Special Area Plan – Larcom Creek Micro-tunnel Crossing - Revised

Fitzroy to Gladstone Pipeline Project

EPBC Approval 2007/3501

Gladstone Area Water Board (GAWB)

June 2024

Gladstone Area Water Board

BASE/

Document Control

Title	Fitzroy to Gladstone Pipeline – Special Area Plan for Larcom Creek Protocol - Revised
Job Number	J0208
Client	Gladstone Area Water Board (GAWB) Pty Ltd

Document Issue

Issue	Date	Prepared By	Reviewed/Approved By
Rev A DRAFT – For client review	21/11/2022	Brandon Hourigan, Chris Morris, Michael Dixon	S. Wakefield (GAWB)
Rev 0 – Final	22/11/2022	Dr Craig Streatfeild	Chris Morris
Rev 1 – Update following contractor information	19/05/2023	Dr Craig Streatfeild	Simon Wakefield (GAWB)
Rev 2 – Update following MBJV review	02/06/2023	Dr Craig Streatfeild	Simon Wakefield (GAWB)
Rev 3 – Updated for client and contractor review	30/05/2024	Dr Craig Streatfeild	Luke Stalley (GAWB) and Cathee Miller (MBJV)
Rev 4 - Update following review	07/06/2024	Dr Craig Streatfeild	Luke Stalley (GAWB)
Rev 5 – Final revised version to DCCEEW	07/06/2024	Dr Craig Streatfeild	Luke Stalley (GAWB)

Revised Special Area Plan – Larcom Creek micro-tunnel crossing

Special Area Plan (SAP) Scope

This Special Area Plan (SAP) covers activities for the duration of works at Larcom Creek for tunnelling operations associated with the construction of the Fitzroy to Gladstone Pipeline (FGP).

The construction method for the Larcom Creek crossing as outlined in the Environmental Impact Statement (EIS was via an open cut trench. However, this crossing will now be constructed via an underground micro-tunnel, which is a trenchless method requiring launch and receival pits that are excavated on both sides of the crossing. A tunnel boring machine is used to excavate an underground path for the pipeline. An enveloper pipe is pushed from the launch pit to the receival pit and the carrier pipe is laid inside the enveloper pipe. The area between the enveloper and carrier pipes is then grouted.

This revised SAP (revision 5) provides mitigation measures for potential impacts to Larcom Creek and the surrounding area from the construction of the FGP. General mitigation measures for the FGP are outlined in the Construction Environment Management Plan (CEMP). This SAP should be read in conjunction with the CEMP.

This revised SAP(revision 5) has been prepared to address relevant requirements of Condition 6(B) and Condition 6(A) of the Coordinator-General's Evaluation Report (CGER) on the Environmental Impact Statement (EIS) and recognises that Condition 1 requires the CEMP to include the SAP as a subplan. The SAP for Lion Creek, also conditioned under 6(B), is addressed in a separate SAP.

Condition 6(B) of the CGER included Larcom Creek as at the time of approval, this crossing was to be constructed via open cut trench. Due to potential impacts to riparian vegetation and associated fauna habitat, construction of this crossing was be limited to May to September (inclusive). However, Condition 6(A) of the CGER relates to crossings that will be constructed via trenchless (micro-tunnel) methods. As such, Condition 6(A) did not limit construction to May to September (inclusive). Due to the significantly reduced impacts to waterways and riparian vegetation from trenchless crossing methods, year-round construction was permitted at these crossing locations.

As the crossing of Larcom Creek will be constructed using trenchless methods and for consistency with those trenchless crossings outlined in Condition 6(A) of the CGER, the May to September limitation is no longer required. This revised SAP has been updated to remove this constraint and such that construction at Larcom Creek can occur year-round.

Although this revised SAP removes reference to construction being limited to May to September (inclusive), all impact avoidance and mitigation measures outlined remain valid and are unchanged. Nevertheless, this revision does invoke Condition 8 of the EPBC approval #2007/3501 – Gladstone to Fitzroy Pipeline Project.

Construction

Construction activities will be undertaken every day between 6:30 am and 6:30 pm or as per approval conditions. If work is required outside of these hours, approval will be required from GAWB, accompanied by engagement with affected landholders.

