most of the land proposed to support the Southern Stabling Yard, was previously a sand extraction quarry site under licence from the Extractive Industries (EIL) dated March 1988. The site comprises three former excavation areas, the Western Extraction area, the Eastern Extraction area and the Central Extraction area Shown in Figure 4-10. The property was purchased by Delta Group in 2001, and forms part of the land within Work Authority (WA) 383 that is held by Lantrak Developments Pty Ltd.

The site is currently being rehabilitated by backfilling with Fill Material (as defined in EPA Publication IWRG600.2 – Waste Categorisation). Rehabilitation of the site commenced in 2008 using Fill Material to shape and fill historical extraction areas.

In 2011, an amended planning permit was issued for the site that allowed the acceptance of Acid Sulfate Soils (ASS) in accordance with an EPA-endorsed ASS Management Plan. Upon arrival on site, ASSs were required to be sent to a purpose-built lime treatment pad for neutralisation. Once neutralised with sufficient lime, the ASS could be reused on site as Fill Material, as it is no longer considered acid generating.

Other current land uses within the Southern Stabling Yard site of interest from a contaminated land perspective are a private dog play park and Nellie Kelly plant nursery.



FIGURE 4-10 HISTORICAL LAND USE (QUARRY) SOURCE: GOLDER ASSOCIATES, 25 JUNE 2008

Existing conditions and desktop review

The desktop review of the Southern Stabling Yard site found:

- No exceedance of contaminants was reported above the adopted National Environmental Protection Measure for Assessment of Site Contamination (NEPM) for commercial/industrial land uses (human health)
- PFAS was not detected in soil samples collected and tested. Concentrations of PFAS were detected in the underlying groundwater and below the drinking water guideline.
- The assessment identified that there is the potential for contaminated soil to be present within the Southern Stabling Yard site. Concentrations of contaminants were categorised as Fill Material and category C prescribed industrial waste due to the presence of arsenic, zinc and mercury.
- The Brighton Group and Fyansford Formations are the main geologic unit to be encountered during construction of the Southern Stabling Yard. The results indicate that Potential Acid Sulfate Soil (PASS) is present within the Brighton Group and Fyansford Formation at the Southern Stabling Yard borehole locations.
- Most of the land proposed to support the Southern Stabling Yard are registered as clean fill sites are not licensed to accept putrescible or municipal waste therefore “landfill leachate” presence at the Southern Stabling Yard site is highly unlikely.

Preliminary Intrusive investigation (ongoing)

Ground investigations commenced in August 2020 and are continuing. Preliminary results indicate:

- Category C fill material and Waste Acid Sulfate Soils (WASS) have been identified at the Doggy Day Park property.
- Sampling of gas bores along Henry Street on the northern boundary of the Southern Stabling Yard site has confirmed no methane from landfill gases were detected.

4.7.4 Proposed Mitigation Measures

The key contaminated land management measure at the Southern Stabling Yard site will involve undertaking a comprehensive sampling and analysis program to enable further classification and understanding of the contaminant profile. This program of site investigations is currently ongoing, and the preliminary results are validating the contaminant profile expected of a former quarry and clean fill site.

The current design of the ground improvement works prescribes the reuse of over 85% of spoil as part of re-profiling of the Southern Stabling Yard site. The reuse will be completed in accordance with the EPA IWRGs.

Where disposal of contaminated soil is required, the soil will be managed and disposed of to a landfill that is licensed to receive that spoil. EPA licenced trucks will be used to transport the material. Transport and disposal of waste will be in accordance with relevant EPA requirements.

4.7.5 Summary of Key Contaminated Land Impacts

Ongoing ground investigations will provide a greater understanding of potentially contaminated land, provide a soil waste classification and inform the potential for soil reuse on-site, and appropriate management strategies.

Preliminary results at the Southern Stabling Yard site indicate that the current levels of contamination are to be expected of a former quarry and clean fill site, consisting mainly of construction and demolition fill material. This level of contamination can be effectively managed in accordance with the site-specific environmental management measures proposed, which include retaining most of the spoil generated on site.

The environmental and economic benefit of reuse as fill material on-site will contribute to the success of the ground improvement works.

Based on these proposed measures, ground improvement works at the Southern Stabling Yard site are not predicted to have a significant effect on the environment from a contaminated land perspective.

4.8 Aboriginal Heritage

4.8.1 Impacts Assessed

The desktop assessment identified potential Aboriginal heritage impacts requiring further assessment at Southern Stabling Yard site and Burwood, which are within mapped areas of Aboriginal Cultural Heritage Sensitivity (CHS).

4.8.2 Methodology

An Aboriginal cultural heritage due diligence for the Initial Works was prepared to document information regarding the nature, extent and significance of known Aboriginal cultural heritage in the immediate surrounds of each of the Initial Works sites and identify key heritage issues requiring consideration for these works.

Preparation of this impact assessment included the following:

- Search of the Victorian Aboriginal Heritage Register (VAHR) through the Aboriginal Cultural Heritage Register and Information System (ACHRIS) for known Aboriginal cultural heritage places and objects and previous assessments undertaken within the Initial Works project area and immediate surrounds (i.e. within 200 m).
- Review of background information to develop an understanding of the environmental context for the project.
- Review of historical aerial photography to develop an understanding of previous historical disturbance in the immediate surrounds.
- Recommendations regarding the levels of investigation required in order to satisfy the requirements of the *Aboriginal Heritage Act 2006* and the *Aboriginal Heritage Regulations 2018*.

4.8.3 Aboriginal Heritage Impact Assessment Findings

Southern Stabling Yard and Burwood

While most of the proposed Initial Works will take place in locations of extensive previous disturbance, some areas of increased potential as areas of Aboriginal CHS have been identified as a result of the desktop-based assessment at Southern Stabling Yard site, and Burwood (including the new underground power connection).

The sites at Clayton, Monash, Glen Waverley and Box Hill are not associated with areas of Aboriginal CHS. Most previous investigations in or adjacent to the Southern Stabling Yard and Burwood sites have encountered extensive surface and subsurface disturbance, although pockets of more intact deposits have been observed in relation to artefact scatters and low-density artefact scatters (LDADs) in proximity to creeks.

