

APA Technical Note - Western Outer Ring Main - Environment Effects Statement

TECHNICAL NOTE NUMBER: TN04

DATE: 13 September 2021

SUBJECT: Specialist Area: Surface Water
An update for the purposes of the *Environment Protection Act 2017 (Vic)* and response to Inquiry RFIs 49, 50, 51 and 52

SUMMARY This Technical Note outlines the implications of the *Environment Protection Act 2017 (Vic)* (as amended by the Environment Protection Amendment Act 2018) which came into effect on 1 July 2021, specific to Technical Report B *Surface Water* of the Western Outer Ring Main (WORM) Environment Effects Statement (EES).

REQUEST: 49. Advise whether Table 19-17 in the Environmental Management Framework (EMF) will be updated as recommended by EPA (Submission 9) to reflect the new stormwater management guidance set out in EPA Publication 1739.

50. Advise whether the Table 19-17 in the EMF will be amended as recommended by the EPA (Submission 9) to apply the Environment Protection Act 2017 (EP Act), the Environment Protection Regulations 2021 (EP Regulations) and the Environmental Reference Standard (ERS).

51. Advise whether EMM SW1 will be amended as recommended by EPA (Submission 9) to include reference to the following EPA Publications:

- Publication 1894: Manage soil disturbance; Publication 1895: Manage stockpiles;
- Publication 1896: Manage how you work within or adjacent to waterways;
- Publication 1897: Manage truck and other vehicle movement; and
- Publication 1834: Civil construction, building and demolition guidance.

52. Advise whether EMMs SW2 to SW10 will be amended as recommended by EPA (Submission 9) to include reference to the EPA publication 1896: Manage how you work within or adjacent to waterways.

ATTACHMENTS: Changes to EMM SW1, SW2, SW3, SW4, SW5, SW7 and SW8

NOTE:

Background

- 1 EES Technical Report B *Surface Water* and Chapter 8 of the WORM EES foreshadowed that the *Environment Protection Act 2017 (Vic)* (new Act) would come into effect on 1 July 2021 and that this would introduce the new General Environmental Duty (**GED**).
- 2 This note outlines the key implications of the new Act and regulations, guidelines or standards that will be relevant to the assessment of the environmental effects of the WORM Project during construction and/or operation.
- 3 This note also sets out changes recommended to the exhibited version of the Environmental Management Measures (EMMs) applicable to the specialist area to account for the new Act, regulations, guidelines or standards.

Implications of new GED

- 4 The new Act contains a General Environmental Duty (**GED**) that will be applicable to APA and all contractors carrying out the construction and operation of the WORM Project.
- 5 The GED (as defined in Section 25 of the new Act) requires a person or entity to:
 - Identify risks and hazards that may impact the environment or human health that arise from its operations; and
 - Eliminate or minimise those risks as far as reasonably practicable.
- 6 The Environmental Management Framework and Construction Environment Management Plan (CEMP) developed as part of the EES and Pipeline Licence Application responds to the identified risks to the environment and human health that may arise from the construction and operation of the WORM Project, responding to the first requirement of the GED. For the surface water assessment specifically, the risk assessment was undertaken based on the review of existing conditions. This review consisted of a two-tiered approach: a preliminary desktop assessment of all identified waterways crossed by the Project pipeline; and identification of the higher risk waterways based on potential risk associated with erosion and flooding that required a more detailed assessment. These further investigations were undertaken for the higher risk waterways to identify potential risks and hazards that may impact the environment and human health. The EMMs relevant to surface water were formed on the basis of the risk and impact assessment, where well-established effective controls or practices were recommended to comply with legislation and standard requirements. Where greater risks were identified and standard mitigation measures were considered not suitable as effective controls, such as Jacksons Creek, site specific EMMs were recommended as additional control measures to minimise and manage these risks as far as reasonably practicable.
- 7 The EMMs relevant to surface water as outlined in Technical Report B *Surface Water* have been developed to manage the identified risks to human health and the environment. In this Technical Note, consideration has been given to whether the EMMs require updating to comply with the GED or to ensure that the EMMs either eliminate or minimise the risks as far as reasonably practicable.

Relevant provisions of the new Act and Regulations

- 8 Relevant provisions in the new Act and Regulations relating to Surface Water include:
 - Section 25 of the new Act (GED) which places a risk-based duty on a person to manage their activities to minimise the risk of harm to human health or the environment from pollution or waste so far as reasonably practicable;¹

The requirements of the General Environmental Duty to manage risks to human health and the environment overrides the consideration of superseded clauses in SEPP (Waters), noting that requirements specified in the Environmental Reference Standard

have not been substantially changes from SEPP (Waters). This does not have any practical implications on the Project but has been considered in this technical note.

