PARMELIA GAS PIPELINE

THORNLIE-COCKBURN LINK RELOCATIONS

ENVIRONMENTAL PLAN BRIDGING DOCUMENT SUMMARY

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			J Hyams	M. Burns	P. Roberts
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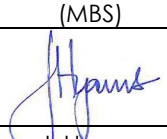
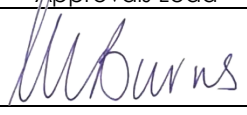
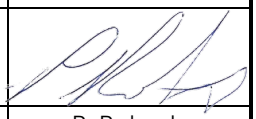
2	24/04/19	IFU			
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table of contents

1. Introduction

The Parmelia Gas Pipeline System (PGPS) comprises the Parmelia Gas Pipeline (PGP), pipeline facilities and associated laterals. APA is the current owner and operator of the PGPS, which takes gas from Dongara to Pinjarra and has been operating since 1972.

APA operates the PGPS according to the current PGPS Environment Plan (EP) (PGP.2373-PL-HSE-0001); the current revision (Rev 2.4; 26/02/2018) was approved by the Department of Mines, Safety and Industry Regulation (DMIRS) on 15 March 2018.

As part of the Public Transport Authority (PTA) Metronet Project in greater Perth, Western Australia, PTA plans to extend the passenger rail link from Thornlie to Cockburn. The Thornlie-Cockburn Link (TCL) will support growth and accessibility across the southern suburbs by providing direct access to employment, sporting and recreation opportunities at Canning Vale, Cannington Strategic Metropolitan Centre, Burswood Peninsula and the eastern Central Business District (CBD).

The TCL project involves laying 17.5 km of new rail line adjacent to the existing Midland to Kwinana freight rail line on this route. Two new train stations, Nicholson Road Station and Ranford Road Station, will also be constructed. The TCL will allow Mandurah Line passengers direct access to the new Perth Stadium without having to go into the CBD to change trains.

To allow the proposed works for the TCL to proceed, the PTA has asked APA to relocate two short sections of the PGP.

1.1 Purpose and Scope

This Summary Document provides an overview of the Thornlie Cockburn Link (TCL) Environment Plan Bridging Document (E-BD), which links relocation works for the TCL to the PGPS EP. The TCL E-BD and Summary Document were prepared in accordance with the Petroleum Pipelines Act 1969, Petroleum Pipeline (Environment) Regulations 2012, the Guideline for the Development of Petroleum and Geothermal Environment Plans in Western Australia (Department of Mines and Petroleum (DMP) 2016) (EP Guidelines) and the Guidance Note – Environmental Performance Objectives, Environmental Performance Standards and Measurement Criteria for Petroleum Environment Plans (Department of Mines, Industry Regulation and Safety (DMIRS) 2018.

1.2 Objectives

The overall environmental objectives of the E-BD are to:

- Minimise environmental and social impacts resulting from the works;
- Mitigate all identified environmental risks to be as low as reasonably practicable (ALARP) and acceptable;
- Comply with all relevant environmental regulations and adopted standards; and
- Minimise disturbance to surrounding landholders.

The scope of the E-BD includes all works associated with relocation of the PGP to allow for construction works by the PTA, including: site preparation, construction and

installation of the relocated section of pipeline, live line welding of "hot tap" fittings, construction of bypass piping, horizontal directional drilling (HDD), commissioning, tie-in, and removal or permanent safe abandonment of the redundant section of the PGP.

1.3 Operator Contact Details

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2. Description of Activity

2.1 Timing

The site work is expected to commence in September 2019, and last up to approximately 6 months. An indicative schedule is provided in below.

Table 1: Indicative Project Schedule

Aspect	Proposed Start Date	Approximate Duration
Project mobilisation and works	September 2019	6 months
Demobilisation	February 2020	2 weeks

2.2 Location and Layout

The project will take place at the two separate PTA sites, designated 'Glen Iris Tunnel' and 'Ranford Road'.

The Glen Iris Tunnel is located approximately 15km south of the Perth CBD (Figure 1) at the interface of the PTA rail easement and Kwinana Freeway. The site straddles the Kwinana Freeway in an east-west direction. The construction alignment abuts residential and recreational areas to the south, and State Energy Commission and Public Purpose crown land accommodating Western Power infrastructure and training facilities to the north.

The planned Ranford Road Station is approximately 14km south-east of the Perth CBD at the interface of the PTA rail easement and Ranford Road. The site straddles Ranford Road

and abuts public purpose, public open space and residential areas to the south and general industry and mixed business areas to the north.

The sites have been largely cleared for infrastructure construction and operations. The environmental setting of the works under this E-BD is described in detail in Section 3, and measures to protect the environment from potential impacts described in Section 4.

