CHAPTER 08

Construction of the proposal

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

ARTC | INLAND RAIL
An Australian Government Initiative

Contents

Figures

Tables

8. Construction of the proposal

This chapter provides an outline of the indicative construction activities likely to be used to construct the Albury to Illabo (A2I) section of the Inland Rail program (the proposal). It includes a summary of the proposed timing, an indicative construction methodology, initial construction timeframes, likely resources, and proposed access arrangements. This information is preliminary only and is based on the current stage of the design.

A final construction methodology and program would be developed by the construction contractor based on the conditions of approval and the mitigation and management measures provided in this EIS.

8.1 Construction overview

Construction within each precinct would generally involve site establishment, main construction works and finishing works as outlined in section 8.2. In addition, enabling works may be carried out as part of construction of the proposal. To facilitate construction, the proposal site would contain a range of construction features, including construction compounds and access tracks, as required.

Subject to planning approval, construction is planned to commence in early-2024 and would be completed by mid-2025. The duration of construction would vary across the precincts: Albury, Greater Hume–Lockhart, Wagga Wagga and Junee. Construction across the precincts would occur concurrently, at times (refer to section 8.3).

The construction methodology would be refined as the design of the proposal progresses and when the construction contractor is engaged. A summary of the construction phase of the proposal is in Table 8-1.

TABLE 8-1 PROPOSAL SUMMARY TABLE—CONSTRUCTION

Proposal element	Summary	Ref
Proposal site area	100 hectares (ha)	
Schedule	Early-2024 to mid-2025	Section 8.3
Workforce	Anticipated peak of 770 staff	Section 8.5.1
Cut/fill	Generation of approximately 132,000 cubic metres (m^3) of excavated material.[1]	Section 8.5.3
Ancillary facilities	Establishment and use of temporary ancillary facilities, including material and earthworks stockpiling areas, laydown areas, construction support areas for bridges, and site compounds located as needed within the proposal site. Other temporary facilities include construction sedimentation basins and access tracks during construction.	Section 8.6, and Figure 8-1 to Figure 8-14
Utilities	Adjustment, protection, or relocation of existing utilities within the proposal site.	Section 8.9
Dewatering	Interception of groundwater at the Riverina Highway bridge and Kemp Street bridge enhancement sites may result in dewatering of approximately 12.1 megalitres (ML) of groundwater.	Section 8.5.3
Property	Temporary property occupation and property access requirements during construction.	Section 8.7 and Figure 8-1 to Figure 8-14

1. This volume does not account for potential reuse where practicable.

8.2 Indicative construction activities

Site establishment and enabling works would be completed at the beginning of construction at all enhancement sites, followed by the main construction activities. Finishing works would be completed at the completion of construction.

The main construction activities vary across the proposal site depending on the enhancement site and consist of:

- track works
- rail bridge works
- road bridge works
- pedestrian bridge works
- associated infrastructure works such as signalling works, culvert works and level crossing alterations.

8.2.1 Site establishment and enabling works

Site establishment and enabling works would typically be carried out before the start of substantial construction to make the areas ready for key construction sites and to provide protection to the public and/or the environment. It would generally involve the following activities:

- consultation with landholders/occupants, where required, and ensure land access is available
- implementation of all ARTC rail site protection requirements (including the provision of site Protection Officers) prior to accessing the rail corridor
- existing condition surveys of buildings and infrastructure such as public and private roads
- environmental investigations, where required, heritage protections, salvage and/or conservation works
- installation of site fencing and temporary signage for restricted access and traffic diversion (if necessary)
- installation of site environmental management including drainage and erosion management controls
- establishment of site access locations, compound sites and the location of stockpiles
- preparation of the site for main construction works (levelling, grading and/or compacting, as required, except where archaeological heritage potential is present)
- delivery and stockpiling of bulk materials, including ballast and capping
- vegetation trimming, clearing and removal, where required, including slashing, mulching, and stockpiling within the proposal site for reuse
- demolition of minor structures and removal of existing road and rail infrastructure located within the proposal site
- utility adjustment or protection where required (refer to section 8.9).

The following activities carried out before the start of construction do not form part of the proposal:

- surveys, test drilling, test excavations, geotechnical investigations or other tests, surveys, sampling, or investigation for the purposes of the design or assessment of the project
- the use of an existing rail corridor, or an existing rail facility adjoining an existing rail corridor, for delivery or storage of tracks, sleepers, ballast, posts, or culverts
- the adjustment, relocation, upgrade, or replacement of existing utilities infrastructure, unless existing water flows within or through the existing rail corridor will be permanently affected or where native vegetation clearing that is likely to significantly affect threatened species within the meaning of Part 7 of the *Biodiversity Conservation Act 2016* (NSW) occurs.

Where these works occur before commencement of construction, separate environmental assessments and approvals would be obtained, where required.

8.2.2 Track works

Track realignment (less than 0.3 m)

For track realignments less than 0.3 m, the general method for the works is:

- inspect track formation to determine condition
- undertake formation widening to accommodate the realigned track, including stripping topsoil and extending the formation (that is the ground surface that supports the track)
- remove, relocate or replace turnouts, if required
- top up ballast, where required
- run tamper machine along the track to horizontally shift track in in increments and level out ballast
- run regulator machine along the track to ensure ballast is distributed and shaped to support the track
- restress track and commission.

Track realignment (greater than 0.3 m and/or track formation replacement)

For track realignment over 0.3 m and/or replacement of track formation, the general method is:

- undertake earthworks to establish new cess drainage
- strip topsoil and excavate existing track formation as required for track realignment
- establish foundation for location of realigned track formation
- place structural fill and capping material for track formation

- install sleepers, rail, and top up ballast
- run tamper machine to level out ballast
- restress track and commission.

Track lowering

The general method for track lowering is:

- create access for piling rigs
- undertake large diameter piling and preparation works for small piles
- undertake small piling works
- install protection and or retaining walls on the piles
- undertake track lowering excavation and drainage installation
- install sleepers, rail, and top up ballast
- restress track and commission.

8.2.3 Rail bridge works

Rail bridge alterations

Alterations to four rail underbridges would be required to accommodate track realignment. The general construction method is:

- disconnect track and support structure from existing bridge
- lift off and remove track structure
- alter the bridge support structure (abutments and piers), as required
- undertake strengthening works including installation of metal plates along the bridge span, if required
- replace or modify track support structure
- reinstall structure onto the abutments and piers, as required
- reinstall realigned track on bridge.

Murray River bridge alterations

The proposed bridge works on the Murray River bridge are unique from the other rail bridge works due to the design of the bridge. The general construction method is:

- establish exclusion zone in the Murray River in accordance with Transport for NSW (TfNSW) requirements, including set up of navigation marks, buoyage and signage
- install scaffolding and temporary bracing structure on the bridge in stages to maintain partial access for watercraft beneath the bridge
- set up of environmental and safety controls for construction work on the bridge including netting around scaffolding
- undertake drilling of attachment holes for new metal sections
- localised corrosion protection of works
- remove and replace cross bracing on bridge portals
- undertake bridge structure modifications
- remove temporary bracing in stages
- repaint disturbed lead-based paint work
- remove scaffolding in stages.

8.2.4 Road bridges works

Road bridge replacement

New road bridges would be constructed at Edmondson Street, Wagga Wagga, and Kemp Street, Junee. The general method of construction is:

- establish road and pedestrian detour controls

- establish crane pads to the north and south of the bridge
- demolish the existing bridge structure
- construct bridge foundations, footings, abutments and piers
- excavate material for piling pads to support the piling rigs
- install internal piles, piles caps for protection and retaining walls
- excavate out remaining materials for retaining walls
- complete reinforced earth retaining wall to height and backfill to underside of the bridge
- install bridge decks (excluding decks over the rail track) for the bridge approaches
- install central deck over the rail track
- complete road works to tie-in to existing roads, intersections and pedestrian and/or pedestrian paths (as required), including drainage works
- install road furniture (including signage) and street lighting
- complete asphalting and line marking
- remove detours and traffic controls.

8.2.5 Pedestrian bridges

Three pedestrian bridges would be replaced and two would be removed or as part of the proposal.

Bridge removal

The general method for the demolition of pedestrian bridges is:

- establish of pedestrian detours and/or traffic management controls as required
- construct crane pad and install the crane
- disconnect pedestrian bridge decks from piers and remove
- demolish existing piers and backfill to existing surface level
- remove approach stairs on both sides of track
- remove detours and traffic controls.

Bridge replacement

In Albury and Wagga Wagga, existing pedestrian bridges would be removed and replaced. The general method is:

- demolition of the existing bridge (as per the methodology described under pedestrian bridge removal above)
- undertake piling for the relocation on any piers
- construct bridge footings, abutments and piers
- install new bridge decks on the piers, new stairs and ramps
- install new steel truss structure on bridge deck
- install safety screens and handrails
- remove detours.

8.2.6 Associated infrastructure works

Culverts works

As a result of track lowering or realignment, culverts may require extension or replacement. Culverts or culvert extensions would be pre-cast offsite and installed along the proposal alignment as the works progress. A general method for the installation of culverts is:

- establish crane pad
- remove track and disconnect culvert structure
- remove culverts if required for full replacement
- install prefabricated replacement culverts or extensions to culvert
- install scour protection as required such as ripraps

- place ballast, sleepers, and rail on top of the culverts
- tamp the ballast and weld the tracks.

Signalling works

A general method for signalling works is:

- for existing signalling:
  - disconnect the feed for existing ground supported or overhead signalling
  - relocate, replace or adjust support structure for example the poles for overhead lines
  - relocate, replace or adjust signal cabling and lighting
- for new signalling:
  - install support structure
  - install signal cabling and lighting
  - connect the feed for the signalling
- commission ground or overhead signal.

For signalling works involving gantries, the general method for these works are:

- for removal of gantry:
  - remove existing gantry from footings (i.e. cut or remove bolts)
  - lift gantry off footings and place nearby for dismantling
  - remove redundant footings if required
  - backfill footing holes
- replace and/or relocate a gantry by:
  - remove the existing gantry structure
  - undertake piling for new gantry structure, if required
  - install new gantry footing
  - install new gantry structure
- for minor adjustments:
  - removing low metal sections from gantry structure
  - raising horizontal section of the gantry frame.

Level crossing works

The general methodology for works on level crossings is:

- close relevant road and implement detour and traffic controls
- disconnect signalling infrastructure
- strip track and level crossings surface panels
- realign track
- install level crossing surface panels
- install or modify pedestrian maze if required
- replace level crossing controls or modify existing controls
- for level crossing activation:
  - install cabling to connect to power
  - install boom gates and lighting
- reconnect signalling
- provide standard level crossing signs and road markings, if impacted.

8.2.7 Finishing works

Testing and commissioning of the rail line and communications/signalling systems would be carried out to ensure that all systems and infrastructure are designed, installed, and operated according to ARTC's operational requirements. Testing for connections to other rail lines would also be required for those sections of track. This would be undertaken prior to use during scheduled rail possessions or other periods when existing rail lines are not operational.

All disturbed areas not required for ongoing operations would be rehabilitated. Finishing and rehabilitation would be undertaken progressively and would include the following typical activities:

- demobilise or remove construction compounds and facilities
- remove all remaining materials, waste, and redundant structures
- decommission all temporary work site signs
- remove temporary fencing
- establish permanent fencing, where required
- decommission site access roads that are no longer required, including reinstatement of topsoil and vegetation, where required
- restore disturbed areas, as required, including revegetation and landscaping, where required.

Where relevant, sites that were occupied temporarily and do not form part of the permanent infrastructure, such as construction compound sites, would be rehabilitated in accordance with the urban design and landscape plan (refer to Chapter 7: Proposal features and operation).

8.3 Construction schedule and staging

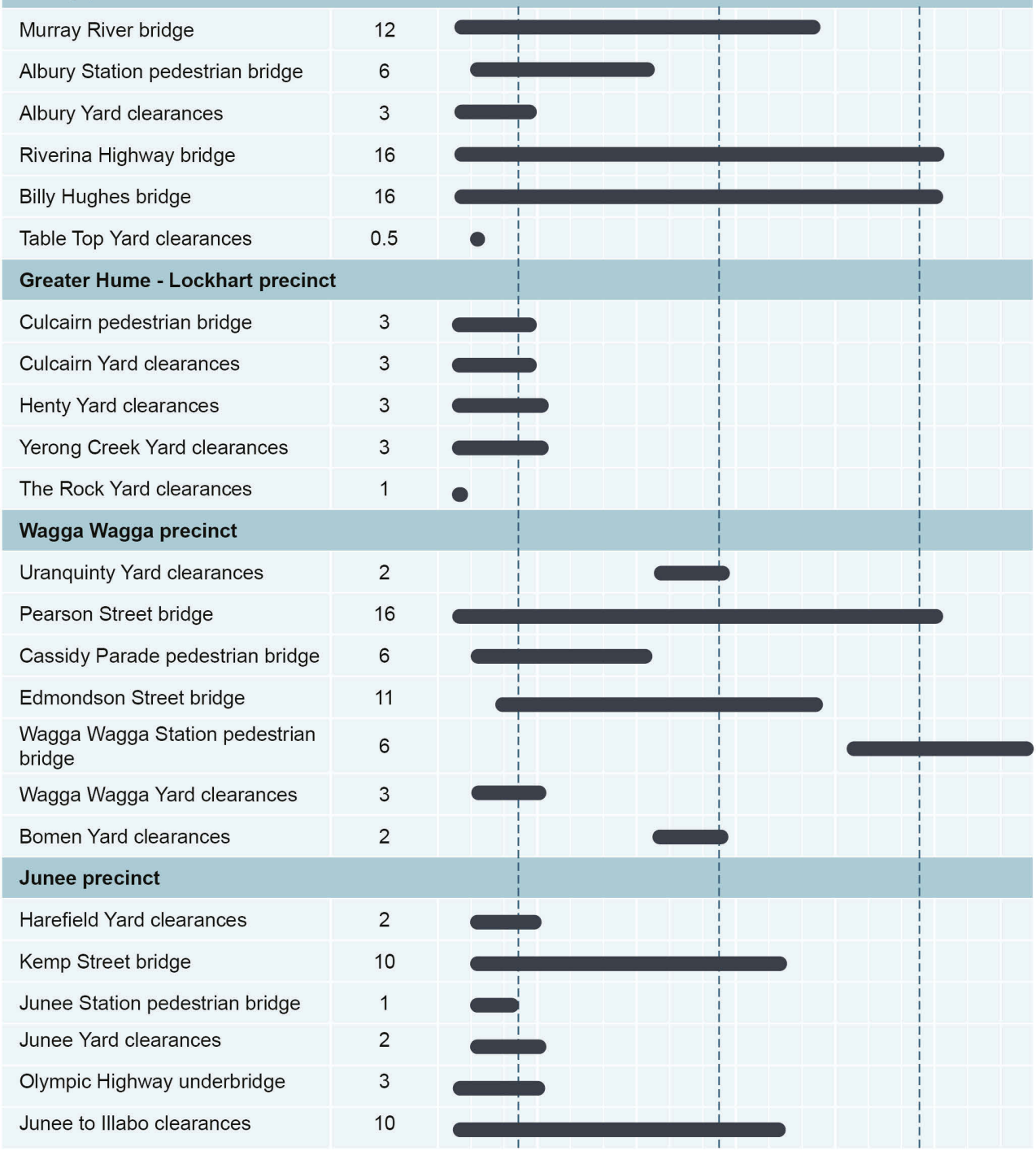
Subject to planning approval and consultation with the construction contractor (once appointed), construction is planned to commence in early 2024 and will be completed by mid-2025. An indicative construction program is shown in Table 8-2. Docker Street gantry works would be completed as part of the Wagga Wagga Yard clearances.

