

TRIGGERS, THRESHOLDS AND CONTINGENCY ACTIONS FOR MANAGEMENT OF TEC / PEC VEGETATION

APPENDIX G TRIGGERS, THRESHOLDS AND CONTINGENCY ACTIONS FOR MANAGEMENT OF TEC / PEC VEGETATION

Triggers, thresholds and contingency actions for TEC / PEC vegetation are detailed in Table 1.

The associated Vegetation and Drainage Monitoring Programs are detailed in Appendices E and F of the ARI document respectively (BORR IPT, 2020)¹.

The number and type of contingency actions to be implemented in the case of trigger exceedance will depend upon various factors, including the state of the natural surrounding environment, the location of the trigger and the works undertaken at the time of the exceedance. The process followed in the event of a flooding or inundation threshold breach is displayed in Figure 1.

A reportable decline is considered where monitoring shows a 20 per cent decline in the species composition and / or health attributes of the TEC / PEC monitoring sites against the change at reference sites.

¹ Bunbury Outer Ring Road Integrated Planning Team (BORR IPT) (2020). *Bunbury Outer Ring Road Northern and Central Sections Response to EPA Notice of Decision to Assess: Additional Information Request.*

Table 1 Triggers, thresholds and contingency actions

MONITORING PARAMETER	MONITORING TIMING, METHODOLOGY AND FREQUENCY	TRIGGER	THRESHOLD	CONTINGENCY ACTION
Erosion	<p>During construction: Visual inspection opportunistically and weekly as detailed in Appendix F</p> <p>Prior to, during and post construction: Visual assessment biannually and plant health assessment annually as detailed in Appendix E</p>	Evidence of new erosion in monitored TEC / PEC vegetation	Evidence of new erosion in monitored TEC / PEC vegetation	<ul style="list-style-type: none"> • Investigate the cause and raise an incident report if new erosion is caused by Proposal activities • Remedial action controls will be undertaken immediately to repair damage if required • Preventative actions such as modifications to infrastructure and additional engineering post-construction will be taken to prevent further non-compliance. These may include controls outside of monitored TEC / PEC vegetation to ensure no indirect impacts such as: <ul style="list-style-type: none"> - Application of fill/mulch - Installation of gabion cages - Installation of jute matting to secure bank. • A review will be conducted of management measures and/or further education of staff/contractors to ensure that all possible steps are taken to prevent any reoccurrence • Monitor the effectiveness of the control(s).
Flooding/ inundation	<p>During construction: Visual inspection opportunistically and weekly as detailed in Appendix F</p> <p>Prior to, during and post construction: Visual assessment biannually and plant health assessment annually as detailed in Appendix E</p>	TEC / PEC vegetation is inundated or flooded for 24 hours as a result of Proposal activities	TEC / PEC vegetation is inundated or flooded for three consecutive days as a result of Proposal activities	<ul style="list-style-type: none"> • Remedial action controls will be undertaken immediately to repair damage if required • Attempt to contain flooding if practicable (i.e. use of bunding to re-direct floodwaters away from TEC vegetation) • Determine if rehabilitation is required (i.e. if soil erosion is evident) in consultation with DBCA if within TEC / PEC areas. • Develop and implement a rehabilitation plan if necessary and consult the relevant government regulator as required • A review will be conducted of management measures and/or further education of staff/contractors to ensure that all possible steps are taken to prevent any reoccurrence • Monitor the effectiveness of the control(s).