As the proposed Initial Works are considered high impact activities and the proposed works areas at the Southern Stabling Yard and Burwood sites (i.e. 'activity area' in relation to an Aboriginal Cultural Heritage Management Plan (CHMP)) includes areas of CHS, the preparation of a CHMP for these locations is mandatory. A due diligence is the first step in the preparation of a CHMP and this has determined the requirement for further investigation. It is considered highly likely that the CHMP will progress to a standard assessment (survey), which will determine the need for complex assessment (excavation).

4.8.4 Proposed Mitigation Measures

A mandatory CHMP will be triggered as a result of Initial Works at the Southern Stabling Yard and Burwood sites in registered places of Aboriginal CHS. Given their setting in a highly disturbed urban environment, these locations will be further investigated to assess potential for establishing significant ground disturbance.

The preparation of a CHMP at the Southern Stabling Yard and Burwood sites, and associated field assessment of areas of registered and potential cultural heritage sensitivity, will determine the nature and application of mitigation measures for the Initial Works to ensure no harm occurs to places of Aboriginal cultural heritage.

4.8.5 Summary of Key Aboriginal Heritage Impacts

A mandatory CHMP will be triggered as a result of Initial Works at the Southern Stabling Yard and Burwood given these sites are associated with an area of Aboriginal CHS.

The preparation of a CHMP and associated field assessment of areas of registered and potential CHS will determine the nature and application of mitigation measures for the Initial Works to ensure no potentially significant impacts occur to places of Aboriginal cultural heritage.

4.9 Ecology and Arboriculture

4.9.1 Impacts Assessed

A flora and fauna assessment of each of the six Initial Works sites has been undertaken that determined the type, quality and extent of native vegetation present. The purpose of the assessment was to identify the potential impacts on ecological values from the Initial Works proposed, and to outline the implications under relevant Commonwealth and State legislation and policy.

An arboricultural assessment of existing conditions has been completed to determine the arboricultural value for each identified tree or tree group assessed.

4.9.2 Methodology

Preparation of the flora and fauna impact assessment included the following activities:

- A review of the government databases and associated documents was undertaken to provide information on ecological values previously identified (or modelled) to occur in the immediate surrounds of the sites and therefore deemed to be relevant to the Initial Works. These databases provide information of biodiversity values that may trigger the need to respond to Commonwealth and/or State legislation.
- Field assessments were conducted by AJM-JV ecologists on 20 May 2019 and 26 August 2020. The purpose of the field assessments was to identify the location and quality of native vegetation and fauna habitat based on the findings of the desktop assessment.
- Identified the approval/referral requirements under relevant State and Commonwealth policies and legislation.
- Recommendations, including mitigation measures, to avoid impact to significant ecological values where required.

The arboricultural existing conditions assessment included site inspections to measure and record details of identified trees or tree groups. An arboricultural value was assigned to each tree which is a single descriptor that encapsulates the size, condition, useful life expectancy and landscape contribution of an

individual tree. Tree Protection Zones (TPZs) have been identified for recorded trees and were used to inform an assessment of predicted tree loss.

4.9.3 Ecology Impact Assessment Findings

Southern Stabling Yard

The flora and fauna assessment identified the following values:

- The current Delta landfill site comprises some areas of natural regeneration and scattered trees, namely River Red Gums. However, in reviewing historical aerial imagery of the site it is evident that most of these scattered trees and patches of regeneration are less than ten years old and so would be exempt from requiring approval for removal. The application of this exemption will depend on the anticipated timeframe for removal.
- The Henry Street Linear Reserve supports a variety of mature planted indigenous and non-indigenous flowering eucalypts. Approximately 0.16 ha of the EVC 55: Plains Grassy Woodland that has a bioregional conservation status of Endangered was mapped within the Henry Street Linear Reserve (refer to Figure 4-11).
- The Kingston Walk Linear Reserve located at the western boundary of the current landfill is within the ecology assessment area, however no Initial Works are proposed within the fenced reserve.
- One large Manna Gum (*Eucalyptus viminalis*) was recorded in the Kingston Road road reserve, immediately south of the Nellie Kelly plant nursery.
- Native vegetation patches were recorded predominantly present along the perimeter of the Southern Stabling Yard site (refer to Figure 4-11). Narrow patches of EVC 53 Swamp Scrub (bioregional conservation status of Endangered) are present along Kingston Road road reserve and Old Dandenong Road road reserve. A total of 0.05 ha of EVC 55 Plains Grassy Woodland and 0.27 ha of EVC 53 Swamp Scrub was mapped across the Delta site. Four small scattered trees were also mapped across the Delta site.

The flora and fauna assessment identified the following impacts:

- Native vegetation proposed to be removed for the Initial Works include:
 - » 0.09 ha of EVC 53 Swamp Scrub
 - » 0.12 ha of EVC 55 Plains Grassy Woodland
 - » One large Manna Gum (*Eucalyptus viminalis*) and three small scattered trees.

Approval under the *Planning and Environment Act 1987* (P&E Act) will be required for the removal of native vegetation and offsets will need to be secured in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation, DELWP, December 2017* (the Guidelines) prior to the removal of the native vegetation.

- The detention basin within the Delta site is steep sloping with disturbed land fringing the water and lacks connectivity to other suitable habitat. Suitable habitat is not present to support the Growling Grass Frog, listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the *Flora and Fauna Guarantee Act 1988* (FFG Act) and the Victorian Advisory List of Threatened Fauna (Vic Adv).
- The large River Red Gum scattered trees identified along the northern perimeter (Henry Street) of the Southern Stabling Yard Assessment Area are to be avoided. These trees provide significant habitat for fauna species within a relatively cleared, urban setting.
- Mature flowering gums present along the northern perimeter of the Southern Stabling Yard provide a foraging resource for the Swift Parrot. These gums will not be impacted by the proposed Initial Works.