The staging of works is generally focused around 60-hour rail possessions, as described in section 8.4.1, which typically occur twice a year. The duration of works at each enhancement site would vary according to the required construction activities. Enhancement sites would be progressively commissioned and rehabilitated as works are completed.

Final staging of works and detailed possession planning would occur during detailed construction planning. This may involve additional rail possessions.

TABLE 8-2 INDICATIVE CONSTRUCTION PROGRAM

Enhancement Sites	Duration (months)	2024 Q1	2024 Q2	2024 Q3	2024 Q4	2025 Q1	2025 Q2
Albury precinct							
Murray River bridge	12						
Albury Station pedestrian bridge	6						
Albury Yard clearances	3						
Riverina Highway bridge	16						
Billy Hughes bridge	16						
Table Top Yard clearances	0.5						
Greater Hume - Lockhart precinct							
Culcairn pedestrian bridge	3						
Culcairn Yard clearances	3						
Henty Yard clearances	3						
Yerong Creek Yard clearances	3						
The Rock Yard clearances	1						
Wagga Wagga precinct							
Uranquinty Yard clearances	2						
Pearson Street bridge	16						
Cassidy Parade pedestrian bridge	6						
Edmondson Street bridge	11						
Wagga Wagga Station pedestrian bridge	6						
Wagga Wagga Yard clearances	3						
Bomen Yard clearances	2						
Junee precinct							
Harefield Yard clearances	2						
Kemp Street bridge	10						
Junee Station pedestrian bridge	1						
Junee Yard clearances	2						
Olympic Highway underbridge	3						
Junee to Illabo clearances	10						



- - - - Indicative scheduling of 60 hour rail possessions

8.4 Hours of construction

The proposal involves enhancement works that are on or immediately adjoin active rail lines that need to remain operational throughout construction with minimal disruption. Such work is subject to safe working arrangements to ensure worker safety. Additionally, there are proposed works that do not occur in close proximity to high-risk locations (such as road bridges).

Work on operational track can occur under two types of safe working arrangements: being rail possessions (sometimes referred to as closures) and temporary track occupancy authorisations (when there are suitable five-to-nine-hour gaps between scheduled trains that can allow certain work to be carried out) (refer to section 8.4.1). Work may also be needed in areas adjacent to track work locations before and after these periods, to prepare for or complete construction.

As a result, the proposed construction hours (as shown in Table 8-3) have been developed to:

- balance worker safety and rail corridor access, to support efficiencies in the workforce utilisation and to reduce construction durations as far as practicable
- reduce community impacts, by minimising the overall duration of disruption and amenity impacts from construction activities and road diversions.

TABLE 8-3 CONSTRUCTION HOURS

Construction type	Construction hours	Comments or exceptions
Work not subject to rail possessions or track occupancy authorisation. This can include site establishment, finishing works and main construction activities such as bridge works.	Primary construction hours: - Monday to Friday: 6 am to 6 pm - Saturday: 6 am to 6 pm - Sundays and public holidays: 6 am to 6 pm.	These hours would apply at all enhancement sites. Where a sensitive receiver (such as a residence, school or hospital) is predicted to be noise affected for more than three months: - primary construction hours would only apply for a maximum three-month period at that enhancement site - no work would be undertaken every alternative week between the hours of 6 pm on Saturday and 7am Monday. Noise affected is defined as an exceedance of the applicable noise management level as specified in the *Interim Construction Noise Guideline* (DECC, 2009) for residential and non-residential sensitive receivers.
	Alternative construction hours: - Monday to Friday: 7 am to 6 pm - Saturday: 8 am to 1 pm - Sundays and public holidays: No works or public holidays.	These hours would apply to an enhancement site where the primary construction hours are not applicable. These hours are consistent with standard construction hours in the *Interim Construction Noise Guideline* (DECC, 2009).
Work subject to rail possessions or track work authorisations, and any necessary ancillary works	24-hours per day during rail possessions and track work authorisations (typically up to 60 hour periods).	Further detail on rail possessions and track work authorisation the type of work occurring during these periods is provided in section 8.4.1.
Highly noise intensive work	- 8 am to 6 pm Monday to Friday, - 8 am to 1 pm Saturday - in continuous blocks not exceeding three hours each with a minimum respite from those activities and work of not less than one hour between each block.	Except where permitted by an environmental protection licence (EPL), highly noise intensive works would be restricted to these hours when these works result in an exceedance of the applicable noise management level at the same receiver. Highly noise intensive works are defined as works that result in noise levels ≥75 dB at a sensitive receiver.

In addition to the construction hours identified in Table 8-3, other construction works would be carried out outside standard construction hours.

- delivery of oversized plant or structures where required by the police or other authorities for safety reasons
- emergency work to avoid the loss of life or damage to property, or to prevent environmental harm
- large concrete pours for new bridges, to allow it to be completed in one pour and avoid high temperatures during the daytime

- works where it is required to minimise impacts on road users and customers (such as bridge deck installation or utility works)
- low impact noise activities at any time where:
  - construction causes $L_{Aeq(15\ minute)}$ noise levels no more than 5 dB(A) above the rating background level at any residence in accordance with the *Interim Construction Noise Guideline* (DECC, 2009), and no more than the 'noise affected' noise management levels specified in Table 3 of the *Interim Construction Noise Guideline* at other sensitive land uses
  - vibration is no more than the preferred values for human exposure to vibration specified in Table 2.2 or Table 2.4 (as applicable) of *Assessing Vibration: a technical guideline* (DEC, 2006a).
- where permitted by an environment protection licence
- where agreement is reached with affected receivers.

8.4.1 Work during possessions or under track occupancy authorisations

Work under rail possessions would be carried out during scheduled possession periods (that is, the times that the movement of trains along the rail corridor are stopped for maintenance). Rail possessions are typically for 60-hour periods, twice a year—in March and September. During rail possessions, works may need to be carried out on a 24-hour basis. Track works (such as track realignment, track lowering, and connecting tracks) can only occur under rail possessions.

Alternatively, track works may occur where single-line running is possible (such as in Albury Yard). Single-line running refers to when trains are able to use another line for travel in either direction when one track is occupied, and would be subject to a track occupancy authorisation. Opportunities for single-line running would be confirmed during detailed design and informed by operational requirements.

Outside scheduled rail possessions, works would also occur within available five- to nine-hour windows when train services are not scheduled and when authorised by ARTC (called a track occupancy authorisation). These periods are determined in consultation with operators of freight and passenger train services, and may occur outside the primary construction hours outlined in Table 8-3.

Indicative works that would occur during a rail possessions and/or subject to a track occupancy authorisation are outlined in Table 8-4. Construction compounds and laydown areas that support these works would also be in use during these periods.

Detailed possession planning would be documented in the Construction Environmental Management Plan, and associated traffic and transport management sub-plan. The plans would be prepared in consultation with Transport for NSW.

A construction noise and vibration impact statement would be prepared for these works in association with the construction noise and vibration management sub-plan. This would identify site specific mitigation measures.

TABLE 8-4 INDICATIVE USE OF RAIL POSSESSIONS AND TRACK OCCUPANCY AUTHORISATIONS

Construction activities	Rail possessions	Under track occupancy authorisation
Track realignment works	Track realignments works at each enhancement site are planned around the use of one rail possession with the exception of the Junee to Illabo clearances, which require two rail possessions. Level crossing works and rail bridge realignment works would be undertaken during the same rail possessions.	Track realignment works where single line running can occur. Associated construction activities directly over or in close proximity to in the track. These activities include track widening, drainage works, signalling adjustments. More substantial track realignment works can occur where single line running is possible.
Track lowering works	Track lowering at each enhancement site are planned around three rail possessions. There would be breaks in the construction schedule between the rail possessions.	Associated construction activities directly over or in close proximity to in the track. These works including drainage works, piling, construction of the protection and retaining walls.
Murray River bridge structure alterations	These works are generally not planned around rail possessions. Work planned to be undertaken under a track occupancy authorisation may be undertaken during a rail possession where schedules overlap. An exception	All the bridge works are proposed to be undertaken twice a week during five-hour windows, which would likely occur in the evening and early night-time hours.
Pedestrian bridge removal		Bridge removal when the structure is lifted over the track (under one authorisation period).

Construction activities	Rail possessions	Under track occupancy authorisation
Pedestrian bridge replacement	would be at Kemp Street bridge where a minor rail possession would be used for piling works and trains would be diverted to other lines temporarily to minimise disruption to train services.	Bridge construction when the bridge structure is lifted over the track (under one authorisation period).
Road bridge works		The works over or near the track include demolition, piling, wall construction and lifting of the bridge decks into place This would occur under four nine-hour track occupancy authorisation periods.

8.5 Construction resources

8.5.1 Workforce

Construction workforce numbers would vary across the proposal site due to scheduling and the scale and type of construction activities required in different enhancement sites. Peak workforce numbers as identified in Table 8-5 would occur when works in different enhancement sites occur concurrently, which would generally be during rail possessions. Workforce numbers would peak in March 2024 for all precincts except Wagga Wagga which would peak in September 2024. Overall, the proposal workforce would peak in March 2024 at 770.

For the majority of the construction period, the workforce would average up to about 50 to 90 people in each of the precincts due to scheduling of construction works.

TABLE 8-5 ESTIMATED AVERAGE AND PEAK WORKFORCE NUMBERS

Precinct	Estimated average workforce	Estimated peak workforce (March 2024)
Albury	50	180
Greater–Hume Lockhart	90	180
Wagga Wagga	50	110[2]
Junee	80	300
Proposal (All precincts)	**170**	**770**

2. A workforce peak at Wagga Wagga precinct of an estimated 150 workers would occur in September 2024.

Given the nature of the workforce requirements, accommodation would be via the short-term accommodation market. Detailed construction planning would aim to distribute construction workforce across scheduled rail possessions throughout the construction period to minimise the peak demand on short-term accommodation market. This would be coordinated with the accommodation strategy for the adjoining Illabo to Stockinbingal project.

8.5.2 Plant and equipment

A range of plant and equipment would be used during construction. The final equipment and plant requirements would be identified by the construction contractor. An indicative list of plant and equipment that would be used for each construction activity is in Table 8-6. Trucks, light vehicles, water carts and handheld tools would be required to complete construction at each enhancement site.

TABLE 8-6 INDICATIVE CONSTRUCTION PLANT AND EQUIPMENT

Plant	Track realignment (<0.3 m)	Track realignment (>0.3 m)	Track lowering	Rail bridge alterations	Murray River bridge alterations	Road bridges	Pedestrian bridge replacement	Pedestrian bridge removal
Excavator		x	x			x		x
Positrack		x	x					
Backhoe	x		x					
Hydremas	x	x	x					
Loader	x	x	x					x
Tamper	x	x	x					
Regulator	x	x	x					
Ballast box	x	x	x					
Padfoot or smooth drum roller		x	x		x	x		
Grader		x	x	x	x	x	x	
Bulldozer			x					
Rail saw	x	x		x				
Grinder	x	x		x	x			
Welding equipment	x	x		x	x			
Franna crane				x		x	x	
50–350 tonne crane				x	x	x	x	x
Elevated work platform				x		x	x	x
Vacuum sheathed drills					x			
Self-contained abrasive blasting unit					x			
Concrete pump				x		x	x	
Hi-rail micro-piling rig			x					
Bored piling rig			x			x	x	
Micro-tunnelling equipment			x					
Rattle guns					x			
Road construction equipment (aggregate spreader, line marking tools and small compactor)						x		

8.5.3 Materials

Construction of the proposal would require a range of materials including (but not limited to):

- general fill and structural fill
- aggregates for capping and scour protection
- materials for the rail track, such as steel rails, sleepers, ballast
- steel and concrete for bridges
- precast culverts, pipes, pit, bridge girders and retaining wall panels
- asphalt for road works
- cabling for signalling and electrical components
- materials for utility adjustments
- water.

Key materials required for construction of the proposal are outlined in this section.

Ballast, capping and fill

The spoil and waste ballast volumes estimated to be generated during construction and the volumes of ballast, capping and fill required for the proposal are in Table 8-7. All excavated material is expected to be re-used for construction fill, where practicable and ballast removed during track works would be re-used where it is in a suitable condition. All volumes have been estimated based on refence design and preliminary geotechnical investigations and would be subject to further refinement during detailed design.

TABLE 8-7 PRELIMINARY ESTIMATE OF CONSTRUCTION MATERIAL VOLUMES

	Material generated		Material required			
Precinct	Excavated material (m^3)	Ballast (m^3)	General fill (m^3)	Capping (m^3)	Structural fill (m^3)	Ballast (m^3)
Albury	27,300	3,700	4,000	5,500	3,300	4,000
Greater–Hume Lockhart	7,800	2,200	2,200	1,200	1,900	2,200
Wagga Wagga	28,400	5,800	5,800	4,700	5,700	5,800
Junee	68,500	4,400	22,800	12,300	24,600	22,800
TOTAL	132,000	16,100	34,800	23,700	35,500	34,800

Quarries within the region with the required approvals such as Boral, Rocky Point, Hanson and Signature quarries would be used to supply capping and ballast for the proposal, where possible. Any heavy vehicle movements from these quarries would be via existing heavy vehicle routes to the proposal site. Regional quarries would be investigated further during the detailed design phase.

The final destinations for excess ballast and spoil would be confirmed prior to construction commencing. Waste management centres in the region which may be used for disposal depending on capacity and licensing requirements are Albury, Gregadoo and Junee waste management centres.

The earthworks requirements for the proposal would be subject to further refinement during detailed design and construction planning following detailed geotechnical investigations. This would seek to minimise the final volume of spoil as far as practicable.

Further information on waste (including spoil) management is in Chapter 23: Waste management and resource use.