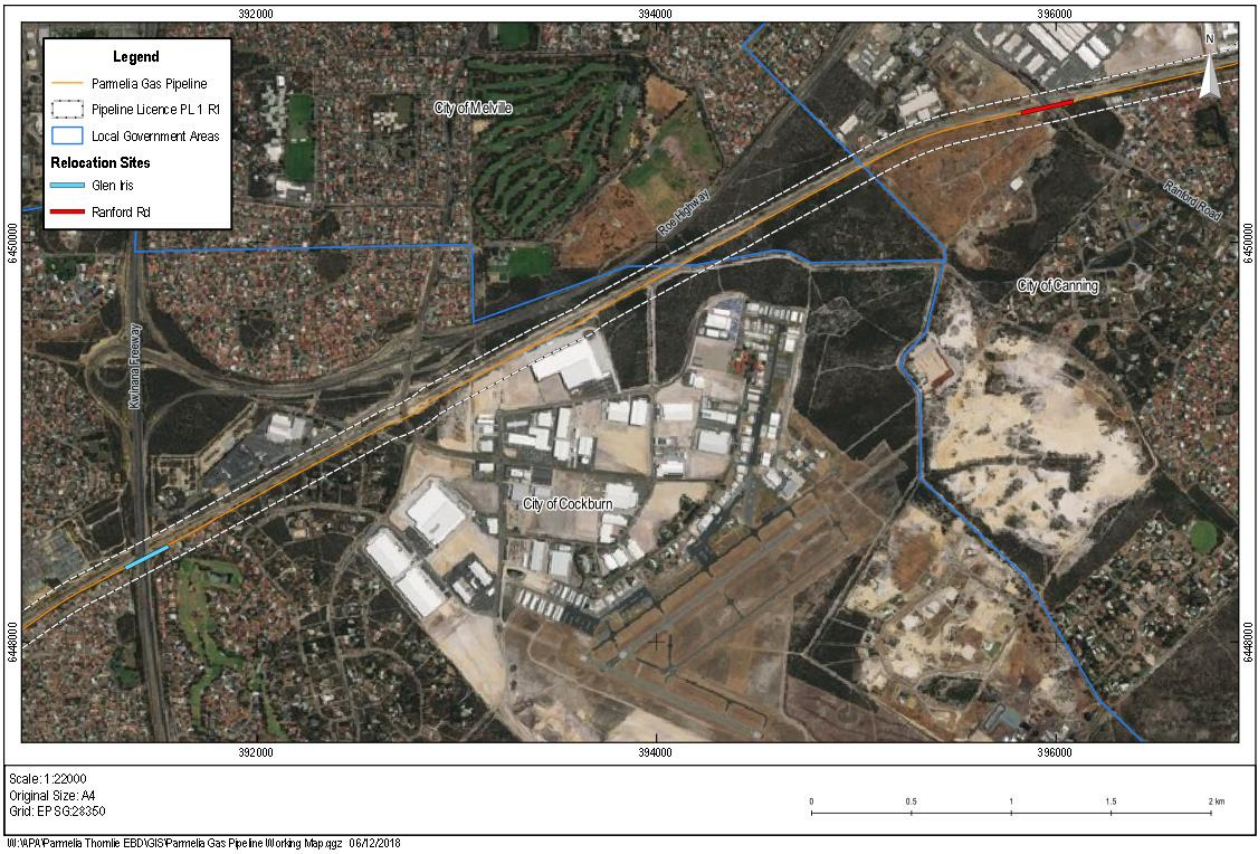

Figure 1: Location & Layout

2.3 Key Activities

Activities associated with the works are summarised in Table 2. Supporting services required for the activity include water supply, power generation, chemical storage and waste management.

Table 2 TCL Activity Summary

Activity	Description
Mobilisation	Transport of machinery, plant and equipment to site, establishment of laydown and site support workspaces.
Survey	The existing PGP and other buried services will be located and marked out on the ground. The Construction Right of Way (CROW), excavation locations, and ancillary workspace will be surveyed and marked out ahead of ground-disturbing works.
Clear and grade	Removal of vegetation in accordance with native clearing permits.
Pipe Assembly	Pipe will be delivered to the CROW and laid out end-to-end alongside the existing alignment. Individual pipe segments will be placed on raised timber skids or sandbags to protect them from damage, and facilitate welding into continuous lengths (pipe strings). A pipe string ~300m long will be fabricated at each site. Where necessary, pipes will be 'cold bent' on site using a hydraulic pipe bender, to allow the pipe string to follow the new pipeline alignment and conform to local topography. As individual pipe lengths are welded into the pipe string, the welded joints will be inspected and x-ray tested (NDT), garnet-blasted to remove surface scale and rust, then coated with a high build epoxy (HBE).
Hydrostatic strength testing	Post-NDT but prior to joint coating, the pipe string will be hydrostatic pressure tested to confirm design compliance. The test will be conducted above ground with all welds exposed and typically four hours in duration. The interior of the pipeline will be pre-cleaned with "pigs" to remove weld debris, dust and surface scale then flushed with potable, additive free water (approx. 2kL per section). Approximately 120kL of water (in total) will then be used for strength testing. Water will be reused where possible or discharged to site in a controlled manner to reduce erosion, waterlogging or other impacts.

