

Stormwater policy

City of Gävle

Anna Nettelbladt / 08.05.2018



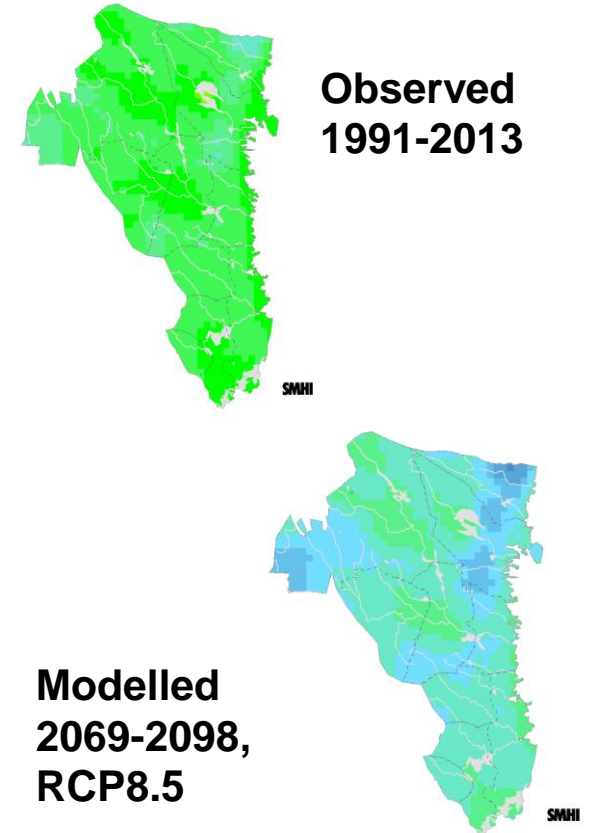
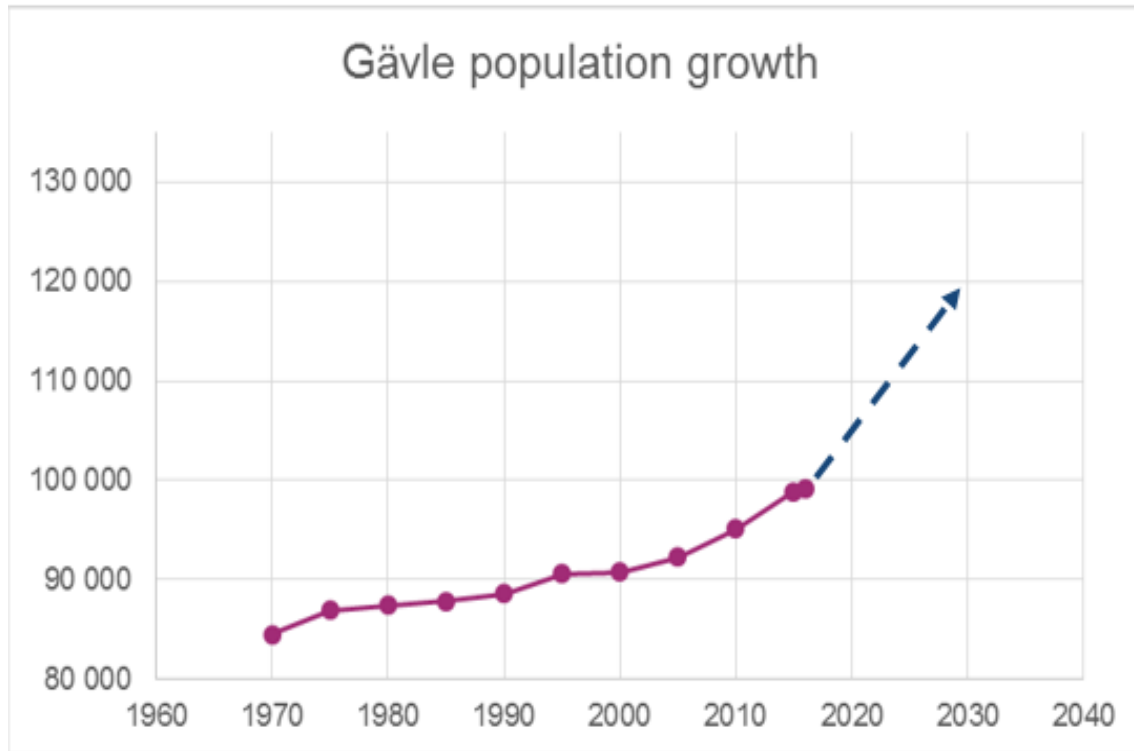
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City is growing – city densifies



Flooding challenges



Storm water – local media



I måndags fick Gävlatrakten drygt 300 millimeter regn. Idag är det dags igen.