Sleeper and rail

Sleepers and rail would be required for track realignment and lowering works. Existing sleepers and rail would be re-used where the condition is adequate for use. New sleepers and rail are proposed to be delivered to the proposal site via existing rail lines during pre-construction. Concrete would be supplied by commercial suppliers.

Water

Water is required during construction for a range of activities, including:

- earthworks and formation preparation and material conditioning
- dust suppression
- concrete production
- vehicle and equipment wash down
- site services at compounds
- landscaping and rehabilitation.

Final water requirements would be subject to weather conditions and the methodology selected by the construction contractor. Based on preliminary construction planning, it is estimated that a total of about 56.9ML would be required during construction as identified in Table 8-8. The volume required would vary according to the type of construction activity at each enhancement site. Opportunities to reduce water use would be further explored during detailed design and construction planning.

TABLE 8-8 ESTIMATED WATER VOLUME REQUIREMENTS DURING CONSTRUCTION

Precinct	Estimated water requirement (ML)
Albury	9.7
Greater–Hume Lockhart	3.4
Wagga Wagga	13.5
Junee	30.3
Total	**56.9**

It is anticipated that construction water would be transported via water trucks. The preferred method would be confirmed by the construction contractor during detailed construction planning.

The construction water balance is considered in Chapter 18: Hydrology, flooding, and water quality.

Construction water sources would be finalised during the detailed design phase, considering:

- climatic conditions in the lead up to construction
- agreements with local governments for sourcing mains water
- agreements with water supply authorities (such as Riverina Water) for sourcing water or treated non-potable water.

At this stage, extraction of water from surface or groundwater sources, such as use of groundwater bores, for the purpose of water supply is not envisioned. Dewatering would occur during some excavation works and this groundwater take may be subject to a water access licence (refer to section 4.3.3). Interception of groundwater at the Riverina Highway bridge and Kemp Street bridge enhancement sites may result in dewatering of approximately 12.1ML of groundwater. Use of groundwater sourced during excavation works would be considered during detailed construction planning to determine suitability for use.

8.5.4 Site servicing requirements

Work areas and construction compounds would be self-sufficient for utilities such as water, sewer, electricity, and telecommunications. Portable amenities blocks would be used that can be pumped out at regular intervals by suitably licensed contractors. Local power generation from portable generators would be installed and diesel resupplied using mobile refuelling services for construction plant and equipment.

Where utilities are located close to the sites, opportunities to connect to existing sources would be explored with relevant providers.

8.6 Construction compounds and laydown areas

Site establishment involves setting up temporary construction compounds for use throughout the construction period. The proposed locations of compounds within the proposal site are shown in Figure 8-1 to Figure 8-14.

Site compounds are designated areas containing key construction facilities. Depending on length and complexity of construction activities, the site compounds would consist of:

- laydown areas
- site offices
- toilets
- potable water tanks
- generators
- parking area
- storage facilities for smaller construction items such as equipment and chemicals.

Laydown areas are designated locations where stockpiles and bulk materials such as ballast or prefabricated units would primarily be stored during construction. Stockpiling may occur outside designated laydown areas within the construction site for short durations. Hazardous chemicals such as fuel for plant would be kept within storage facilities in accordance with relevant standards.

8.7 Temporary land requirements

Construction would require temporary use of land outside the rail corridor for the duration of the construction period. These areas would be required for some key construction infrastructure, site compound placement, access and to facilitate manoeuvring of construction plant and machinery. The proposed temporary occupation and use of these areas are subject to further engagement and agreement with landowners. Initial discussions about establishing agreements with landowners for the proposal's property requirements commenced in March 2022. As discussions are ongoing, the location and area of individual property requirements may change or be removed. The final land requirements for the proposal would be confirmed during detailed design.

The land outside the rail corridor proposed for use is shown in Figure 8-1 to Figure 8-14. Road occupancy licences from the relevant road authorities would be required for occupation of the road reserve. Lease agreements for temporary land requirements would be established with the relevant landholders, or permits in the case of Crown land. Further information is in Chapter 12: Land use and property.

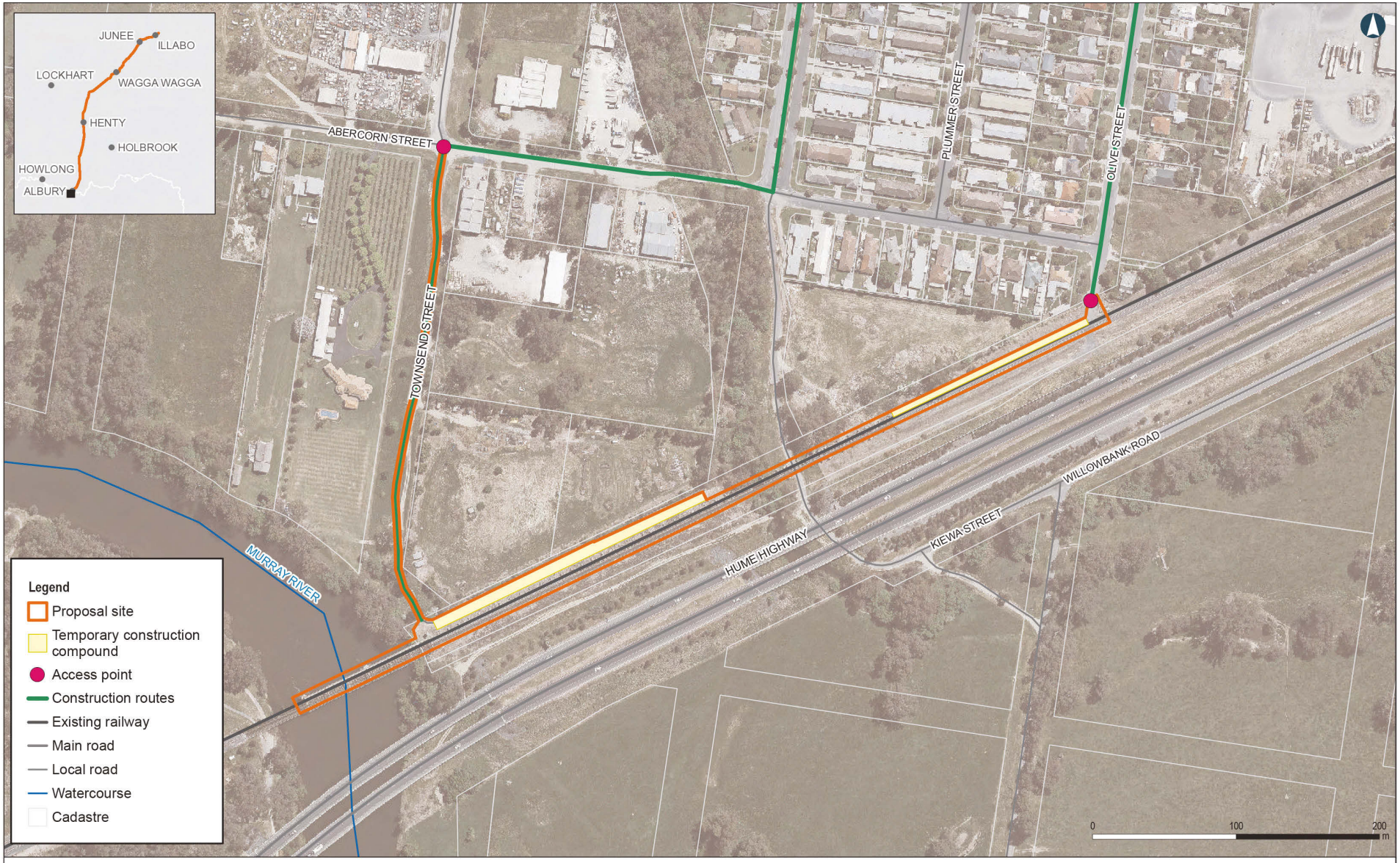


Figure 8-1 Construction layout of Murray River bridge

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:3,500
Paper size: A4
Date: 10/11/2021

210_EAP_F08XX_A4L_Construction_r1v4.mxd

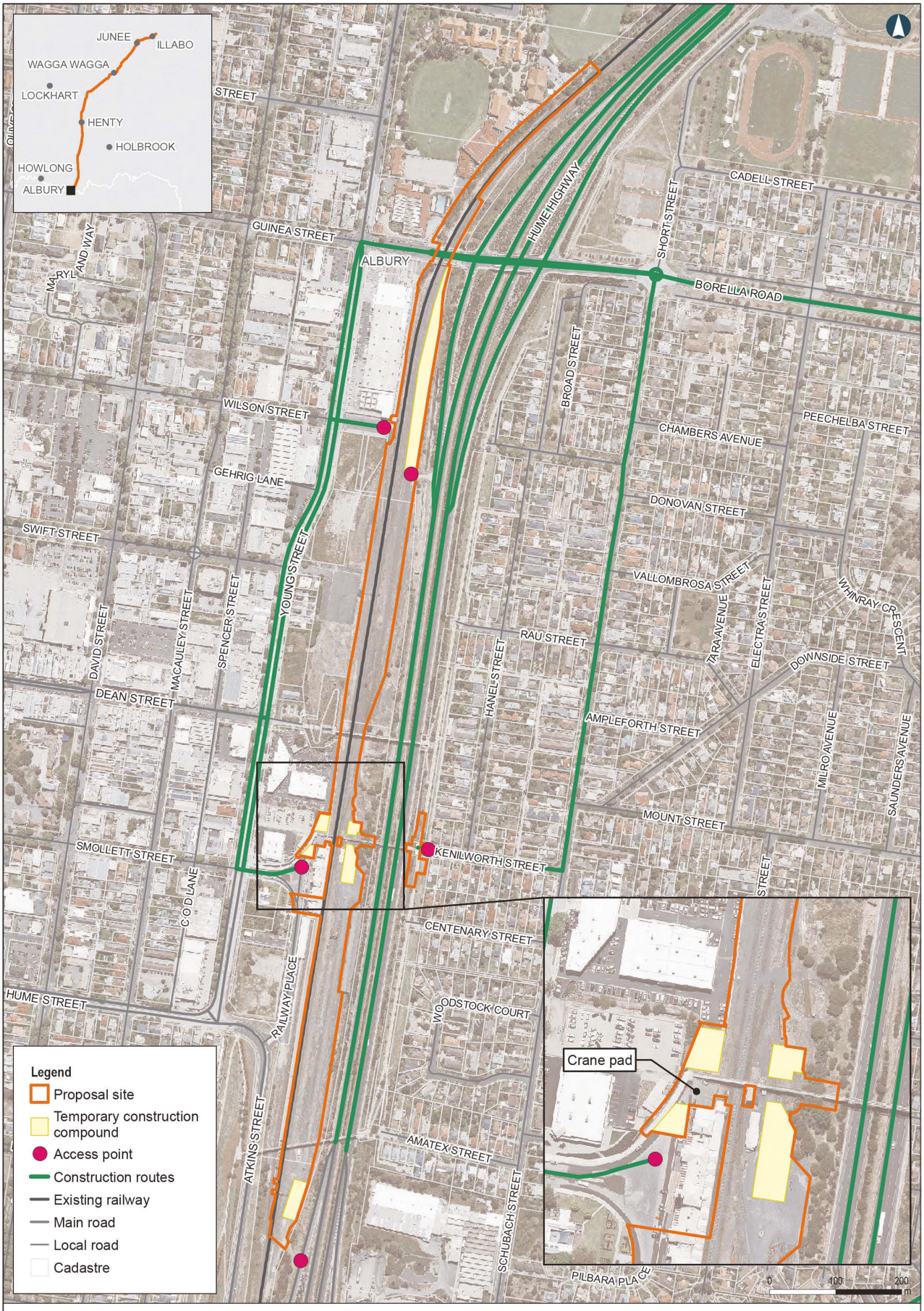


Figure 8-2 Construction layout of Albury Station and surrounds

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:7,500
Paper size: A4
Date: 9/12/2021

210_EAP_F0802_A4P_Construction_r1v5.mxd

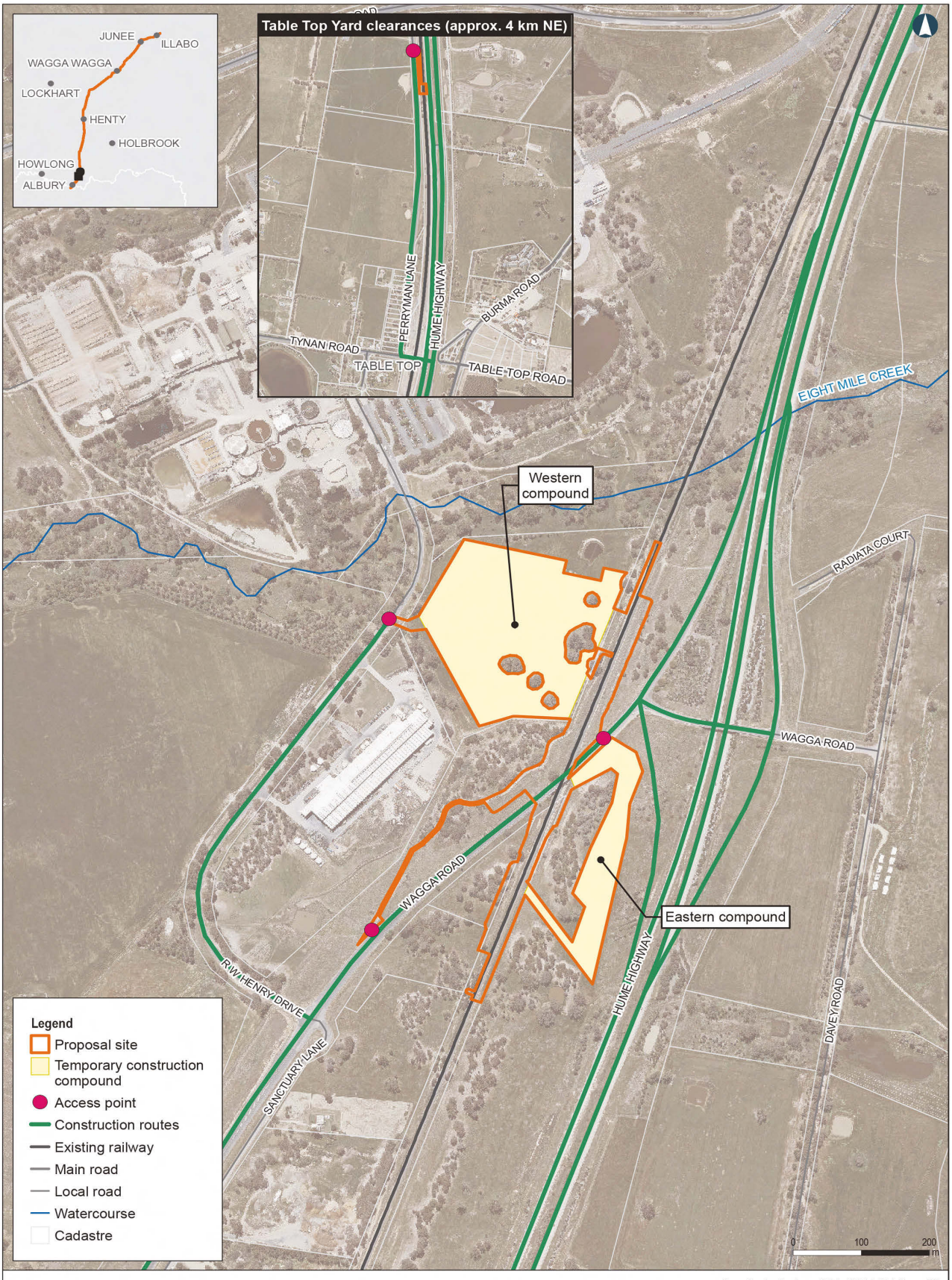


Figure 8-3 Construction layout of Billy Hughes bridge and Table Top Yard

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:7,500
Paper size: A4
Date: 10/11/2021

