

The WaterMan project

Reuse of storm water and next generation multi-dams in Gamleby & Västervik

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Västervik Municipality



Västervik Pilot The challenge

- Too much and too little of water
Problems with heavy rains and water scarcity in summertime
- Climate change and more hard surfaces
makes the problem worse

From the news - Effects of climate change, too much and too little of water

Mer av både skyfall och torka på jorden



Människor flyr undan vattnet efter ihållande regn i Kulli i den Indiska staten Himachal Pradesh i slutet av augusti i år. Foto: Aqil Khan/AP/TT

Fler kraftiga skyfall och fler perioder med svår torka. Det är vad som väntar världen, slår världsmeteorologiska organisationen WMO fast i en ny rapport.



LARS THELL MARKLUND, FORSKARE RISE

Skyfall och torka ökar – men många kommuner halkar efter i arbetet med klimatanpassning

Sveriges infrastruktur är inte rustad för extremväder. Lars Thell Marklund ser brister i hur kommuner hanterar både skyfall och torka – och menar att det krävs bättre och tydligare ansvar och samarbete för att utveckla

Läs artikeln

Water retention solves many problems

Actual and prioritized issue in Västervik

- Protection from floods
- Climate adaption
- Reduce of nutrients
- Winwin-effects



Storm water can be a resource instead of problem

Climate adaption, recreation,
reuse - irrigation and other use , green
and pleasant surroundings, biodiversity



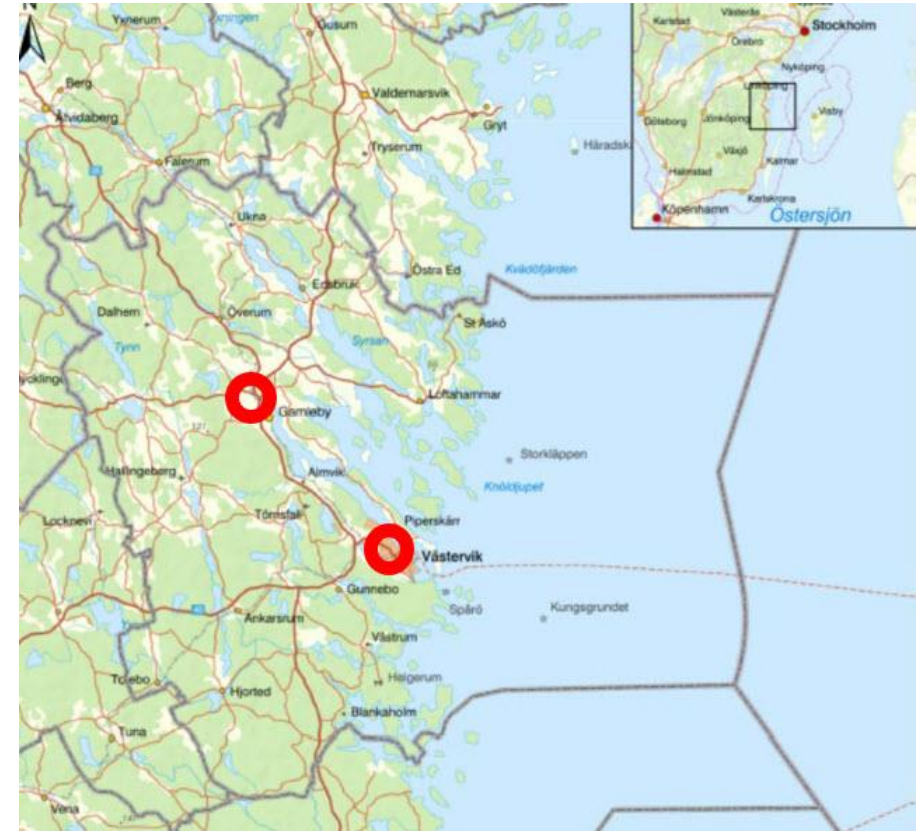
Background and objectives

- The reuse of water from the "multidam" in Gamleby. The water had been used for sportfields for 2 years. It was a winwin solution
- Saving drinking water and water retention are prioritized issues in the Municipality
- The users of the water were satisfied
- We wanted to develop the concept
Wider use, Tap points, More of "multidams"



Pilot measures in Västervik municipality

- Development of the use of storm water as a resource
 - Tap points for wider use in Gamleby and Västervik
- More "multidams" in Gamleby and Västervik