Activity	Description
Excavation	Excavations for hot-tap will occur, comprising a total of four (4) bell holes approximately 5 m^2 and 3.0 m deep. Minor excavations for HDD sumps, potholing and asset identification will also occur. Topsoil and vegetation, which will be stockpiled no greater than 2 m high, on the side of the CROW. Excavation spoil will be stockpiled separately.
Pipe Installation (Horizontal Directional Drill)	The fabricated pipe will be installed in the new alignment via subsurface Horizontal Directional Drill. Drill rig will be mobilised, pilot hole drilled, back reamed, clean-out pass completed and the strings pulled into place. Minor excavation for drill sumps will be required and additional shallow drill shots will be required to install return mud lines.
Wet excavations	Depending on rainfall, some surface water run-off may collect in sumps or bell holes. Saturated or inundated ground may be encountered, particularly in lower-lying areas. In such areas, the excavations may be dug into wet ground, and surface water redirected to other areas of the site. Dewatering is not anticipated.
Dewatering	Open excavation below the water table is not expected. In the unlikely event that dewatering is required, activities will be implemented in accordance with DWER guidelines (DoW 2012), using either spears or sump pumps. Where spears are used they will be installed to a maximum depth of 1 m below the maximum drawdown level to avoid over-abstraction. Potential acid sulfate soils (PASS) occur at one location within the project area. No open excavations will disturb PASS, with the only disturbance being a small amount of bore spoil, which will be managed in accordance with the DWER guidelines (DER 2015) and an Acid Sulphate Soils and Dewatering Management Plan (ASSDMP).
Backfilling	Suitable stockpiled excavation spoil will be returned to the excavation area and compacted after the works are completed. If required, clean, approved locally-sourced fill will be imported to make up any shortfall where trench spoil is deemed unsuitable for backfill. Topsoil removed during clear and grade will then be re-spread and contours reinstated.

Activity	Description
Hydrotesting	The new section of buried pipeline will be hydrostatically tested. The pipeline will be filled with water, and once full, pressurised to about 125% of operating pressure. The pressure will then lowered and held for up to 24 hours, and monitored for pressure falls that may indicate a leak. Approximately 120kL (in total) of potable, additive free water will be used for strength testing. Water will be reused where possible or discharged to site in a controlled manner to reduce erosion, waterlogging or other impacts.
Bypass and Tie-in	The existing live PGP will be exposed via excavation and temporary bypasses installed by "hot tapping" into the live line, to allow the gas supply an alternate flow path. Special "stops" will plug the live line and divert gas through the bypasses, allowing the existing line to be cut and the new pipeline section to be welded onto the existing line. The tie-in welds will be inspected and tested.
Commissioning	The new section of pipeline will be purged with nitrogen gas then filled with natural gas. Upstream and downstream plugs will be removed, and gas will be able to flow through the new pipeline. Residual gas in the old line will be vented and combusted in a controlled manner. Hot Tap and Line Stop equipment will be removed, remaining flanges will be plugged and blind flanges installed. The remaining bell-holes will be filled in. The new pipeline and tie-ins will be surveyed.
Removal of old pipeline	Once the new pipeline is commissioned, the old pipeline will be uncovered, inspected, cleaned as required, removed, cut into transportable sections and stockpiled for removal to a recycling facility. Spoil will be returned to the old pipeline trench and the natural ground levels reinstated. A small section of old pipeline is unrecoverable and will be decommissioned insitu by filling with environmentally inert material to stabilise and prevent void collapse.
Rehabilitation	Upon completion of activities, appropriate levels will be restored to minimise potential for erosion, stockpiled topsoil and cleared vegetation will be respread where appropriate and secured as necessary to prevent migration. Follow-on works for PTA development will influence rehabilitation decisions.
Demobilisation	Disassembly of any temporary infrastructure, machinery and equipment. Removal of all equipment from the site.

3. Existing Environment

3.1 Regional Setting

The work sites under the TCL E-BD are situated within the Swan Coastal Plain Bioregion and SWA2 Swan Coastal Plain subregion, as defined by the *Biogeographic Regionalisation for Australia* version 7 (IBRA; DoEE 2012).

The Swan Coastal Plain is a low lying coastal area dominated by fixed dunes of quaternary sand with subordinate alluvium, peat and lacustrine deposits overlying Permian sediments, featuring a significant number of wetlands (Mitchell *et al*. 2002). Soils of the Swan Coastal Plain are dominated by sandy acidic yellow mottled soils with associated leached sands and clays. The plain is mainly covered with woodlands. It is dominated by Banksia or Tuart on sandy soils, *Casuarina obesa* on outwash plains, and in the east, the plain rises to duricrusted Mesozoic sediments dominated by jarrah woodland.

The work sites lie in the southeastern metropolitan area of Perth. To the north, west and south, land has been largely developed for residential and light industrial use. To the east are the foothills of the Darling Scarp, where native remnants and conservation reserves are more common.

3.2 Wetlands

The nearest wetland, as mapped in the Department of Biodiversity, Conservation and Attractions (DBCA) *Geomorphic Wetlands of the Swan Coastal Plain* (DBCA 2018a), to the Glen Iris site (UFI 13320 – Multiple Use) is approximately 900m to the west of the site. Two unnamed wetlands (UFI 6910 – Conservation; UFI 6911 – Conservation) are located to the immediate southeast of the Ranford Road site (Figure 2.) It is not expected that works at either site will impact these wetlands.

The nearest Ramsar-listed Wetland (Forrestdale and Thomson's Lake) is located approximately 4.8 km south of the Glen Iris site.