210_EAP_F0803_A4P_Construction_r1v4.mxd

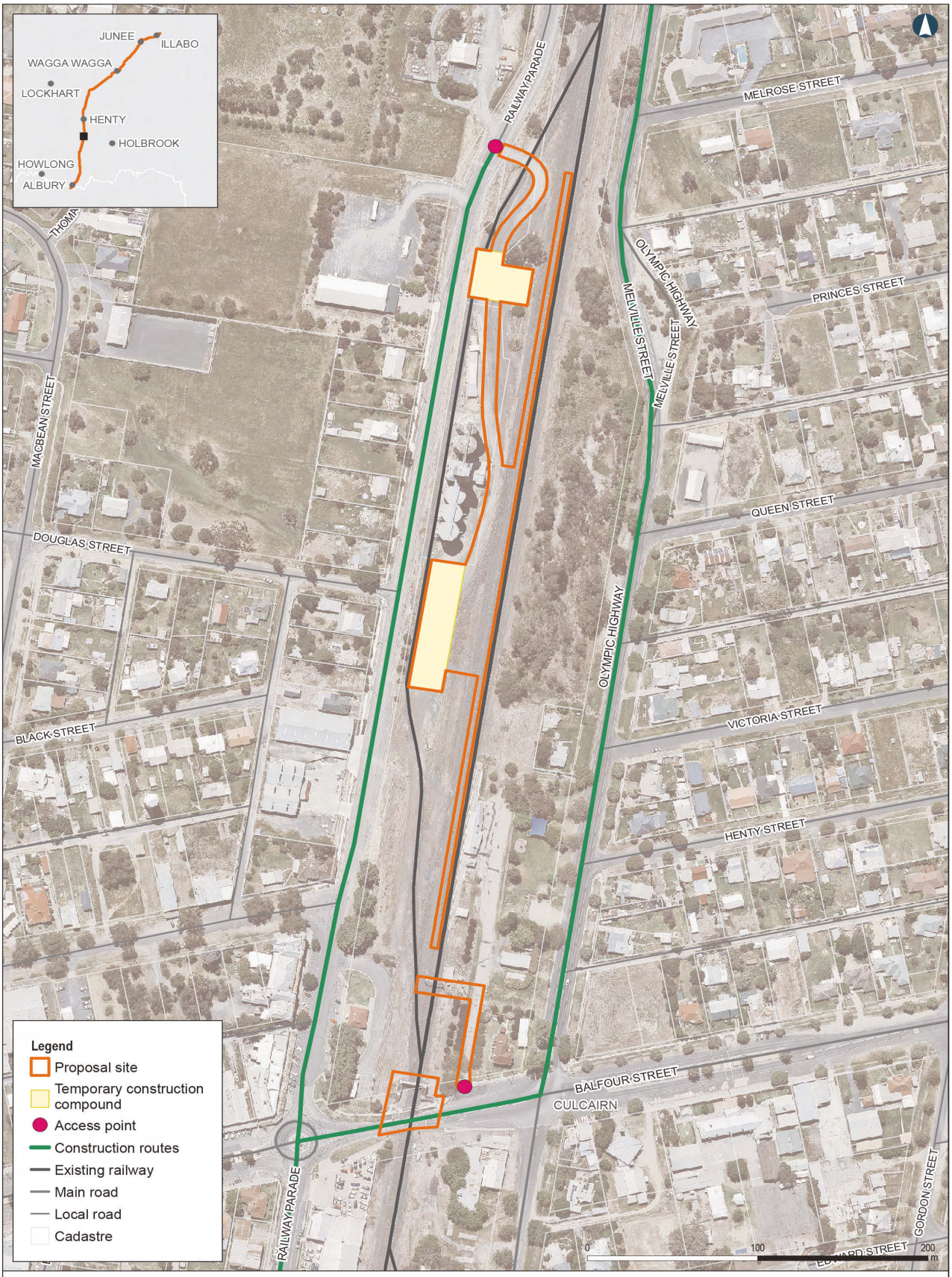


Figure 8-4 Construction layout of Culcairn Yard clearances

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:3,000
Paper size: A4
Date: 10/11/2021

210_EAP_F08XX_A4P_Construction_r1v4.mxd

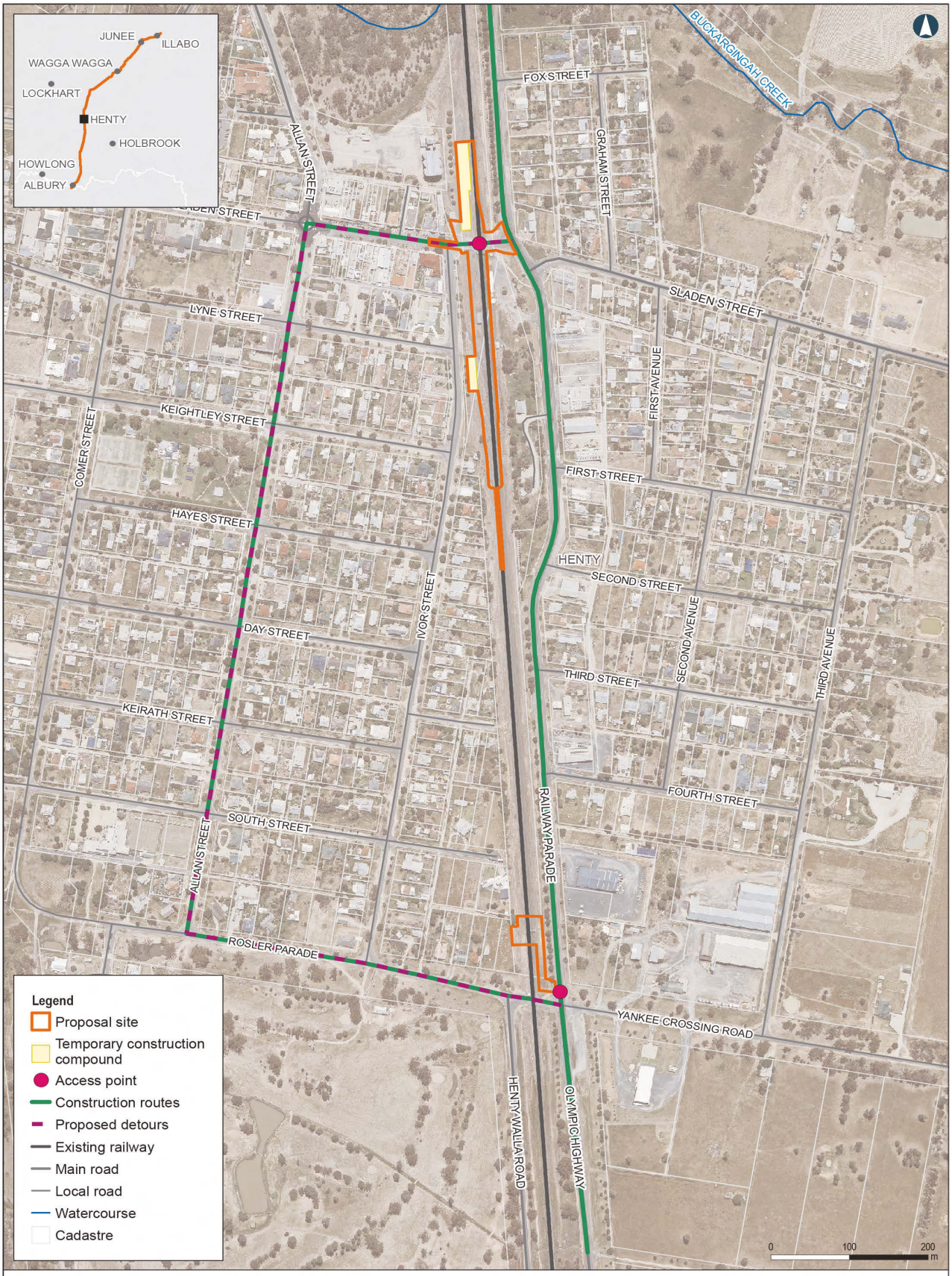


Figure 8-5 Construction layout of Henty Yard clearances

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:6,500
Paper size: A4
Date: 9/12/2021

210_EAP_F08XX_A4P_Construction_r1v7.mxd

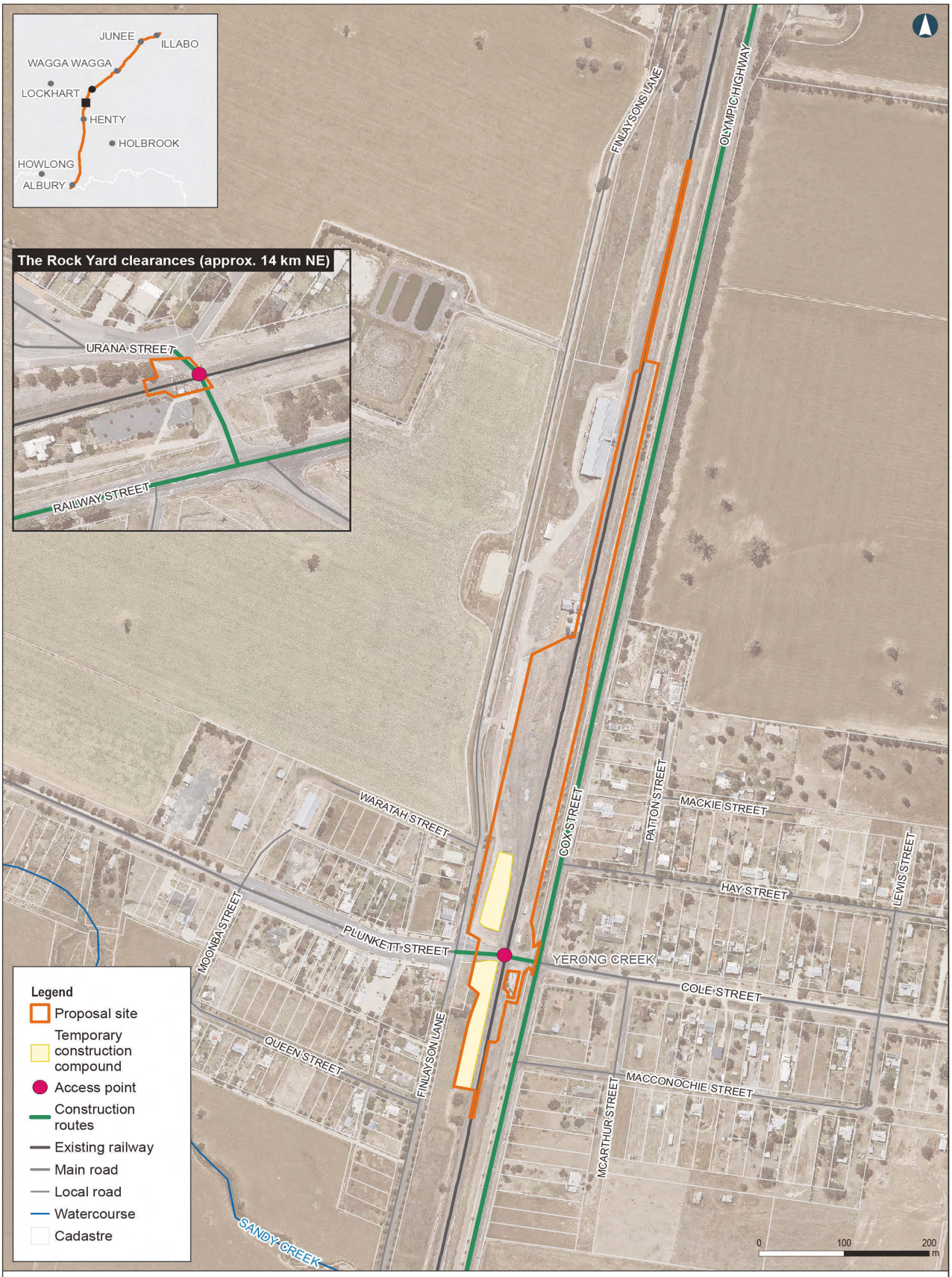


Figure 8-6 Construction layout of Yerong Creek and The Rock Yard clearances

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:3,000
Paper size: A4
Date: 10/11/2021

