

Erosion and Sediment Control Development Site Audit Checklist

This checklist is designed to assist the ESC Officer determine if erosion and sediment controls implemented on a site meet best practice requirements and hence comply with development permit conditions and *Environmental Protection Act 1994* obligations. The checklist is adapted from the Queensland Government Department of Environment and Science *Procedural guide: Releases to waters from land development site and construction sites 2,500 m² and greater (2020)* and that publication should be referred to for advice notes on assessing each criteria.

The checklist is intended to be applied in its entirety to each individual subcatchment at the site.

A copy of the checklist should be provided to the principal contractor at the pre-start meeting.

Erosion and Sediment Control Development Site Audit Checklist

Approval number:	Address/Development name and stage:			
Date:	Auditor:			
Category:	Criteria ¹ :	Compliant (Y/N/Partially):	Severity/Impact ² :	Observations and actions:
Minimising soil exposure and erosion	Has the development been staged so that the extent of clearing is restricted to that necessary for access to, and safe construction of the immediate stage of works, and is vegetation and waterways intact/protected in all other areas of the site?			
	<p>Has soil exposure been minimised by:</p> <ul style="list-style-type: none"> • Only clearing vegetation to an extent where earthworks will commence in that part of the land within 4 weeks of the clearing taking place. Vegetation must be protected in all unworked areas of the site. • Stage the works to minimise the area of soil exposed at any one time. Soil disturbances must be staged into manageable sized areas of no greater than ten (10) hectares to ensure adequate ESC management and progressive stabilisation of disturbed surfaces. • Effectively stabilise cleared areas if works are suspended for a period exceeding 10 days. • Effectively stabilise steep areas, such as slopes, stockpiles, embankments, batters and bunds which are not being actively worked for a period exceeding 10 days. • Effectively stabilise all permanent and temporary open drains immediately upon construction, including the base and the full width and length of the drainage channel. • Effectively stabilise all areas at finished level within 10 days of completion and prior to rainfall (50% or greater chance of rainfall occurring with a predicted total of 20mm or more over a 5-day period). <p>*For the purpose of this section, an effectively stabilised surface is defined as one that, as a result of rainfall and stormwater runoff, does not erode, does not cause sedimentation and does not cause water contamination.</p>			

Drainage and stormwater control	Is clean stormwater diverted around or through the site and will the manner of diversion keep stormwater clean (i.e. will not cause erosion)? Alternatively, if flow cannot be diverted, is it managed as for dirty runoff and are sediment control devices provided and sized to accommodate this additional flow?			
	Are drainage controls (bunds, chutes, etc.) and/or erosion controls in place to control flow onto and manage flows down steep batters and embankments without causing rill or gully erosion?			
	Are drainage controls (catch drains and diversion drains/bunds) and/or erosion controls in place to intercept and control sheet flows to prevent rill and gully erosion?			
	Do all concentrated drainage lines and structures have adequate capacity and appropriate lining to prevent erosion of the flow surface (i.e. is erosion or scour visible or likely within drainage features)? Velocity control devices (e.g. check dams) can be used in unlined drains, however lining drainage channels is more affective at reducing erosion and preventing the mobilisation of sediment.			
Sediment capture and minimising contaminant releases	Do all disturbed areas greater than 2,500 m ² drain to a sediment basin* or equivalent sediment control which is designed, implemented and maintained to a standard which would achieve at least 80 % of the average annual runoff volume of the contributing catchment treated to 50 mg/L total suspended solids (TSS) (or 60 NTU) or less and pH in the range 6.5 – 8.5? *High efficiency sediment basins are the most effective way to comply with this condition.			
	Are sediment basins: <ol style="list-style-type: none"> 1. Appropriately sized. Refer to IECA <i>Best Practice Erosion and Sediment Control</i> (latest version). 2. Provided with an effective and operational automated system of flocculant/coagulant dosing (Type A and B) and a suitable supply of flocculant/coagulant (all types) to meet water quality standards of 50 mg/L TSS (or <60 NTU) or less and pH in the range 6.5 – 8.5 prior to any discharge. <p><i>Advice note: If not applied and managed correctly coagulants and flocculants can have negative impacts on the environment. Aluminium chlorohydrate (ACH) and chitosan have low ecotoxicity, negligible effect on pH, and low dose rates, so are considered</i></p>			

