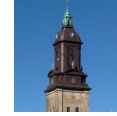
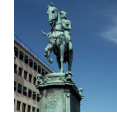


# City of Göteborg



Photo: Flygare Palmnä



# Göteborg



Photo: City Museum



Photo: Anna Jolfors

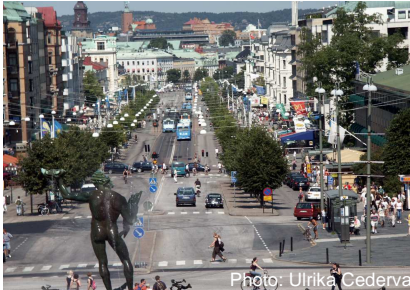


Photo: Ulrika Cederna



Photo: Johannes Haglund



Photo: Mats Andersson



Photo: Gösta Rydva

- Founded in 1621
- Second largest city in Sweden –appr. 500,000 inhabitants
- Administrative capital of the County of Västra Götaland

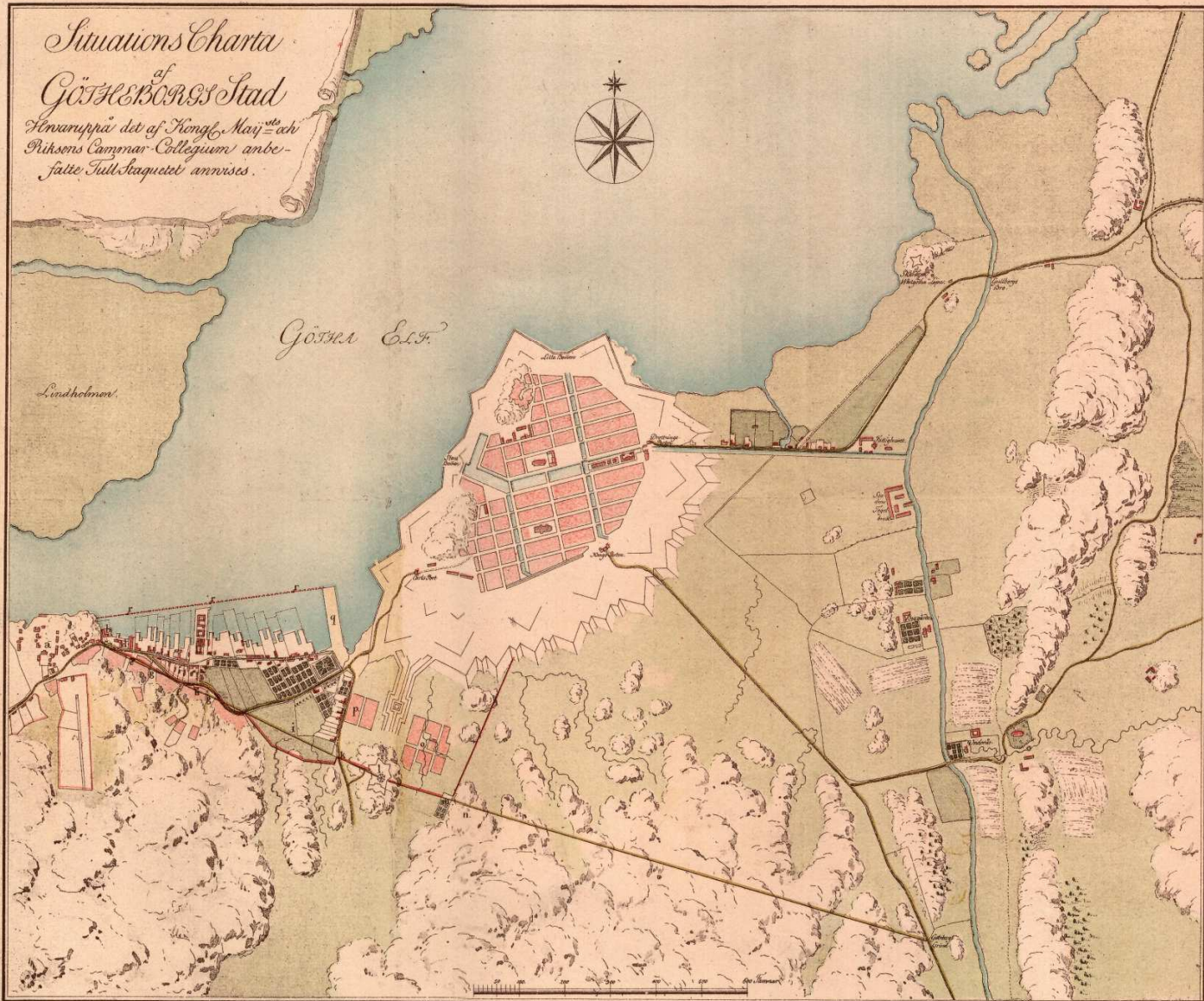


City of  
Göteborg

*Situations Charta*

*Göteborgs Stad*

*Finansuppsåt det af Kongl. Maj: och Rikens Cammar-Collegium anbefälte Fullstaqnetets anvisis.*



