



# A guide to farm lane and culvert design and management



Water flowing down a lane gathering contaminants that could enter a waterway

Farm lanes and culverts are an important part of the farm and are frequently used by vehicles and animals. They can quickly be coated in manure and other contaminants that can get picked up when it rains and flow directly into a waterway. Good design and management of lanes and culverts can significantly reduce this pollution hot spot.

## ► Good design of farm lanes

The goal is to direct surface water off the lanes onto pasture, preventing it from building up and discharging into a waterway or eroding the lane surface. This can be done with cut-outs, contouring the surface and direction baffles.



Good lane design with raised culvert, riparian strip and surface angles directing water onto pasture.

### Lane design tips

1. Avoid building tracks adjacent to waterways. If this is necessary, build them sloping away from the waterway so any runoff is directed into the paddock.
2. Consider soil type when designing the track. Construction on a heavy soil will require more care and maintenance.
3. Construct your lanes in the summer months to minimise sediment loss and scouring.
4. Keep gradients gentle to reduce runoff speed and scouring.
5. Install cut outs, baffles or sediment traps to tracks leading towards a waterway to divert runoff into adjacent paddocks.

## ► Good design of culverts

The goal is to stop mud, manure and other contaminants building up to then be washed into the waterway after heavy rain. Good culvert design can also help to prevent erosion and allow for fish passage.



Good culvert placement, size and lane side baffles.

### Culvert design tips

1. Check rules for culvert dimensions and fish passage requirements – you may need a consent.
2. Install cut outs towards bridge and culvert approaches.
3. Build up the sides above culverts and bridges to avoid runoff entering the waterway.
4. Place baffles along sides of lanes over the culvert to direct material onto pasture.
5. Avoid placing paddock access close to a crossing.

### More information

You'll find helpful information on these websites:

- DairyNZ – [www.dairynz.co.nz](http://www.dairynz.co.nz)
- Beef + Lamb – [www.beeflambnz.com](http://www.beeflambnz.com)

### Further assistance

For advice and designs to suit your specific needs, call us to arrange a free visit by Environment Southland's land sustainability team on 0800 76 88 45.

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