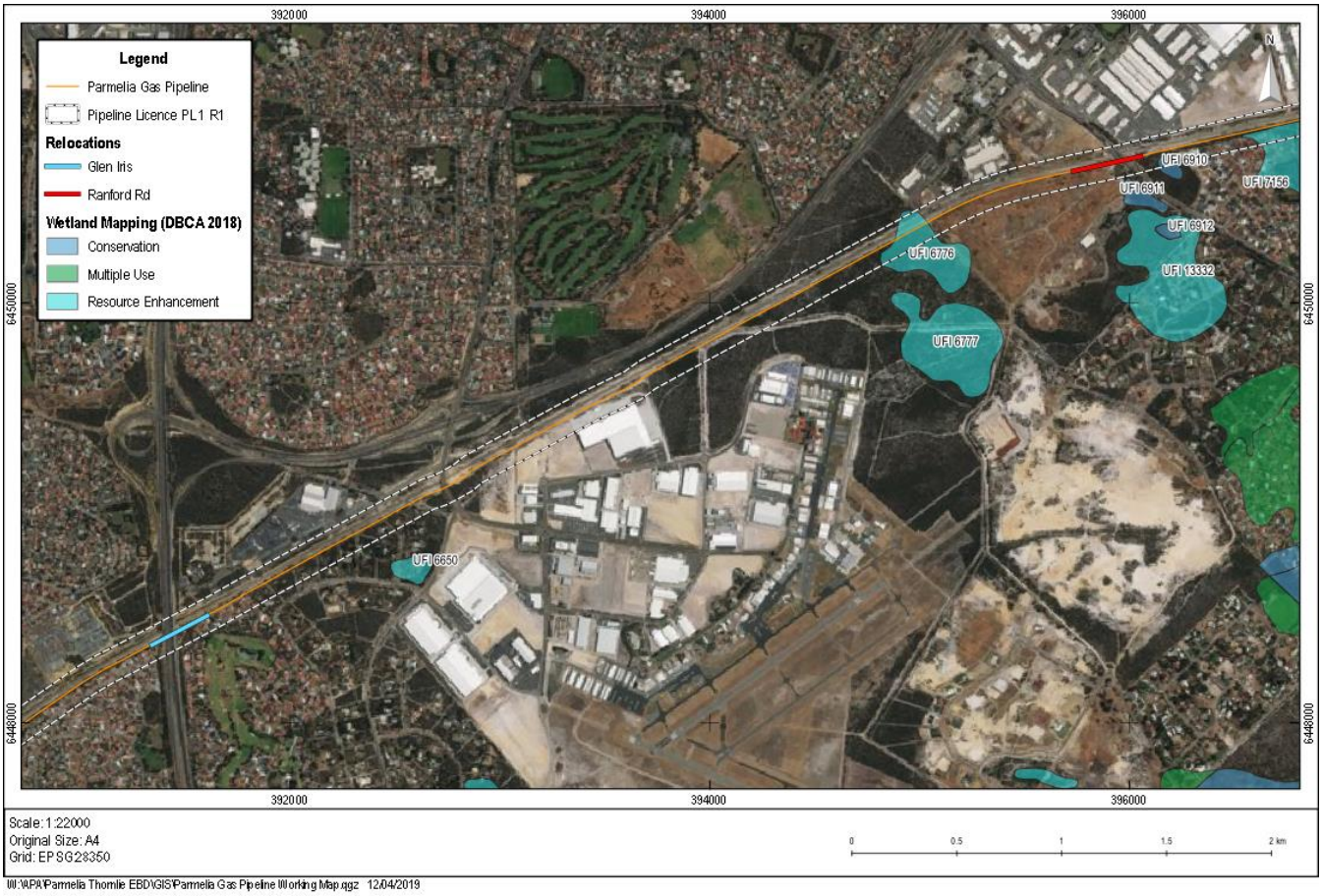

Figure 2: DBCA Wetland Mapping (DBCA 2018)

3.3 Environmentally Sensitive Areas And Bush Forever Sites

An Environmentally Sensitive Area (ESA, as declared under Section 51B of the EP Act) corresponds to the Jandakot Airport Bush Forever Site (388) and Bush Forever Site 245 (Ken Hurst Park) (Figure 3). Another ESA lies to the immediate east of the Ranford Road site, and is a buffer area around an unnamed wetland site, discussed in Section 3.2.

Bush Forever Site 388 (Jandakot Airport) is the nearest Bush Forever site to the work sites, located approximately 85 m south of the Ranford Road relocation site on the southern side of Ranford Road and extending to the southwest. Works at Ranford Road will not impact this Bush Forever site.

