

Background

Pilot DiBT (German technical authority in construction)

- **80%** TSS₆₃ removal

Lab SediPipe XL 600/24 (Boogaard, 2015)

- **Nearly 100 %** removal of TSS > 63 μm at 10 L/s

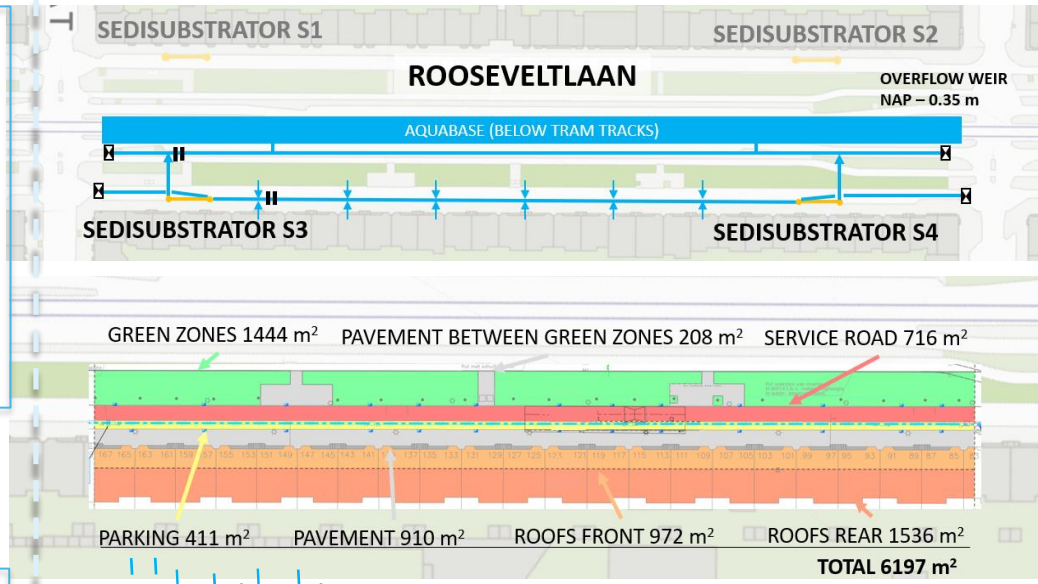
Model SediPipe L 600/12 (Goess-Enzenberg, 2020)

- **17-78%** average annual removal TSS

In-Situ SediPipe XL 600/24 (Lieske et al., 2021)

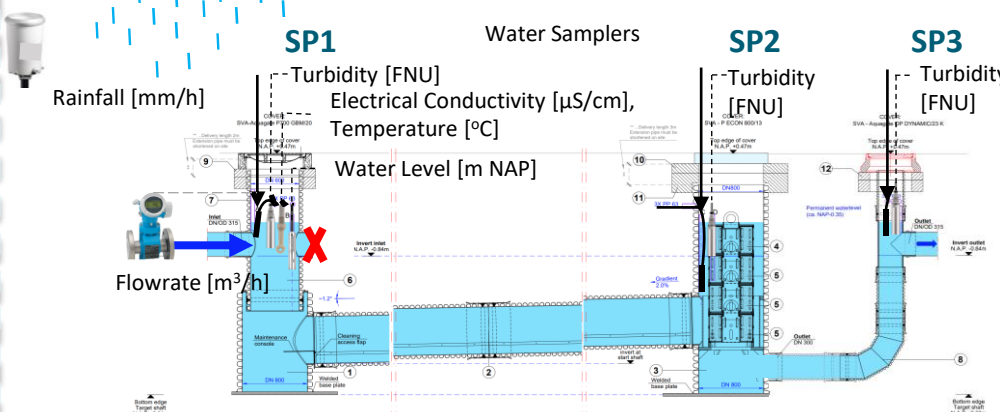
- **29%** average removal TSS (2 years)

Methods



Research Questions

1. What is the sediment removal efficiency in Amsterdam?
2. What is the stormwater quality?
3. How does the SediSubstrator L perform on the long-term?