MONITORING PARAMETER	MONITORING TIMING, METHODOLOGY AND FREQUENCY	TRIGGER	THRESHOLD	CONTINGENCY ACTION
Drying of Claypan TEC vegetation	<p>During construction:</p> <p>Visual inspection opportunistically and weekly as detailed in Appendix F</p> <p>Prior to, during and post construction:</p> <p>Plant health assessment biannually or as recommended by DBCA as detailed in Appendix E</p>	Plant health scores decline by one health class relative to control sites in two consecutive monitoring periods	Drying continues to breach trigger levels two months after management / mitigation measures are implemented	<ul style="list-style-type: none"> Investigate the cause and raise an incident report Cease dewatering or other drying activities Remedial action controls will be undertaken immediately to repair damage if required. This may include the application of water to TEC vegetation in consultation with DBCA Preventative actions such as modifications to infrastructure and additional engineering post-construction will be taken to prevent further non-compliance A review will be conducted of management measures and/or further education of staff/contractors to ensure that all possible steps are taken to prevent any reoccurrence Monitor the effectiveness of the control(s).
Groundwater levels	<p>Prior to, during and post construction:</p> <p>Monthly as detailed in Appendix F</p>	25% variance from baseline	25% variance from baseline	<ul style="list-style-type: none"> Investigate the cause and raise an incident report if necessary. Include consideration of results from baseline monitoring and comparison with reference sites for the same period Refer to contingency actions for drainage structures (functioning of culverts etc) A review will be conducted of management measures and/or further education of staff/contractors to ensure that all possible steps are taken to prevent any reoccurrence Monitor the effectiveness of the control(s).
Water quality parameter(s)	<p>During construction:</p> <p>North Creek 4 (surface water) monthly</p>	Exceedance of ANZECC guideline values ² (slightly/moderately disturbed wetlands in the SW) and/or	Exceedance of ANZECC guideline values (slightly/moderately disturbed wetlands in the SW) and/or	<ul style="list-style-type: none"> Investigate the cause and raise an incident report if necessary. Include consideration of results from baseline monitoring and comparison with reference sites for the same period Remedial action controls will be undertaken if required – to be determined based on likely cause e.g. spills, sedimentation or erosion

² Suitability of ANZECC guidelines as triggers will be reviewed at the end of collection of baseline and if required site specific trigger values will be developed.

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	Ground water wells quarterly As detailed in Appendix F Post construction: Quarterly as detailed in Appendix F	significant difference from baseline conditions in one monitoring period	significant difference from baseline conditions in two consecutive monitoring periods	<ul style="list-style-type: none"> • A review will be conducted of management measures and/or further education of staff/contractors to ensure that all possible steps are taken to prevent any reoccurrence • Preventative actions such as modifications to infrastructure and additional engineering post-construction will be taken to prevent further non-compliance • Monitor the effectiveness of the control(s).
Fire	During construction: Visual inspection opportunistically and weekly Prior to and post construction: N/A	Sparks or unplanned fire resulting from Proposal activity that have the potential to impact TEC / PEC vegetation	Sparks or unplanned fire detected from project activity within 100 m of TEC / PEC vegetation	<ul style="list-style-type: none"> • Implement emergency evacuation and response plans • Investigate cause and raise an incident report • Review management procedures.
Reportable decline	During construction: Visual inspection opportunistically and weekly Prior to and post construction: Plant health assessment biannually (or as recommended by DBCA for Claypan TEC) as detailed in Appendix E	TEC / PEC vegetation health shows a decline on baseline levels	TEC / PEC vegetation monitoring parameters have decreased greater than 20 per cent in comparison to the change at reference sites	Reportable decline: If monitoring identifies that the TEC / PEC vegetation monitoring parameters have decreased (greater than 20 per cent) in comparison to the change at reference sites (reportable decline) the following will occur: <ul style="list-style-type: none"> • Review hydrological monitoring to confirm whether any incidents have occurred. If incidents have occurred, review these to determine their nature and extent and whether they could have impacted the sampling sites. Implement Hydrological contingency actions as detailed in Section 2.4.2 • If there have been no environmental incidents recorded / occurred, assess monitoring sites and their adjacent area for evidence of other impacts, such as erosion or sedimentation, dumping of waste, dust accumulation on vegetation or an increase in weed species. Assess these impacts to determine whether they are likely to be sourced from the Project i.e. does

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				<p>the erosion extend from the Project boundary into the TEC or is there evidence of alternative pathways</p> <ul style="list-style-type: none"> • Report findings to EPA / DBCA and implement management actions if impacts attributable to the Proposal are detected • Monitor effectiveness of management actions and recovery of TEC / PEC vegetation. Update / revise management measure if needed (impact persists despite management actions).

Figure 1 Threshold breach response process

