

Erosion Control Structures



There are many ways to manage surface run-off and erosion on your property. In some cases, adapting tillage and cropping systems is enough to reduce erosion. However, other properties require the construction of berms, water and sediment control basins, diversion terraces, or grassed waterways to divert the water.

Water and Sediment Control Basin

A water and sediment control basin, also known as a WASCoB, is an embankment, also known as a berm, installed across a natural drainage pathway. The WASCoB intercepts surface run off, holding it for up to 24 hours as it is slowly discharged through a standpipe inlet. By slowing down and draining excess surface water, it can reduce erosion and sediment has time to settle out of the run-off.

Why Install a WASCoB?

- Reduces run-off from directly entering watercourses
- Prevents erosion from worsening in the future
- Can improve the ability to farm on topographically irregular

Placement is Key

Appropriately placing a WASCoB in the landscape will determine how effective it is at controlling erosion. Installing WASCoB's in the headwaters of a watershed will help with erosion downstream. Erosion control and rural stormwater management therefore must be tackled at a watershed scale.

Capacity of a Berm to Control Erosion

Berms are designed to be used in smaller watersheds that are less than 20 ha (50 ac). In larger watersheds , greater than 20 ha, a series of berms may be necessary. Each structure should be designed to hold the amount of run-off expected from a 10-year storm event. If designed improperly, water can over flow the walls of the WASCoB and cause various issues.



Broad-based berm with hickenbottom inlet



Grassed waterway with French drain and erosion control berm

WASCoB Types

Broad – based berm

A broad based berm can be cropped over and tends to tie well into the existing landscape. They fit well into steeper environments and can be built on slopes up to 8%. Due to their large size, broad-based berms require a lot of soil to construct, increasing costs.

Narrow – based berm

A narrow-based berm can be permanently vegetated and cropping can occur on either side. They can be built on slopes up to 14% and require less soil to construct, decreasing costs.

Diversion terrace

A diversion terrace is a permanently vegetated channel that control water. They help prevent rill erosion and reduce sheet erosion. Construction expenses are higher due to design work and installation.



Grassed waterway with French drain and broad based-berm



Stormwater accumulating in a field

Narrow-based berm and hickenbottom, Garvey-Glenn watershed, Summer 2016



WASCoB Maintenance

- Make sure the structure keeps its original shape
- Repair any damages especially after heavy rainfall
- Regularly complete inspections to make sure everything is in working order
- If a structure can be worked over, be cautious with the type of equipment selected
- If the structure is grassed, limit weed growth

Thank you to our partners!



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Broad-based berm construction, Garvey-Glenn watershed, Summer 2016