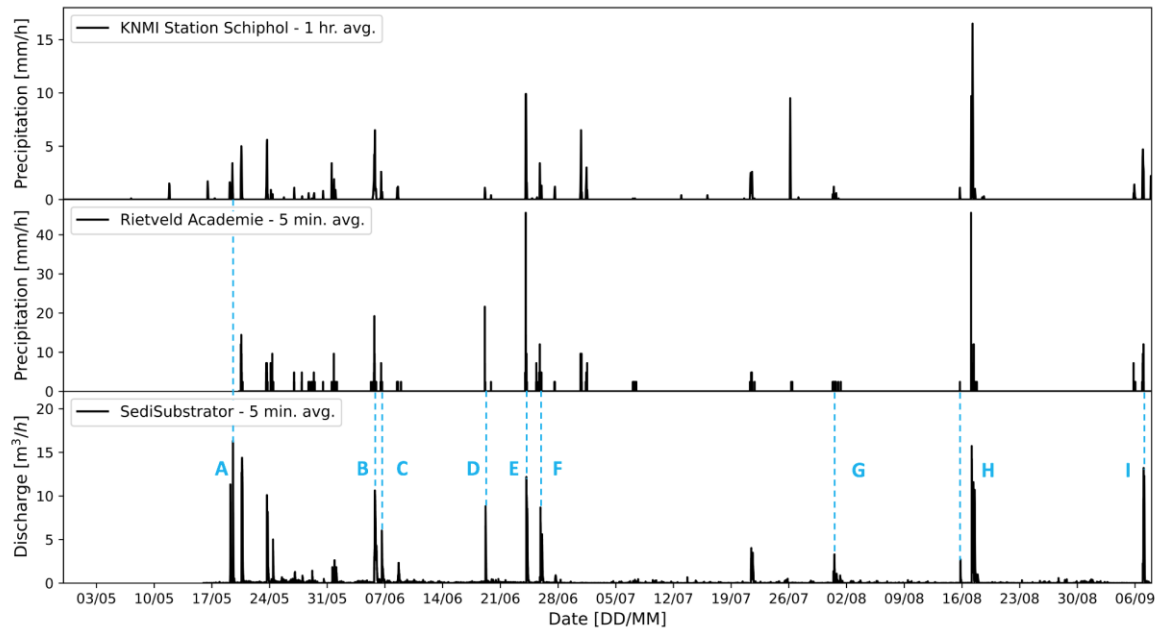


Results (1/3)