Relevant Standards or Guidelines

- 9 Technical Report B *Surface Water* and Chapter 8 refer to some EPA documents that have been replaced by new standards and guidance material.
- 10 Prior to the commencement of the new Act, the following Surface Water standard applied:
- State Environment Protection Policy (Waters) (SEPP (Waters)).
- 11 Upon commencement of the new Act, SEPP (Waters) was replaced with the following:
- Part 5 (Water) of the *Environment Reference Standard (ERS)*, gazetted on 26 May 2021;
 - *Environmental Protection Regulations 2021* (the Regulations), and
 - the GED.
- 12 The *Environment Reference Standard (ERS)* does not include other aspects of SEPP (Waters) related to rules and obligations, and measures for the management of risks. Despite the new Act replacing SEPP(Waters), parts of SEPP (Waters) will remain relevant through Regulation 7 of the *Environment Protection Transitional Regulations 2021* for a period of up to two years after the commencement of the *Environment Protection Regulations 2021* (1 July 2023) to allow for future arrangement to be determined: The provisions outlined in Regulation 7 are not directly relevant to the Project.
- 13 Recently published EPA guidance referenced in the current EES Technical Report B *Surface Water* and will continue to be relevant include Publication 1834: *The Civil construction, building and demolition guide* (2020). Additional EPA guidance recently published but not currently referenced include Publication 1894: *Manage soil disturbance*; Publication 1895: *Manage stockpiles*; Publication 1896: *Manage how you work within or adjacent to waterways*; Publication 1897: *Manage truck and other vehicle movement*. These recent EPA publications provide guidance on eliminating or reducing the risk of harm to human health and the environment through good environmental practice during construction works. The EMMs relating to Surface Water have been developed based on well-established effective controls and practices to comply with legislation and standard requirements that are recommended in the above EPA Publications. Therefore, the key changes will only include referencing the new EPA Publications in the relevant EMMs relating to Surface Water.

Changes to EMMs

- 14 In response to RFI 50 to 52, the following EMMs relating to Surface Water require amendment to reference the latest EPA standards and guidance documents or to update to meet the GED:
- SW1 - Managing runoff from adjacent construction areas, discharge from dewatering activities and spills/leaks;
 - SW2 - Waterway and floodplain function (construction);
 - SW3 - Site Rehabilitation measures for disturbance caused by open cut trench construction;
 - SW4 - Control measures for open cut trench construction and watercourse management

¹ The GED replaces the clean water framework that existed under Part 5 of the *Environment Protection Act 1970*.

- SW5 - Implement a Monitoring Program.
 - SW7 – Design and Construction Management (Jacksons Creek)
 - SW8 – Site Rehabilitation (Jacksons Creek)
- 15 In response to RFI 49, the surface water EMMs in the CEMP will not be updated to refer to the new stormwater management guidance set out in EPA Publication 1739. This is because the urban stormwater management guidance (EPA publication 1739) is directly relevant to urban development (e.g. in the application of water sensitive urban design as a means to manage impacts of stormwater from development) which is not considered to be relevant for the WORM Project.
- 16 The surface water EMMs in the CEMP:
- will be amended as recommended by the EPA (Submission 9) to apply the *Environment Protection Act 2017*, the *Environment Protection Regulations 2021* and the Environmental Reference Standard; and
 - will be amended to include reference to the following EPA Publications:
 - Publication 1894: Manage soil disturbance;
 - Publication 1895: Manage stockpiles;
 - Publication 1896: Manage how you work within or adjacent to waterways;
 - Publication 1897: Manage truck and other vehicle movement; and
 - Publication 1834: Civil construction, building and demolition guidance.
- 17 Attached is a mark-up of the relevant EMMs showing the changes needed to include the updated requirements of the new Act and Regulations and to reference the new guidelines and standards.
- 18 Consideration has also been given to whether the EMMs reduce the risk of harm to human health and the environment to the extent reasonably practicable and therefore meet the GED. The attached mark-up of the relevant EMMs are proposed to reflect the language of the GED but do not impose additional requirements on the Project to further reduce risk.