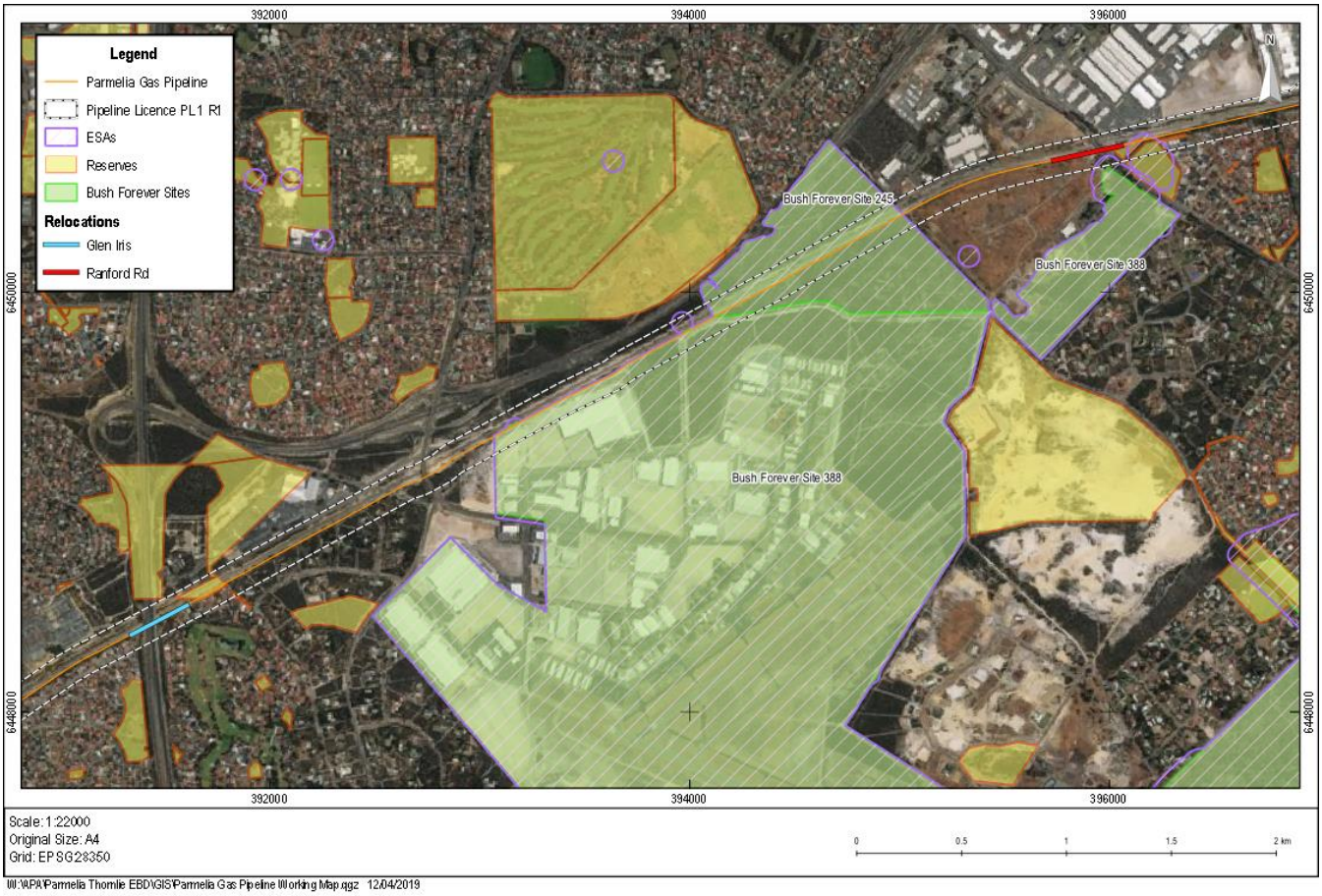

Figure 3: Environmentally Sensitive Areas, Bush Forever Sites, and Reserves

3.4 Geology and Soils

The sites are located within the "Bassendean" soil system, described as 'Sand dunes and sandplains with pale deep sand, semi-wet and wet soil. Banksia-paperbark woodlands and mixed heaths' (DPIRD 2018). The western extent of the Ranford Road borders the "Pinjarra" system, described as 'Poorly drained coastal plain with variable alluvial and aeolian soils. Variable vegetation includes Jarrah, marri, wandoo, paperbark sheoaks and rudis' (DPIRD 2018).

Geology at the Glen Iris site is summarised as:

Surficial geology (excavation depths, <3m) – thick Bassendean Sand, possibility of up to 5 m of fill material from works to existing Mandurah train line and Kwinana Freeway.

Subsurface geology (drilling depths, <20m) – sand and clayey sand. Bedrock located at -5 to -50m Australian Height Datum (mAHD). Coffee rock seams are highly unlikely.

Geology at the Ranford Road site is summarised as:

Surficial geology (excavation depths, <3m) – thick to thin Bassendean Sand over clayey soils of the Guildford Formation (very stiff).

Subsurface geology (drilling depths, <20m) – primarily Bassendean San with possibility of stiff clay. Bedrock located at -5 to -20mAHD. Coffee rock seams may be present.

The project is located in the Swan Province, which has been described at the regional level (Tille 2006) as pale and yellow deep sands, semi-wet and wet soil, sandy and loamy gravel, calcareous deep sands and grey deep sandy duplex. The Swan Province corresponds with the Swan Coastal Plain.

The proposed work sites sit within the Bassendean Zone, described by Purdie et al. (2004) as 'Mid-Pleistocene Bassendean sand. Fixed dunes inland from coastal dune zone. Non-calcareous sands, podsolised soils with low-lying wet areas'.

3.5 Acid Sulfate Soils

The work sites are located entirely within areas rated as Class II, '*moderate to low risk of ASS occurring within 3 m on natural soil surface, but high to moderate risk beyond 3 m of natural soil surface*' (DWER 2018b).

This classification indicates that the surface excavations for the works under this E-BD are unlikely to expose ASS, but that HDD bore alignments may intersect ASS at depth.

Any ASS material will be managed in accordance with DWER guidelines (DER 2015) and an Acid Sulphate Soils and Dewatering Management Plan (ASSDMP).

3.6 Hydrology

Topography around the work sites is gently undulating; the Glen Iris site has a vertical range of approximately 10 m Australian Height Datum (mAHD) and the Ranford Road site has a vertical range of approximately 9 mAHD. The natural topography and hydrology of the areas around the sites has however been substantially altered by urban and infrastructure development.