*Beskrifning.*

*Den äro dragne Linor, utvisat det projecterade Vall Sträcket, ifrån Sjögårds Lådan till Renskan Cronan och Speke Borgen, samt derifrån utmed Östra Haga öfver Stå, den Sted. til Glacinen om Kring' Säth, neringer.*

*Deröda Puncterade Linor utvisa den projecterade påhängerna framför Kammarhus i Masthuggel.*

*De gula dragne Linor utvisa hängangen emellan Stadens och Landets grund ifrån Sjögårds till Klauften Lån, samt och därifrån til Sjögårds grund.*

*lit. a. Gamla Marksten*  
*b. Herrens Utlänns plats, Renskan kallad, som tillhöra Stå den*

*c. Sjögårds Lådan*

*d. Stadens Spårhög*

*e. Stenbänmannen Krönörborgs Hus*

*f. En allmän Kyrkväg för Lådan ända till Sjögårds*

*g. Ena gemensamma utgången för några af Lådan, gårds Sjögårds.*

*h. Meglensare Albertus Hus*

*i. Kammarhusen Bertina Agor*

*k. Sjögårds Grund.*

*l. Klauften Cronan*

*m. Herrens Bockens Plats.*

*n. Speke Borgen.*

*o. Östra Haga.*

*p. Västra Haga.*

*q. Renskan Cronan*

*r. Ena utgången för den projecterade påhängerna fram, för Kammarhus, såltes utgången fram, med Stå. Den ma, och vilken blifver ad honze utgång till Masthuggel utifrån.*

*Göteborg den 26 Mars 1777.*

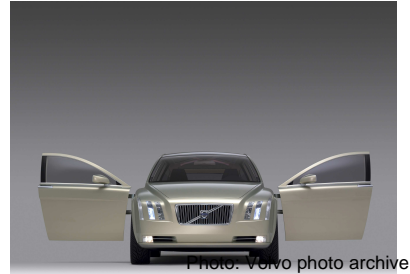
*L. P. W. Brönnel* *J. M. W. W. W.*

# Business traditions



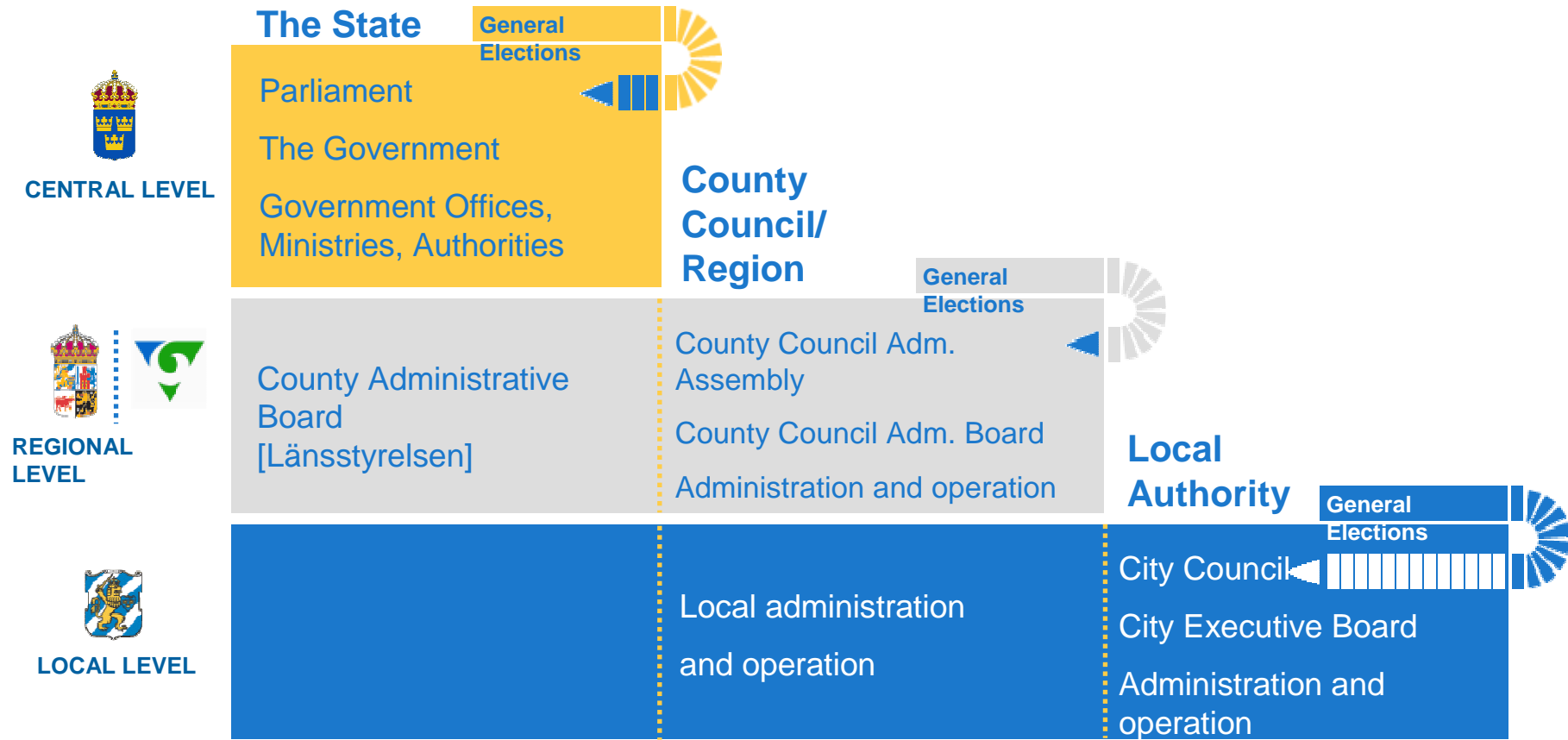
- Long tradition of international trade and industry
- Swedish East India Company
- World leading in shipping industry

