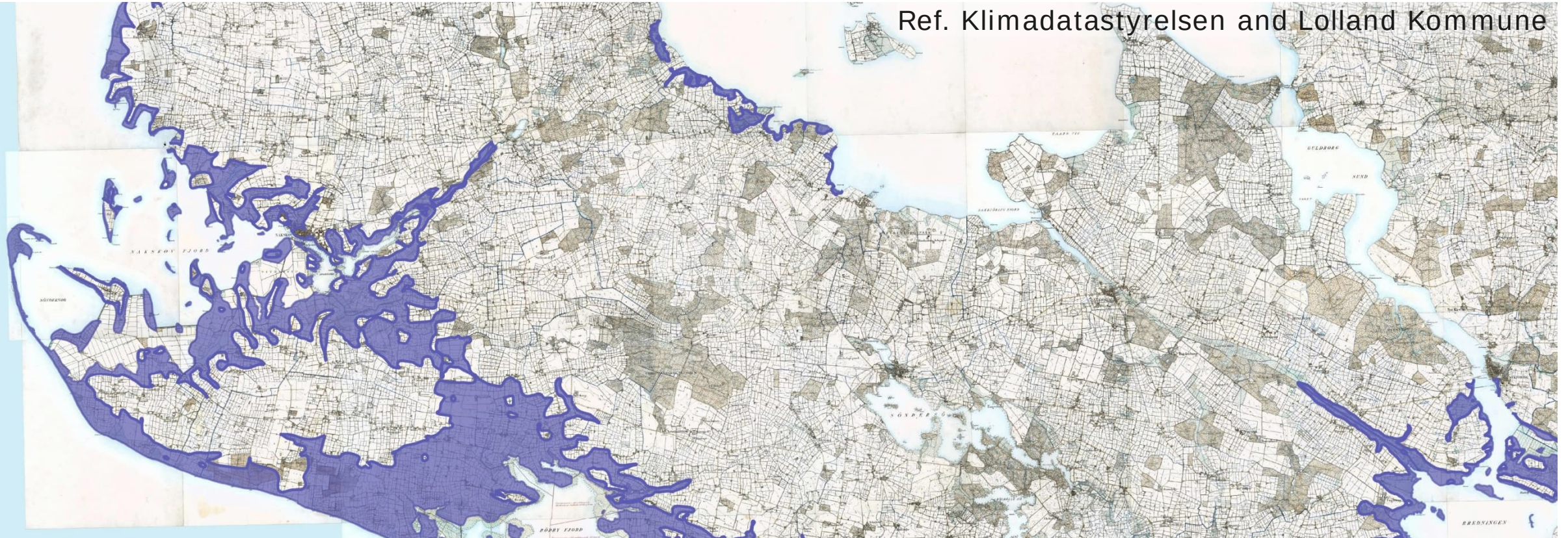


Ref. Klimadatastyrelsen and Lolland Kommune



Kustmöte 2026

Coastal protection and citizen involvement in Nakskov, Lolland Municipality

Agenda

- Introduction
- Background
 - The threat
 - Legal framework
 - The process
- The Solutions
 - High Water Gate
 - Inner Gate
 - High Water Wall
- Citizen involvement
 - Dialogue
 - Webpage
 - Citizen meetings
 - Questionnaires
 - E-mail contact
 - Media outreach

Introduction

- Dan Leif Nielsen
- Works with climate adaptation and coastal protection in the Municipality of Lolland. Does most of the technical work on the project on improving the coastal protection in Nakskov
- Started working in the municipality 1 February 2026
- Formerly of the Agency for Cultural and Palaces and various Danish museums
- Master in prehistoric archaeology from KU. I have also studied technical physics at DTU

Ref. Klimadatastyrelsen (Nakskov 1928)

Background

Partners, threat, processes and solutions

Collaboration partners



Miljøministeriet
Miljøstyrelsen



The threat from ocean-based flooding

- Appointed as an area of risk from flooding in 2011 in plan period 1 of EU's directive regarding risk assessment and management of risk of flooding from the ocean and waterways
- Kept the status in the following plan period 2 and 3
- Several flooding events and storm surges during the last 150 years
- Latest storm surge occurred in October 2023

The threat from ocean-based flooding

- Average median water rise towards year 2100 (SSP5-8,5)

Year	Median water rise	Uncertainty interval
2041-2070	32 cm	14-60 cm
2071-2100	64 cm	35-124 cm

Reference: 0 cm (1981-2010) (DMI's Klimaatlas)

- Increased risk from storms and storm surges (SSP5-8,5)