The Glen Iris site lies within the Lake Coogee subcatchment of the Bartram Road Catchment. Land use within the Bartram Road catchment is generally medium density residential with the catchment discharging into Thompson Lake (DoW 2011). The Ranford Road site is located within the Bannister Creek subcatchment of the Lower Swan catchment. Bannister Creek is a permanently flowing subcatchment has been largely cleared for industrial and residential land use that discharges into the Canning Estuary (DoW 2017).

There are no perennial or non-perennial watercourses close to the work sites. The nearest watercourse (Canning River) is located approximately 6.3 km northeast of the Ranford Road site. Two unnamed wetlands are located close to the Ranford Road site.

3.7 Hydrogeology

The project lies within the Perth Groundwater Area and the Perth South Confined groundwater sub-area, proclaimed in the *Rights in Water and Irrigation Act 1914*. The Glen Iris site straddles a Priority 3 Public Drinking Water Source Area (P3 | Jandakot Underground Water Pollution Control Area).

The Perth Groundwater Map (DWER 2018a) indicates that depth to watertable ranges from approximately 14 to 18 metres below ground level (mbgl) at the Glen Iris site and 8

to 9mbgl at the Ranford Road site. No dewatering is expected to be necessary for the works under this E-BD.

3.8 Vegetation and Flora

Vegetation within and around the work sites is highly disturbed and has been largely cleared during previous works for the PGP and existing train line. Any clearing that takes place during the works under this E-BD will be minor in nature and limited to previously cleared vegetation, as permitted under the current clearing permit for the PGPS.

A search of the NatureMap database was completed for each of the relocation sites in December 2018. Search results indicated that four conservation-significant flora species have been recorded within 1km of the realignment sites:

- Grand Spider Orchid (Caladenia huegelii) – Ranford Road site only – Listed as Threatened under the WC Act and Endangered under the EPBC Act. The species is most commonly found on well-drained grey sandy soils in banksia/jarrah/casuarina between Wanneroo and Busselton.
- Synaphea sp. Fairbridge Farm (D. Papenfus 696) – Ranford Road site only – Listed as Threatened under the WC Act and Critically Endangered under the EPBC Act. The species occurs on grey clayey sand with lateritic pebbles on low woodland areas and ranges between Serpentine and Dardanup.
- Styphelia filifolia – both sites – Listed as P3 by DBCA. Generally occurs on deep Bassendean sands from Dandaragan to Harvey.
- Tripterococcus sp. Brachylobus (A.S. George 14234) – Ranford Road site only – Listed as P4 by DBCA. Ranges from Dandaragan to Augusta.

None of these species are endemic to the work sites. Site management measures will be implemented to control disturbance and minimise impacts to vegetation and flora.

The locality of the work sites is highly disturbed, and historical land use has resulted in the introduction of numerous weeds. The EPBC Protected Matters database identifies 19 weeds of national significance (WoNS) that are likely to occur within 1km of each of the sites (DoEE 2018).

Site management measures will be in place to manage the threat of weed spread.

3.9 Fauna

The project area is predominantly cleared and it is unlikely that any conservation significant fauna species are reliant on habitat present. Conservation significant fauna in the region are more likely to occur in larger areas of better quality available, such as the surrounding geomorphic wetlands and the Jandakot Airport Bush Forever site.

Habitat to be cleared is in degraded condition and clearing is unlikely to impact the conservation status of any fauna in the region.

3.10 Social Environment

The Glen Iris and Ranford Road sites lie within the City of Cockburn and City of Canning respectively. The project areas have been used for farming since at least the 1850s and

are now a mix of residential, recreational, general industry, mixed business, and public purpose areas.

Surrounding land use at the Glen Iris site is largely residential, but includes Western Power infrastructure to the north-west, and a golf course to the south-east. Surrounding land use at the Ranford Road site includes the Canning Vale Markets site, the Regional Resource Recovery Centre and a bulk earth supplier to the north, with the Canning landfill and recycling facility to the south-west.

TCL activities will result in a temporary increase in, and some minor interruptions to, local traffic. Overall, no significant impacts to community or economy are anticipated.

There are no reported contaminated sites within the project area.

3.11 Heritage

No Registered Aboriginal Sites or Other Heritage Places occur within the project area (DPLH 2018).

No European heritage places occur within the project area.

No adverse impacts to Aboriginal or European heritage are expected.

4. Environmental Management

Environmental management will be implemented in compliance with the APA ISO14001 aligned Health, Safety and Environmental (HSE) Management System which provides for:

- communication of policies, objectives and roles and responsibilities
- inductions, training and competency of personnel
- monitoring, auditing, record keeping and reporting, including dedicated hazard and incident reporting system
- management of non-conformances and corrective actions
- development, tracking and ongoing maintenance of documentation
- emergency preparedness and response
- toolbox talks

A risk based approach has been adopted to manage potential threats to the environment. This process involved initial identification of environmental interactions (aspects) resulting from project activities followed by an environmental risk assessment (ERA) workshop attended by key personnel. The ERA process involved:

- assessment of environmental risks in terms of likelihood and consequence
- identification of mitigating factors and management measures to reduce environmental risks to ALARP and acceptable
- risk ranking according to severity

A summary of the key environmental hazards, control measures and mitigating factors identified for the .TCL has been provided in Table 3. Table 3 only provides an indication of major hazards and controls and is not a comprehensive summary of all commitments associated with the TCL. A comprehensive environmental risk assessment is included in the E-BD.