# Business today



- SKF, Volvo, Ericsson, Astra Zeneca
- From dockyards to science park
- Triple-Helix model  
(*Business, Research, Municipality*)
- Port of Göteborg – Scandinavia's largest port and logistical centre

# How Sweden is governed

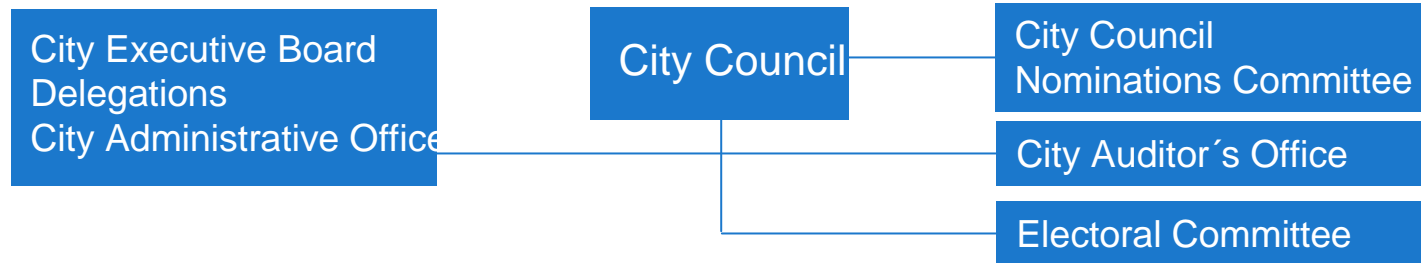


# Local government autonomy

- 290 municipalities
- Pre-school activities
- Schools
- Social services
- Elder care
- Care of people with physical or intellectual disabilities
- Responsibility for refugees
- Leisure activities
- Physical planning and building
- Certain environmental tasks
- Rescue services
- Housing
- Street and road networks
- Communications
- Energy
- Cultural affairs



# Decentralised structure



## Committees

- District Committee
- Education
- Art and Culture
- Recreation
- Land and Housing
- Public Works
- Traffic
- Environment
- Other Committees

## Companies

- Arts and Culture
- Recreation
- Real Estate and Housing
- Public Works
- Traffic
- Industry and Commerce
- Other Companies