Gamleby



Measures in Gamleby

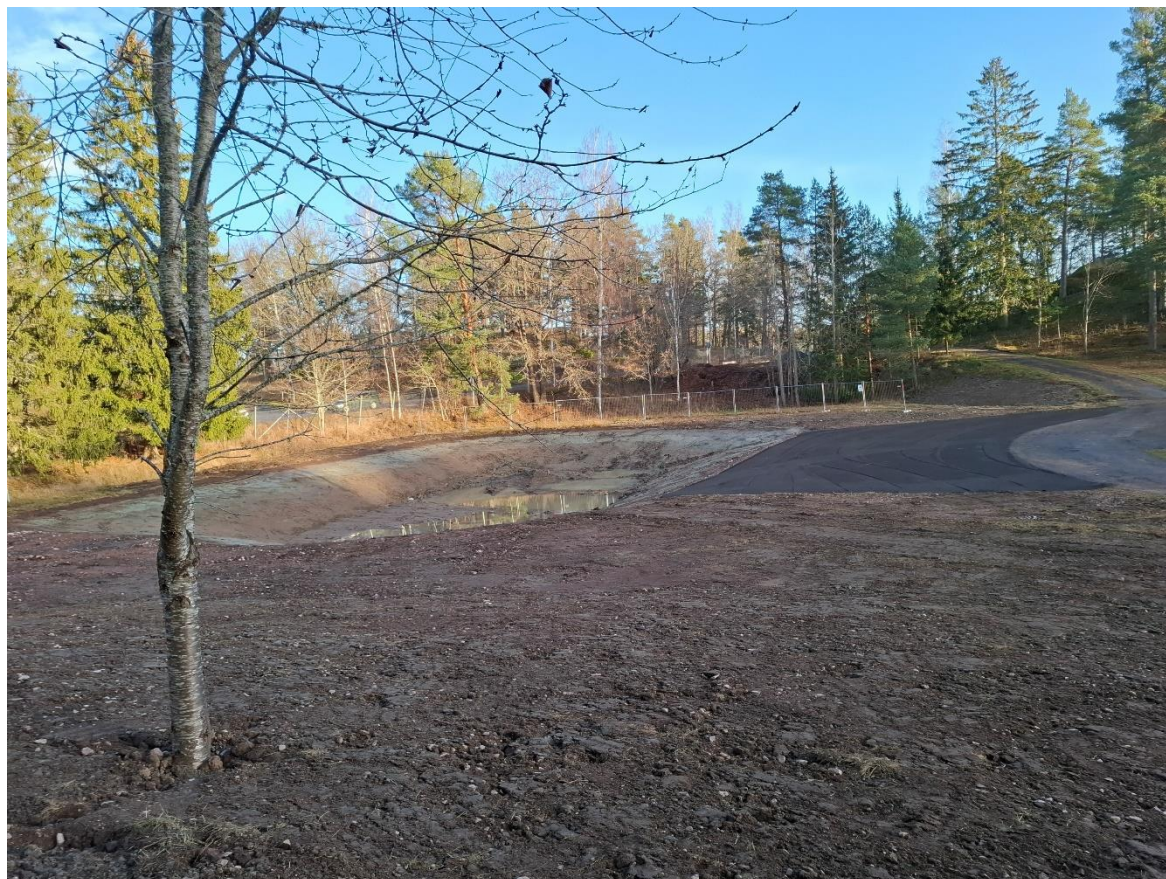
- Tap point in Erneberg "multidam"
New users: Cemetery, housing areas, plantation/trees citycenter
- Developed drainage system in the sportsfield
- "Minimultidam" in Tjustvallen
Automatic irrigation system, football, tennis, ice skating
- Evaluation of reuse of rainwater for flushing toilets in Åbylund Gamleby
Completion with filter (pollen)
- Suitable transport of collected water