210_EAP_F0806_A4P_Construction_r1v4.mxd

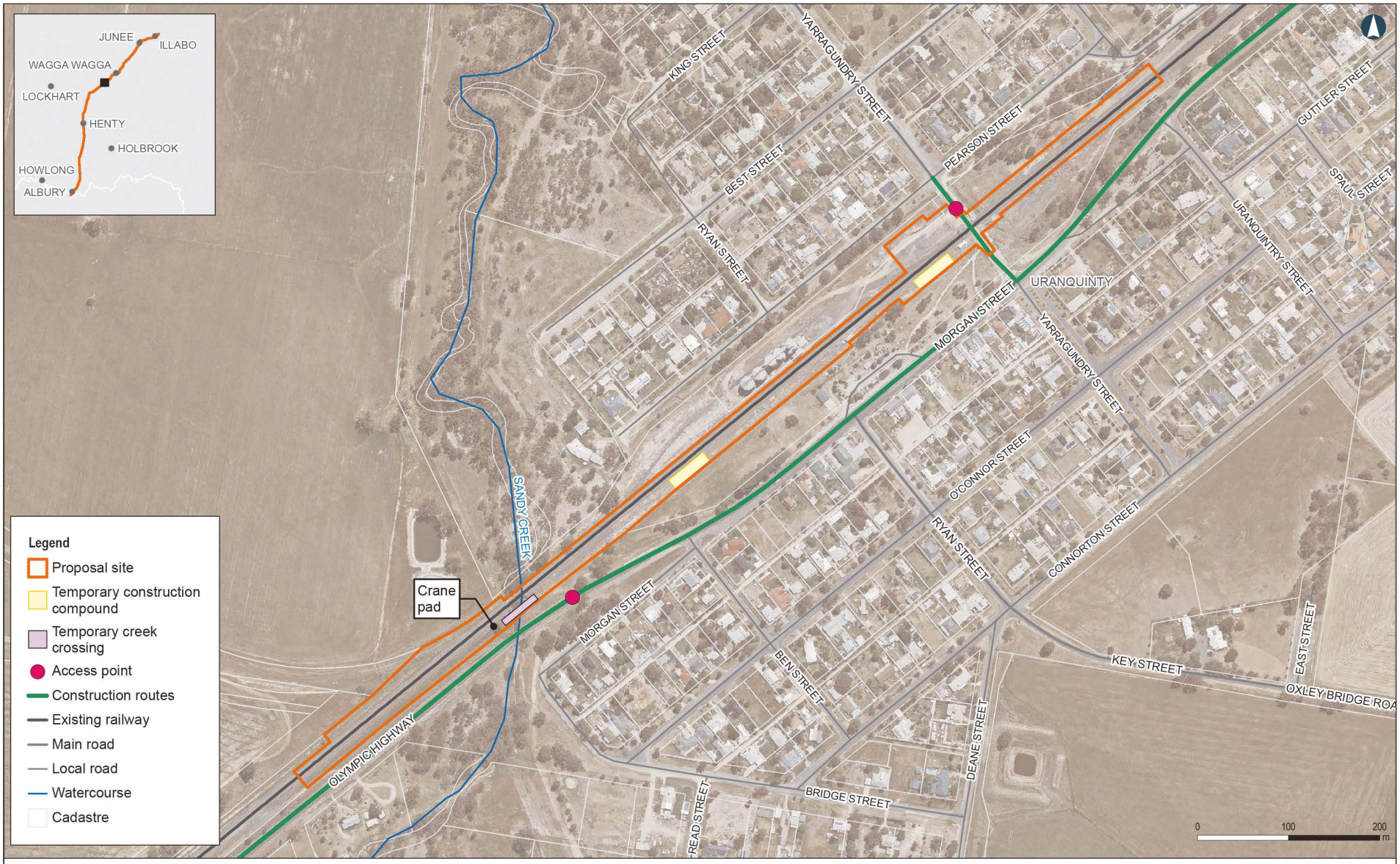


Figure 8-7 Construction layout of Uranquinty Yard clearances

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:5,500
Paper size: A4
Date: 12/11/2021

210_EAP_F08XX_A4L_Construction_r1v5.mxd

Figure 8-8 Construction layout of Pearson Street bridge

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:6,000
Paper size: A4
Date: 9/11/2021

210_EAP_F08XX_A4L_Construction_r1v4.mxd

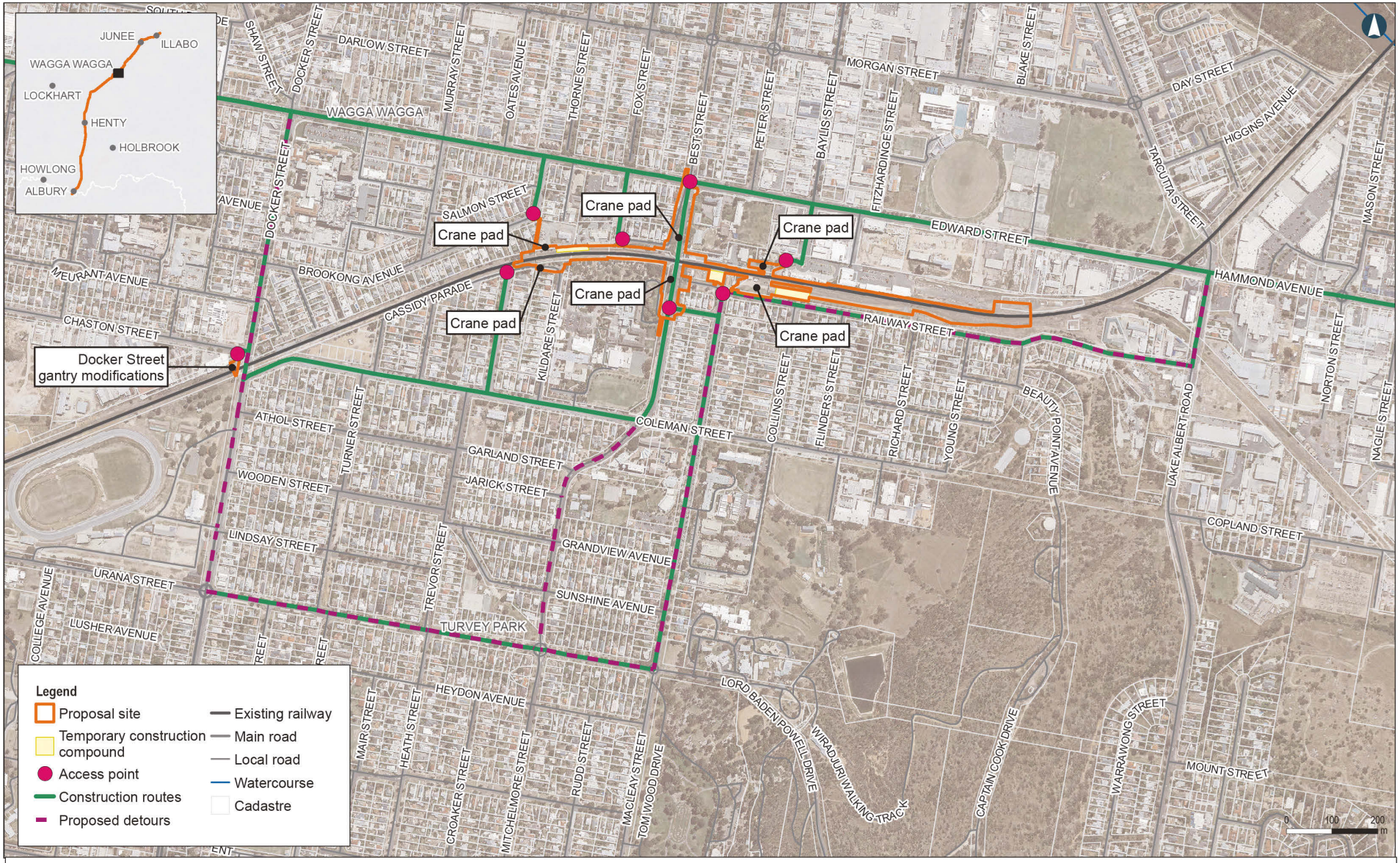


Figure 8-9 Construction layout of Wagga Wagga Station and surrounds

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:11,000
Paper size: A4
Date: 9/12/2021

210_EAP_F0809_A4L_Construction_r1v6.mxd

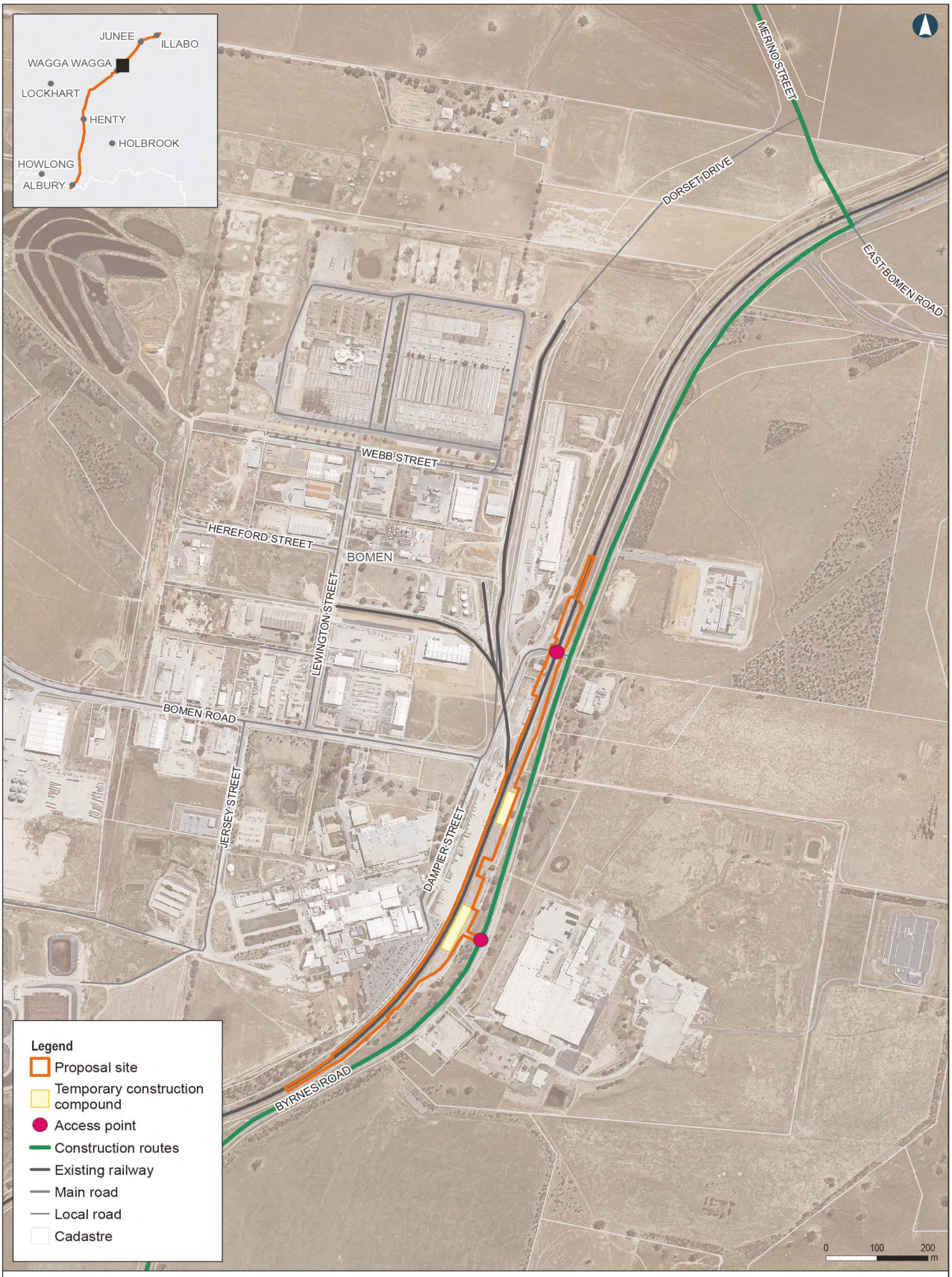


Figure 8-10 Construction layout of Bomen Yard clearances

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:10,000
Paper size: A4
Date: 10/11/2021

210_EAP_F08XX_A4P_Construction_r1v4.mxd

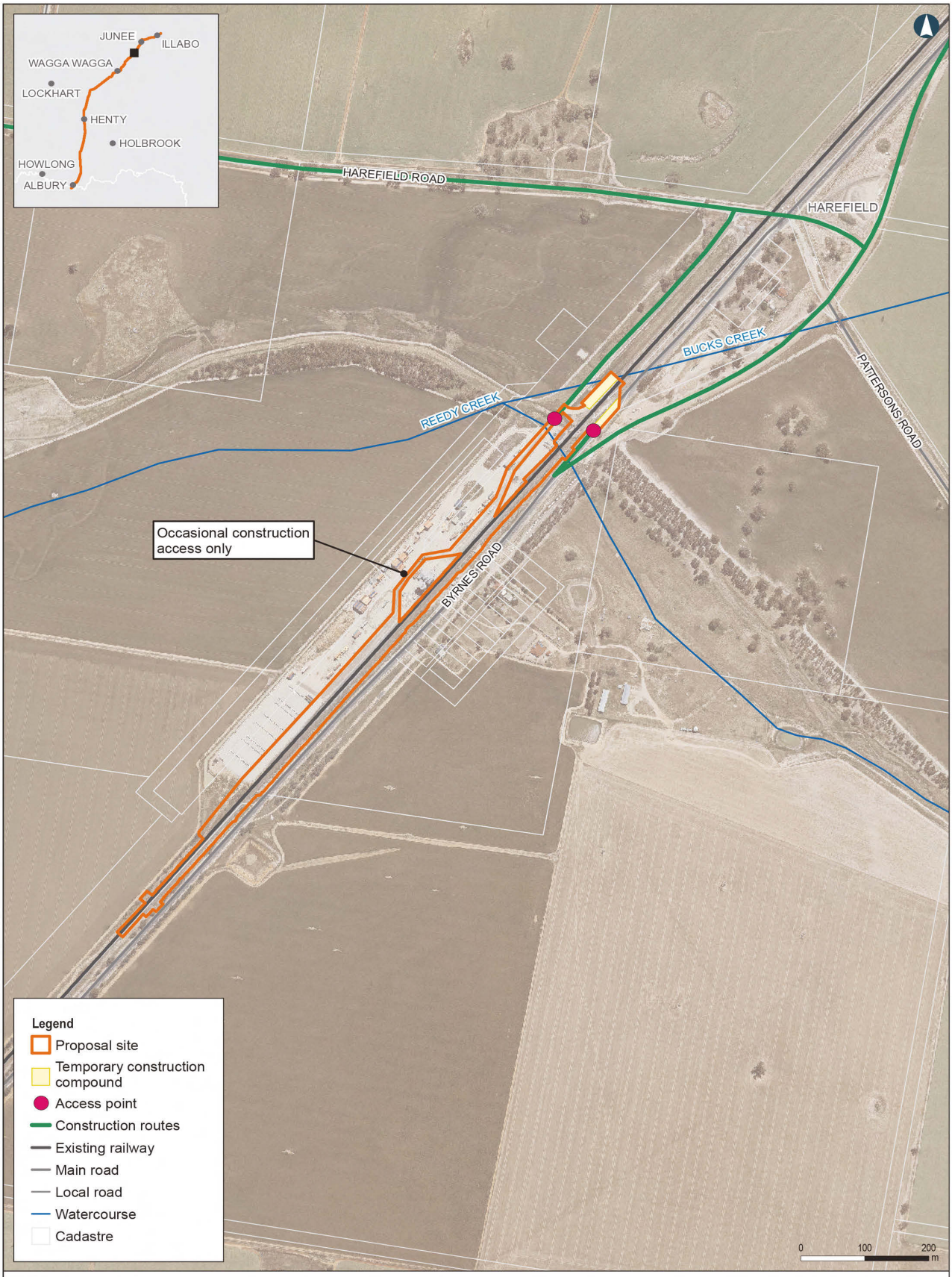


Figure 8-11 Construction layout of Harefield Yard clearances

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:8,000
Paper size: A4
Date: 12/11/2021