Currency of Technical Report and Chapter

- 19 The replacement of SEPP Waters with new standards and guidance material was foreshadowed in the EES. For example, section 5.5.4 of the Surface Water Technical Report (page 31) provided that:
- “In July 2021, when SEPP (Waters) is replaced with the Environment Protection Act 2017 (as amended by the Environment Protection Amendment Act 2018) and the latter comes into effect, beneficial uses will be known as “environmental values” and will be provided in the Environment Reference Standards. Subtle changes between “beneficial uses” and “environmental values” are expected. However, these changes are unlikely to impact this assessment.”*
- 20 Having considered the new provisions referenced at paragraph 8 of this Technical Note and Part 5 of the *Environment Reference Standard*, the conclusions presented in EES Technical Report B *Surface Water* remain relevant and do not need to be altered. Therefore, the assessment does not need to be supplemented with any additional analysis.

Annexure 1
Changes to Surface Water EMMs

SURFACE WATER		
Ref.	Environmental controls	Project phase
SW1	<p>Managing runoff from adjacent construction areas, discharge from dewatering activities and spills/leaks</p> <p>Implement measures to minimise impacts <u>so far as reasonably practicable</u> on downstream environments due to construction activities and potential runoff. <u>This is to be in accordance with EPA Publication 1834: Civil construction, building and demolition guidance, Publication 1894: Manage soil disturbance, Publication 1895: Manage stockpiles, Publication 1896: Manage how you work within or adjacent to waterways and Publication 1897: Manage truck and other vehicle movement,</u> including:</p> <ul style="list-style-type: none"> ▪ Where practicable, construct all trenched crossings of ephemeral watercourses during no or low flow conditions and reinstated as soon as reasonably practicable ▪ Form discrete stockpile segments (ie rather than a continuous row of stockpile materials) to prevent causing water to pond on the upstream side ▪ Where drainage lines intersect the construction corridor, place flow diversion measures upstream of soil stockpiles ▪ Direct surface water runoff from external catchments through regular gaps in soil stockpiles where erosion and sediment controls are installed to allow runoff to pass over the construction corridor at a controlled location without causing erosion. ▪ Implement erosion and sediment controls for the site with reference to International Erosion Control Association Best Practice Erosion and Sediment Control, Appendix P – Land Based Pipeline Construction (IECA, 2008) ▪ Monitor weather forecasts to manage the pipeline works with the intent of avoiding open trench works at each individual waterway crossing when high rainfall events are expected ▪ Collect and treat water from dewatering of trenches due to rainfall prior to discharge into the waterways (eg grass filtration) if turbidity exceeds <u>the objectives requirements</u> in accordance with <u>SEPP (Waters)the Environment Reference Standard</u>. Manage non- contaminated groundwater and surface water run-off that enters the open trenches and bell holes in accordance with <u>EPA Publication 1834 Civil Construction, building and demolition guide (November 2020)SEPP (Waters)</u>. Discharge to land (ie grass filtration) must not occur within 100 metres of watercourses ▪ Manage any spills and/or leaks during construction in accordance with mitigation measures described in EES Technical Report E: Contamination assessment (EMM C6). <p>Implement measures to minimise impacts due to discharge from Trenchless construction sites including, where reasonably practicable:</p> <ul style="list-style-type: none"> ▪ Install a combination of earth bunds and drainage channels around the upper edges of trenchless drilling sites to divert runoff away from the site and prevent it from mixing with material used during drilling operations ▪ Install sump pits at the bottom of trenchless drilling sites to capture any runoff from drilling compound and construct earth bunds around the sump pits to prevent spillage from entering the waterway ▪ Construct bunds around all facilities that are involved in the HDD activities including around slurry operations and pumping of drilling mud ▪ Manage trenchless bores and drilling fluids in accordance with mitigation measures described in EES Technical Report E: Contamination (EMM C9) and EES Technical Report D: Land stability and ground movement (EMM GM5 and EMM GM6). 	Construction