FOTO: ANNAKARIN BJÖRNSTRÖM

Stora regnmängder väntas

GÄVLEBORG Torsdagen blir regnig för många kommuner runt om i Gävleborg. På sina håll väntas 30-35 millimeter regn falla under ett dygn.
– Gävleborg är faktiskt det ställe som det väntas komma mest regn i året, säger Erik Rindeskär, metrolog på Foreca.

Regnvädret väntas dra in över Gävleborg vid midnatt på onsdagen och sedan ligga kvar fram tills på fredagskvällen.

– Det blir under drygt ett dygn som ni kommer att ha ganska ihållande regn och på några platser upp emot 30-35 millimeter som mest. Men i Gävleborg i stort är det 15-30 millimeter. Så det är ett ganska utbrett regn-

område, säger Erik Rindeskär.

Kustkommunerna ser ut att få ett blött dygn och regnvädret väntas även att dra vidare inåt land.

– Längs kusten från Gävle upp mot Hudiksvall och i Bollnäs ser det ut att kunna bli som mest regn, säger Erik Rindeskär.

För att SMHI ska gå ut med en så kallad klass 1-var-

ning krävs att 35 millimeter regn faller inom tolv timmar eller 70 millimeter under 24 timmar.

– Det blir väl ganska stora regnmängder men när inte riktigt upp till den nivån, säger Erik Rindeskär.

Hannes Holmström

Regnet fortsätter. På torsdag väntas stora regnmängder runt om i Gävleborg.

FOTO: LARS SUNDIN



Vädret 110



sidan 32

Insändare "Det är dags att **politiker och regiondirektör** gör en ordentlig översyn av ledningen. Ta bort de som har som främsta, eller enda ambition att hålla sig fast på sin position och tillsätt personer som vill arbeta för att befolkningen ska få god vård och förbättrad hälsa." | 18

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Gefle Dagblad

Gävle får värsta vädret – igen

GÄVLE Räkna med en till rejäl rotblöta under det närmaste dygnet. Lokalt kan det komma upp till 35 millimeter regn. Allra blö-

– Gävleborg är faktiskt det ställe som det väntas komma mest regn i landet, säger Erik Rindeskär, metrolog på Foreca.



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Background – storm water policy

2004: Storm water policy and local storm water group established

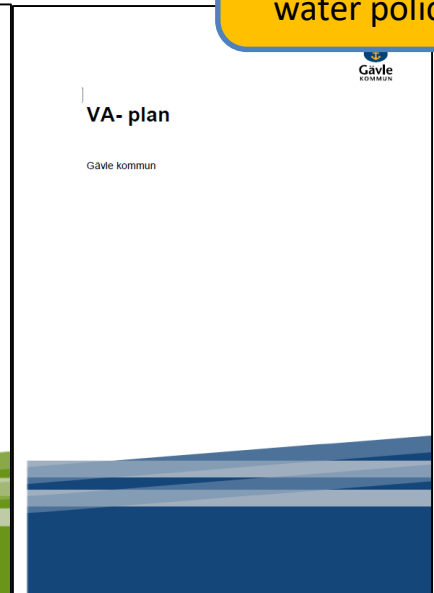
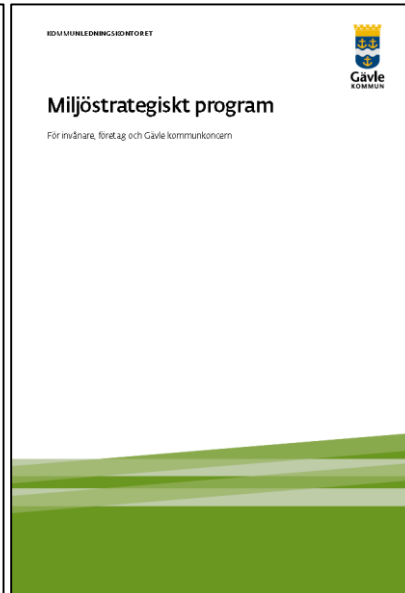
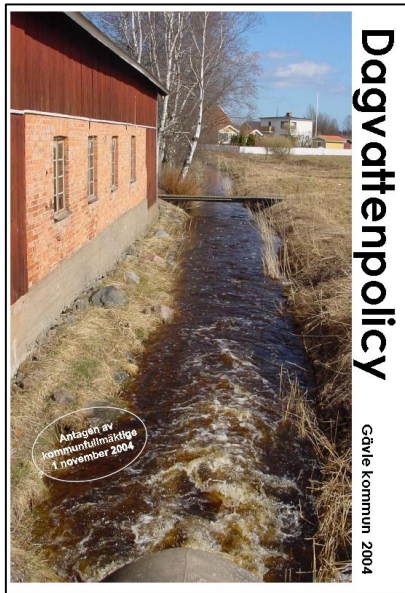
2009: Environmental strategic program