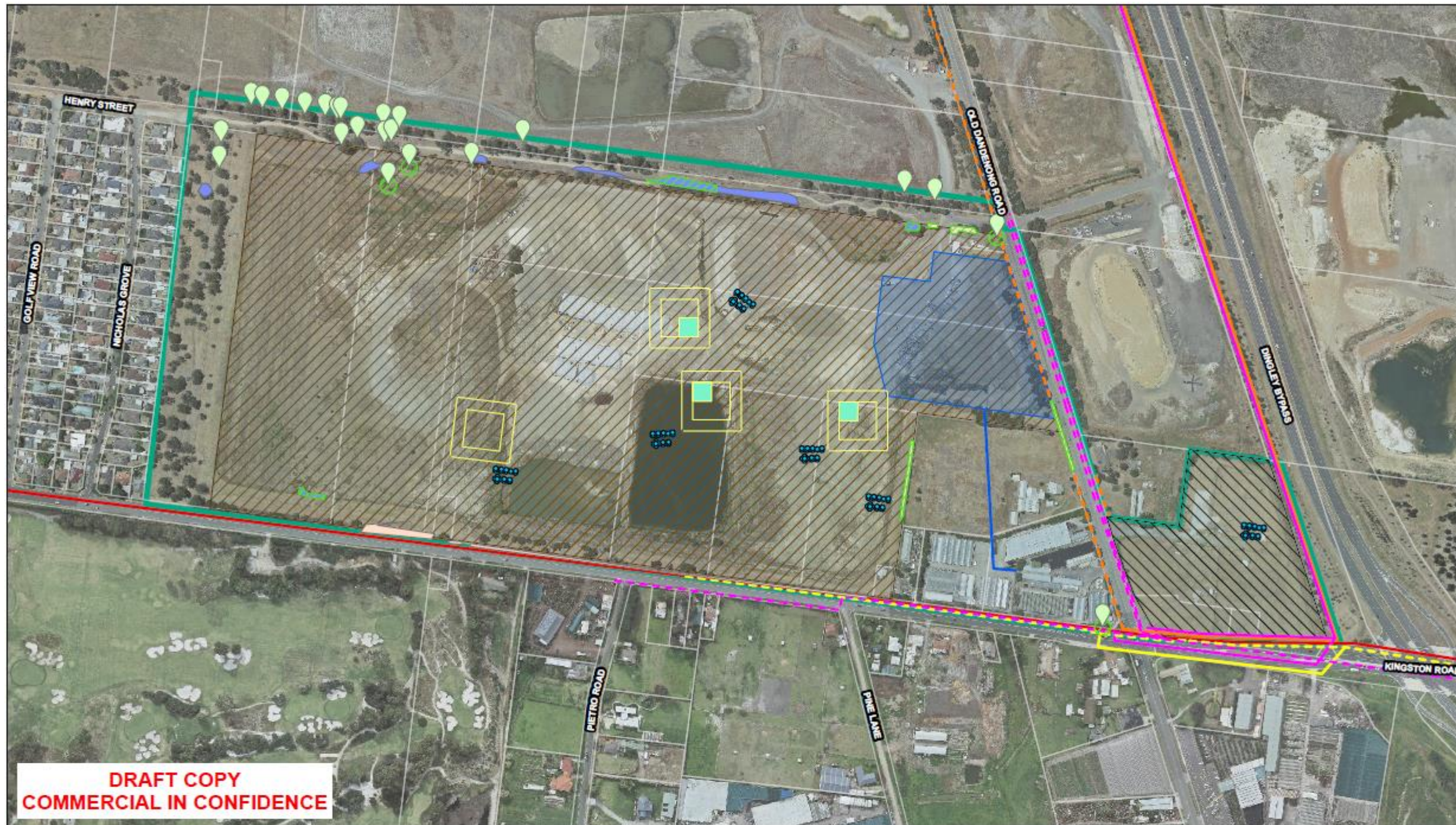


FIGURE 4-11 ECOLOGICAL VALUES – SOUTHERN STABLING YARD

Clayton

- No ecological values were identified within the Clayton Initial Works footprint. Planted trees comprise exotic and non-indigenous natives. No further assessments or ecological approvals are required to progress Initial Works for this site.

Monash

- No ecological values were identified within the Monash Initial Works footprint. Planted trees comprise exotic and non-indigenous natives. No further assessments or ecological approvals are required to progress Initial Works for this site.

Glen Waverley

- No ecological values were identified within the Glen Waverley Initial Works footprint. Planted trees comprise exotic and non-indigenous natives. No further assessments or ecological approvals are required to progress Initial Works within this site.

Burwood

- No ecological values were identified within the Initial Works footprint at the Burwood site. Planted trees comprise exotic and non-indigenous natives. No further assessments or ecological approvals are required to progress Initial Works at Burwood.
- The Initial Works includes the construction of a 66kV underground power connection between the existing Malvern Terminal Substation and Sinnott Street, Burwood. An arboriculture assessment is to be completed of potential street trees that may be impacted along the indicative alignment.

Box Hill

- No ecological values were identified within the Box Hill site. Planted trees comprise exotic and non-indigenous natives. No further assessments or ecological approvals are required to progress Initial Works at Box Hill.
- The Arboricultural assessment identified eight high value and 25 moderate value trees in the centre median strip on Whitehorse Road adjacent to where the electricity relocation works are proposed. None of these trees are required to be removed and impacts on the TPZs will be avoided where possible during the Initial Works.

4.9.4 Proposed Management and Mitigation Measures

Of the six Initial Works sites, ecological values were identified at only one location – the Southern Stabling Yard. Management and mitigation measures proposed for this site include:

- Areas identified as native vegetation assessable under the Guidelines will be avoided where possible. Offsets will be secured in accordance with the Guidelines prior to the removal of the native vegetation, if necessary.
- Large scattered trees including the large River Red Gums identified along the northern perimeter of the Southern Stabling Yard will be avoided.
- The large, mature flowering eucalypts that provide potential foraging habitat for threatened fauna, including the Swift Parrot, will be retained within the landscape.