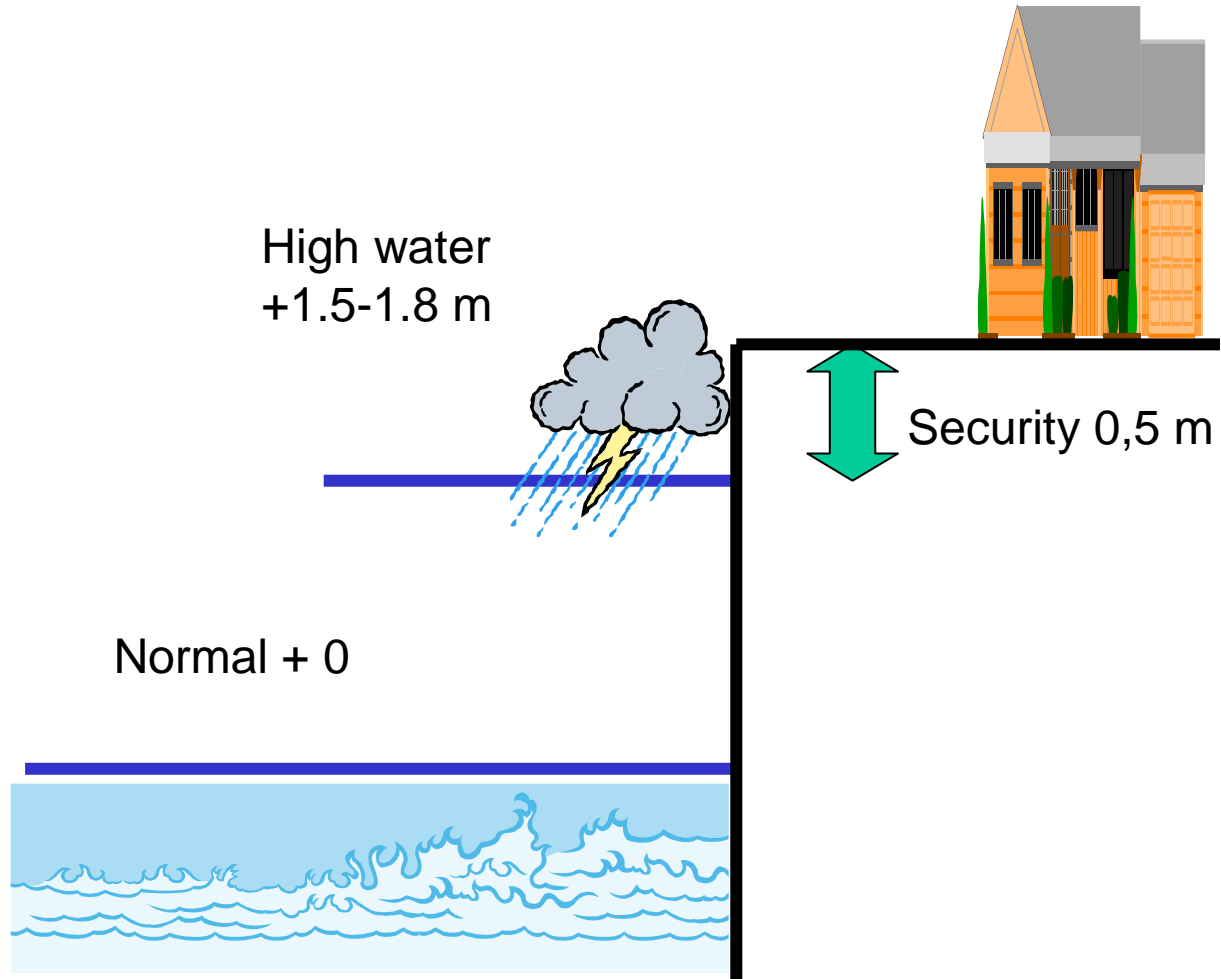
In total: 80 Committees and Companies



# The municipal executive board commission

- How prepared is Göteborg for extreme weather and climate change?
- What kind of knowledge do we need?

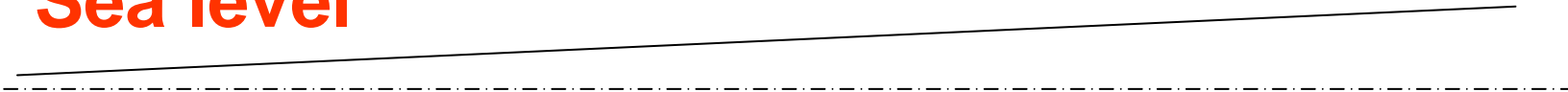
# If the sea rise with 0,5 m




# The river

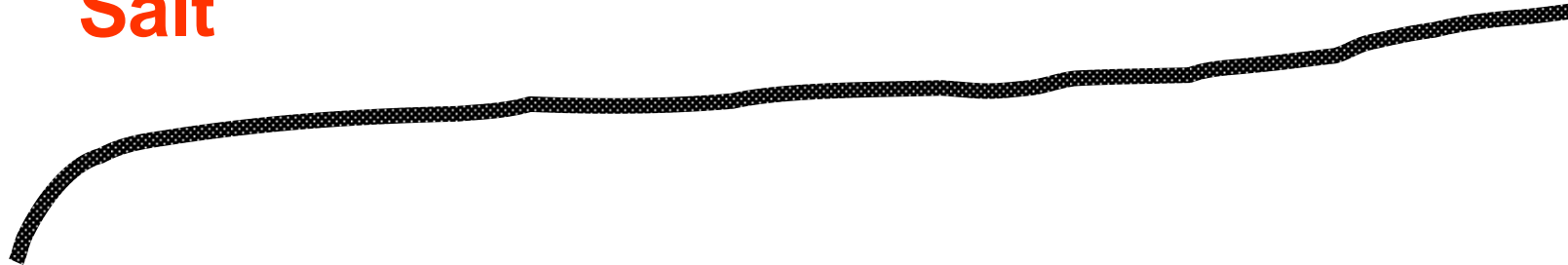
wind 

Sea level



Salt

flow 



# Water level what influence most

The sea  
+100 till +150

wind  
max 20?