	<p>suitable for most applications. For other products refer to: https://www.austieca.com.au/documents/item/818</p> <ol style="list-style-type: none"> 3. Automated system is adequately designed and is suitable for basin design and catchment size. 4. Dewatered within five (5) days of rainfall ceasing (Type D). Water released during dewatering must meet water quality standards of 50 mg/L TSS or less and pH in the range 6.5 – 8.5. 5. Provided with hydraulic structures such as inlets, outlets, forebays, level spreaders, and spillways which are structurally sound, and installed and designed in accordance with IECA <i>Best Practice Erosion and Sediment Control</i> (latest version). 6. Basin layout is suitably designed and positioned in accordance with IECA <i>Best Practice Erosion and Sediment Control</i> (latest version). 			
	Is any active release from a sediment basin, for events up to the relevant design event for the basin type, discharging at water quality standards of < 50 mg/L TSS (or <60 NTU) or less and pH in the range of 6.5 – 8.5?			
	<p>Is accumulated sediment from basins and other controls removed before the sediment storage capacity is reached and disposed of appropriately without causing water contamination?</p> <p>Has a marker post or similar being installed to identify sediment storage zone depth?</p>			
	For areas or subcatchments <2,500 m ² which are not able to drain to a sediment basin due to the topography of the site, are Type 2 or Type 3 sediment controls provided consistent with IECA <i>Best Practice Erosion and Sediment Control</i> (latest version) and/or has the area been stabilised with adequate erosion controls?			
	Have controls been implemented to prevent or minimise sediment from leaving the site on the tyres of vehicles?			
Work within waterways	Are works undertaken in accordance with IECA <i>BPESC (latest version), Appendix I – Instream works</i> ?			
	Does the timing of works avoid rainfall events?			
	Are temporary vehicle crossings provided with a low-flow culvert and constructed of clean rock fill (not earth embankment)?			
	For works within waterways (i.e. bridges and culverts) is a system of flow diversion in place consistent with IECA <i>Best Practice Erosion and Sediment Control</i> (latest version) Appendix I?			

Maintenance	Are all controls effective and maintained?			
Water quality monitoring	Have water quality tests been undertaken as per the conditions of approval, and are they available on site to be provided to Council upon request?			
Planning and adaptive management	Is an adequate and up-to-date ESC plan available on site and does the plan adequately reflect current site conditions and the stage of works?			
	Have the conditions of approval been met?			
	Have independent audits and inspection certificates been completed to the frequency required by the development permit (where applicable)?			
	Have additional controls been implemented to address any issues identified through previous independent or Council audits (where applicable)?			
Unlawful discharge	Is there evidence of unlawful discharge from the site?			
Risk of actual or potential water contamination	Have all reasonable and practicable measures been implemented to reduce the likelihood of releases of contaminated runoff to a waterway or drainage system?			
Overall compliance rating²:		Proposed action (e.g. education, advice and follow-up and/or enforcement action⁴):		
Comments:				

¹ The IECA *Site Inspection Checklist (detailed)* may be referred to for advice on what to check on individual control measures to determine if they are adequate (<https://www.austieca.com.au/publications/free-downloads>).

² If the answer to all criteria is 'Yes', then the site is compliant. If the answer to any of the criteria is 'No', then site is non-compliant. However, if all non-compliances are deemed of low severity then a rating of 'partially compliant' may be considered.

³ Severity should be classified as either *Low* – technical or inconsequential non-compliances which are easily resolved (e.g. sediment fence temporarily removed for works to proceed), *Moderate* – non-compliance will cause design standard to not be met, although some protection provided to a lower standard and water contamination has not occurred, or *High* – non-compliance either has caused or will cause water contamination of a non-trivial nature if rainfall occurs.

⁴ In general, the enforcement response should consider the severity of the non-compliance as well as the level of planning and adaptive management (i.e. willingness to comply) that is exhibited at the site. This is illustrated below in Figure 1. Further advice on enforcement tools and determining a proportional response can be found in the Department of Environment and Science *Enforcement Guidelines* (2019).