Larcom Creek was initially proposed as a trenched crossing in the EIS. As such, Condition 6(B) stated that works are to avoid existing riparian vegetation where possible and construction works are to be limited to no more than 20 m within riparian vegetation. However, following further design, Larcom Creek is now proposed to be a trenchless crossing and construction areas will be located outside riparian vegetation. As construction at Larcom Creek will be via trenchless methods, for consistency with other trenchless crossings, works are not limited to May to September (inclusive) as outlined in CGER approval conditions.

For the purposes of this SAP, riparian vegetation is defined as vegetation immediately adjacent to the riparian zone, which is defined as the interface between terrestrial and aquatic ecosystems (i.e. top of the high banks (Pusey and Arthington, 2003)).

All personnel will be trained in the requirements of this SAP, the CEMP and other relevant environmental management plans.

Review and Updates

This SAP will be reviewed and updated as required and following identifying any new information, receipt of relevant approval conditions and continual improvement initiatives.

Erosion and Sediment Control

Control Activities	Responsibility
– Works will be undertaken in accordance with the CEMP Erosion and Sediment Control Plan and site-specific Erosion and Sediment Control Plans (ESCPs) that will comply with the International Erosion Control Association (IECA) guideline and be certified by a registered professional engineer Queensland (RPEQ) or a Certified Professional in Erosion and Sediment Control (CPESC). – All erosion and sediment control devices will be installed and maintained in accordance with the ESCPs and in place prior to the commencement of construction activities. – Stormwater will be diverted around the construction areas and site. – The area and duration of exposed soil will be kept to the minimum during construction work. – The construction area and access routes will be clearly delineated and shown in the CEMP and ESCPs, to prevent disturbance to areas outside the construction footprint. – Excavated sediment will be stored in a designated disposal area within the construction areas shown on the attached plan. The final disposal areas will be shown on the ESCPs. – Sediment will be disposed of either onsite (i.e. same property) or disposed of at a suitable and registered, if required, site. Any onsite disposal area will be shown on the ESCPs. – Water will be discharged from the trenchless crossing and associated entry and exit shafts, where required, in accordance with the CEMP to mitigate risks and potential impacts from erosion and sedimentation into waterways.	McConnell Dowell BMD Joint Venture (MBJV)

Contaminated Land Management

Control Activities	Responsibility
– No areas within the construction area have been identified as contaminated land. – Unexpected finds will be managed in accordance with the CEMP Contaminated Land Control Plan. If an area within the ROW is suspected of being potentially contaminated, works in that area are to cease until a site investigation can be completed, and the contamination identified and appropriately managed. – Any contaminated material will be reported and managed in accordance with relevant legislation/guidelines and the CEMP Contaminated Land Control Plan.	MBJV

Acid Sulfate Soils Management

Control Activities	Responsibility
– No areas within the construction area have been identified as containing Acid Sulfate Soils (ASS). – An ASS assessment will be undertaken and if encountered an ASS Management Plan (ASS MP) will be developed and implemented that will meet the requirements outlined in Queensland Acid Sulfate Soil Technical Manual, Soil Management Guidelines (State of Queensland, 2014). – Any contaminated material will be handled and treated in accordance with the ASS MP and relevant legislation/guidelines. – If ASS are identified, all areas will be clearly shown on construction plans and all staff made aware.	MBJV

Flora Management

Control Activities	Responsibility
– Construction activities will be undertaken in accordance with the CEMP Flora and Fauna Control Plans. – Minimal vegetation removal is expected and will be limited to individual trees within the construction areas shown on the Figure 1. – Pre-disturbance inspections of the areas to be cleared and/or disturbed following demarcation by MBJV will be undertaken to confirm the clearing limits are correct and clearly marked. – During site inductions, all personnel will be briefed on flora/vegetation values within the construction area including vegetation to be avoided and retained along the riparian corridor. – Safeguards will be put in place to ensure that there is no damage to growing trees, shrubs, and vegetation outside the construction areas, and to selected trees to be left standing in areas designated for clearing. – A suitably qualified person (such as a qualified ecologist and/or licensed fauna spotter/catcher) will be engaged to undertake a pre-clearance survey to inspect vegetation to be removed. – A suitably qualified person (ecologist and/or fauna spotter/catcher) will be present during vegetation clearing. – If protected species are encountered during construction in areas where a Clearing Permit has not been obtained, works will cease, GAWB notified, and a Clearing Permit obtained (refer to the Flora Survey Guidelines – Protected Plants). – Trees to be retained within the construction areas will be clearly flagged to prevent accidental removal. – Where trees and vegetation cannot be preserved aboveground, stabilising root material will be undisturbed wherever possible. – Construction activities will be scheduled to minimise the time between clearing and rehabilitation at Larcom Creek.	MBJV