flow  
ca 10

salt  
ca 5



City of  
Göteborg

# Break down in infrastructure

- Water intake
- Traffic



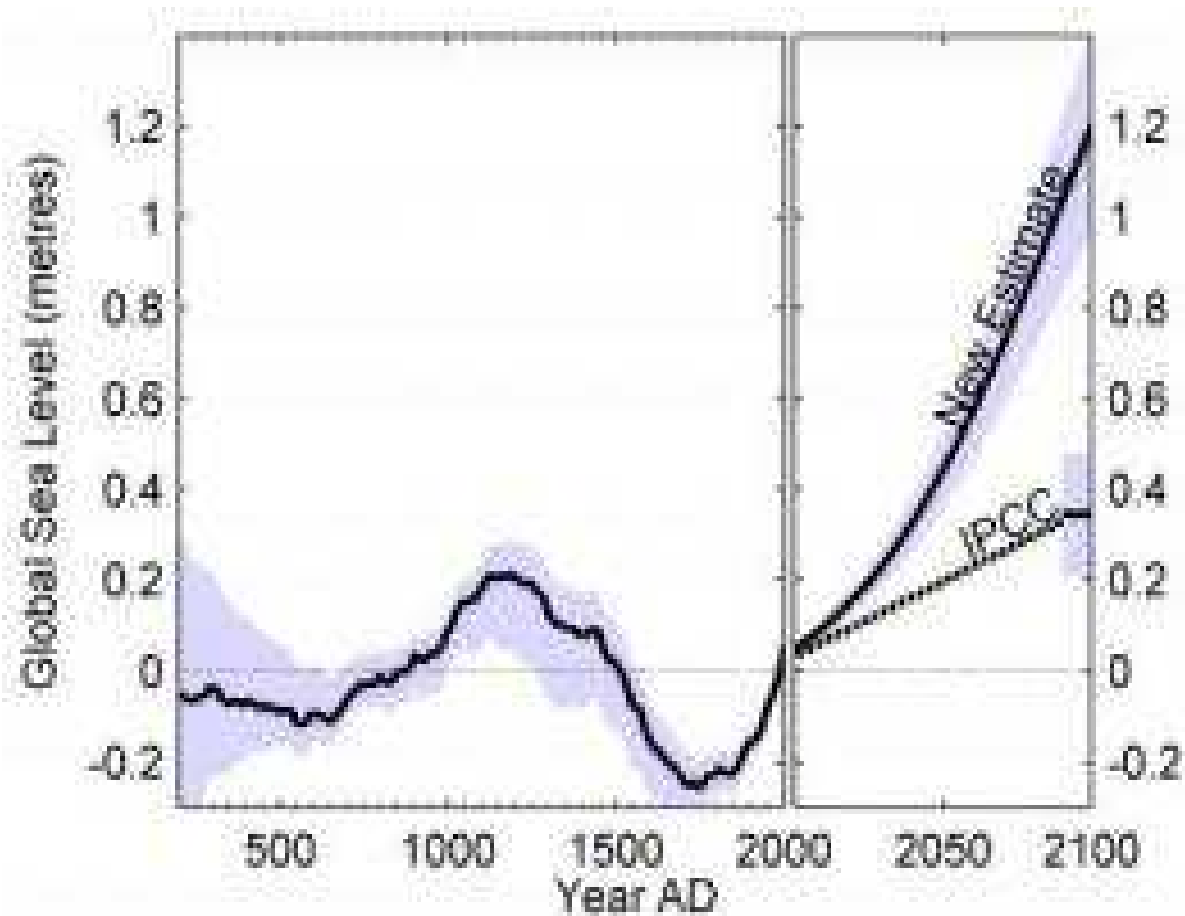
Foto: LEIF JACOBSSON



# Rising sealevels

	Outside Älvsborgbridge	<b>Göteborg City Central</b>	North Marieholmsbridge
Normal water level- today	+ 10,0 m	+ 10,1 m	+ 10,2 m
<b>Today's extreme water level</b>	+ 11,5 m	<b>+ 11,8 m</b>	+ 12,0 m
<b>½ m over today's extreme waterlevel</b>	+ 12,0 m	<b>+ 12,3 m</b>	+ 12,5 m
<b>1 m over today's extreme waterlevel</b>	+ 12,5 m	<b>+ 12,8 m</b>	+ 13,0 m
The level stipulated in the coprehensive plan	+ 12,5 m	+ 12,8 m	+ 13,0 m
Functions of public interest	+ 13,5 m	+ 13,8 m	+ 14,0 m





IPCC:s prognosis from 2007, and a new prognosis developed at the Niels Bohr institutet, Climate Dynamics 2009.

# Extreme weather, phase II

- Gullbergsvass model area
- Protection against high water, identification of installations with public interest and inquiry about polluted ground.
- City planning office coordinate





Konturerad laserskanning över modellområde  
Gullbergsvass. Laserskanning utförd 2006.