For all Initial Works sites, detailed analysis of design and construction methodologies are required to determine opportunities to avoid and/or minimise impacts on street trees and other amenity trees located within the Initial Works sites.

4.9.5 Summary of Key Ecological Impacts

No significant ecological impacts to matters of national environmental significance will occur from the Initial Works. No threatened flora species, threatened ecological communities, or protected flora will be impacted as a result of the proposed Initial Works.

Where small patches of native vegetation and scattered trees are required to be removed to facilitate Initial Works at the Southern Stabling Yard, offsets in accordance with the Guidelines will be secured prior to removal.

Based on the proposed measures, it is predicted that the Initial Works will not have a significant effect on the environment from an ecological perspective.

5 Environmental Management and Approvals

5.1 Environmental Management Measures

This section presents the environmental management measures proposed to mitigate impacts for construction activities across all six Initial Works sites.

From 1 July 2021 the *Environment Protection Act 1970* will be repealed by the *Environment Protection Amendment Act 2018*, and any reference to the 1970 Act, or its associated regulations or guidelines, are to be read as it's equivalent from 1 July 2021. Initial Works management and mitigation measures will be reviewed and updated to reflect anticipated legislative changes in 2021, including the obligation to demonstrate compliance with the General Environmental Duty.

5.1.1 Site-Specific Mitigation Measures

Based on the environmental impact assessments summarised in Section 4, the following site-specific mitigation measures are required to ensure the Initial Works do not result in any potentially significant environmental impacts:

Southern Stabling Yard site

- Works are required to mitigate off-site flooding impacts that are modelled to affect adjacent properties and roads south of the site in the event of a 1-in-100-year flood. These measures involve construction of a flood storage basin in the north-east of the site, as well as minor land raising of Henry Street and installation of an outlet pipe to Kingston Road.
- The current design of the ground improvement works prescribes the reuse of over 85% of spoil as part of reprofiling of the Southern Stabling Yard site, and the reuse will be completed in accordance with the EPA Industrial Waste Resource Guidelines.
- Areas for siting of the ground improvement trials have been selected to ensure appropriate noise and vibration levels are achieved in accordance with relevant guidelines. Monitoring will be undertaken at key receptors during the trials to confirm modelled levels, and to implement any adjustments to practices if levels are different than expected. A trench will be installed to minimise vibration impacts and the efficacy of this measure will be monitored.
- Impacts must be avoided to the walking trails to the west (Kingston Walk Linear Reserve) and north (Henry Street) of the site that provide passive open space for the local community, noting that minor works to the Henry Street trail to treat flooding is required and will likely require temporary closure of this trail (for several days only).
- A consultation and notification procedure will be implemented that enables notification to sensitive land uses of potential vibration impacts in advance of the works and provides information on the expected noise levels and duration.
- In the event of reduced efficacy of the proposed mitigation measures, offers of respite will be provided, such as alternative accommodation for the duration of the intensive trials, to residences who might experience some temporary nuisance.

Impacts to Aboriginal heritage places and native vegetation will be managed in accordance with relevant planning and environmental legislation.

5.1.2 Standard Environmental Management Measures

The desktop assessment in Section 4.1 identified some effects that are considered to have impact on the surrounding environment and amenity commensurate with standard construction activities in the Melbourne metropolitan area. These issues can be appropriately managed by applying industry-standard controls and management measures. Table 5-1 describes the management and mitigation approach to avoid and minimise environmental and amenity impacts for Initial Works.

TABLE 5-1 POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

DISCIPLINE	ISSUE	MANAGEMENT AND MITIGATION APPROACH
Land Use Planning	Temporary loss of passive open space and community/recreation facilities	- Construction footprints will be reduced where possible to minimise access impacts to private properties and public open space (access to residential areas and businesses will be maintained) - Consultation with the council to ensure all surrounding land uses can continue to function
Business and Economic	Temporary changes to access to businesses during Initial Works (traffic, bicycle and pedestrian flows)	Mitigation measures to be developed by the application of a Communication and Stakeholder engagement strategy including: - Development of a site-specific communications and engagement plans and procedures to inform businesses and the community of any of potential access disruption to community recreational facilities, as well as potential noise and air quality issues in advance of the works. - Temporary access arrangements (including signage) will be in place to maintain access for businesses, customers and deliveries - Permanent access to businesses affected by Initial works will be reinstated or relocated as agreed with property owners. - Identify lead times for community notice if the road network or utilities services are to be impacted. This will be co-ordinated and managed in partnership with key stakeholders and utility service providers. - Establishment of central contact centre to assess, classify and forward relevant enquiries and address concerns raised in complaints.
Transport and Traffic	Temporary changes to public transport services Temporary road closures or redistribution of traffic Implications of increased traffic from Initial Works vehicles	Mitigation measures will be developed in accordance with relevant guidelines including: - Road Management controls will be implemented in accordance with the <i>Road Management Act 2004 Code of Practice: Worksite Safety – Traffic Management</i>. This would include: - Development of a Traffic Management Plans to ensure localised traffic disruptions are managed efficiently and effectively. - Communicating the arrangements for and impacts of works affecting traffic. - Heavy vehicle movements on local roads will be kept to a minimum. - Haulage routes will be carefully considered and will comply with all requirements of the road management authority. - Ensure that property access is maintained, and minimal on-street car parking is lost throughout the duration of the works.
Social and Community	Temporary changes to access to community facilities and services during Initial Works Temporary changes to amenity for residences and the public realm during Initial Works	Mitigation measures to be developed by the application of a Community and Stakeholder Engagement Strategy including: - Development of a site-specific communications and engagement plans and procedures to inform the community of any of potential access disruption to community and recreational facilities, as well as potential noise and air quality issues in advance of the works. - Identify lead-in times for community notice if community and recreational facilities are to be impacted. This will be co-ordinated and managed in partnership with key stakeholders to ensure operational continuity of recreational facilities, where practicable - Implement training programs to ensure that the construction workforce has appropriate understanding of community sensitivities.

