



with assistance from
New Zealand Water and Wastes Association
presents

**Managing Stormwater
and Road Run-off
Tools, Techniques and Devices**





Innovative Stormwater Technologies for Road Runoff

Stormwater Treatment Technologies

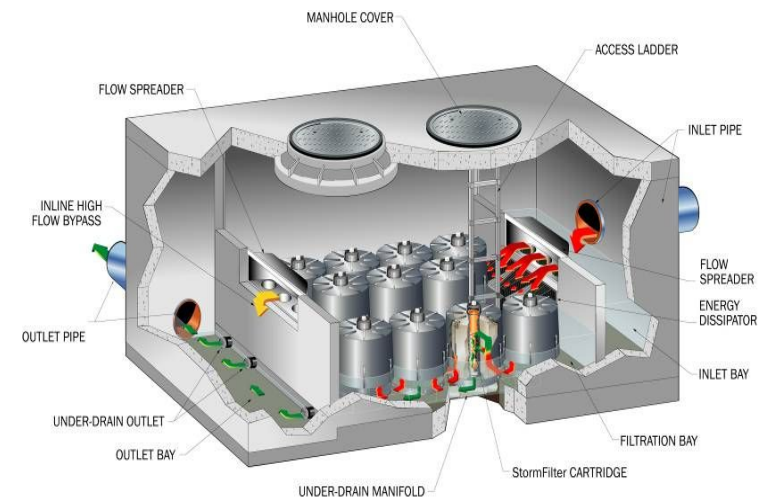
- Traditional

- Ponds
- Wetlands
- Swales
- Sand filters



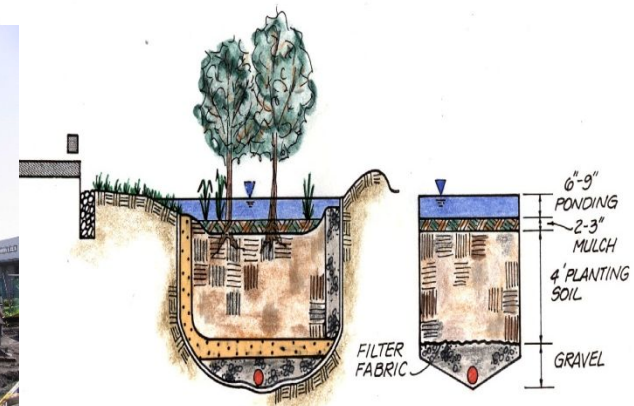
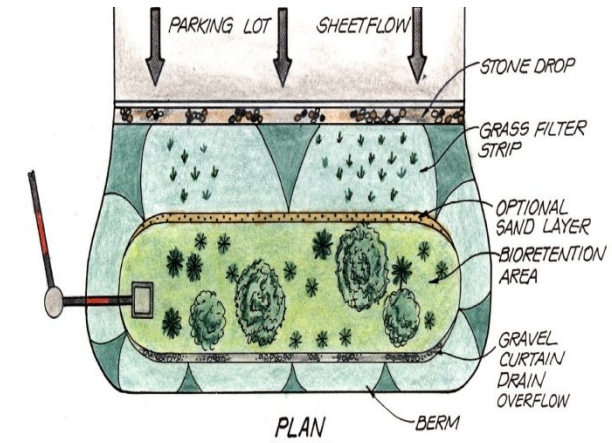
- Innovative