Sediments

- Size 78% < 63 μm
- Composition/density 66% organic
- Concentration 20 mg/L TSS

Rainfall and Discharge



Stormwater Quality

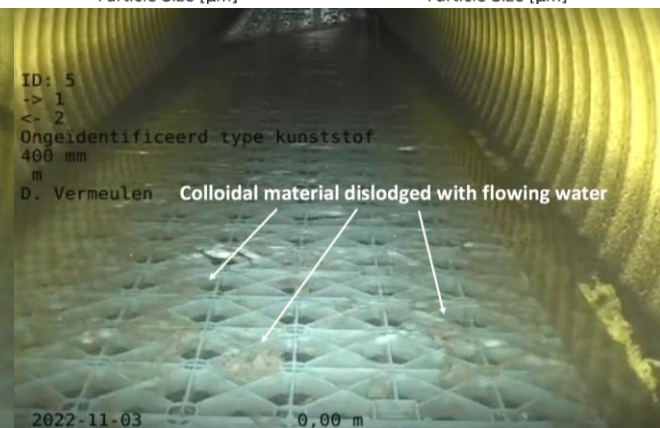
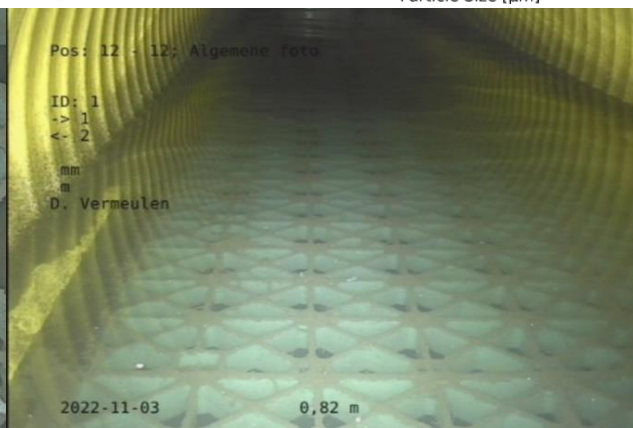
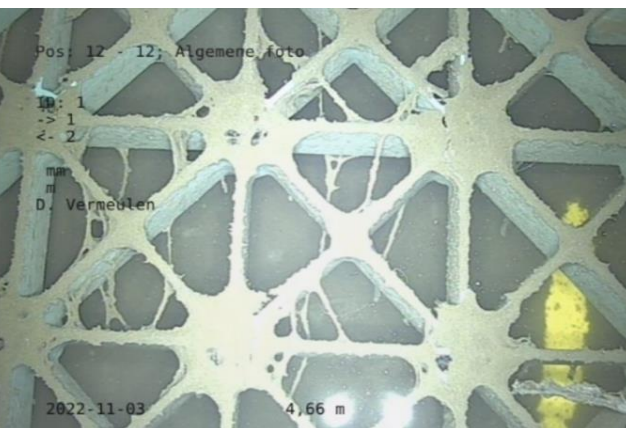
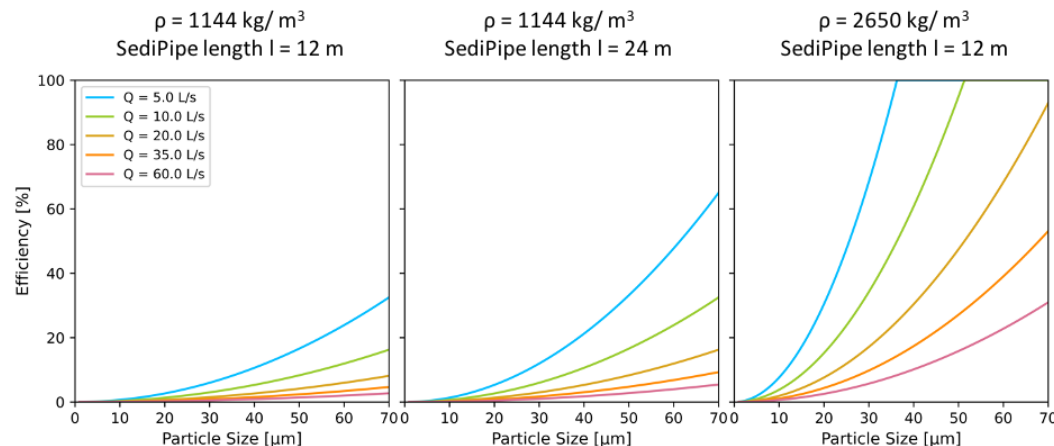
	Rooseveltlaan	NL Mean	NL Median ¹
Total Kjeldahl N [mg/L]	3.3	2.1	1.4
Total P [mg/L]	0.29	0.3	0.2
PO ₄ ³⁻ [mg/L]	0.19	-	-
Pb [μg/L]	53	21	12
Zinc [μg/L]	790	144	75

¹Liefing et al. 2020

Results (2/3)