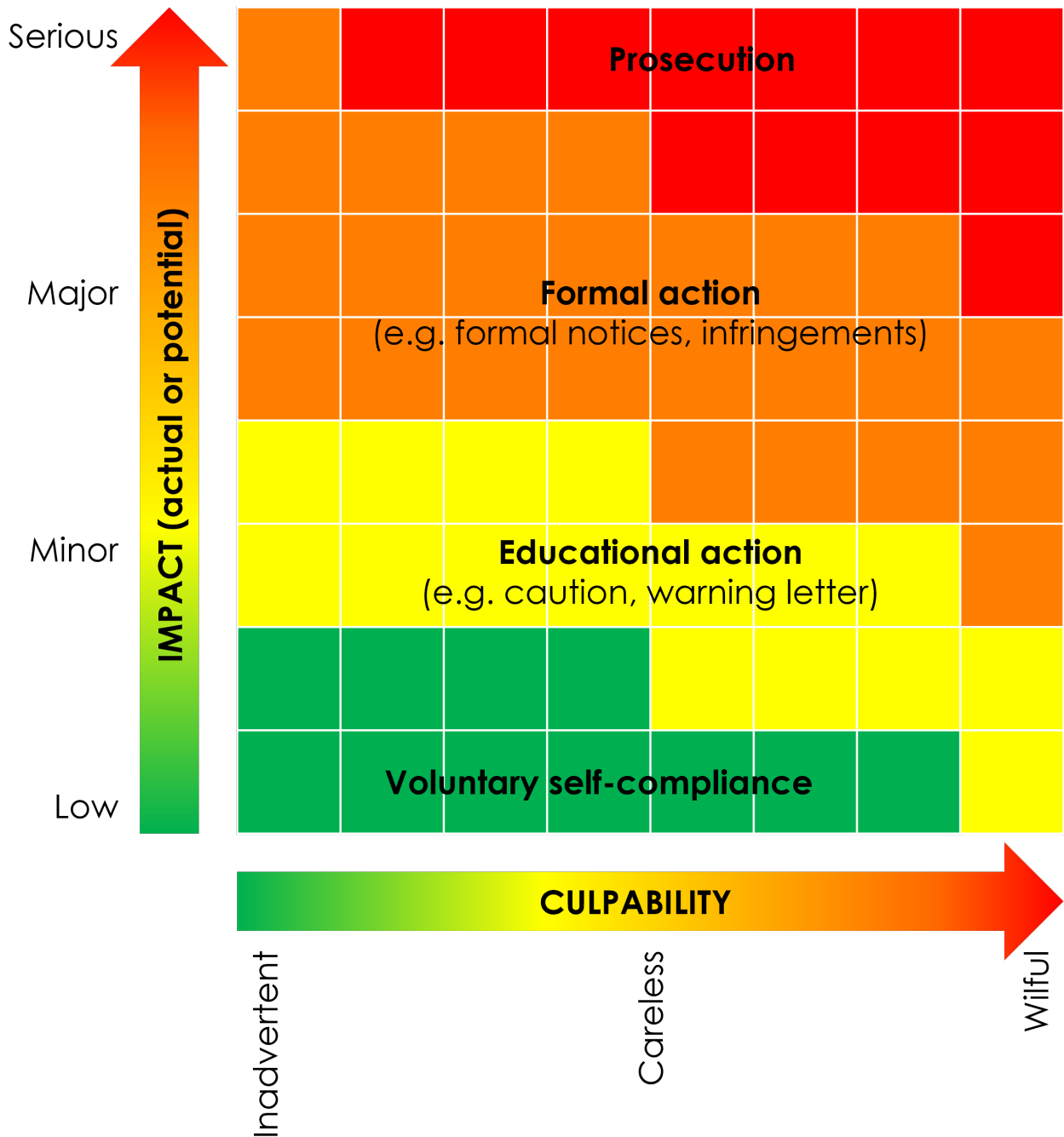


Figure 1. Considerations for determining a proportional compliance response.