210_EAP_F08XX_A4P_Construction_r1v5.mxd

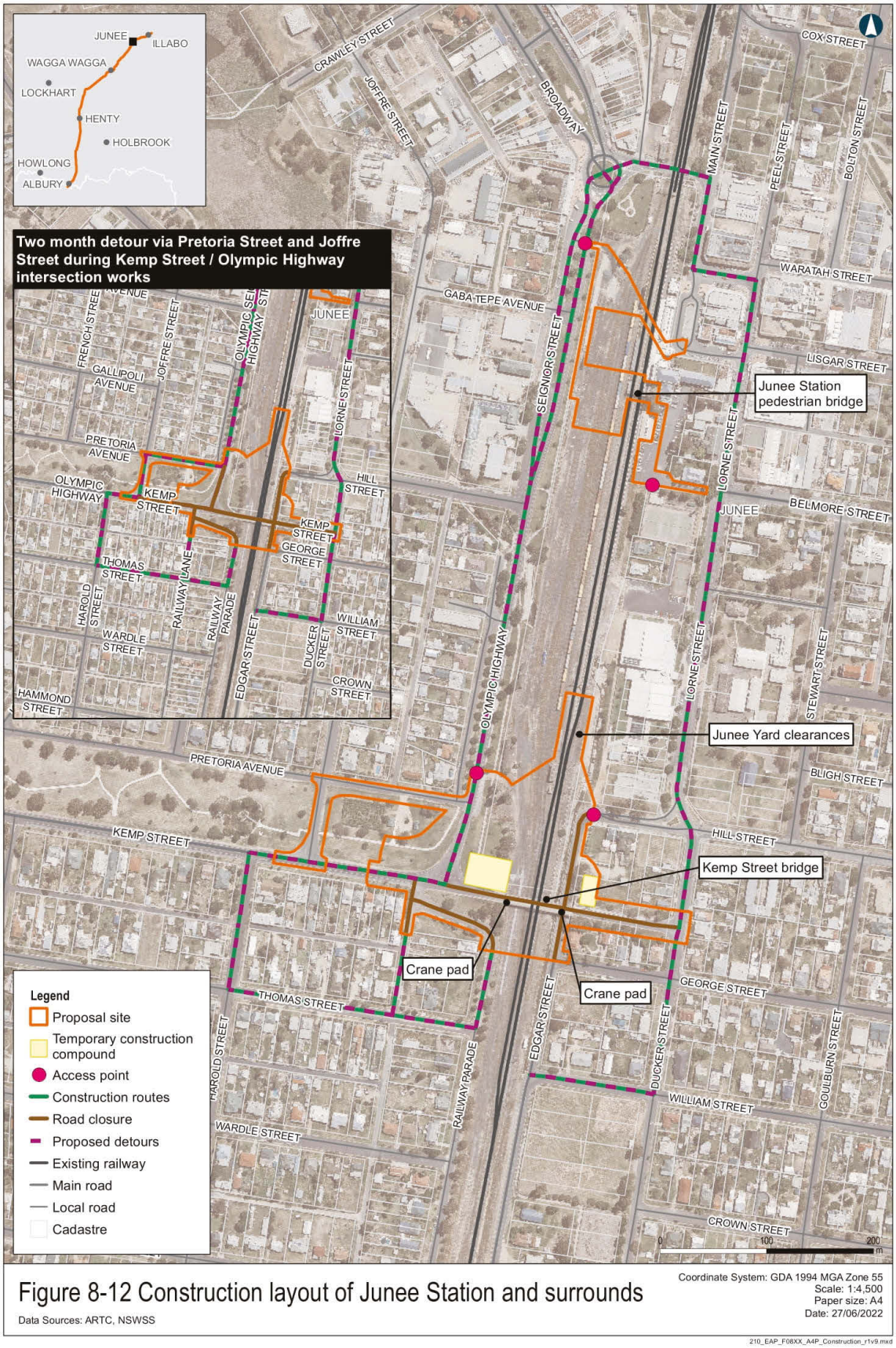


Figure 8-12 Construction layout of Junee Station and surrounds

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:4,500
Paper size: A4
Date: 27/06/2022

210_EAP_F08XX_A4P_Construction_r1v9.mxd

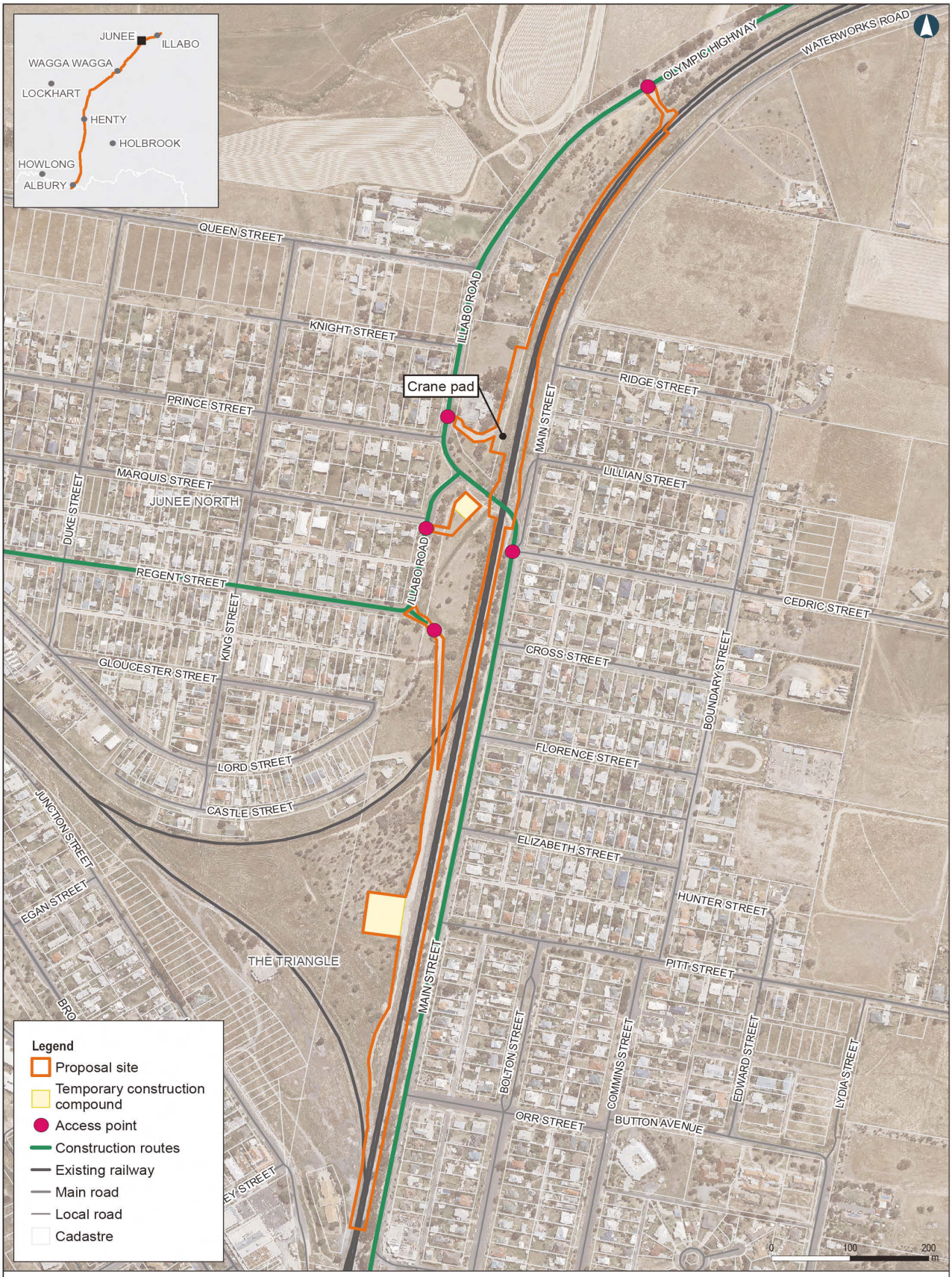


Figure 8-13 Construction layout of Olympic Highway underbridge

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:6,500
Paper size: A4
Date: 15/11/2021

210_EAP_F08XX_A4P_Construction_r1v6.mxd

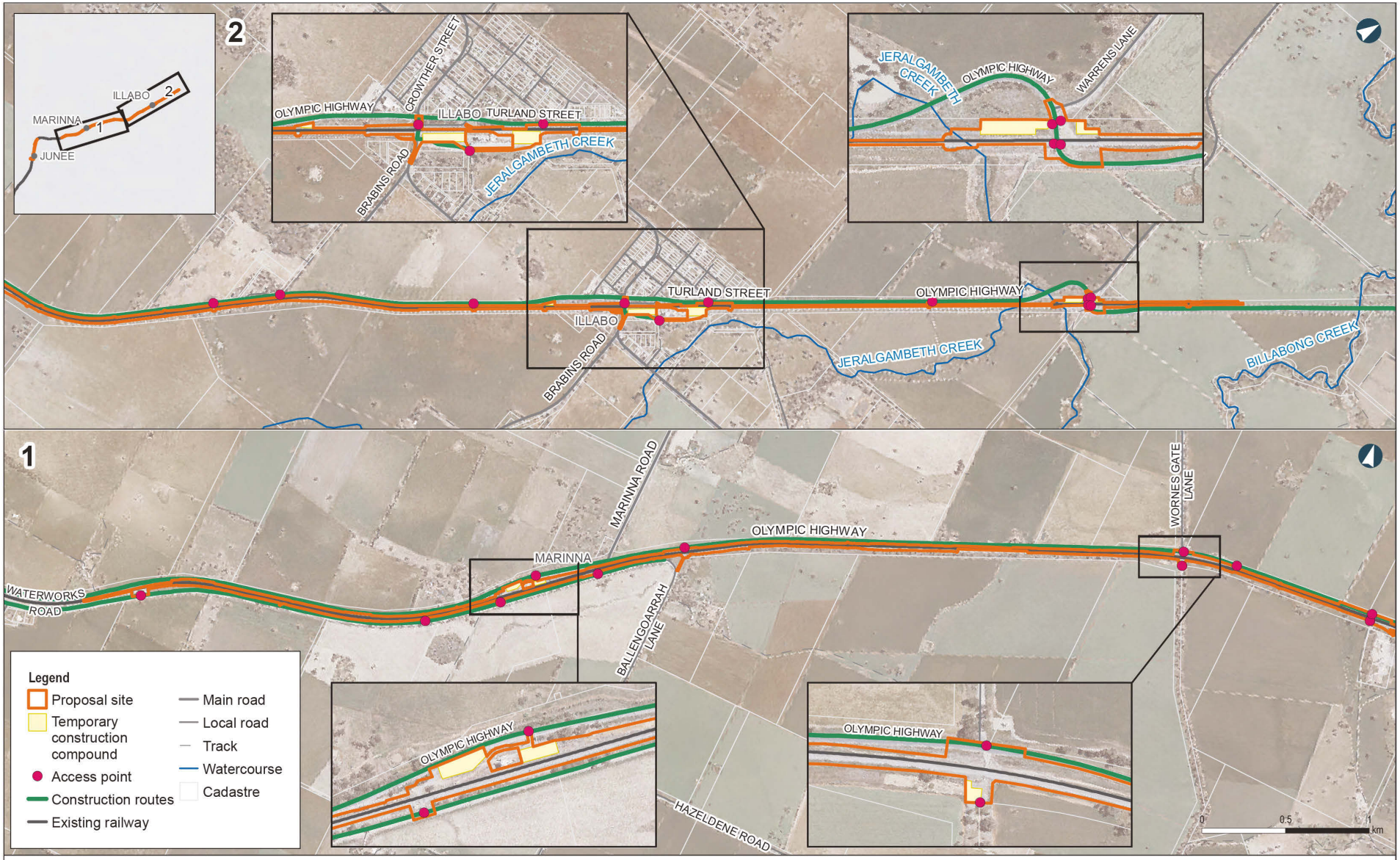


Figure 8-14 Construction layout of Junee to Illabo clearances

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:30,000
Paper size: A4
Date: 10/11/2021

210_EAP_F0814_A4P_Construction_r1v4.mxd

8.8 Transport, access, and haulage arrangements

8.8.1 Construction access and traffic

Indicative access to each enhancement site are shown in Figure 8-1 to Figure 8-14. Deliveries from the wider region would use the regional public road network to link with these access routes.

Temporary access tracks from public roads to a construction compounds would be established, where required, for the duration of construction. All connections to public roads would be designed to the appropriate standard and in consultation with the road manager. Temporary connections to public roads and temporary tracks would be removed when the access is no longer required and would be restored to pre-existing conditions.

Construction vehicle movements would comprise both heavy and light vehicles and would vary across the proposal site depending on the construction activity being undertaken. Light vehicle movements would be predominantly workers arriving and leaving the sites and would peak with the workforce numbers during rail possessions.

Heavy vehicle movements would be due to deliveries of plant and materials and removal of waste and spoil. Heavy vehicle movements would generally peak during removal of waste after demolition or during material deliveries for track works or bridge works. Deliveries and waste removal would be contained to the propose primary construction hours as far as practicable. However, some heavy vehicle movements may be required during out of hours work. Indicative construction traffic volumes and access arrangements are summarised in Table 8-9.

TABLE 8-9 ESTIMATED TRAFFIC VOLUMES AND PROPOSED ACCESS ARRANGEMENTS

	Peak estimated vehicle movements (one-way) in an hour		
Enhancement site	**Light**	**Heavy**	**Construction access arrangements**
Albury Precinct			
Murray River bridge	27	2	Heavy and light vehicle access would be from Olive Street via Willowbank Drive. Light vehicles access would also be via Abercorn Street and Townsend Street. Minor regrading works and placement of geotextile and gravel along the existing unformed section of Townsend Street would occur to ensure it is suitable for light vehicles. This regrading would be limited to the width of the existing track.
Albury Station pedestrian bridge	13	8	Site access would predominantly be from Railway Place via Young Street and Atkins Street. Access to the work on the western ramp would be via Kenilworth Street.
Albury Yard clearances	27	18	The southern access would via the northbound on-ramp to the Hume Highway at the East Street interchange (under traffic management) and the northern access would be via the Hume Highway off-ramp to Borella Road (under traffic management).
Riverina Highway bridge	40	10	Access would be from Wilson Street off Young Street on the western side and the Hume Highway off-ramp to Borella Road (under traffic management) on the eastern side. One off access through The Scots School Albury may be required to establish the piling rig subject to agreement.
Billy Hughes bridge	47	10	Eastern and western compounds would be accessed from Wagga Road via the Wagga Road interchange at the Hume Highway. A private track would be used to access the construction compound to the west of the rail corridor off Wagga Road subject to landholder agreement (Albury City Council). A secondary access would be provided via an existing property access point off R W Henry Drive to the western compound.
Table Top Yard clearances	7	2	Access would be from Perrymans Lane.
Greater Hume–Lockhart Precinct			
Culcairn pedestrian bridge/Culcairn Yard clearances	40	8	Access to the rail corridor and construction compounds would be via Railway Parade. This access is shared with GrainCorp. Access to the signal gantry and the pedestrian footbridge would be from Balfour Street.
Henty Yard clearances	40	8	Access would be via Sladen Street. Access to the southern gantry would be via Railway Parade.