Table 3: Key environmental hazards and control measures

Environmental Hazard	Control Measures and Mitigation Factors
Disturbance of Heritage.	• Search of Heritage registers. • Construction boundaries clearly delineated to prevent disturbance of heritage sites. • Works to cease and DPLH notified immediately if suspected heritage artefacts identified. • Implementation of APA Cultural Heritage Procedure.
Disturbance of vegetation	• Clearing of native vegetation minimised. • Construction boundary clearly marked out to prevent over-clearing or encroachment of works into adjacent areas. • Vegetation and topsoil cleared for construction and stockpiled separately in adjacent areas, topsoils re-spread after backfilling trench, then any stockpiled vegetation respread. • Clearing implemented in accordance with APA Native Vegetation Management Procedure (APA HSE EP 13.02.01) including: • Protection of vegetation which has not been authorised for clearing by establishing exclusion zones; • Ensure suitably qualified personnel onsite during clearing.
Disturbance to fauna	• Established roads used for access where practicable. • Night works minimised. • Trenching and excavation activities controlled – regular trench inspections and clearing. • Escape ramps for fauna installed in open trenches. • Trained and competent handlers for fauna removal (if required).
Soil erosion and degradation	• Vehicles to remain on existing roads/tracks or within designated areas at all times • Topsoil removal and storage controlled and maintained to minimise erosion; including stockpiling away from watercourses. • At completion of works, topsoils to be re-spread over disturbed areas then cleared vegetation re-spread over topsoil. • Soil erosion berms, drains and sediment barriers installed where required for erosion protection.
Acidification of soils and water through disturbance of Acid Sulfate Soils.	• Identification of PASS zones and minimising open excavations in those areas. • Identification and management of ASS in accordance with DWER Guidelines and ASSDMP • Identification of bore spoils from potential ASS (PASS) zones and stockpiling separately to non-PASS substrates. • Spraying liquid/hydrated lime media on PASS zone excavation walls that have been exposed by dewatering. • Neutralising excavated PASS with aglime or an appropriate neutralising agent within 18 hours of excavation. • Only using treated PASS onsite after validation testing has been completed (pHF/pHFOX and SPOCAS suite). • Supervision of ASS management by a suitably qualified consultant.

Environmental Hazard	Control Measures and Mitigation Factors
Contamination from spills or leaks of hydrocarbons or hazardous chemicals / materials	• Chemical register and SDS maintained for all hazardous substances on site. • Storage of hazardous substances in accordance with SDS and safety specifications • Use of bunds and drip trays • Spill response equipment kept on site • Implementation of the EP Emergency Response Plan and Oil Spill Contingency Plan, which includes management of hydrocarbon and chemical spills. • Regular checks and maintenance of machinery, plant and equipment. • Hydrocarbon and chemical storage sited well away from drainage lines. • Refuelling carried out as far as practicable from drainage lines or water bodies
Incorrect waste disposal	• Regular emptying of rubbish bins to prevent overfilling and spillage • Waste taken off site for disposal at a facility appropriate for its class. • Records kept of waste disposal • Bins covered to prevent spills, windblown waste, and access by fauna
Ignition of fire	• Fire response equipment maintained on site • Local fire response in accordance with ERP • Adherence to site access restrictions i.e. total fire ban days • Hot works fire ban exemption (DFES) where required • Permit system in place for hot works • Flammable materials to be removed from areas around ignition sources i.e. welding bays • No parking over vegetation (engines to be stopped) • Increased gas monitoring in place for landfill site
Introduction and/or spread of weeds and introduced flora	• Vehicle movements remain on designated roads at all times. • Construction footprint kept as small as practicable to minimise disturbance of existing weeds. • Ground disturbing equipment to be clean upon arrival and departure.
Dust/Air emissions	• Water truck on site for dust suppression as required • Vehicle movements compliant with speed limits • Topsoil stockpiles limited to maximum height of 2m. • Vehicles and fixed and mobile plant inspected and maintained according to manufacturer's specifications.
Noise and vibration	• Works generally limited to daytime hours where practicable. • Gas purged for commissioning will be flared in enclosed combustion chamber, rather than vented. • Equipment is quietest practicably available.

5. Implementation Strategy

The over-arching system for implementation of the measures outlined in this E-BD is the integrated APA "Safeguard" Health, Safety, Environment and Quality Management System (HSEQ-MS), which is based on the requirements of ISO 14001 *Environmental Management Systems -- Requirements with Guidance for Use*.

APA has a comprehensive library of corporate and project-specific documents for environmental management, including management plans, work instructions, (procedures), forms, toolbox talks and other guidance materials that will be adopted and/or adapted for the TCL works.

5.1 Roles and Responsibilities

The TCL works will be a discrete project under the direction of APA Group. Responsibilities for environmental management will be assigned to APA corporate and project staff, contractors, and sub-contractors as appropriate.

5.2 Training and Competency

APA follows a corporate procedure, *PMP-4.18.1 Training and Competency Management*, to identify competency and training requirements for all personnel working on its behalf. In accordance with this procedure, managers are responsible for identifying training and competency requirements for all personnel under their control, for ensuring that these requirements are met, and for ensuring that records of training or verification of competency are maintained.