<p>SW2</p>	<p>Waterway and floodplain function (construction)</p> <p>Implement measures to minimise impacts so far as reasonably practicable to the function of waterways and floodplains during construction and allow flow to be conveyed across the construction area in accordance with EPA Publication 1896: Manage how you work within or adjacent to waterways, including:</p> <ul style="list-style-type: none"> ▪ Form discrete stockpile segments (ie rather than a continuous row of stockpile materials) to prevent causing water to pond on the upstream side ▪ Provide regular gaps in stockpiles to allow flood water to pass through ▪ Avoid stockpiling material near waterways. Material must be located away from the top of banks so that there is no restriction to the flow conveyance area ▪ To maintain the waterway and floodplain function, the Project must compact soil, scarify and re-profile the land to original contours as far as reasonably practicable. 	<p>Construction</p>
<p>SW3</p>	<p>Site Rehabilitation measures for disturbance caused by open cut trench construction</p> <p>This will include all standard construction management measures and site rehabilitation measures outlined in Table 8-47 of EES Technical Report B Surface water. Implement site rehabilitation measures to minimise impacts to the waterway health as far as reasonably practicable and in accordance with EPA Publication 1896: Manage how you work within or adjacent to waterways, including:</p> <ul style="list-style-type: none"> ▪ Compact soil, scarify and re-profile the land to original contours to maintain the waterway and floodplain function, ▪ Restrict any operational works to the easement only, with landholder requirements determined prior to commencement of works ▪ Restore waterway bed and banks as soon as reasonably practicable after pipe installation and backfilling works ▪ Restore banks by grading (nominally 1:3 grade and revegetation), and smoothly transition to the undisturbed banks (refer to APA standard drawing no. 530-DWG-L-5008). ▪ Restore waterway bed to preconstruction profile, and smoothly transition to the upstream and downstream undisturbed bed condition ▪ Provide temporary protection such as geofabric or erosion matting on bed and banks to prevent erosion until vegetation has established ▪ Carry out routine inspections (e.g. minimum every six months plus potentially following any significant flood event) to monitor effectiveness of civil rehabilitation works (earthworks and rock beaching works) during the first 12 months post-construction. Where monitoring identifies defects or deficiency in civil rehabilitation works, appropriate rectification measures will need to be implemented. ▪ Establishment of vegetation cover within the first three months post construction. Following establishment of vegetation/ground cover, routine maintenance to be undertaken for a period between 12- 24 months to monitor and manage successful reinstatement ▪ Include site specific application of rock beaching protection as part of site rehabilitation where required. 	<p>Construction and Operation</p>