Februari 2008, Karin Bergdahl



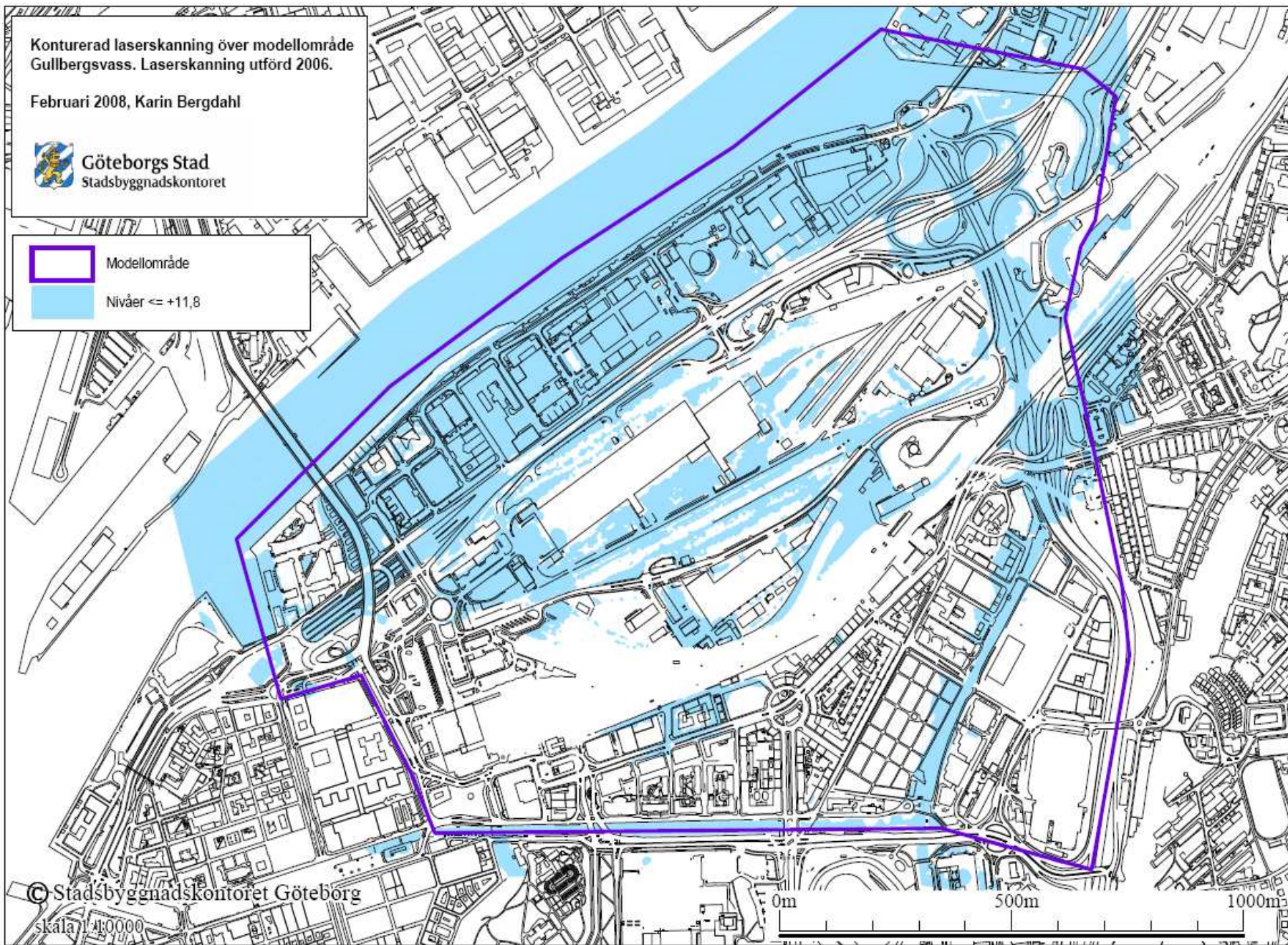
Göteborgs Stad  
Stadsbyggnadskontoret



Modellområde



Nivåer <= +11,8



© Stadsbyggnadskontoret Göteborg

skala 1:10000

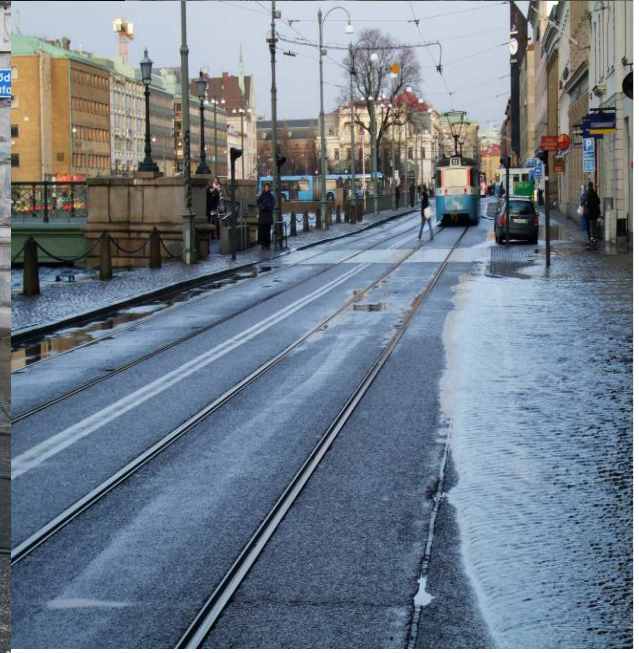


Göteborg

Sealevel Göteborg 2008-02-19 to 2008-02-25







Konturerad laserskanning över modellområde  
Gullbergsvass. Laserskanning utförd 2006.