5.2.1 Inductions

At a minimum, all personnel are required to complete the APA *National Transmission Induction*, covering corporate standard requirements for HSE management before entry onto any APA site.

In addition, a project-specific site induction will be developed for the TCL works, addressing the on-site environmental measures required under the E-BD. All personnel (regardless of position) will be required to sit this induction.

5.2.2 Pre-start Meetings

Work crews on site before the start of work will hold pre-start meetings each day, led by the crew supervisor, with assistance from APA and/or contractor environmental personnel as required. These meetings will address any specific environmental issues relevant to the day ahead, including any hazards identified or incidents or complaints reported from the previous day, particular environmental hazards associated with the activities planned (such as weather conditions and fire risk), or particular environmental or social matters in the area of work.

At least once a week, pre-starts will include "toolbox talks" on specific environmental aspects, hazards or values. Toolbox talks will be targeted to address issues relevant to the area and type of work, recent or recurring incidents or hazards, and any important learnings.

Records will be kept of pre-start meetings and toolbox talks, including persons attending, matters discussed, and any actions identified for follow-up.

5.3 Monitoring, Auditing and Review

A series of inspections and audits will be completed to ensure environmental management is implemented in accordance with the E-BD. These will include:

Inspection Type	Description
Daily workplace inspections	The construction contractor (typically the contractor HSE Officer and/or workplace supervisors) will be required to inspect the workplaces and under its control (including equipment and work practices) daily for conformance to the requirements of the E-BD.
Weekly site inspections	The TCL work areas will be inspected by APA personnel (typically the HSE Officer) once a week, for conformance to the management measures set out in the E-BD.
Project audits	APA intends that the project will be comprehensively audited for environmental performance at least once during works. A compliance audit will also be undertaken at the completion of works. Audits will incorporate desktop review of project environmental records (including inspection reports, hazard and incident reports, and monitoring data), and comprehensive site inspections.
Practical completion inspections	Works under contract will be subject to checks at practical completion before acceptance by APA, incorporating checks that reinstatement works have been completed according to specification, including: removal of all residual wastes, remediation of any residual contamination, reinstatement of contours and drainage patterns, adequate respreading of topsoil and vegetation, and (where required) maintenance of erosion and sediment controls.
Environmental monitoring	Environmental monitoring will occur post-construction for a period of two years. Environmental monitoring will assess the success of reinstatement of disturbed areas, including stability and resistance to erosion.
Reviews	The APA Project Manager will review the environmental performance of the project, including substantial or recurring hazards or incidents, substantial non-conformances identified from weekly inspections, findings and recommendations from audit reports, and implement improvement actions, on advice from the project HSE Advisor and APA Environmental Advisors.

5.4 Management of non-conformance

Non-conformances with the requirements of this E-BD, as identified from inspections, audits, and ad-hoc observations, will be recorded in the corporate APA incident database, maintained as part of the APA HSEQ-MS. The database is an online system, accessible via the APA intranet.

The immediate and root causes of each non-conformance will be investigated and identified by project personnel, and corrective actions determined and assigned to a responsible position. Corrective actions will be marked for completion within a timeframe commensurate with the risk associated with the non-conformance.

Non-conformances entailing high risks, and their determined causes and corrective actions, or overdue actions will be subject to review by the APA Project Manager, in consultation with APA environmental staff and in accordance with the contract.

6. Stakeholder Consultation

APA is committed to maintaining positive relations with all stakeholders throughout the duration of its activities. The PTA represents the key stakeholder as the landowner. Due to commercial arrangements, consultation with stakeholders relevant to the TCL has been and will continue to be via the PTA.

A brief summary of engagement to date is provided in Table 4.

Consultation with government has involved meetings with agencies to generally advise them of the project, and discuss approval requirements (including information requirements), and timeframes. APA notes that no major issues of concern in regard to potential project environmental impacts have been raised to date.

Affected stakeholders will be kept aware of scheduled activities and impacts as the project progresses. Ongoing consultation will occur for this project via email/letters, meetings and circulation of updates to relevant stakeholders.

Feedback from all interested parties will be encouraged and monitored during the entire project. A register will be maintained that records actions taken to address any issues/feedback received.

Table 4: Summary of stakeholder interactions

Stakeholder	Consultation
DMIRS – Resource Tenure; Resource & Environmental Compliance & Dangerous Goods & Critical Risks	Project approvals and reporting requirements.
PTA	Liaison regarding Project scope, timing and approvals.
ARC Infrastructure	Approvals required for access to the rail corridor and compliance requirements under the Rail Safety National Law (WA) Act 2015, including Rail Safety Management Plan.
City of Canning	General notifications of works. Approvals required for access via the City's infrastructure, including the Waste Transfer Station, to access the Ranford Road crossing. Noise management if required.
City of Cockburn	General notifications of works. Approvals required for access for the Glen Iris crossing. Noise management if required.
Main Roads WA	Liaison regarding possible permit/s for drilling under the Kwinana Freeway.
Residents in close proximity to Glen Iris Crossing	Ongoing communication to ensure noise and access requirements are discussed.
BP	Access and work permits in area of BP oil line.
DFES	Enquiry around works in close proximity to the Ranford Road Waste Transfer Station, to understand management measures for the project ERP.

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