

REGIONAL GSI FACILITY MAINTENANCE

A large amount of fine sediment and organic compound will bypass swirl separator.



Newly Installed

The facility can become inundated with fine sediments and organics if they are not removed on a regular basis. Once sediment builds up around weir structures and plants not only is it difficult to remove but it negatively impacts the function of the facility.



Unmaintained Sediment

Plants



Newly Installed

It was found that sedges and rushes worked best for Swale on Yale. Sedges and rushes require irrigation year-round to survive. Plants should be trimmed to 4" after the rainy season to allow for easier sediment removal. Weeds will need to be maintained on a regular basis to maintain the desired aesthetic and function. Assume 5% of plants will need to be replaced annually.



Unmaintained Weeds

Inflow Structure



Raised Gate

The inflow structure can become clogged with fine sediments and organics if not maintained properly. The solution for this on Swale on Yale was to raise the grate above the concrete channel to allow stormwater to flow over the edge like a weir instead of up through the grate.



Unmaintained Grate

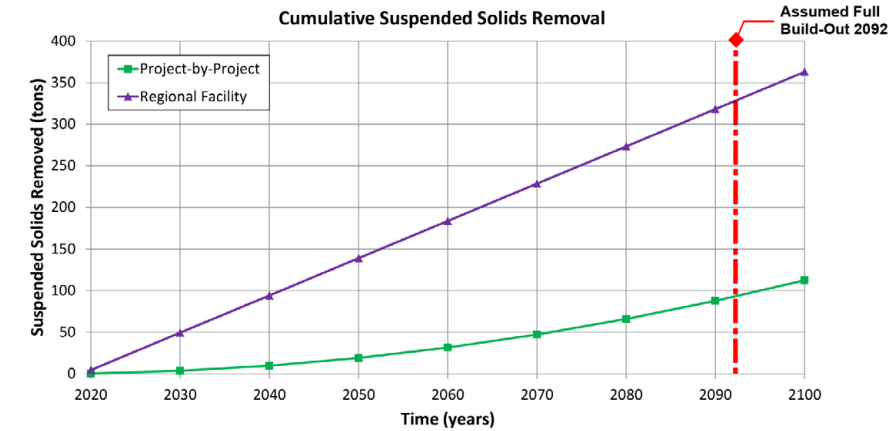
Swirl Separator



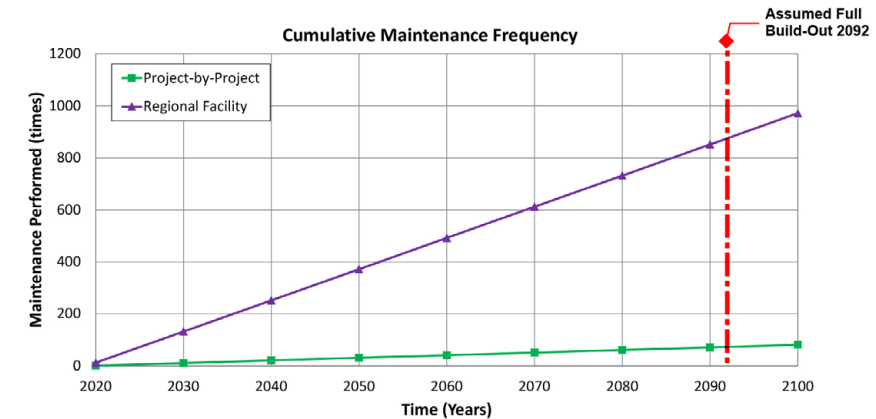
Inside of swirl separator

Anticipate the swirl separator will need to be maintained via vactor truck on a monthly basis. The swirl separator will only collect the larger floatables so it is important to consider pre-settling for smaller fines and organics. The swirl separator will not require confined space entry.

Project-by-Project vs. Regional Facility



At full build-out of the basin, the regional facility will remove approximately six times more total suspended solids (TSS) than traditional on-site stormwater management (OSM) facilities. The amount of TSS removal directly correlates to the amount of maintenance that will need to be performed. Assuming you maintain OSM facilities once a year and you maintain the regional facility once per month, the regional facility will require twelve times more maintenance visits. However, the regional facility maintenance will occur at one centralized location at ground-level as opposed to the project-by-project approach where maintenance would be dispersed across the basin and may also require roof access to maintain vegetated roof systems.



Other Maintenance Considerations

- Plan to dispose of waste off-site
- Incorporate a pre-settling function to settle out fines and organics
 - Install a pre-settling facility just downstream of flow splitter
 - Leave the first bay of the facility unplanted
 - Scrape sediment out without disrupting plants
 - Anticipate monthly cleaning
- Install rocks on either side of the weir
 - Prevents plant growth from disrupting level spreader
 - Allows the flow to be seen
 - Place rocks in a removable basket for ease of maintenance