

Prevent 100% of CSO floatables and gross solids and 95% of CSO grit and sediment from reaching the environment.

The Storm King® is an advanced hydrodynamic vortex separator and screen that delivers exceptional removal of TSS, BOD and other materials at combined sewer overflow sites, preventing damaging pollutants from reaching the environment.

Non-powered and self-cleansing, the Storm King® is ideal for satellite treatment at overflow sites and has been shown to reduce project costs by up to 50% compared to conventional technologies.

Applications

- Floatables control.
- New satellite CSO facilities and upgrades to existing CSO facilities.
- Treatment of excess stormwater flows at WWTPs.
- Treatment at centralised stormwater treatment plants.
- Combined sedimentation, screening and disinfection.

Performance

- Low headloss.
- Self-activating and self-cleansing.

Pollutant Removal Rates:

- 100% removal of solids 6 mm in two directions, including floatables, gross solids and neutrally buoyant material.
- 95% removal of grit and sediments.

Design Requirements

- Flow rates.
- Spill frequency.
- Chamber details.
- Hydraulic conditions.



Benefits

Reduce project costs

The Storm King® is a small-footprint, non-powered, low-maintenance unit with low capital and O&M costs, and offers 50% project costs savings when compared with conventional technologies such as micro-strainers.

Cut maintenance

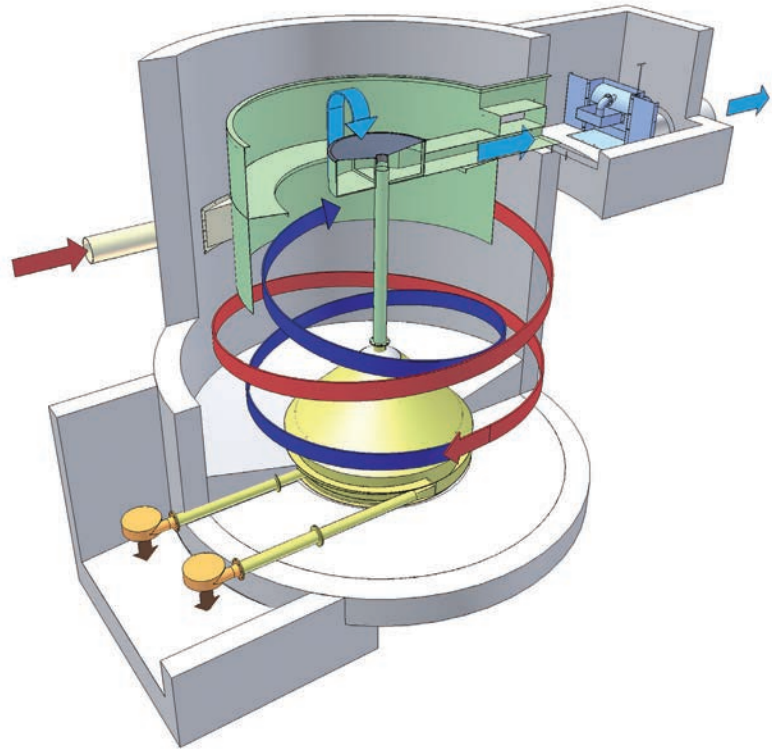
With no moving parts, no power requirements and self-cleansing components, the Storm King® is a low-maintenance CSO option.

Combine screening, sedimentation and disinfection

The Storm King® incorporates both a screen and a hydrodynamic separator to ensure exceptional removal of CSO pollutants, and trials conducted in the US at Columbus, GA and Saco, ME show that the unit can also be used to provide disinfection in 30% of the area normally required for conventional disinfection technologies.

How it Works

- 1) Flow is introduced tangentially into the side of the Storm King® causing the contents to rotate slowly about the vertical axis.
- 2) The flow spirals down the perimeter allowing solids to settle out. This process is aided by rotary forces, shear forces and drag forces at the boundary layer on the wall and base of the vessel (**red arrow**).
- 3) The internal components direct the main flow away from the perimeter and back up the middle of the vessel as a broad spiralling column, rotating at a slower velocity than the outer downward flow. By the time the flow reaches the top of the vessel, it is virtually free of settleable solids and is discharged to the outlet channel. Prior to discharge, the overflow passes through the self-cleaning screen (**dark blue arrow**).
- 4) The self-cleaning screen captures all floatables and neutrally buoyant material down to 6mm. The air regulated siphon provides an effective backwash mechanism to prevent the screen from blinding (**light blue arrow**).
- 5) The collected solids and floatables are then discharged by gravity or pumped out from the base of the unit to the Continuation flow to the treatment works (**brown arrow**).



Maintenance

The Storm King® Overflow incorporates a screen with a hydraulically operated siphon that regulates the self-cleansing dynamic backwashing system.

With no moving parts, no power requirements and self-cleansing components, the Storm King® is a low-maintenance CSO option.

Make it Smart:

Add Hydro-Logic® Event Duration Monitoring, telemetry and alerts to help you make better water decisions.

Learn more

To learn more about how the Storm King® can help you to make better water management decisions, visit hydro-int.com, search **Hydro Storm King** online or contact us:

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