2014/15: Water and sewage plan

2016-2018: iWater

Storm water-model

Need of updated storm water policy



Storm water policy - aim

Aim : To reach a sustainable storm water management in Gävle municipality

- Describes goals, strategies and responsibilities.
- Focusing on construction within new areas.
- Complementing guidelines produced spring/summer 2018.

*Screen basin – Gävle river.
Main target: Cleaning of storm water*



Storm water policy - goals

1. Improved water quality and preserved water balance.
2. Storm water management that is robust and climate adapted.
3. Storm water seen as a resource, that can create values for the city, as attractive city environments and ecosystem services.
4. Cooperation and clear division of responsibilities within the municipality.



*Storm water pond– outside Gävle City
Main target: Retention and cleaning of storm water
before outlet in sea*



Storm water policy- strategies

A few examples

- An adjustment level of a 100-year rainfall shall be pursued in planning of new areas, with the intent to protect infrastructure and buildings.
- Storm water is considered early in the strategic city planning process.
- Decrease of pollutants in storm water.
 - ✓ Firstly by avoiding pollutants in the external environment.
 - ✓ Secondly by local storm water solutions (private or municipal)
 - ✓ Thirdly by general (municipality owned) storm water solutions further down the system.
- Infiltration and detention of storm water before connection to the municipal storm water system.
- When planning of yards and common city landscape, storm water should be used to create attractive environments, multifunctional elements and improved conditions for ecosystem services.



Strategies continued...

- At each detail planning of new areas or land use change a storm water investigation should be developed.
- Principal solutions proposed in the planning process shall when needed be projected and dimensioned and thereafter verified and controlled during the building permit process.



Division of responsibilities

Water and
Sewage
company

Road
administrator

The municipality
in it's different
roles



Developers

Property/landowner

Operators



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Green factor tool

Evaluated and adapted to local conditions.

Translated to Swedish

Further described in local storm water guidelines.

Score card

Date: 2018-03-13 Block ID: -
Lot ID: -

Green Factor calculation

Green Factor is below target level!	0,52
Target level	0,90

Stormwater volume m³

39,8

Average runoff coefficient C	Possibility to retain stormwater outside block/lot
0,8	Yes
Necessary retention vol. m ³ on the lot	
31,9	
Retention volume of chosen elements m ³	Remaining retention demand m ³
16,3	15,6
Share of total impermeable surface	
77%	

Elements included in the green factor

Element group	Elements filled	Total number of elements in group
Preserved vegetation	2	5
Planted vegetation	3	10
Pavements	1	2
Stormwater solutions	2	9
Bonus elements	0	12
Total	8	38

Comments

- Nature reserve/body of water/natural vegetation located within ≤ 50 m of the site!

Share of total weighted area, %

Element group	Share of total weighted area, %
Preserved vegetation	33,6%
Planted vegetation	35,5%
Pavements	7,8%
Stormwater solutions	23,0%
Bonus elements	0,0%

Element groups (% of total number of chosen elements)

Element group	% of total number of chosen elements
Preserved vegetation	25%
Planted vegetation	37,5%
Pavements	12,5%
Stormwater solutions	25%
Bonus elements	0%

Weighting of different categories in the green factor, %

Category	Weighting, %
Ecology	23,9%
Functionality	25,1%
Cityscape	16,3%
Maintenance	24,4%
Stormwater	10,2%



How has iWater project contributed?

- Increased knowledge and awareness of challenges
- The project has put questions and problems related to storm water up on the table
- Better understanding of our different roles and responsibilities and need to solve how to work together.
- Help with material and tools to be used in our continued work with guidelines for the city



Future challenges –work continues

- Specific guideline concerning detention and infiltration of storm water on estate land before connection to municipal storm water system is under investigation.
- Criteria's for formation of municipal storm water areas.
- Guidelines for storm water investigations.
- Continued cooperation within municipality departments needed!



Thank you!

Contact

Anna Nettelbladt
Gävle Municipality
anna.nettelbladt@gavle.se



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