Enhancement site	Peak estimated vehicle movements (one-way) in an hour		Construction access arrangements
	Light	Heavy	
Yerong Creek Yard clearances	40	8	Access would be via Plunkett Street.
The Rock Yard clearances	7	1	Access would be via Urana Street.
Wagga Wagga Precinct			
Uranquinty Yard clearances	27	8	Access would be via Yarragundry Street. A temporary waterway crossing at Sandy Creek would be established to facilitate access to the site to the east of the creek.
Pearson Street bridge	33	3	Access would be via Urana Street near the rail corridor and though the Wagga Show Campground and via Fernleigh Road through the council depot access road. Access to the rail corridor from the north would be via an internal access road from Cheshire Street.
Cassidy Parade pedestrian bridge	13	3	Access from the north would be via Brookong Avenue and Donnelly Avenue/Fox Street. Access from the south would be via Cassidy Parade.
Edmondson Street bridge	20	5	Access from the north would be from Best Street and Little Best Street. Access from the south includes: ▸ Edmondson Street ▸ Mount Erin Heritage Centre driveway off Edmondson Street ▸ Railway Street at the northern end of MacLeay Street.
Wagga Wagga Station pedestrian bridge	13	3	Access from the north would be via Railway Street near MacLeay Street from the south. Access from the north would be via Station Place through the Multicultural Council of Wagga Wagga access gate. Docker Street and Chaston Street would be used to access the gantry proposed to be modified to the west of the Docker Street level crossing.
Wagga Wagga Yard clearances	27	10	
Bomen Yard clearances	27	8	Access would be via Dampier Street and Byrnes Road. A new access point would be constructed into Byrnes Road.
Junee Precinct			
Harefield Yard clearances	47	8	Access would be via Byrnes Road and a private access road off Harefield Road.
Kemp Street bridge	20	8	Access would be from the Edgar Street from the east and the Olympic Highway (Kemp Street and Seignior Street) from the west.
Junee Yard clearances	23	8	
Junee Station pedestrian bridge	7	1	Access would be via Lorne Street from the east and via a Seignior Street from the west.
Olympic Highway underbridge	53	8	Access would be via Illabo Road and Olympic Highway from the east and Main Street near the Olympic Highway from the west.
Junee to Illabo clearances	60	8	Access would be via several locations along the Olympic Highway including at level crossings and culvert works locations. Access in Illabo would be via Junee Street, Crowther Street and Turland Street.

Construction worker parking

Construction workers would be required to drive and park at enhancement sites, or could travel to/from sites via private bus transport arranged by the construction contractor. The numbers of construction workers requiring parking would vary over the duration of the construction program. Generally, workers would arrive at the beginning of a shift in the morning and leave at the end of a shift in the evening. For out-of-hours work, workers would arrive in the evening and leave in the night or morning, depending on shift requirements.

The number of car parking spaces at the construction compounds would be determined during construction planning. Worker parking would generally be contained to the rail corridor. During rail possessions, when the number of workers would likely peak, there may be a need for temporary use of on street and road side parking. Measures to manage any potential parking impacts during construction are discussed in Chapter 9: Transport and traffic.

8.8.2 Traffic management and access

During construction, traffic management measures would be implemented to ensure the ongoing functionality of surrounding roads, and the safety of members of the public, motorists, and construction workers in consultation with relevant road authorities. Over-size and over-mass vehicles would be required for the delivery and removal of large plant and equipment on discrete occasions. There would be a higher proportion of these movements during site establishment and site closure, as large plant and equipment are moved to and from site respectively.

At enhancement sites where temporary road closures are required, access to properties would be maintained or alternative arrangements would be made in agreement with the affected stakeholders. The proposal would also temporarily alter cyclist and pedestrian access through road and pedestrian bridge closures. Temporary traffic and pedestrian detours would be implemented as discussed below.

Temporary detours

Temporary road closures would be required for the road bridge replacements in Junee and Wagga Wagga. Level crossing works would be completed under traffic control to maintain traffic flow, where possible. However, one level crossing at Henty Yard clearances and four level crossings at Junee to Illabo clearances would be closed to complete works. Detours would be established where road or level crossing closures are required.

Pedestrian detours would be required during the replacement of pedestrian bridges at Albury and Wagga Wagga in addition to the road bridge replacements at Edmondson Street bridge and Kemp Street bridge enhancement sites.

Details of temporary detours required during construction are discussed further in section 9.3. The duration of bridge closures, staging of works and the required detours would be further refined during detailed design in consultation with Transport for NSW and other relevant stakeholders.

TABLE 8-10 TEMPORARY DETOURS

Enhancement site	Closure	Approximate duration	Detour summary
Albury Precinct			
Albury Station pedestrian bridge	Pedestrian bridge	6 months	During the demolition of the existing pedestrian bridge and construction of the new pedestrian bridge at Albury Station, pedestrians would be diverted for around six months to the existing bridge infrastructure located around 170 m to the north at Dean Street (a pedestrian bridge). An additional route is also available around 450 m to the south, connecting Atkins Street and Amatex Street.
Greater Hume–Lockhart Precinct			
Henty Yard clearances	Sladen street level crossing	5 days	Traffic would be diverted to the Rosler Parade level crossing located 1 km to the south. Pedestrian movements across the rail corridor during the closure would be maintained.
Wagga Wagga Precinct			
Cassidy Parade pedestrian bridge	Pedestrian bridge	6 months	Temporary pedestrian and cyclist detours would be required while works are carried out on Cassidy Parade pedestrian bridge (see Figure 8-15). Pedestrians would be diverted to the Docker Street level crossing to the west and Wagga Wagga Station pedestrian bridge to the east, while Edmondson Street bridge is under construction at the same time. Closure of Wagga Wagga Station pedestrian bridge is planned to commence after Cassidy Parade pedestrian bridge and Edmondson Street bridge has been reopened to enable pedestrians and cyclists to be detoured to at least one of the bridges during construction works.
Edmondson Street bridge	Edmondson Street	9 months	Pedestrians would be diverted to Wagga Wagga Station pedestrian bridge to the east while works are carried out on Edmondson Street bridge (see Figure 8-15). For vehicular detours, a traffic management strategy would be implemented for motorists to divert to the remaining rail corridor crossings while Edmondson Street bridge is unavailable(see Figure 8-16). Little Best Street would be partially occupied; however, access would be available throughout construction.
Wagga Wagga Station pedestrian bridge	Pedestrian bridge	6 months	Pedestrians would be diverted to the new Edmondson Street bridge over the rail corridor while works are carried out on Wagga Wagga Station pedestrian bridge (see Figure 8-15).

Enhancement site	Closure	Approximate duration	Detour summary
Junee Precinct			
Kemp Street bridge	Kemp Street	8 months	Vehicular, pedestrian and cyclist detours would be required while works are carried out on Kemp Street bridge (see Figure 8-17 and Figure 8-18). Detours would be required for: ▸ vehicles, pedestrians and cyclists using Kemp Street bridge. Traffic would be detoured to the Olympic Highway crossing of the rail corridor approximately 700 m to the north ▸ the Olympic Highway during intersection works. Traffic would travel a short section of local roads via Joffre Street and Pretoria Avenue for around two months. This would require temporary widening of these roads and adjustments to road drainage, as well as a temporary change in priority for detoured traffic at the three impacted intersections, and the temporary removal of on-street parking for the duration of the detour. The temporary adjustments would be removed once the detour is no longer required. Local access to Railway Lane and Railway Parade would also be via Harold Street and Thomas Street for the two months ▸ access to the Olympic Highway via Railway Lane would be closed for the duration of construction. Alternative access to the highway is available via Harold Street ▸ the section of Edgar Street between George and Hill Street would be closed for the duration of the bridge works. The driveway access to rear of the Locomotive Hotel would be maintained.
Olympic Highway underbridge	Footpath	5 days	Temporary closure of the pedestrian footpath under the rail corridor may be required during works on the underbridge around the rail possession.
Junee to Illabo clearances	Waterworks Road level crossing (LX604)	3 days	Motorists would need to use Waterworks Road to travel to/from the Olympic Highway.
	Wornes Gate Road level crossing (LX1472).	5 days	Alternative route using Hazeldene Road would need to be used.
	Shire and Carter property level crossing (LX605).	3 days	Timing of this closure and detour would be coordinated with Junee Shire Council and the landowner. Heavy and light vehicles use this level crossing daily and increased usage occurs during the harvest season. Alternative access is available for the Carter property via Hazeldene Road to travel west (via Ballengaoarrah Lane and Waterworks Road), or east (via Brabins Road). For the Junee Shire Council property (a quarry), alternative access would not be available. Access to this property by council is infrequent but can involve multiple heavy vehicle trips.
	Olympic Highway level crossing (LX603)	3 days	A temporary crossing approximately five metres from the existing level crossing would be constructed to maintain highway access across the rail corridor.

Alternative public transport arrangements

Construction works within the rail corridor would occur during scheduled rail possessions or under track occupancy authorisations. During rail possessions, alternative transport arrangements would be implemented in consultation with relevant stakeholders. Works carried out under a track occupancy authorisation would cause minimal disruption to rail passenger services.

Bus routes would be disrupted during the replacement of Edmondson Street bridge and Kemp Street bridge and level crossing closures at Henty Yard clearances and Junee to Illabo clearances. Adjustments to these bus routes would be determined in consultation with Transport for NSW and the bus operators. This may require adjustment to bus stops to accommodate altered services (refer to Chapter 9: Transport and traffic for further detail on traffic impacts).

A bus shelter on Illabo Street, Junee, may also require temporary relocation to minimise conflicts with the access to the Olympic Highway underbridge construction compound. This relocation would be determined in consultation with Transport for NSW and the bus operators.

Waterway access

During construction on the Murray River bridge, waterway access beneath the bridge would be partially restricted for construction and safety purposes in accordance with the *Marine Safety Act 1998* (NSW). Partial access for watercraft would be maintained by staging the works across the bridge and a Marine Traffic Management Plan would be implemented to minimise potential access impacts to vessels. A temporary exclusion zone would be established in the Murray River in accordance with Transport for NSW requirements including the set-up of navigation marks, buoyage and signage.

All other watercourses within the proposal site are ephemeral and access to these watercourses would be restricted while construction is underway.

Emergency access

Emergency vehicle access to nearby buildings and surrounding areas would be maintained. Emergency vehicles would need to use alternative routes when roads or level crossings are temporarily closed during construction.

Emergency services would be consulted (such as fire, police and ambulance) during the preparation of the site-specific traffic management plans, to obtain requirements for the proposal. An Emergency Management Plan would coordinate these measures and provide a framework for input into the site-specific traffic management plans.

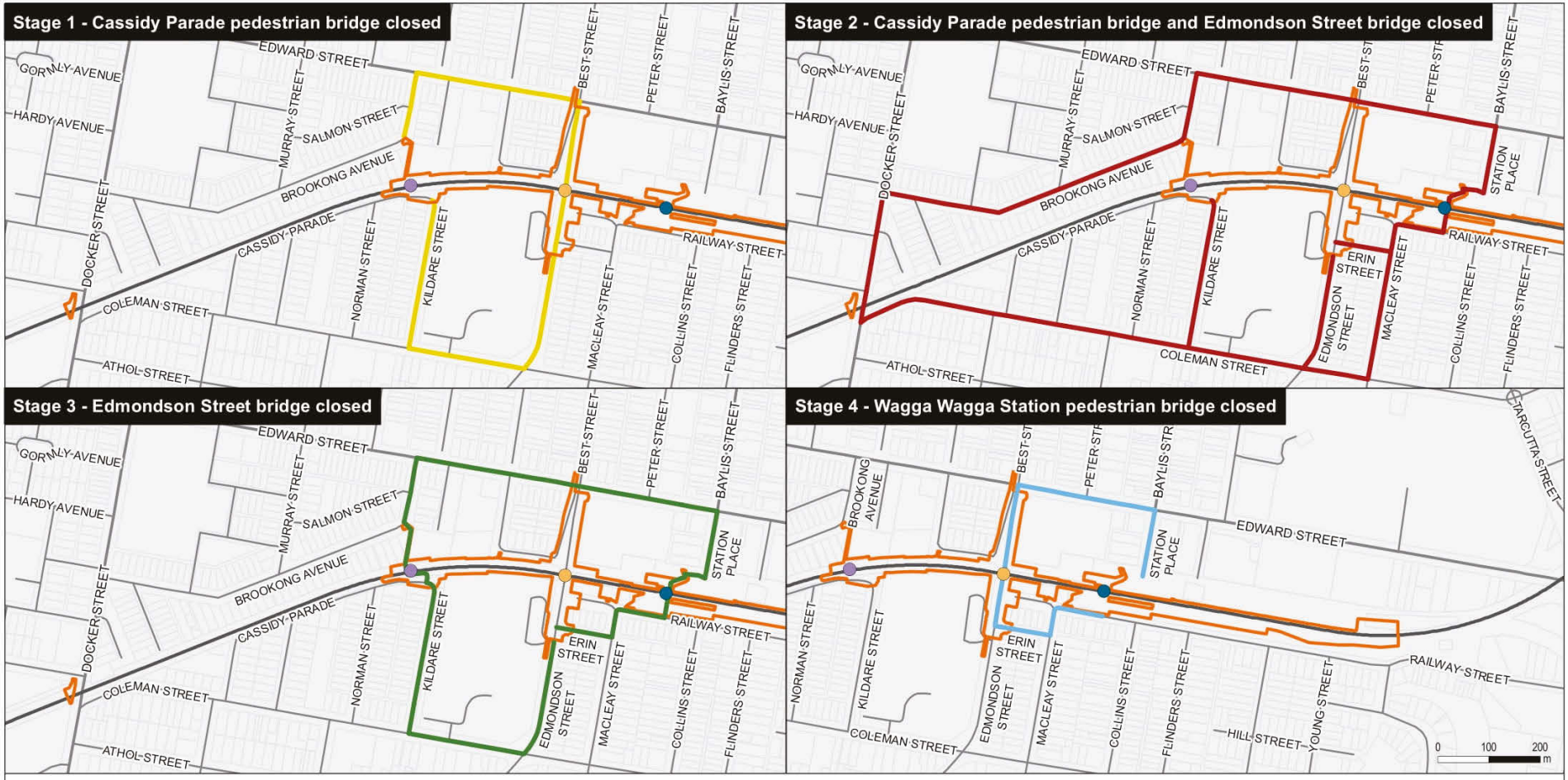


Figure 8-15 Pedestrian detours and staging at Wagga Wagga Station and surrounds

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:11,000
Paper size: A4
Date: 11/04/2022

