DIVERSION DRAINS

WHAT IS THIS?

'Clean' runoff from rain will flow towards your development site from the upslope catchment. You can install surface drainage to divert upslope runoff away from the disturbed areas of your site to reduce the amount of water needing treatment. You must NOT divert runoff onto adjacent properties, only around or through the development site away from disturbed areas (also see 'Early Drainage Connection', page 32). Surface drainage controls must be removed before completion of the development. All clean diverted water must leave the site via the stormwater connection or be temporarily directed via a level spreader to vegetated No-Go-Areas (see page 38) away from/below the disturbed work area to soak into the ground.

WHAT DO I NEED TO DO?

Before starting site works:

'Clean' upslope runoff can be diverted with the use of a diversion drain to the site stormwater connection or a vegetated 'No-Go Area' via a level spreader outlet if appropriate. Identify areas within the site where runoff can be diverted around the disturbed or active work areas and ensure your ESCP (see page 17) includes the location of these controls. Any external runoff that cannot be diverted around the disturbed area is the responsibility of the developer to treat and its volume needs to be accounted for in the selection and sizing of sediment controls. Diversion drains must be adequately designed and constructed to convey water without overflowing, eroding, or failing due to excessive runoff velocity, or accumulating sediment. They should not accumulate sediment as they are only for clean runoff. Ensure the function and maintenance of diversion drains, catch drains, and soil berms are included in all site inductions.

Installing the controls:

Diversion drains: A diversion drain is a channel constructed on the upslope side of a site to divert clean upslope surface runoff from rain that would otherwise flow into the work site (Figure 3).

- Refer to diversion channel design guidance in the Diversion Channels factsheet (IECA Book 4 Design Factsheets, 2010) for design specifications, unless specified otherwise by the council.
- To protect the drain from scouring, line it with appropriately selected and installed geotextile, matting, or rock, or create rock check dams (see page 28).
- Ensure the drainage channel is at least 300mm deep (depending on your catchment size) with a freeboard of at least 150mm, and with a curved or flat base.
- Place the excavated soil from the channel on the down-slope side to increase the capacity of the diversion drain.

- If clean water from the diversion drain is not connected directly to the stormwater connection, flows must be diverted to a stable drainage area (via a level spreader) to ensure that the channel does not itself cause erosion where it discharges.
- The diversion drain must be kept clean and free of plantings and mulch to avoid obstructing water flow.

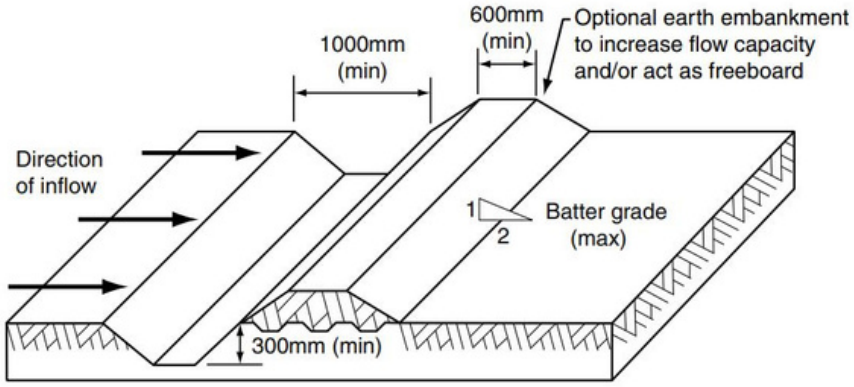

Figure 3: Typical profile of a diversion drain with downslope bank to increase flow capacity. *Figure from Catchments and Creeks Pty Ltd.*

Level spreader: A level spreader is a wide, level overflow sill built across a slope at the outlet of a diversion drain. It allows even spread of water flow, so velocities are reduced, and soil erosion is avoided. This should only be constructed to release water to a protected 'No-Go-Area' where:

- water flow will not become concentrated;
- soil is stabilised and the area is not within the path of construction activities;
- ground remains well-vegetated and can absorb water; and
- discharged water flow will be slow moving.

If the area is sloped or the runoff is at high flow velocities, a grass or geotextile fabric lined channel is required to return the diverted clean runoff to the site stormwater connection.

Maintaining upslope drainage controls:

Regularly check diversion drains, the connection to stormwater infrastructure, or level spreader outlet to a 'No-Go Area' for signs of damage, erosion, or sediment build-up, and maintain them accordingly. Inspections should be carried out specifically before and after rain events.