Road Controlling Authorities Forum

Road Controlling Authorities Forum (New Zealand) Incorporated

with assistance from

New Zealand Water and Wastes Association

*presents*

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

nzwwa

New Zealand Water & Wastes Association

Waiora Aotearoa

Stormwater360

HYNDS ENVIRONMENTAL

HUMES

# Innovative Stormwater Technologies for Road Runoff

# Proprietary Devices

## Why use these over traditional techniques ?

# Where to use them…

- Retrofits / Brownfield land
- Steep sites
- Smaller catchments
- Pre-treatment for infiltration devices to improve their longevity

# Why use these devices ?

## Performance

- As units are often factory-made efficiencies can be achieved with more certainty
- When used in Auckland Region - ARC pre-approval:  >75% removal of TSS
- Units can be tailored to remove particular pollutants by selection of various filtration media

# Why use these devices ?

## Space constraints

- Easily retrofitted into existing roadways / verges / car parks where space may be a constraint
- Can use multiple smaller devices effectively rather than one larger one
- Small footprint allows them to be used close to source

# Points to consider

- As the majority of these devices are installed below ground level please remember:
- It is not always obvious when something is wrong (blockage / breakage) – **Routine inspections are essential**
- It is not always obvious when devices are full and require emptying – **Routine and reactive maintenance are essential**

# Points to consider

- A good understanding of the **pollutants contained in runoff** is required before selecting / approving a proprietary device.
- Regardless of quoted efficiencies, devices can only provide a robust level of treatment if **well maintained**

# Why use these devices ?

## Maintenance

- Benefit: No planting to keep alive
- Often quite easy and fast (2 to 6 hours)
- Consideration should be given as to whether maintenance of device can be incorporated into existing maintenance schedule, using existing skills

# Maintenance

3 Phases:

- Establishment
- Routine
- Renovation

# Maintenance

## Establishment

- During construction
- Requires regular and frequent monitoring
- Frequency will depend on site practices for sediment and erosion control

# Maintenance

## Routine

- 6 monthly or yearly as per consent
- Removal of filtration media
- Removal of sediment build-up in chambers
- Cartridge replacement

# Maintenance

## Renovating

- Sandfilters- removal and replacement of sand
- Cartridge types are renovated with routine maintenance
- Can be quite costly in time as well as contaminant disposal costs to an approved landfill

# Maintenance

## Be aware of what is happening in the catchment!!

# Device Ownership

## Options

- Developer owns and maintains device
- Ownership can be transferred to council after a specified period

# Questions

- If Council owned – which department is responsible for maintenance ?
- Where is the boundary for maintenance responsibilities ?
- How is the maintenance funded ?
- Do roading and stormwater departments talk to each other ?
- What about the Parks people?

# Questions for you

- Who has used any of these?
- Was your experience good?
- Why – location? Size? Cost? Maintenance?
- Who has had a bad experience?
- Why? -Hard to maintain?
  -Frequency of maintenance to high?
  -Not achieving good contaminant removal?

# Why use these devices ?

## Cost

- Developers: Cost of unit should be weighed against dual use capability – stormwater treatment and carparking
- Adopting authorities: How will OPEX compare with that of other devices?

# Questions?

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

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