210_EAP_F0815_PedestrianDetours_Wagga_r1v1.mxd

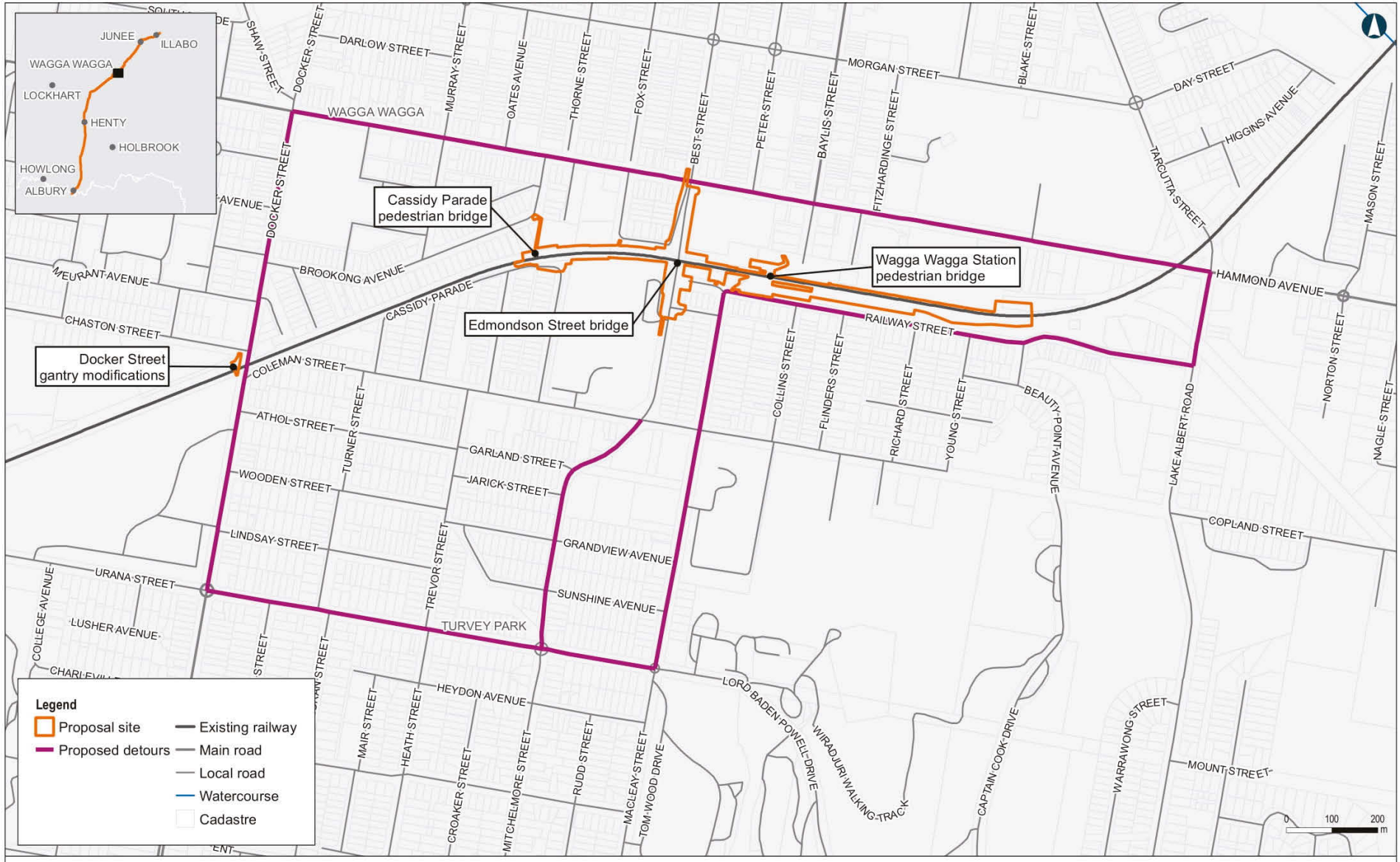


Figure 8-16 Vehicle and cyclist detour during Edmondson Street bridge closure

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:11,000
Paper size: A4
Date: 11/04/2022

210_EAP_F0816_VehicleDetour_Wagga_r1v1.mxd

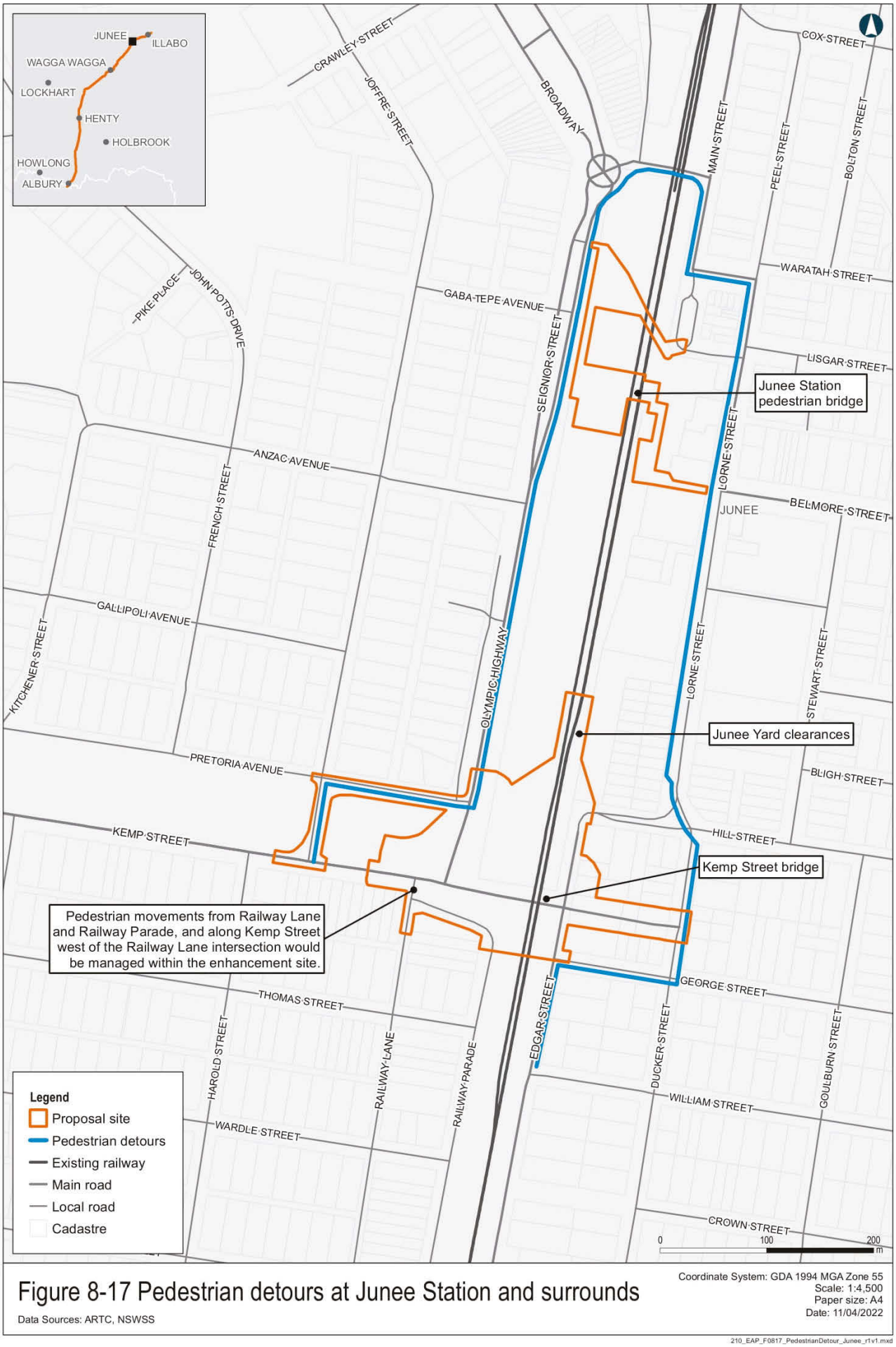


Figure 8-17 Pedestrian detours at Junee Station and surrounds

Data Sources: ARTC, NSWSS

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:4,500
Paper size: A4
Date: 11/04/2022

210_EAP_F0817_PedestrianDetour_Junee_r1v1.mxd

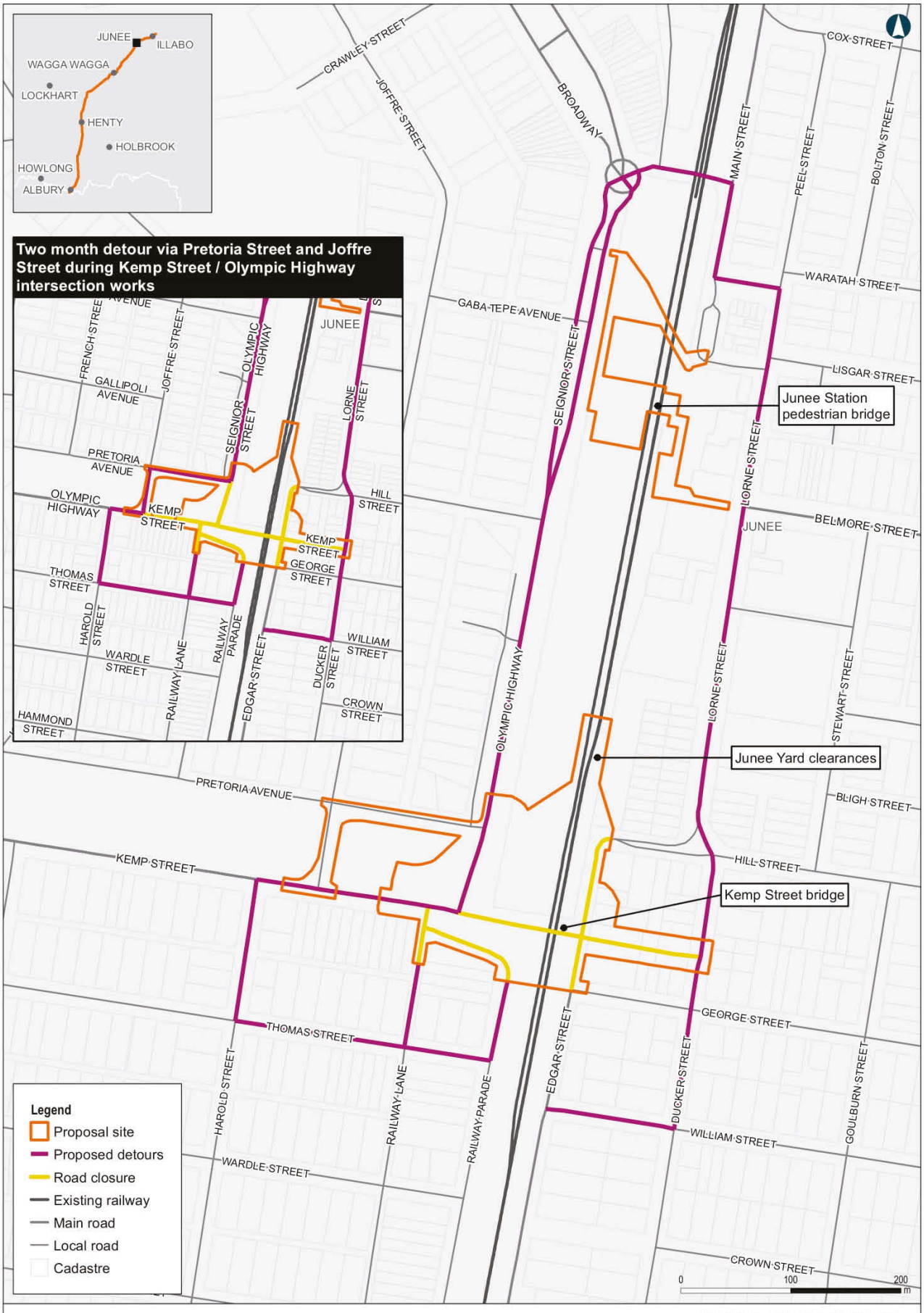


Figure 8-18 Vehicle and cyclist detour during Kemp Street bridge closure

Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:4,500
Paper size: A4
Date: 12/04/2022

Data Sources: ARTC, NSWSS

210_EAP_F0818_VehicleDetour_Junee_r1v1.mxd

8.9 Utilities

Consultation with public utility authorities is being undertaken as part of the design process to identify and locate existing utilities and incorporate utility authority requirements for relocations and/or adjustments. Preliminary investigations have indicated that a number of utilities would need to be relocated or adjusted as part of the proposal. Utilities identified include:

- high and low voltage electrical power lines (Essential Energy)
- water mains and pipelines (councils, Riverina Water and Goldenfields Water)
- sewer mains and pipelines (councils)
- overhead or buried telecommunications (including Telstra, NBN and Optus)
- buried low- and high-pressure gas pipelines (APA and Jemena).

Depending on the interaction, the utilities may remain unaffected, require protection, or require relocation. Additional services investigations would be undertaken during detailed design in consultation with the relevant utility authorities.

These utility relocations and adjustments would generally be contained with the proposal site; however, consultation with utility providers is ongoing and confirmation of the final treatment solution would occur during detailed design.

Appendix D: Utilities management framework has been prepared, adopting a risk-based approach to avoiding and/or minimising impacts associated with the relocation and/or adjustment of public utilities affected by the proposal. The framework provides a consistent approach to the assessment and management of public utilities relocation/adjustment across all proposal activities. This includes where additional assessment and approval may be required for utility works outside the proposal site in addition to any approval granted for this proposal.

Utility works that meet the definition of clause 7(5) of Schedule 5 of the State Environmental Planning Policy (Planning Systems) 2021 do not form part of the proposal. This includes the adjustment, relocation, upgrade or replacement of existing utilities prior to commencement of construction unless:

- existing water flows within or through the rail corridor would be permanently affected, or
- clearing of native vegetation would be required that is likely to significantly affect threatened species within the meaning of Part 7 of the *Biodiversity Conservation Act 2016* (NSW).

Where these works occur before commencement of construction, separate environmental assessments and approvals would be obtained, where required. This could include utility work as described in Appendix D: Utility Management Framework, depending on the final construction methodology and schedule as determined by the construction contractor.