Februari 2008, Karin Bergdahl



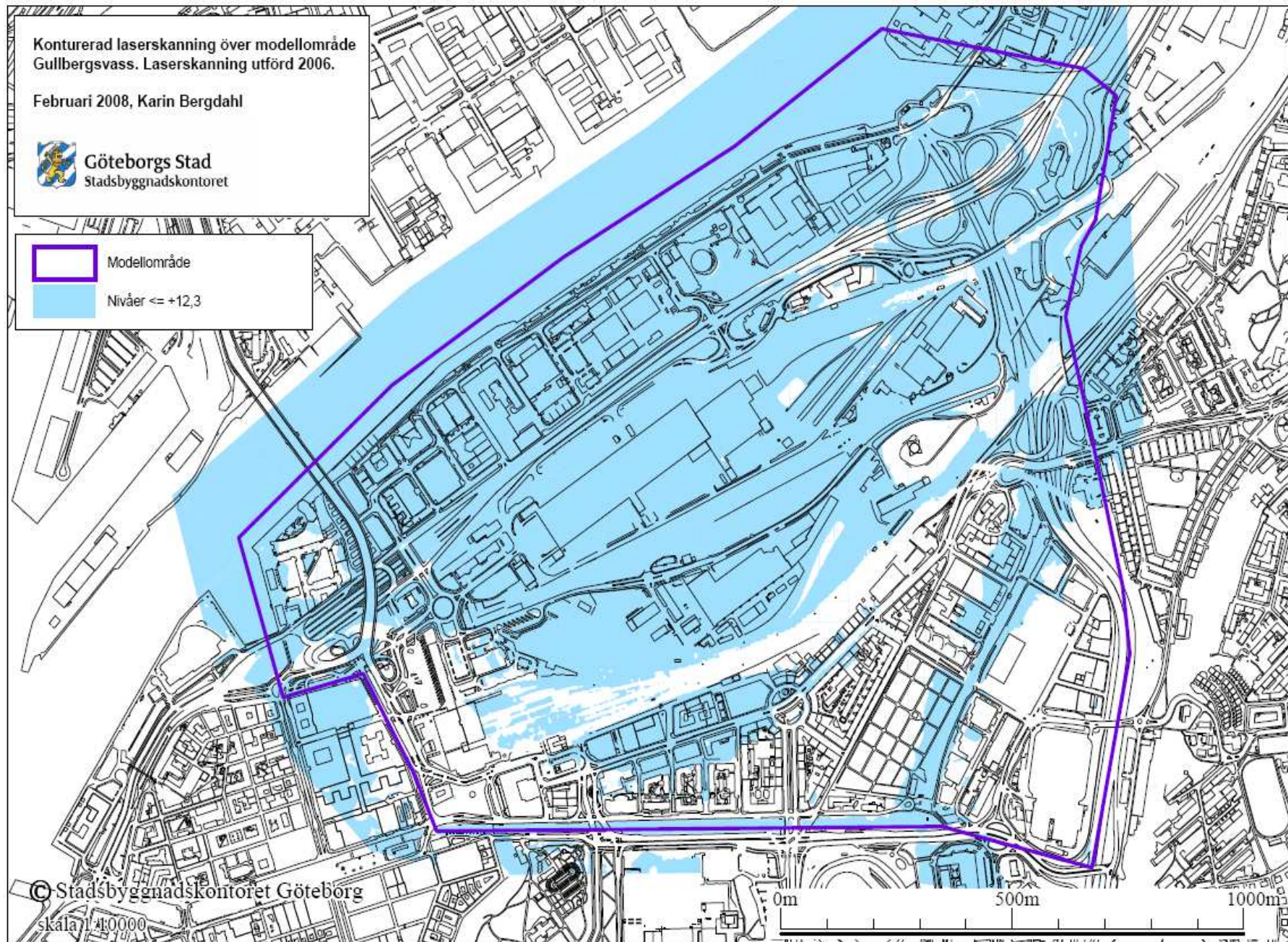
Göteborgs Stad  
Stadsbyggnadskontoret



Modellområde



Nivåer  $\leq +12,3$



© Stadsbyggnadskontoret Göteborg

skala 1:10000



Göteborg

Konturerad laserskanning över modellområde  
Gullbergsvass. Laserskanning utförd 2006.