Fauna Management

Control Activities	Responsibility
– Construction activities will be undertaken in accordance with the CEMP Flora and Fauna Control Plans and Species Management Program (SMP). – No clearing of fauna habitat is permitted outside of the construction areas. – Mature hollow-bearing trees will be identified, retained and protected wherever reasonably practicable. Where this cannot be achieved, hollow limbs and/or trunks should be left on the ground adjacent to the ROW (or relocated to within areas of remnant vegetation) to provide habitat for ground-dwelling fauna. – Prior to vegetation clearing (within 24 hours), a suitably qualified person (e.g., ecologist and/or fauna spotter/catcher) will inspect the construction areas to identify fauna habitat and breeding places. Clearing will not occur until the fauna spotter has confirmed the construction areas have been inspected. – The suitably qualified person (e.g., ecologist and/or fauna spotter/catcher) will be present during all clearing and will ensure any clearing is undertaken as per the requirements of the approved SMP. – Any displaced fauna will be relocated to more suitable similar habitat within the	MBJV

BASE/

Gladstone Area Water Board

surrounding area, as far as reasonably practicable. – Logs and fallen vegetation will be used as a habitat feature post-construction. – Trees adjacent to construction areas will be lopped, with complete-to-ground clearing being avoided where reasonably practicable. – Fauna exclusion fences will be established to prevent relocated fauna inadvertently re-entering the construction areas, as far as reasonably practicable. – If required, directional lighting and shields will be installed to minimise light spill outside of the immediate work areas having consideration for health and safety requirements.	

Biosecurity	
Control Activities	**Responsibility**
– Construction activities will be undertaken in accordance with the CEMP Biosecurity Control Plans that includes biosecurity management measures. – Prior to commencement of construction, pre-clearance surveys will be undertaken to assess the presence of weeds and fauna pest species. These will be identified in the CEMP Flora and Fauna Control Plans and the CEMP Biosecurity Control Plans. – All food wastes or waste that could attract animals, will be kept in designated containers/bins that do not allow the access of animals. All personnel will be trained with respect to weeds (e.g. colour photos, precautions, procedures, fact sheets). Biosecurity training will be included as part of the environmental induction to be completed by all personnel prior to commencement of work on the site. – Access roads will be identified in the CEMP and adhered to during construction to prevent transport of weeds from or to other areas. – Vehicles and machinery will be subject to wash-down before entering sites where a request for wash-down by the landholder is identified in CEMP Biosecurity Control Plans and associated documentation. Proof of washdown (e.g. washdown certificates) will kept in the vehicle once it has been washed down and certified.	MBJV

Water Quality	
Control Activities	**Responsibility**
– The location of the micro-tunnel entry/exit points will be away from Larcom Creek, outside riparian vegetation and within the designated construction areas shown on Figure 1. – Construction activities will be undertaken in accordance with the CEMP Water Resources and Water Quality Control Plan. – Water quality will be managed and monitored in accordance with the CEMP Water Resources and Water Quality Control Plan and ESCPs including water quality requirements outlined in the IECA Guidelines (2008). – Stormwater will be diverted around the construction areas and site in accordance with the CEMP Water Resources and Water Quality Control Plan. – Storage of fuels and chemicals will occur within the construction area and implement measures for managing fuel and chemical handling, storage, distribution and spill response during construction. – Daily visual inspections of Larcom Creek downstream of the works area for obvious signs of fuel and/or oil slicks. If identified, the environment manager will be notified and appropriate actions implemented as per the CEMP Water Resources and Water Quality Control Plan. – Water quality monitoring, if required, will be conducted in accordance with approval conditions, and the CEMP Water Resources and Water Quality Control Plan (in the event of discharge of tunnel boring slurry/water). – Where the top of the bank occurs within the construction areas and has been excavated, backfilling and compacting and grading to natural contours will occur to avoid erosion. – Any water bodies or water bores used for extraction of construction water will be monitored for water levels and water quality extraction will cease if unacceptable impacts are identified. The OSW/2020/5467 Exemption requirements for constructing authorities for the take of water without a water entitlement (DRDMW, 2021) will be met.	MBJV