<p>SW4</p>	<p>Control measures for open cut trench construction and watercourse management</p> <p>Where open cut trench construction is required for a watercourse implement the following mitigation measures to minimise impacts to the waterway health as far as reasonably practicable and in accordance with EPA Publication 1896: Manage how you work within or adjacent to waterways:</p> <ul style="list-style-type: none"> ▪ Implement erosion and sediment controls (ESC) for the site will be implemented with reference to the International Erosion Control Association Best Practice Erosion and Sediment Control, Appendix P – Land Based Pipeline Construction (IECA, 2008) ▪ Construct trenched crossings of ephemeral watercourses during no or low flow conditions, where reasonably practicable ▪ Monitor weather forecasts to minimise the likelihood of having open trenches at the waterway when high rainfall events are expected ▪ Remove all obstructions to flow after the pipe has been laid and backfilled ▪ Assemble and prepare the pipeline so that it can be installed as soon as reasonably practicable once the trenching over the watercourse has been undertaken ▪ Reinstatement the exposed trench within the watercourse and riparian zones as soon as reasonably practicable following the installation of the pipeline ▪ Design waterway reinstatement to avoid future erosion over the pipeline alignment and to provide bank stability at the crossing location as the same or better than prior to construction. ▪ Provide temporary erosion and sediment control as needed to prevent erosion and scour until the vegetation has established throughout the post-construction period (e.g. up to 12 months depending on establishment of vegetation) ▪ Undertake visual monitoring downstream of the trench during flow events if the trench has not been reinstated ▪ Provide temporary flow diversions if there is permanent flow in the waterway. Flow diversion measures may include pumps to ensure that water can be moved from one side of trench to the other, screened inlets (or other appropriate equipment) to minimise the entrapment of aquatic fauna and outlet structures that are designed to avoid scouring of the channel. Measures must be in accordance with International Erosion Control Association Best Practice Erosion and Sediment Control, Appendix P – Land Based Pipeline Construction (IECA, 2008). ▪ Restore waterway bed and banks as soon as reasonably practicable after pipe installation and backfilling works ▪ Carry out bed and bank restoration, temporary protection and monitoring of establishment works as part of the site rehabilitation ▪ Prepare a construction management plan for Merri Creek works including site works methodology, construction timeframes and durations, and water quality monitoring frequency and parameters for APA approval ▪ Groundwater levels and flows will be managed in accordance with EMM GW1 described in EES Technical Report C Groundwater 	<p>Construction</p>
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<p>SW5</p>	<p>Implement a Monitoring Program</p> <p>Develop and implement a monitoring program, for the main waterways to determine if there are any construction related impacts. This must occur in Merri Creek and Jacksons Creek where open cut construction will occur.</p> <p>The monitoring program must adopt a control/impact approach with water quality monitored at a suitable distance of 20 - 200 metres from the Project Area both upstream and downstream of the works to establish background conditions. The monitoring program must be developed and undertaken in accordance with EPA Publication 1896: Manage how you work within or adjacent to waterways, the Environment Reference Standard SEPP (Waters) and ANZG Australia Guidelines for Water Quality Monitoring and Reporting (2018).</p> <p>Water quality monitoring must occur immediately prior to construction to establish background conditions upstream and downstream of the Project area. Monitoring must then occur on a continual basis during construction (eg at appropriate intervals) with comparisons of upstream and downstream conditions used to infer if there is a downstream impact such as increased turbidity.</p> <p>The biodiversity monitoring must occur at the two sites upstream and downstream of the Project Area prior to construction to establish background conditions. A final biodiversity and water quality monitoring must be repeated post-construction to identify any potential impacts from the construction and rehabilitation works.</p> <p>Should the monitoring determine adverse residual impacts on surface water and biodiversity values, contingency measures must be developed and implemented. These remedial actions may include:</p> <ul style="list-style-type: none"> ▪ Identifying, repairing and redesign failed management measures aimed at reducing impacts due to erosion and sedimentation ▪ Further stabilise banks and beds at waterway crossing to reduce erosion potential and sedimentation ▪ Inspect pumping of water from coffer dams and/or other areas if water quality exceeds background conditions and implement further management measures. 	<p>Design and Construction</p>
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<p>SW7</p>	<p>Design and Construction Management (Jacksons Creek)</p> <p>The detailed design must include the following measures:</p> <ul style="list-style-type: none"> ▪ Minimum depth: 2m below bed invert level ▪ Length of flat grade pipe (extend from top bank to top of bank) ▪ Pipe protection: concrete encasement, concrete coated pipe or slab protection be considered below the ground surface before backfilling <p>Develop site specific construction management measures for Jacksons Creek to minimise impacts to human health and the environment as far as reasonably practicable, including:</p> <ul style="list-style-type: none"> ▪ Timing of works: Summer-autumn only ▪ Flow management: Prepare a flow management work method statement to detail reliance on pumping, cofferdams (partial or full), temporary flume pipes ▪ Weather Forecast: align timing of works with long term weather forecast without significant rain ▪ Trench exposure: Limit the longitudinal extent of trench exposure to the extent reasonably practicable (i.e. to what could be backfilled within 24 hours) ▪ Construction duration: limits on time for trench exposure and construction duration between bank to bank works to the extent reasonably practicable (e.g. pre-prepare the pipe works) ▪ Backfilling works: Backfilling in accordance with appropriate MWC standard drawings for pipe trenching and backfilling and compaction requirements ▪ Contingency works: Have available backfill and stockpile of rock beaching to protect exposed trench in lieu of a late change or unexpected forecast weather event ▪ Prepare a construction management plan for Jacksons Creek works including site works methodology, construction timeframes and durations, and water quality monitoring frequency and parameters for APA approval. 	<p>Design, Construction and Operation</p>
<p>SW8</p>	<p>Site Rehabilitation (Jacksons Creek)</p> <p>Develop and implement site specific rehabilitation for Jacksons Creek to minimise impacts to the waterway health as far as reasonably practicable, including:</p> <ul style="list-style-type: none"> ▪ Timing: Restore waterway bed and banks in accordance with site-specific requirements after pipe installation and backfilling works ▪ Bed & Bank restoration: bed and bank rock protection in accordance with MWC Service Crossing Open Trench Medium Creek Crossing - guidelines. This may be a combination of lower bank rock beaching and upper bank and floodplain revegetation. The works must smoothly transition to upstream and downstream undisturbed conditions. ▪ Rehabilitate and reinstate Jacksons Creek in accordance with EMM B7 described in EES Technical Report A: Biodiversity and habitats ▪ Carry out routine inspections (e.g. minimum every two months or following any significant flood event) to monitor effectiveness of civil rehabilitation works (earthworks and rock beaching works) during the first 12 months post-construction. Where monitoring identifies defects or deficiency in civil rehabilitation works, appropriate rectification measures will need to be implemented. ▪ Establishment of planting and vegetation for the first three months post construction. Following planting and vegetation establishment period, routine maintenance (e.g. monthly during autumn and spring) to be undertaken for a period between 12-24 months to monitor and manage successful vegetation establishment. 	<p>Construction and Operation</p>