

# Huston Lake Water Quality Treatment

Consists of a 2-stage treatment design

Stage 1 —Concrete forebay intended to retain larger sediment and debris

Stage 2 —Bioretention zone overlaid by turfgrass

- filtration
- infiltration
- biological uptake



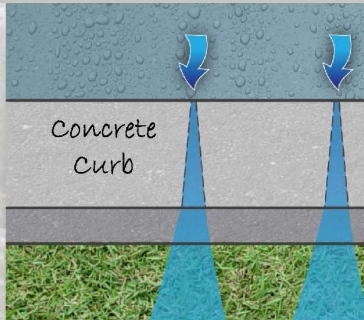
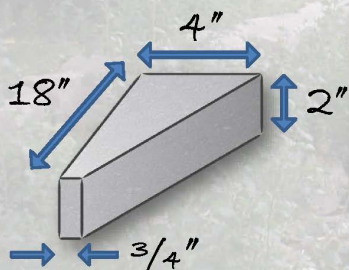
Basin area = 13.6 acre

Imperviousness = 50%

Construction completed in November 2013



Huston Lake

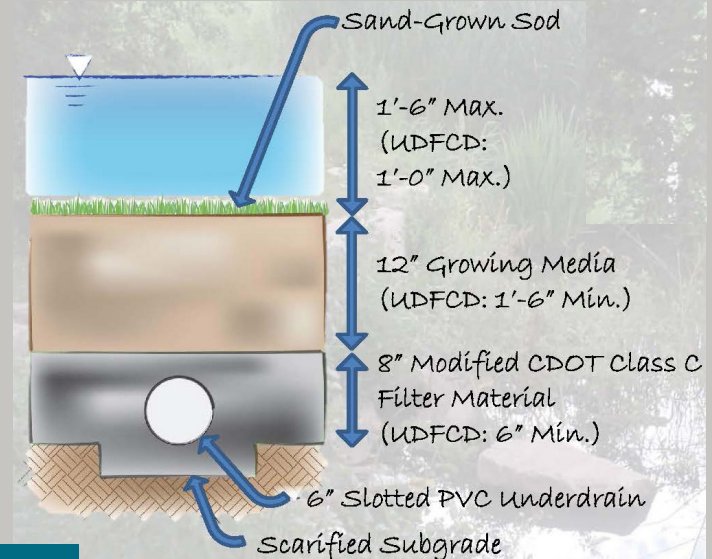


Water is discharged from the forebay through triangular-shaped openings spaced 2-foot O. C. along a curb wall. Openings are sloped.



The City and County of Denver sweeps the forebay once a month from April thru November.

## Bioretention Section Detail

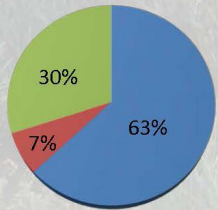




# Huston Lake Water Quality Treatment

## Growing Media Mix

### Volumetric Mix Proportions



- Athletic Grade Sand
- Fine Shredded Cedar Mulch
- Sandy Loam Topsoil

Blended with Granulated Iron at 3.6% by Weight



## Project Comparison to UDFCD Criteria

	UDFCD Criteria	Project Design
Forebay Volume	3% of WQCV	1% of WQCV
Forebay Release	1 CFS (2% of 48.5 CFS)	1.7 CFS
Biotetention Volume	8,325 CF	2,010 CF (24%)
Surface Area	5,550 SF	<1,000 SF bottom (<20%) 2,700 SF top (50%)
Bioretention Release	12 Hours	2 Hours

\*Site constraints didn't allow UDFCD criteria to be fully met.

## Post-Construction Observations

- Forebay is removing sediment very effectively. Even when openings appear clogged the forebay does not hold water in between storm events.
- Street sweeping has been effective and removes debris from the openings.
- The bioretention area is not draining as quickly as it did in 2014.
- Vegetation is stressed/dying in the lowest, most heavily loaded portion of the rain garden.