- Screening Devices
- Hydrodynamic Devices
- Filtration Devices

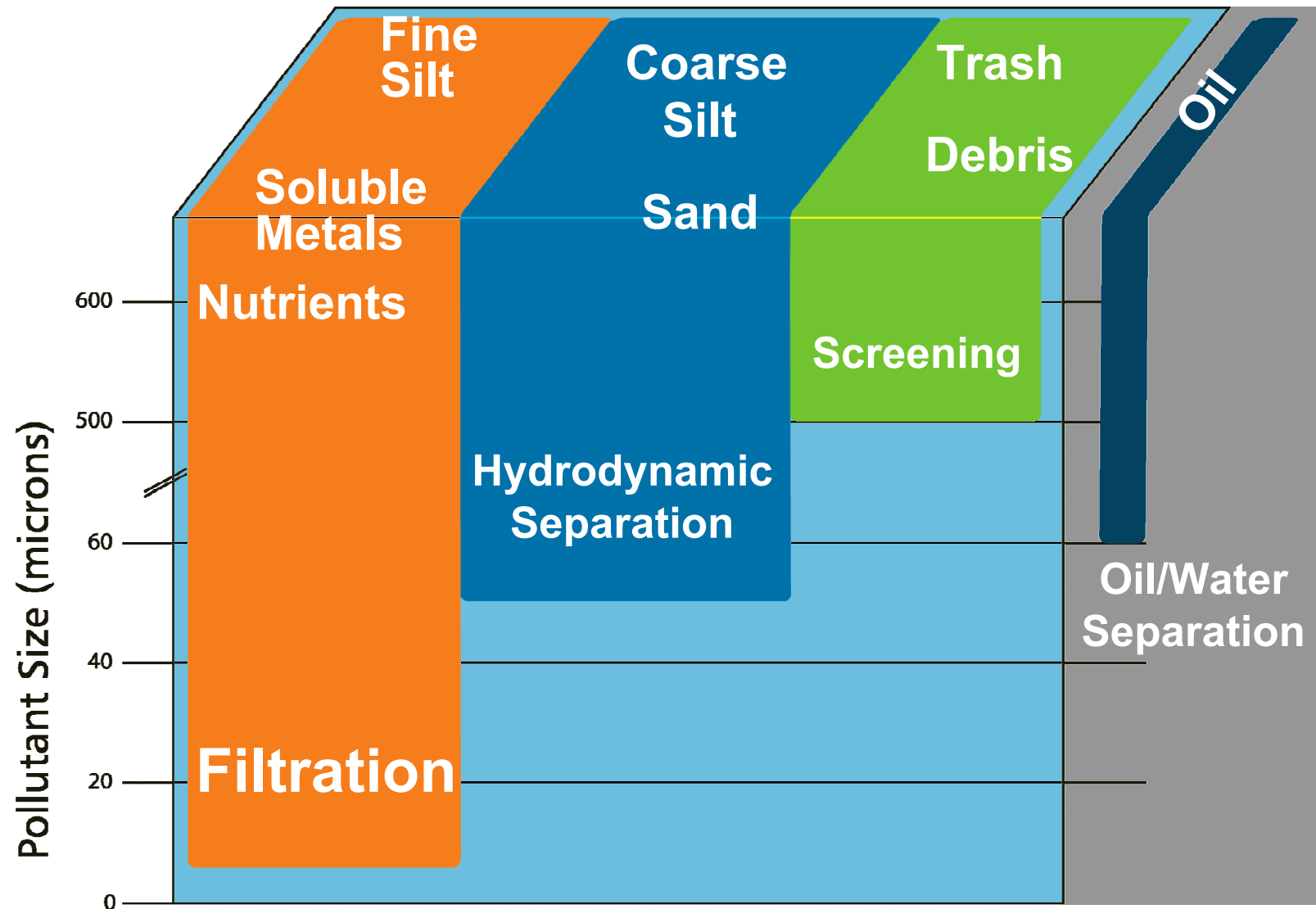


Traditional or Innovative

- Flow based as Opposed to Volume based
- Manufactured Solution as Opposed to Designed and Constructed
- Aboveground or Underground



Pollutant Characterization

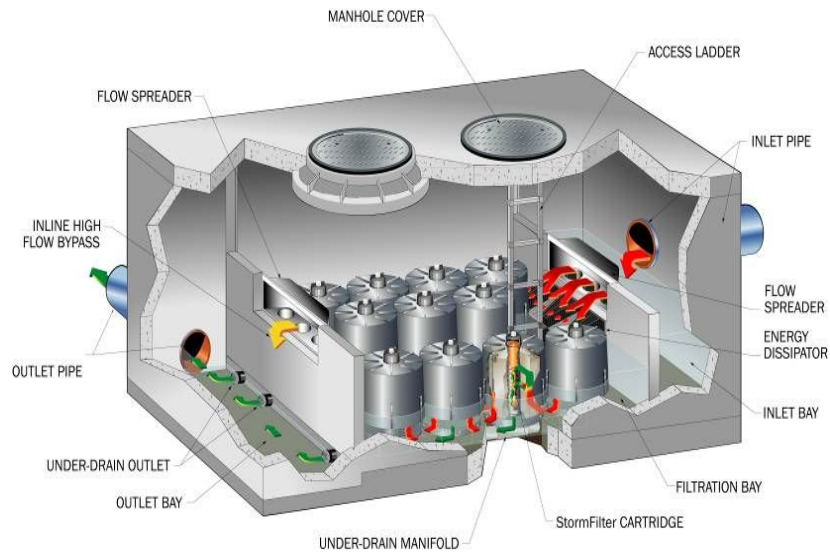


Filtration Devices

Why Filtration?