Gamleby

Tap point and drainage works



Gamleby "Minimultidam" Tjustvallen

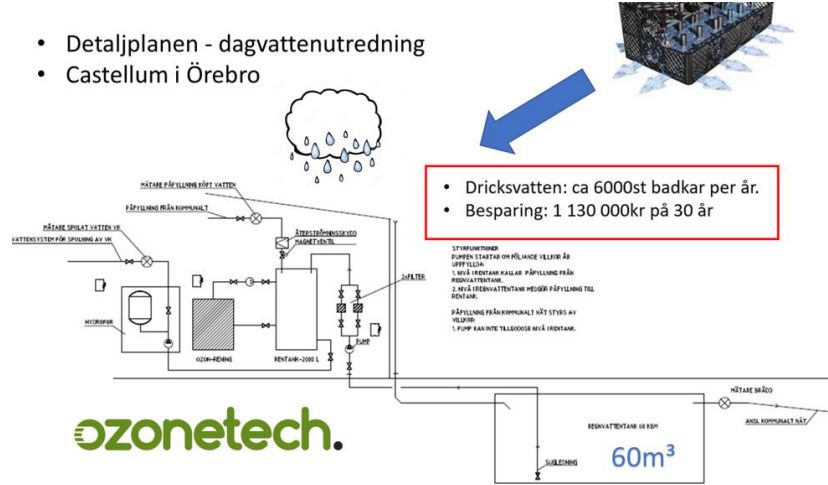


Gamleby Rainwater for flushing toilet

Gamleby Suitible transport



- Detaljplanen - dagvattenutredning
- Castellum i Örebro



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Measures in Västervik

- Tap point in Örserum
New users: Plantations/trees citycenter, housing areas, more of sportfields
- Aeration Örserum Västervik
For less algae in the "multidam"
- "Mini-multies" in Marieberg and Jenny
- Feasability study for climate adaption measures in Karstorp industrial area
- Measures for water retention in Karstorp
Nature based solutions to decrease the problems with heavy rains including "mini-multi" for using water for irrigation
- Show room municipal hall, local use of rainwater



Västervik Tap point



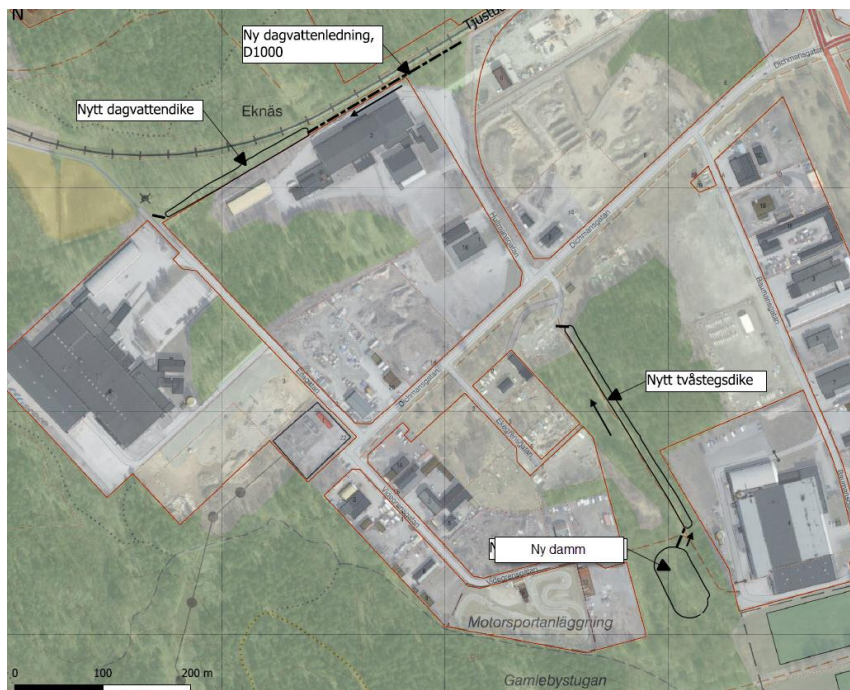
”Minimultidam” Piperskärr



Karstorp Västervik

Room for water, open storm water treatment

Multi functions



Reuse of stormwater

How we are working

- Collecting water at the right place close to the users
- Pipes to the closest users as sportfields
- Tap points for filling water and transporting to use for trees, summer flowers, housing companies etc
- Municipality want to be a good example in sustainability



Development & implementation

- Close contact to the users
- Contact to potential users through Municipality and Water company
- Demands in building process (new houses/renovations)
- Information and peptalk – use the dry summers for understanding



Users and key stakeholders

- Municipality Parkdep, Manager and coordinator, local authority
- Public housing company VBAB, Water company VMEAB
- Sport clubs
- Churches
- Housing companies
- Entrepreneurs (working for Municipality)