Air Environment	
Control Activities	**Responsibility**
– Air Quality will be managed in accordance with the CEMP Air Environment Control Plan. – Nearby landowners will be informed of potential temporary dust generation prior to the commencement of activities likely to generate dust. – Dust and particulate matter emissions and monitoring will be in accordance with approval condition requirements. – Construction vehicles will be confined to designated access tracks in the construction areas, as far as reasonably practicable. – Dust suppression will be undertaken as needed along access roads, tracks and exposed soils to minimise dust. – Where required and practicable, rumble strips or similar method will be used at the entrance/exit of construction areas to reduce the amount of mud or soil that is transported onto hard-surfaced roads. This will be shown on the ESCP. – Exposed ground surfaces will be mulched or revegetated as soon as reasonably practicable following construction activity and as per the ESCP requirements and the CEMP Rehabilitation and Revegetation Control Plan.	MBJV

Waste Management	
Control Activities	**Responsibility**
– Waste will be managed in accordance with the CEMP Waste Management Control Plan. – Wastewater will be managed in accordance with the Water Resources and Water Quality Control Plan and includes the management of wastewater and slurry from the trenchless construction methods. – All waste receptacles will be coloured for waste streams and covered to prevent vermin being attached, water infiltration and wind from causing litter. – Sorting and storage recyclable wastes (such as oils, timber, steel and plastic) will occur, and arrangement for the transfer of the recyclables to a licenced waste management facility. – Regulated wastes will be transported by a licensed contractor to a licensed waste management facility able to accept the waste. – Sewage disposal will be managed through the use of mobile chemical treatment systems, approved septic systems or via connection with the municipal waste sewage infrastructure, depending on location of the site. – All 'trackable wastes' under the *Environmental Protection Regulation 2019* (Qld) leaving the site will be recorded. – Hazardous and regulated wastes will be controlled as per any local government or legislative requirements, stored in bunded containers / areas in accordance with AS1940 and transported and disposed of by an appropriately licensed contractor. – Depending on the quality of the material excavated, it may be practical to utilise excess material within the ROW. Excess spoil will be disposed of at the nearest approved locations along ROW, generally by agreement with landowners or local council – All wastes will be removed and disposed of at a licensed waste management facility regularly during construction and when construction has been completed.	MBJV

Hydrotesting and Commissioning	
Control Activities	**Responsibility**
– Hydrotesting will be undertaken in accordance with CEMP Hydrotest and Commissioning Control Plan for discharge of water from pipelines in relation to hydrotesting. – Any pipeline leaks identified during the commissioning process will be cleaned up as soon as practical. – Water disposed during commissioning to land or waterways will comply with regulatory requirements and the CEMP Hydrotest and Commissioning Control Plan which will have relevant controls in place to reduce impacts, including erosion and sediment controls.	MBJV

Noise and Vibration Management	
Control Activities	**Responsibility**
– Noise and vibration will be managed in accordance with the CEMP Noise and Vibration Control Plan. – All equipment and plant will be regularly maintained to manufacturers' specifications. – Horns and reversing alarms will be at the minimum volume level as far as practicable without compromising safety requirements. – A 24 hour contact number for the Project will be implemented for the construction phase so that residents always have an immediate point of contact when they have questions or concerns. – All complaints received will be handled in accordance with the complaints / incidents procedure addressed in the CEMP – If required, noise and vibration monitoring will be undertaken in accordance with approval conditions.	MBJV

Transport and Access	
Control Activities	**Responsibility**
– Traffic Management Plans (TMPs) will be developed prior to construction activities and will address site access, signage and traffic control during construction and any temporary traffic control measures. – Access to and from the construction areas will be via designated routes prescribed in the TMP and displayed in the CEMP. – Roads, particularly unsealed roads and access tracks used during construction will be maintained by MBJV.	MBJV

Cultural Heritage	
Control Activities	**Responsibility**
– Construction activities will be undertaken in accordance with the approved Cultural Heritage Management Plan (CHMP) and the requirements of the CEMP Cultural Heritage Management Control Plan. – A Cultural Heritage survey of the construction areas will be undertaken in accordance with the requirements of the approved CHMP and the status of the survey shown on the SAP figure using a traffic light approach (e.g. red = not surveyed, amber =. surveyed but not yet cleared and green = surveyed and cleared). – The environmental induction will include a basic level of training for all personnel with regard to their obligations under the CHMP and the measures to be taken in the event of a historic or Aboriginal Cultural Heritage find.	MBJV