Februari 2008, Karin Bergdahl



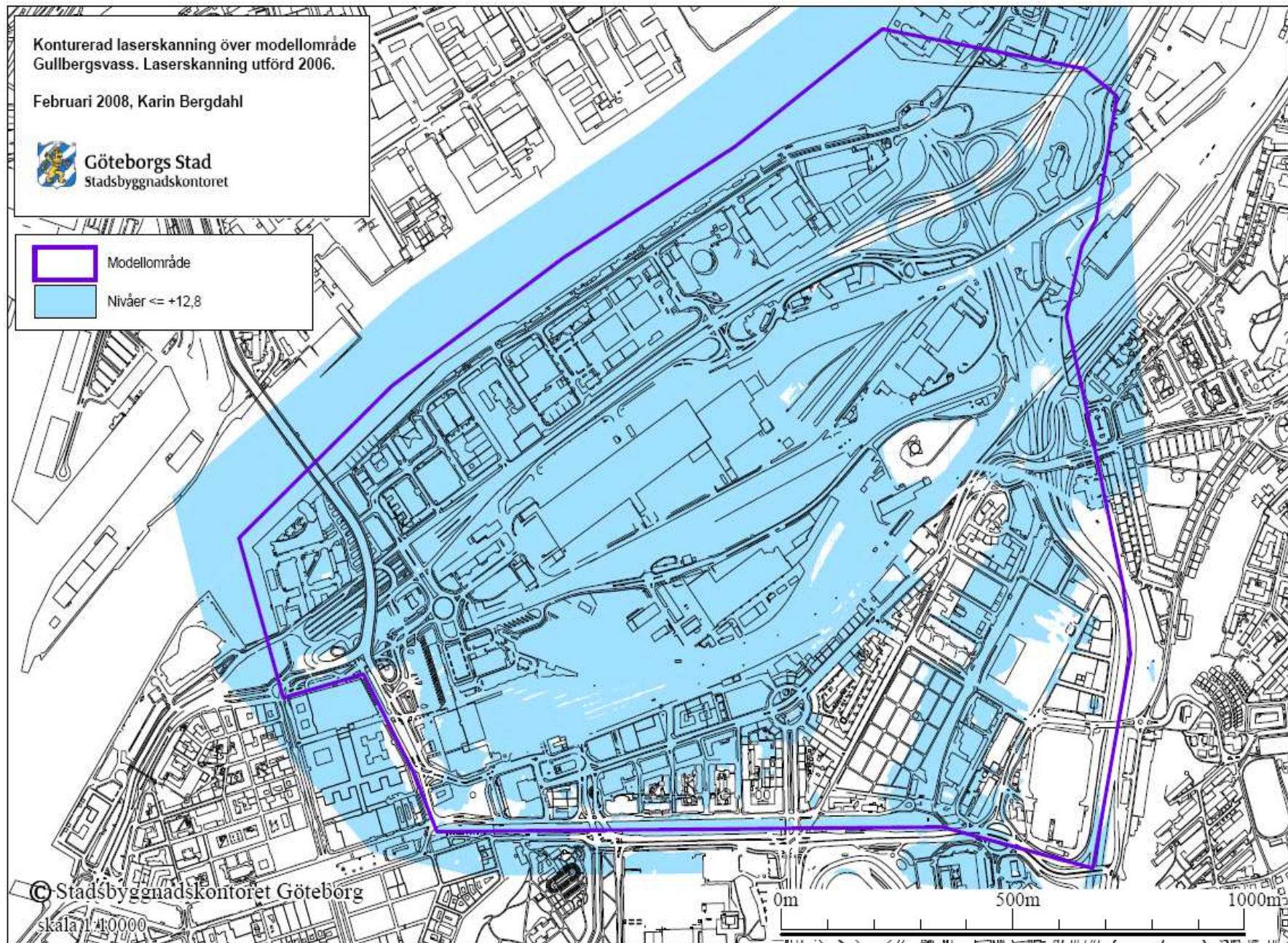
Göteborgs Stad  
Stadsbyggnadskontoret



Modellområde



Nivåer  $\leq +12,8$



© Stadsbyggnadskontoret Göteborg  
skala 1:10000



City of  
Göteborg

## Municipal Cost, MEUR Gullbergsvass

<b>Total Sum</b>	<b>19-21</b>	<b>23-26</b>	<b>98-158</b>
<b>Nivå</b>	<b>+11,8 m</b>	<b>+12,3 m</b>	<b>+12,8 m</b>
Energy	(1,5)	(6,6)	(7,7)
Transport system	1,5-3	5-8	80-140
Water & sewage	18	18	18
Parks & greens	(0,3 <sup>**</sup> )	(0,3 <sup>**</sup> )	(0,33 <sup>**</sup> )
Polluted areas	***	***	***

( ) cost that is avoided if Traffic office and Water and Sewage water office protects the area

\*\* cost are the same regardless to level

\*\*\* The Real Estate Committee has along with the environment administration done calculations for treatment off contaminated land masses within the entire mock-up area.

Assessed costs are 70 - 170 millions Euro. These are preliminary costs.

Distrikt  
Söder



City of  
Göteborg



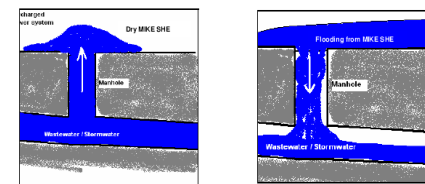
# Temporary measures





# Short-term municipal actions

- Hydrologic model
  - Water-level meters
  - Water-levels on the web
  - Cris management organisations
  - Examples of standard actions
- Material depots for temporary protection equipment
  - Planning for evacuation of inhabitants and installations with public interest
  - Work with the state!!



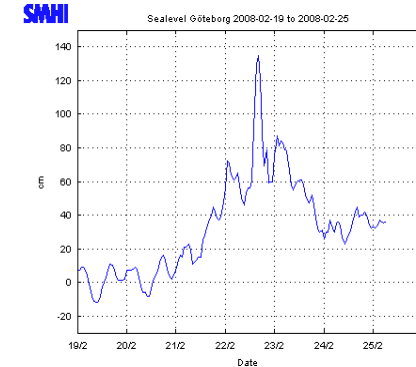
# Long-term municipal actions

- Adapt collected knowledge
- Adapt planning to new conditions
- Create tailor-made existent buildings
- Detailed geological studies



Marknivå +12,10

# Issues to discuss with the state



- Water judgement
- Planning and building act
- More money
- Planning levels, scenarios?
- New directive for calculation of slope
- Stability
- Who is responsible ?????
- SMHI:s rate for water level meters
- SMHI better prognoses



City of  
Göteborg

---

# Thank you for your attention!

See more at:

[www.goteborg.se](http://www.goteborg.se)

Contact:

[\*\*per-erik.ebbestahl@stadshuset.goteborg.se\*\*](mailto:per-erik.ebbestahl@stadshuset.goteborg.se)



City of  
Göteborg

---