Meet the users on site



How is it working
Problems, improvements, motivation, appreciation

Evaluation file for improvements

| Users of contained stormwater | | | | | | | | | | | | | | | | | | |
|--|-----------------|------------------------|----------------|-----------------|-------------------|----------------|----------------|--------------------------------|--|-----------------|----------------|----------------|----------------|----------------|-----------------------------|---------------|----------------|----------------|
| Västervik och Gamleby | | | | | | | | | | | | | | | | | | |
| | 2023 | | | 2024 | | | | | | 2025 | | | | | | | | |
| | VBAB (Erneberg) | Kanonaden G | AMA Gamleby | VBAB (Erneberg) | Kanonaden Gar | Kyrkan Gamleby | VBAB Åbylund | Kyrkan Västervik | | VBAB (Erneberg) | Kanonaden G | AMA Gamleby | Kyrkan Gamleby | VBAB Åbylund | Kanonaden Väs | Fotbollsplane | Kyrkan Vä | VBAB Tj |
| Contact | Markus R | Jörgen | Jörgen | Markus R | Jörgen | Mathias L | David | Göran | | Markus R | Jörgen | Jörgen | Mathias L | David | Jörgen | Frippen VBAB | | Markus |
| From tap point kbn | Yes >1000 | Yes 15 | | Yes >1000 | Yes 15 | Yes 50 ? | | 1 000 | | >1000 | | 100 | 100 | 100 ? | Yes >1000 | Yes 500 | | 500 |
| Local collection | | | | | | | Yes | | | | | | | | | | | Yes |
| Instead of | Drinking water | Drinking water | Drinking water | Drinking water | Drinking water | Drinking water | Drinking water | Drinking water | | Drinking water | Drinking water | Drinking water | Drinking water | Drinking water | Drinking water | Lake water | Drinking water | Drinking water |
| How is transport from tap point working | | Ok | | | Ok | Ok | | | | | Ok | Ok | Ok | | Ok | Ok | | |
| Practical problems tap point | | No | | | No | No | | | | | No | No | No | | No | No | | |
| Function of the used water, problem quality | Ok | | | Ok | | Ok | Ok | Ok | | Ok | Ok | Ok | Ok | | Ok | Ok | Ok | Ok |
| Practical problems irrigation/etc | No | Sacks maintenance | | Drainage | Sacks maintenance | No | | | | | | | | | | | | |
| Improvements suggestions | | Drainage can be better | | Drainage | | | | First flush filter (pAeration) | | | | | | | First flush filter (pollen) | | | |
| Other use than irrigation | | | | | | | | Toilet flushing | | | | | | | Toilet flushing | | | |
| Comments | First flush | | | First flush | | App fungerar | | Drip irrigation problem | | | | | | | | | | |
| Bevattningsäck 75 l Kan tas upp och skötjas | | | | | | | | | | | | | | | | | | |

Encourage/inspire to save water



Webpage, brochures, social media, newsletters

Lessons learned and adjustments

- Find the right location to collect the storm water
Close to user, not heavy polluted, where you need water retention, look for winwins
- Its not enough with one solution
More of local solutions – Mini-multi-functional dams
- Suitable transport of collected water is important
Irrigation cart with electric motor, right size and according to work environment regarding noise level in residential area
- For toilet flushing with rainwater there will be a good idea with a pollen filter



Scalability

- Good potential for scalability in the municipality and in the region
- More "mini-multies"
- There are a lot of potential users and a lot of storm water to use
- Possible winwins



Final reflections

Start to use storm
water for irrigation

Winning concept in
saving water, climate
adaption and
biodiversity

Start with water for
irrigation and the big
users of water

Find the right place for
measures

Maintenance and
evaluation is important
(pumps, nozzles,
irrigation sacks etc)

We need to reuse
storm water and
treated wastewater
(different users)

It is not enough with
one “multidam”.



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eurobalt.org/WaterRecyclingToolbox
interreg-baltic.eu/project/waterman

WaterMan promotes a region-specific approach to water recycling, which intends to use the alternation of too much and too little water that has become typical in the Baltic Sea Region to make the local water supply more resilient, and supports municipalities & water companies in adapting their strategies.

The contents of „BSR Water Recycling Toolbox” are the sole responsibility of the authors and can in no way be taken to reflect the views of the European Union, the Managing Authority or the Joint Secretariat of the Interreg Baltic Sea Region Programme.