DISCIPLINE	ISSUE	MANAGEMENT AND MITIGATION APPROACH
		Impacts associated with air quality and noise for all works can be managed by the implementation of standard management measures specified in the air quality and noise sections below.
Air Quality	Impacts to and changes in air quality on sensitive receptors due to Initial Works	Mitigation measures will be determined in accordance with relevant guidelines including: - EPA Victoria Publication 480 Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites. - State Environment Protection Policy (SEPP) (Air Quality Management) This would include: - Dust and air quality impacts from construction works will be minimised during the construction using various dust suppression measures such as water carts and dust suppressant products. Speed restrictions will also be imposed within the construction area to help suppress dust generated from site plant, vehicles and equipment.
Noise	Air borne noise impacts during Initial Works	Mitigation measures will be determined in accordance with relevant guidelines including: - Environment Protection Authority (EPA) Victoria Publication 1254 Noise Control Guidelines (EPA Publication 1254) - Environmental Guidelines for Major Construction Sites (EPA Publication 480). - Standards, Australia, AS 2436 2010 Guide to Noise and Vibration Control on Construction, Maintenance and Demolition Sites, May 2018. This would include: - Site management (e.g. location and orientation of site offices and equipment) - Equipment management (e.g. Equipment to be well maintained and fitted with adequately maintained silencers which meet the design specifications. - Acoustic enclosures of generators or compressors. - Screening and shielding of noisy construction activity - Nearby residential properties will be proactively advised of the likely extent of the works - A consultation and notification procedure will be implemented that enables notification to sensitive land uses of potential noise impacts in advance of the works and provides information on the expected noise levels and duration.
Vibration	Ground borne vibration impacts during Initial Works	Mitigation measures will be determined in accordance with relevant guidelines including: - Environment Protection Authority (EPA) Victoria Publication 1254 Noise Control Guidelines (EPA Publication 1254) - Environmental Guidelines for Major Construction Sites (EPA Publication 480). - Standards, Australia, AS 2436 2010 Guide to Noise and Vibration Control on Construction, Maintenance and Demolition Sites, May 2018. This would include: - Provision of 3-metre-wide by 3-metre-deep cut-off trench to interrupt the direct transmission path of vibrations between source and receptors at the Southern Stabling Yard. - Implement an active vibration monitoring program, and should the vibration behave differently than expected, any adjustments to the practices will be implemented in advance of any damage or loss of amenity. This active monitoring approach promotes compliance with the proposed standards and reduces any impact by ensuring that any elevated levels of vibration are recognised and adjustments to the practices are immediately introduced (e.g. review operating procedures, timing and frequency). - Site management (e.g. location and orientation of site offices and equipment) - Equipment management (e.g. Equipment to be well maintained and fitted with adequately maintained silencers which meet the design specifications. - Acoustic enclosures of generators or compressors. - Screening and shielding of noisy construction activity - Nearby residential properties will be proactively advised of the likely extent of the works. - A consultation and notification procedure will be implemented that enables notification to sensitive land uses of potential vibration impacts in advance

DISCIPLINE	ISSUE	MANAGEMENT AND MITIGATION APPROACH
		of the works and provides information on the expected vibration levels and duration.
Surface water	Changes to flood regime due to Initial Works Changes to surface water quality due to Initial Works	Mitigation measures will be determined in accordance with relevant guidelines including: - SEPP (Waters) - Environmental Guidelines for Major Construction Sites (EPA Publication 480). This would include: - Maintaining hydrologic and hydraulic connectivity and functionality of existing drainage surface water flow paths - Retain existing flow characteristics to maintain waterway stability downstream of construction - Appropriately locate and bund any stockpiled contaminated soil to the 1% AEP flood level and to the requirements of EPA Victoria and the relevant water catchment authority - Appropriately schedule works to reduce flood related risks
Groundwater	Changes to groundwater levels and/or mobilisation of existing groundwater sources Handling and management of groundwater during Initial Works	Initial Works scope does not involve substructure construction activities anticipated to intersect groundwater. However, the eventuality of any impact mitigation measures will be determined in accordance with relevant guidelines including: - SEPP (Waters) - Environmental Guidelines for Major Construction Sites (EPA Publication 480). This would include: - Where groundwater is intercepted during works, the groundwater will be collected and retained onsite until tested then disposed of in accordance with licencing, trade waste agreements and EPA requirements.
Contaminated Land and Spoil Management	Disturbance and management of potentially contaminated soil during Initial Works	Mitigation measures will be determined in accordance with relevant standards, guidelines, statutory requirements and best practice including but not limited to: - SEPP – Prevention and Management of Contaminated Land, 2002 - SEPP – Air Quality Management, 2001 (in respect of odour) - Environment Protection (Industrial Waste Resource) Regulations 2009 - Industrial Waste Management Policy (Waste Acid Sulphate Soils) 1999 - Industrial Waste Resource Guideline Publications (IWRG702 and IWRG621) - National Environment Protection (Assessment of Site Contamination) Measures 2013 - PFAS National Environmental Management Plan 2018 - EPA A Guide to the Sampling and Analysis of Waters, Wastewaters, Soils and Wastes (Publication 441). This would include: - Comprehensive sampling and analysis program (both before and after) to enable further classification and understanding of the contaminant profile. - Preparation of a Soil Construction Management Plan. The Soil Construction Management Plan will outline how soil will be managed in accordance with the EPA Industrial Waste Resource Guidelines, relevant regulations, standards or best practice guidelines. - Opportunities for beneficial reuse will be investigated, such as the potential for reuse as fill material on-site in accordance with EPA Industrial Waste Resource Guidelines. - Where disposal of contaminated soil or groundwater occurs, a suitable licenced landfill facility will be sought, and EPA licenced trucks will be used to transport the material.
Arboriculture and Ecology	Removal of amenity trees Potential removal of native vegetation and scattered trees	Native vegetation confirmed for removal would be subject to planning approval and provision of offsets in accordance with the Guidelines. Tree protection zones (TPZ) are to be established for the duration of any works near a tree to be retained. Tree protection fencing will be implemented in accordance with AS4970-2009 (Protection of Trees on Development Sites) or alternative guidance documents provided by local council. Where there is potential for TPZ encroachment, protective measures will be established as required in accordance with advice from the project arborist. Amenity trees will be removed in accordance with local laws, where impacts cannot be avoided.