- Highest level of treatment
- Meets most stringent regulatory requirements
- Filtration media to target contaminants
 - Particulates
 - Dissolved contaminants

Rapid Filtration



The Stormwater Management StormFilter®

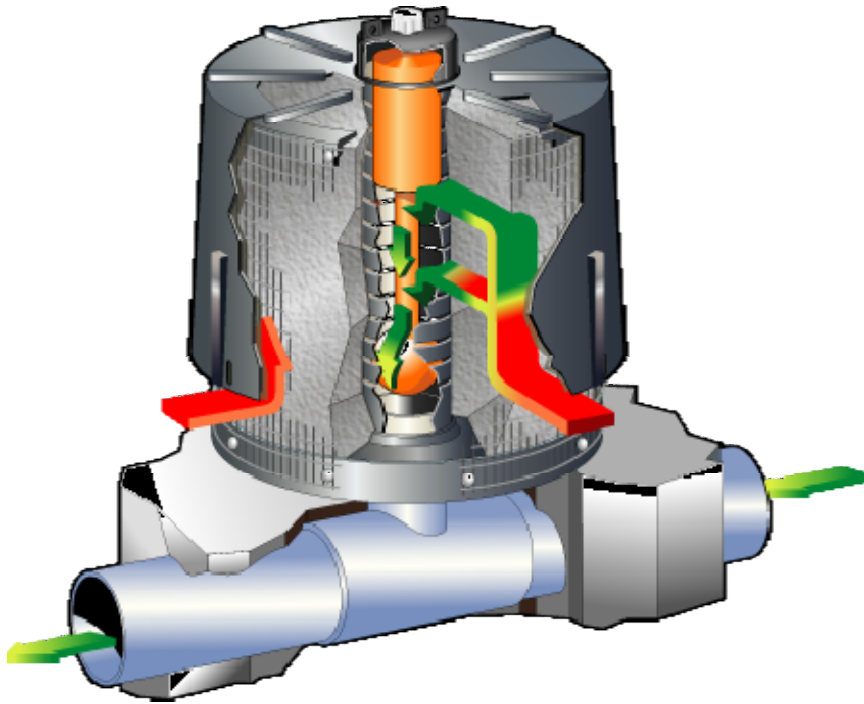


The “Filternator”

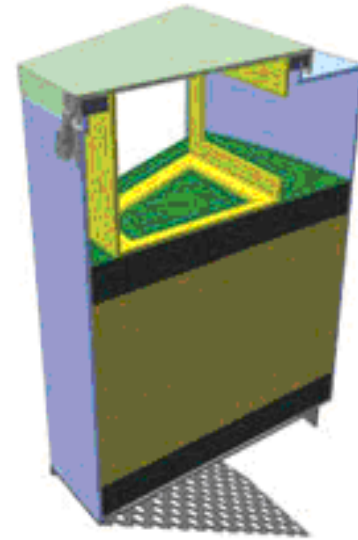


Upflo Filter

Filtration



StormFilter® Cartridge



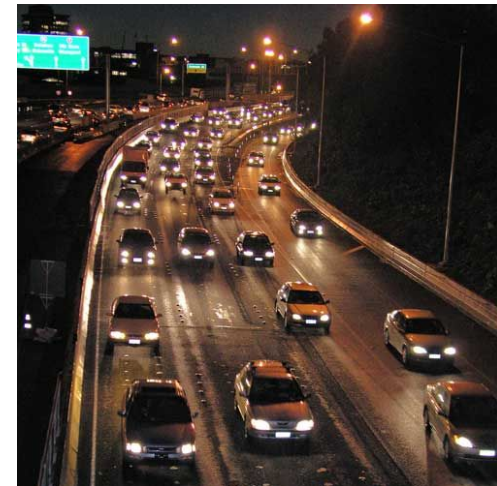
Upflo Module

Filtration Fundamentals

- Media contact time
- Specific flow rate (l/sec/m^2 and l/sec/m^3)
- System hydraulics
- Media properties
 - Physical properties
 - Chemical properties
- Load capacity and maintenance

Where to use Filtration

- Stand alone treatment
- Highly trafficked areas
- Metal removal
- Ecologically significant areas
- High risk land use



Summary

- There is now a greater emphasis on stormwater treatment
- There is a variety of contaminants in stormwater
- Innovative devices
- There are many different stormwater treatment devices
- There are 3 main types
 - Screening
 - Separation
 - Filtration
- The type chosen depends on contaminants targeted.
- Consideration needs also be given to design, maintenance, cost and performance



Thank you

Questions?

- Mike Hannah, Stormwater 360
- Chris Thorpe, Humes
- Peter Carroll, Hynds
- Keith Caldwell / Sue-Ellen Fenelon, Beca