Dangerous and Hazardous Goods	
Control Activities	**Responsibility**
– Dangerous and hazardous material will be managed in accordance with the CEMP Handling and Storage of Dangerous and Hazardous Goods Control Plan. – Hazardous wastes will be controlled as per local government or legislative requirements, emergency use of a spill kit, bunded and/or contained to avoid release and transported and disposed of by an appropriately licensed contractor. – Any spills will be managed and cleaned up as soon as possible. – Appropriately stocked spill kits will be located in each construction area. All site personnel will receive an induction prior to commencing work in the handling and storage of dangerous goods and in spill containment procedures. – A hazard identification and risk assessment process will be undertaken for the storage of dangerous goods in the construction corridor. – The Safety Data Sheets (SDS) for all dangerous goods and hazardous materials will be kept on site. – Where practicable, any refuelling undertaken at site will be undertaken in a designated refuelling area to reduce the risk of contamination to the environment. – Regulated wastes will be transported by a licensed contractor to a licensed waste management facility able to accept the waste.	MBJV

Landscape and Visual Amenity	
Control Activities	**Responsibility**
– Landscape and visual amenity will be managed in accordance with the CEMP Landscape and Visual Amenity Control Plan Control Plan. – Vegetation clearance at sensitive sites will be avoided where practicable. – Upon completion of construction, all construction materials will be removed to a suitable location. – Appearance of other features such as signs and fencing will be considered as minimal visual amenity impacts. – Rehabilitation and Revegetation will be undertaken at the construction areas in accordance with the CEMP Rehabilitation and Revegetation Control Plan.	MBJV

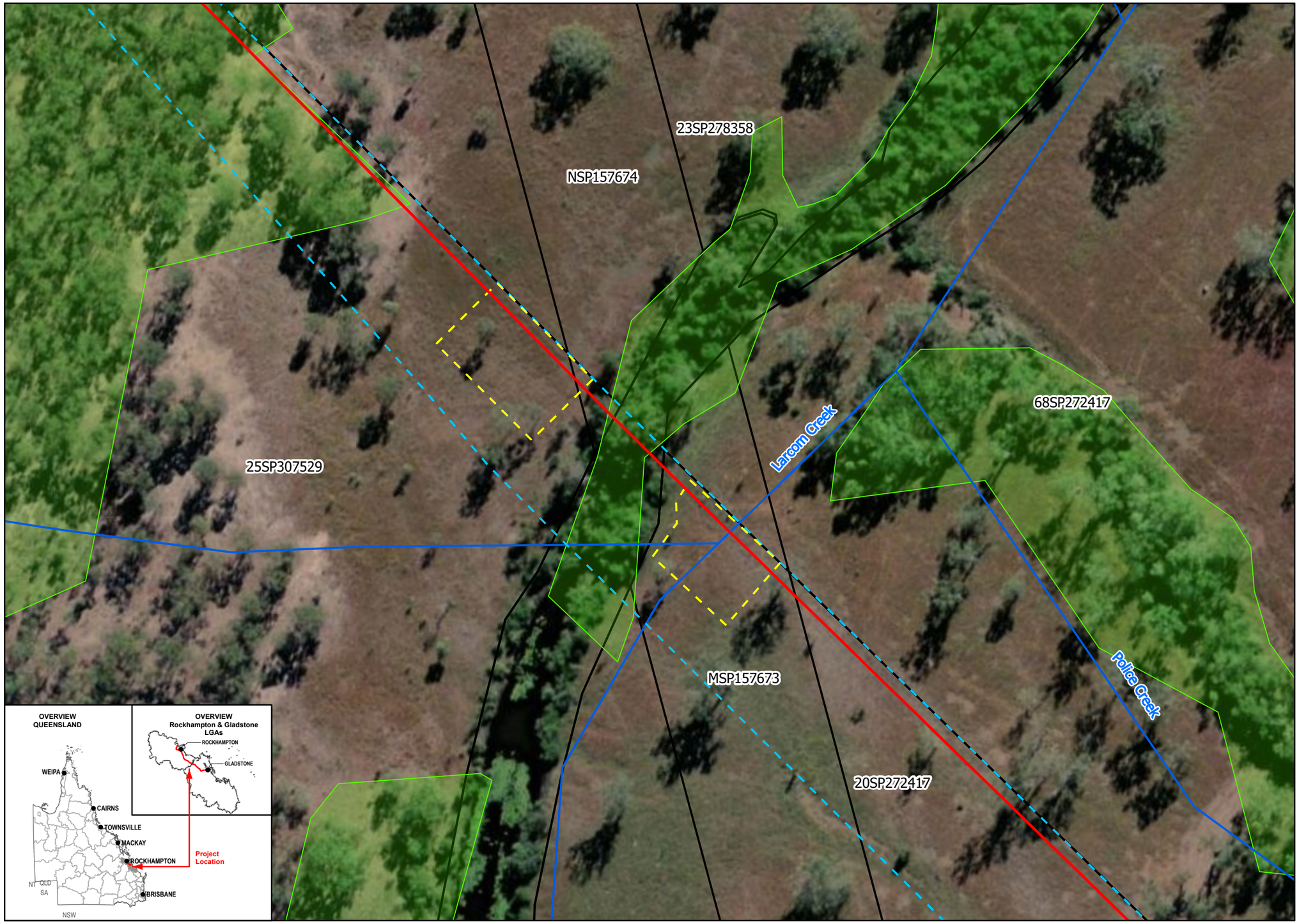
General Rehabilitation and Remediation	
Control Activities	**Responsibility**
– All remediation works at the construction areas will be undertaken in the accordance with the CEMP Rehabilitation and Revegetation Control Plan.	MBJV