5.2 Approvals Required

Due to their modest scale and limited impact contained on-site, most Initial Works do not trigger the need for a planning permit or other statutory approval. However, the following primary approval requirements apply to the Initial Works:

- A planning permit is required at the Southern Stabling Yard site under the Kingston planning scheme for:
 - » Works (site levelling and ground improvement) in the ESO4.
 - » Use of land for a *railway*, works (site levelling and ground improvement), and vegetation removal under the PAO2.
 - » Removal of native vegetation, predominantly present along the perimeter of the Southern Stabling Yard site, under Clause 52.17 and for vegetation removal under the PAO1. Offsets will need to be secured in accordance with the Guidelines prior to the removal of the native vegetation.

An application will likely be put on public notice and subject to review rights under the P&E Act. Parks Victoria would be a determining referral authority for any application.

- A planning permit is required at the Monash site under the Monash planning scheme for:
 - » Creation and/or alteration of access to a road in a Road Zone Category 1.

An application under Clause 52.29 will be referred to VicRoads, which will be a determining referral authority for the application.

- A planning permit is required at Burwood site under the Whitehorse Planning Scheme for:
 - » Vegetation removal in the SLO9

A detailed assessment of the Initial Works scope against the planning permit controls under the relevant planning schemes is provided at **Appendix A – Planning Permit Trigger Assessment**.

- A mandatory Cultural Heritage Management Plan (CHMP) is required for the Initial Works at Southern Stabling Yard and Burwood sites under the *Aboriginal Heritage Act 2006*.

Approvals are not required under the *Heritage Act 2017* and assessments have confirmed that no Matters of National Environmental Significance (MNES) as listed in the *Environment Protection and Biodiversity Conservation Act 1999* are present.

A range of secondary approvals will be required to facilitate the Initial Works including, but not limited to:

- Groundwater licence under Moorabbin Groundwater Management Area (GMA) for Initial Works at the Southern Stabling Yard site
- *Road Management Act 2004* consent for minor road modifications and utility works in road reserves
- Local laws permits, as required.

6 Conclusion

The Initial Works are a suite of works proposed at six sites in south-east Melbourne that consist of utilities relocations/installations on public roads and reserves, small-scale road modifications, and ground improvement works at the Southern Stabling Yard site. The Initial Works will, if excluded from the SRL Stage One EES, enable the timely delivery of SRL Stage One and reduce disruption to business, residents and road users. Should SRL Stage One not proceed, the Initial Works will deliver enhanced infrastructure and improve development options for the Southern Stabling Yard site.

The assessment of the Initial Works presented in this report demonstrates that the effects on the environment are temporary, highly localised, and occur within the context of an urban environment which in many instances possess limited environmental or heritage values. This is reflected by the fact that the planning controls and policies do not prioritise protection of environmental values at any of the Initial Works locations, planning permits are only required for Initial Works at the Southern Stabling Yard site and Monash, and a CHMP is only required at the Southern Stabling Yard and Burwood sites. No approvals are required under the *Heritage Act 2017* and assessments have confirmed that no Matters of National Environmental Significance (MNES) as listed in the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* are present.

There were nevertheless several environmental aspects of the Initial Works that warranted more detailed investigation. These investigations were required to fully understand and characterise the potential environmental effects and design suitable mitigation and management measures. The detailed investigations primarily focussed on the effect of ground improvement works at the Southern Stabling Yard site, although the land use planning, ecological and Aboriginal heritage characteristics and values of all six sites were closely examined.

The investigations informed the development of a series of mitigation and management measures that would be implemented to reduce the effects of the Initial Works. Based on the assessment presented in this report, and the mitigation measures that the SRLA is committed to implementing, the proposed Initial Works to support SRL Stage One are not predicted to have a significant effect on the environment.

Appendix A

Planning Permit Trigger Assessment

An abstract geometric design on the left side of the page. It features a large white shape that resembles a stylized 'L' or a corner, set against a dark blue background. The white shape has a diagonal cutout, creating a complex geometric pattern. The dark blue background is a solid color that fills the rest of the page.

Appendix A- Initial Works Planning Permit Trigger Assessment

This appendix assesses the Initial Works scope against the Kingston Planning Scheme, Monash Planning Scheme and Whitehorse Planning Scheme (the relevant planning schemes) at the following locations:

- Southern Stabling Yard (Kingston Planning Scheme)
- Clayton (Monash Planning Scheme)
- Monash (Monash Planning Scheme)
- Glen Waverley (Monash Planning Scheme)
- Burwood (Whitehorse Planning Scheme)
- Box Hill (Whitehorse Planning Scheme)

Assumptions

- All site establishment activities including site establishment, site levelling and ground improvement require land acquisition.
- Utility relocations and new power components are defined as '*minor utility installations*' unless otherwise stated and exemptions for use and development apply under [Clause 62.01](#) and [Clause 62.02](#) respectively of the relevant planning schemes. Definitions for '*minor utility installations*' are provided under [Clause 73.03](#) (emphasis added for relevant items of scope):

Land Use Term	Definition
Minor utility installation	Land used for a utility installation comprising any of the following: a) <u>sewerage or water mains;</u> b) <u>storm or flood water drains</u> or retarding basins; c) flow measurement device or a structure to gauge waterway flow; d) siphons, water storage tanks, disinfection booster stations and channels; e) <u>gas mains providing gas directly to consumers;</u> f) a sewerage treatment plant, and any associated disposal works, required to serve a neighbourhood; g) a pumping station required to serve a neighbourhood; h) <u>power lines designed to operate at less than 220,000 volts</u> but excluding any power lines directly associated with an Energy generation facility or Geothermal energy extraction; or i) <u>an electrical sub-station designed to operate at no more than 66,000 volts</u> but excluding any sub-station directly associated with an Energy generation facility or Geothermal energy extraction.