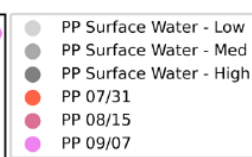
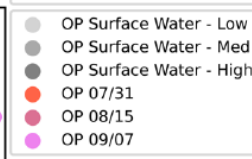
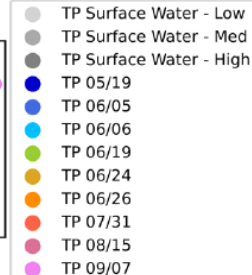
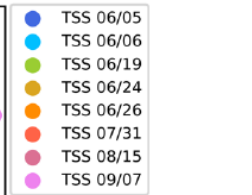
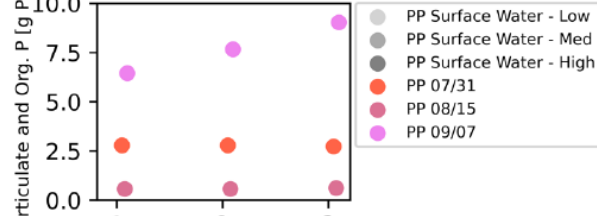
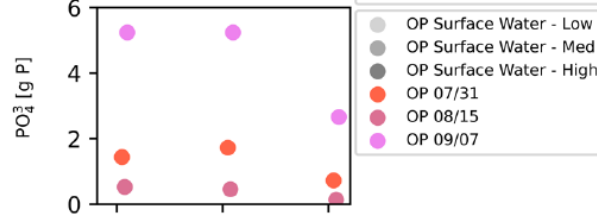
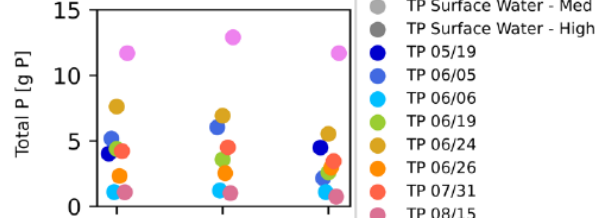
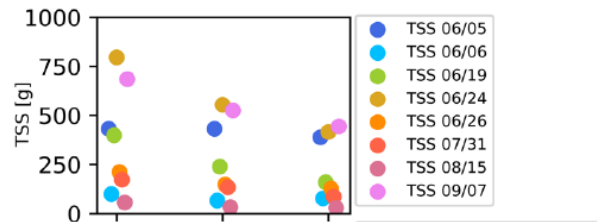
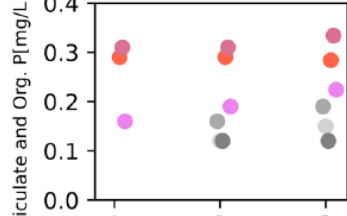
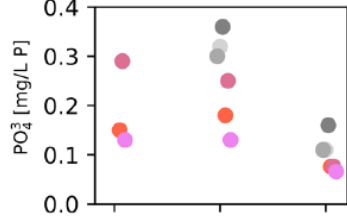
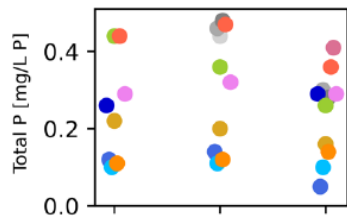
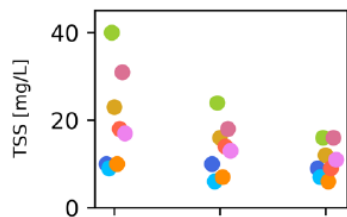
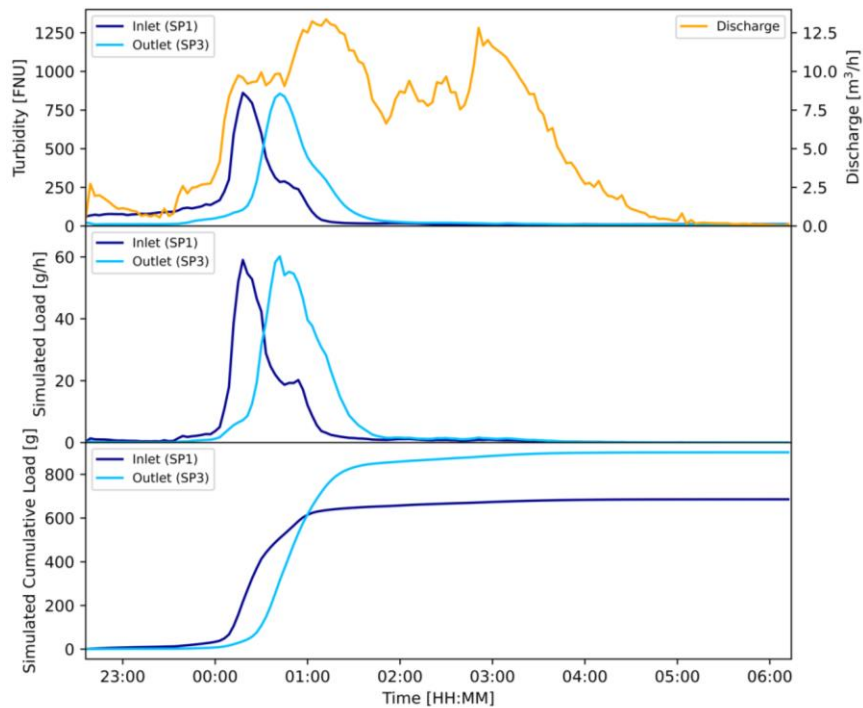
- Removal efficiency
- Modeled removal efficiency Sedipipe
- Camera inspection (2022)

	Removal Efficiency [%]			
	TSS	Total P	PO ₄ ³⁻	Particulate and Organic Phosphorus
SediPipe	22	-6	-3	-15
SediSorp+	16	24	52	-14
Overall	34	18	50	-24



Results (3/3)

Dynamics in the system



Looking to the future

Long term maintenance and caught load

Filter resistance testing and analysis

Alternative filter materials (sustainable, functional and low-maintenance)

Local infiltration pre-treatment design recommendations

The SediSubstrator L

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