– The extent and species mix of vegetation and/or fauna habitat, will be determined during pre-clearance surveys. These details will be included in the CEMP Rehabilitation and Revegetation Control Plan following the pre-clearance surveys. – Rehabilitation methods will include: • Reinstatement, which is the process of bringing the landscape back to the original profile of the surrounding environment, including site stabilisation and riparian revegetation. • Rehabilitation which is the process of establishing vegetation back onto the site following reinstatement. • Ongoing management of rehabilitation areas to control pest species, minimise threats to rehabilitation success and rectify erosion and landform stability issues identified during monitoring. – Topsoil will be stripped, stockpiled away from waterways and separately to other cleared material and managed in accordance with the CEMP Rehabilitation and Revegetation Control Plan. – Reinstatement will commence as soon as practicable after construction activities and no later than one month after completion of works. – During reinstatement of impacted areas, soils will be replaced so that the topsoil depth is consistent with pre-clearance depths and profiles. – Ground cover then be established at disturbed sites following respreading of topsoil. Ground cover can include organic material, leaf litter, mulch, hydromulch, living or dead plant material, rocks, logs, other woody materials or erosion control materials. – Disturbed areas may also be sown with a cover crop immediately following topsoil respreading in areas with high erosion potential. – Rehabilitation will primarily rely on natural regeneration from the soil seed bank and reproductive plant material delivered by the tides as well as relocating the salvaged and surviving plants back to where they were removed from. – Where either natural regeneration or reinstatement of the relocated plants fails to meet the performance criteria outlined in the CEMP Rehabilitation and Revegetation Control Plan, assisted revegetation and direct planting will be undertaken in accordance with the Control Plan and with a species mix and density that is consistent with the pre-clearance conditions.	

Contact Details	
Control Activities	**Responsibility**
Refer to CEMP for contact details.	MBJV

References

Pusey, BJ and Arthington, AH (2003). Importance of the riparian zone to the conservation and management of freshwater fish: a review. Marine and Freshwater Research, 54, 1-16.



N
W E
S

Queensland Government

SMEC
Member of the Surbana Jurong Group

0 10 20 30 40
Meters

1:1,500 (when printed @ A3)

Legend

- Pipe Alignment
- Waterway
- Construction Area
- Right of Way - GSDA
- Property Boundary
- Essential Habitat

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2. Property Boundary @ Department of Resources 2021.
3. Indicative Ecology Survey Location(s) @ GAWB 2022
4. Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SMEC Disclaimer:
Maps are for graphical purposes only. The information on this map is from a computer database accessed using a Geographic Information System (GIS). They do not represent a legal survey and the information provided includes inherit errors. SMEC cannot guarantee the accuracy of the information contained on this map. Each user of this map is responsible for determining its suitability for his or her intended use or purpose.

Gladstone Area Water Board
P.O. Box 466, Gladstone QLD 4680
Ph: 07 4976 3000 www.gawb.qld.gov.a

PROJECTION UTM Zone 56
(Datum GDA2020)

Compiled by:ZD17041 Date 16/11/2022

FITZROY TO GLADSTONE PIPELINE PROJECT
FIGURE 1 SAP for Larcom Creek
000-G-MAP-2643 Version: 1 Date: 16/11/2022