- Telecommunications infrastructure to be relocated is included under '*low impact facilities*' as described in Clause 52.19 Telecommunications Facility; specifically Telecommunications (Low-impact) Facilities Determination 1997 (Cth).
- Site levelling and ground improvement activities are associated with the use of the land for a '*railway*'; namely the preparation of the sites for tunnel-boring machine launch and/or retrieval associated with the building of an underground rail tunnel.
- All buildings required to allow for construction of the Initial Works are included under 'temporary shed or temporary structure for construction purposes' and exempted from planning approval under Clause 62.02 of the relevant planning schemes.
- Any requirement relating to the construction or carrying out of works does not include the removal, destruction or lopping of trees and the removal of vegetation under Clause 62.02-3. This does not apply if a permit is specifically required to remove, destroy or lop trees or to remove vegetation.
- No subdivision is required for the Initial Works.

Southern Stabling Yard (Kingston Planning Scheme)

Relevant Zone, Overlay and Particular Provisions	Initial Works Component	Planning Approval (Y/N)		Comments
		Buildings and Works	Use	
Green Wedge A Zone (GWAZ)	Site Establishment Site Levelling Ground Improvement Utility Relocations New Power Connection	N	N	The proposed works on the site are associated with the use of land for <i>minor utility installation</i> (utility relocations and new power connection) and <i>railway</i> (site establishment, site levelling and ground improvement). As a Section 1 use no permit is required in the GWAZ for use of the land for a <i>railway</i> or buildings and works.
Road Zone Category 1 (RDZ1)	Utility Relocations New Power Connection	N	N	Utility relocations and new power connection are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Industrial 1 Zone (IN1Z)	New Power Connection	N	N	Heatherton Terminal Substation and Springvale South Zone Substation are zoned IN1Z. It is not anticipated that works are required at these terminal stations except to establish connections points for new power connections to the Southern Stabling Yard site.
Environment Audit Overlay (EAO)	Site Establishment Site Levelling Ground Improvement Utility Relocations New Power Connection	N	N	A sensitive use is not proposed within the EAO as part of the Initial Works.

Relevant Zone, Overlay and Particular Provisions	Initial Works Component	Planning Approval (Y/N)		Comments
		Buildings and Works	Use	
Environmental Significance Overlay Schedule 4 – Land North of Kingston & Heatherton Roads Outside the Urban Growth Boundary (ESO4)	Site Establishment Site Levelling Ground Improvement Utility Relocations New Power Connection	Y	n/a	A planning permit is required for works (site levelling and ground improvement) in the ESO4. No planning permit is required under the ESO4 to remove, destroy or lop vegetation. An application for a planning permit under the ESO4 is <u>not</u> exempt from notice and review rights required under the P&E Act.
Public Acquisition Overlay Schedule 2 – Parks Victoria (PAO2)	Site Establishment Site Levelling Ground Improvement Utility Relocations New Power Connection	Y	N	Under the PAO2, a permit is required to: • Use land for a <i>railway</i> • Carry out works (site levelling and ground improvement) • Damage, demolish and remove a building • Damage, remove, destroy or lop any vegetation. An application for a planning permit under the PAO2 is exempt from notice and review rights required under the P&E Act. An application under the PAO2 will be referred to Parks Victoria, which will be a determining referral authority for the application.
Design and Development Overlay Schedule 5 – Aviation Obstacle Referral Height Area No. 2 (DDO5)	Site Establishment Site Levelling Ground Improvement Utility Relocations New Power Connection	N	n/a	No permit is required under the DDO5 as no buildings or works are proposed which exceed 25 metres in height.

Relevant Zone, Overlay and Particular Provisions	Initial Works Component	Planning Approval (Y/N)		Comments
		Buildings and Works	Use	
Public Acquisition Overlay Schedule 1 – VicRoads (PAO1)	Utility Relocations New Power Connection	N	N	It should be confirmed that no vegetation removal is required within the extent of the PAO1.
Clause 52.17 Native Vegetation	All components	Y	n/a	A permit is required for the removal of native vegetation, predominantly present along the perimeter of the Southern Stabling site. Offsets will need to be secured in accordance with the Guidelines prior to the removal of the native vegetation. Field assessment is yet to be completed of private land located between Old Dandenong Road and Dingley Bypass to the north of the Doggy Play Park. The site looks predominantly cleared of native vegetation except along the western perimeter. A field assessment is required to map the presence and extent of native vegetation.
Summary	Based on the Initial Works scope, a planning permit is required at the Southern Stabling Yard site for: • Works (site levelling and ground improvement) in the ESO4. • Use of land for a <i>railway</i>, works (site levelling and ground improvement), and vegetation removal under the PAO2. • Removal of native vegetation under Clause 52.17 and for vegetation removal under the PAO1. An application will likely be put on public notice and subject to review rights under the P&E Act. Further, Parks Victoria can determine the outcome of the application as determining referral authority.			

Clayton (Monash Planning Scheme)

Relevant Overlay and Particular Provisions	Zone, and	Initial Works Component	Planning Approval (Y/N)		Comments
			Buildings and Works	Use	
Road Zone Category 1 (RDZ1)		Utility Relocations	N	N	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Public Use Zone 4 – Transport (PUZ4)		Utility Relocations	N	N	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Commercial 1 Zone (C1Z)		Utility Relocations	N	N	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Residential Growth Zone Schedule 3 - Clayton Major Activity Centre and Monash National Employment and Innovation Cluster (RGZ3)		Utility Relocations	N	N	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
General Residential Zone Schedule 6 - Monash National Employment and Innovation Cluster and Clayton Activity Centre (GRZ6)		Utility Relocations	N	N	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Special Building Overlay (SBO)		Utility Relocations	N	n/a	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.

Relevant Overlay and Particular Provisions	Zone, and	Initial Works Component	Planning Approval (Y/N)		Comments
			Buildings and Works	Use	
Heritage Overlay Schedule 13 - Clayton Road, Clayton - Railway Station (HO13)					Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme. No demolition or removal of a building is purposed.
Clause 52.17 Native Vegetation		None	N	n/a	No ecological values were identified within the Clayton study area.
Clause 52.29 Land Adjacent to Road Zone 1		None	N	N/A	
Summary		Based on the current Initial Works scope no planning permit is required at the Clayton site.			

Monash (Monash Planning Scheme)

Relevant Zone, Overlay and Particular Provisions	Initial Works Component	Planning (Y/N)	Approval	Comments
		Buildings and Works	Use	
Special Use Zone Schedule 6 (SUZ6)	Utility Relocations New Power Connection	N	N	The utility relocations and new power connection is defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Road Zone Category 1 (RDZ1)	Utility Relocations New Power Connection	N	N	The utility relocations and new power connection is defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Design and Development Overlay Schedule 1 – Industrial and Commercial Design and Development Area (DDO1)	Utility Relocations New Power Connection	N	N/A	The utility relocations and new power connection is defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Clause 52.17 Native Vegetation	None	N	N/A	No ecological values were identified within the Monash site.
Clause 52.29 Land Adjacent to Road Zone 1	Change in access to Ferntree Gully Rd, Notting Hill.	Y	N/A	A permit is required to create or alter access to road in a Road Zone Category 1. It is anticipated that a permit will be required under Clause 52.29 based on the current design. An application under Clause 52.29 will be referred to VicRoads, which will be a determining referral authority for the application.

				An application for a planning permit under Clause 52.29 is exempt from notice and review rights required under the P&E Act.
Summary	Based on the Initial Works scope, a planning permit is required at the Monash for: – Creation and/or alteration of access to a road in a Road Zone Category 1.			

Glen Waverley (Monash Planning Scheme)

Relevant Zone, Overlay and Particular Provisions	Initial Works Component	Planning Approval (Y/N)		Comments
		Buildings and Works	Use	
Commercial 1 Zone (C1Z)	Utility Relocations	N	N	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Residential Growth Zone Schedule 4 – Glen Waverley Major Activity Centre (RGZ4)	Utility Relocations	N	N	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Design and Development Overlay Schedule 12 – Glen Waverley Major Activity Centre (DDO12)	Utility Relocations	N	N/A	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Clause 52.17 Native Vegetation	None	N	N/A	No ecological values were identified within the Glen Waverley study area
Clause 52.29 Land Adjacent to Road Zone 1	None	N	N/A	
Summary	Based on the Initial Works scope, no planning permit is required for the Glen Waverley site.			

Burwood (Whitehorse Planning Scheme)

Relevant Zone, Overlay and Particular Provisions	Initial Works Component	Planning Approval (Y/N)		Comments
		Buildings and Works	Use	
Public Use Zone 1 – Service & Utility (PUZ1)	Utility Relocations	N	N	Utility relocations are defined as ‘minor utility installations’ and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Road Zone Category 1 (RDZ1)	Utility Relocations	N	N	Utility relocations are defined as ‘minor utility installations’ and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Residential Growth Zone Schedule 2 – Substantial Change B (RGZ2)	Utility Relocations	N	N	Utility relocations are defined as ‘minor utility installations’ and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
General Residential Zone Schedule 3 - Classic Garden Suburban Areas (GRZ3)	Utility Relocations	N	N	Utility relocations are defined as ‘minor utility installations’ and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Significant Landscape Overlay Schedule 9 - Neighbourhood Character Areas (SLO9)	Utility Relocations	N	N	Utility relocations are defined as ‘minor utility installations’ and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme. A permit is required to remove, destruct, or lop a tree. This does not apply to the removal, destruction or lopping to minimum extent necessary to maintain the safe and efficient function of a Utility Installation to the satisfaction of the responsible authority or the utility service provider. Consultation is required with Whitehorse City Council to determine if this exemption can be utilised.
Various Zones (does not include PCRZ)	New Power Connection	N	N	An underground power line is proposed between the existing Malvern Terminal Station and the industrial precinct south of

Relevant Zone, Overlay and Particular Provisions	Initial Works Component	Planning Approval (Y/N)		Comments
		Buildings and Works	Use	
				the Burwood site in Sinnott Street, Burwood. This power line traverses various zones across road and rail reserves. The new power connection is defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme. It is not anticipated that works are required at the Malvern Terminal Station except to establish connections points for new power connections to the industrial precinct.
Clause 52.17 Native Vegetation	None	N	N/A	The scope of works includes a new 66kV power connection underground. An arborist assessment is to be completed of potential street trees that may be impacted along the alignment.
Clause 52.29 Land Adjacent to Road Zone 1	None	N	N/A	
Summary	An arboricultural assessment is to be completed of potential street trees that may be impacted along the new power connection alignment between the Malvern Terminal Station and Sinnott Street, Burwood. Engagement with Whitehorse City Council and the utility service provider is required to verify permit requirements associated with the removal of a tree within the SLO9.			

Box Hill (Whitehorse Planning Scheme)

Relevant Zone, Overlay and Particular Provisions	Initial Works Component	Planning Approval (Y/N)		Comments
		Buildings and Works	Use	
Commercial 1 Zone (C1Z)	Utility Relocations	N	N	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Road Zone Category 1 (RDZ1)	Utility Relocations	N	N	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme.
Heritage Overlay Schedule 91 - Former Colonial Gas Association Building 942-946 Whitehorse Road, Box Hill (HO91) Heritage Overlay Schedule 244 - Box Hill Commercial Area (HO244)	Utility Relocations	N	N	Utility relocations are defined as 'minor utility installations' and exemptions for use and development apply under Clause 62.01 and Clause 62.02 respectively of the relevant planning scheme. No demolition or removal of a building is purposed.
Clause 52.17 Native Vegetation	None	N	N/A	No ecological values were identified within the Box Hill station site.
Clause 52.29 Land Adjacent to Road Zone 1	None	N	N/A	
Summary	Based on the Initial Works scope, no planning permit is required at the Box Hill.			



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