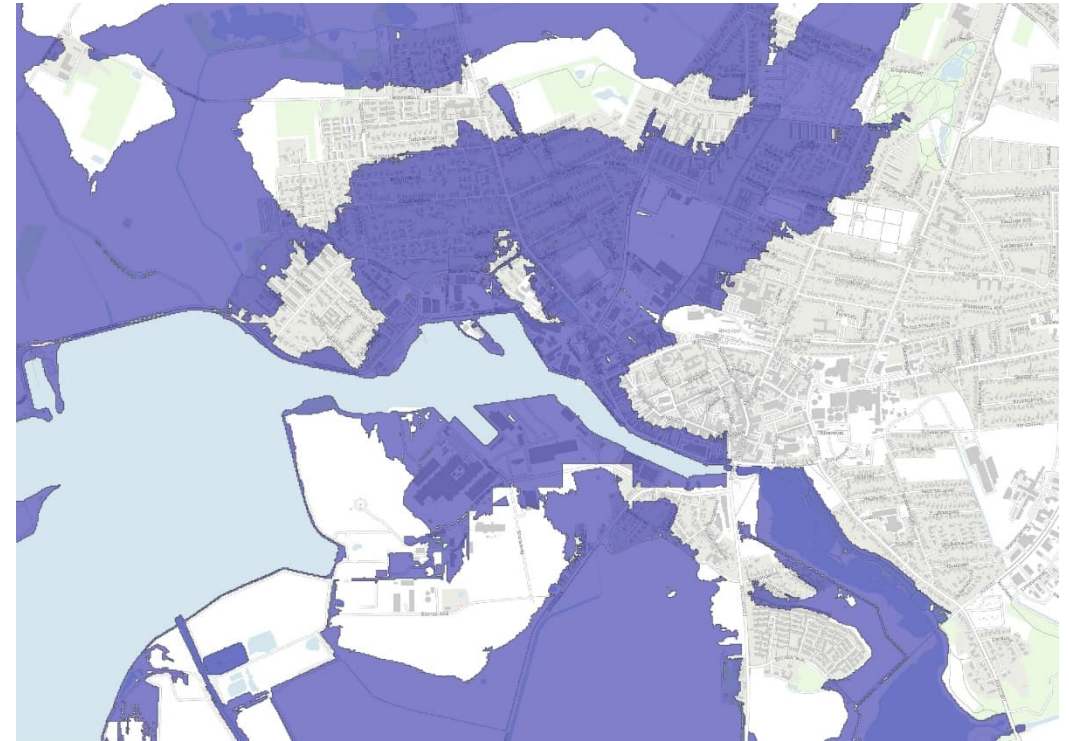
Year	Median stormsurge level	Uncertainty interval
2041-2070	32 cm	10 – 63 cm
2071-2100	64 cm	33 - 125 cm

Reference: 178 cm (1981-2010) – 100-year event (DMI's Klimaatlas)

- Increased high water level (SSP5-8,5)

Year	5-year high water event	Uncertainty interval
2041-2070	32 cm	13-61 cm
2071-2100	64 cm	35-124 cm

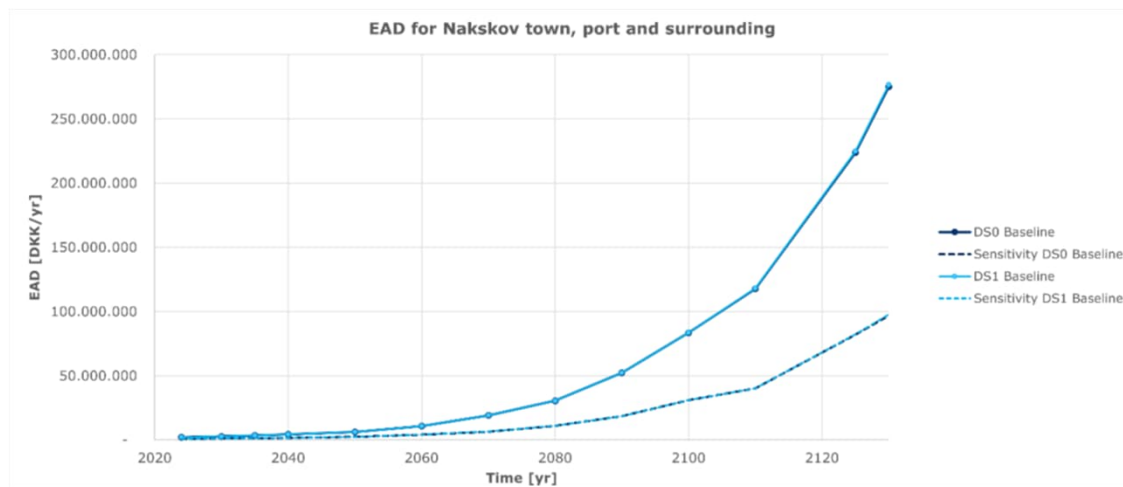
Reference: 134 cm (1981-2010) – 5-year events (DMI's Klimaatlas)



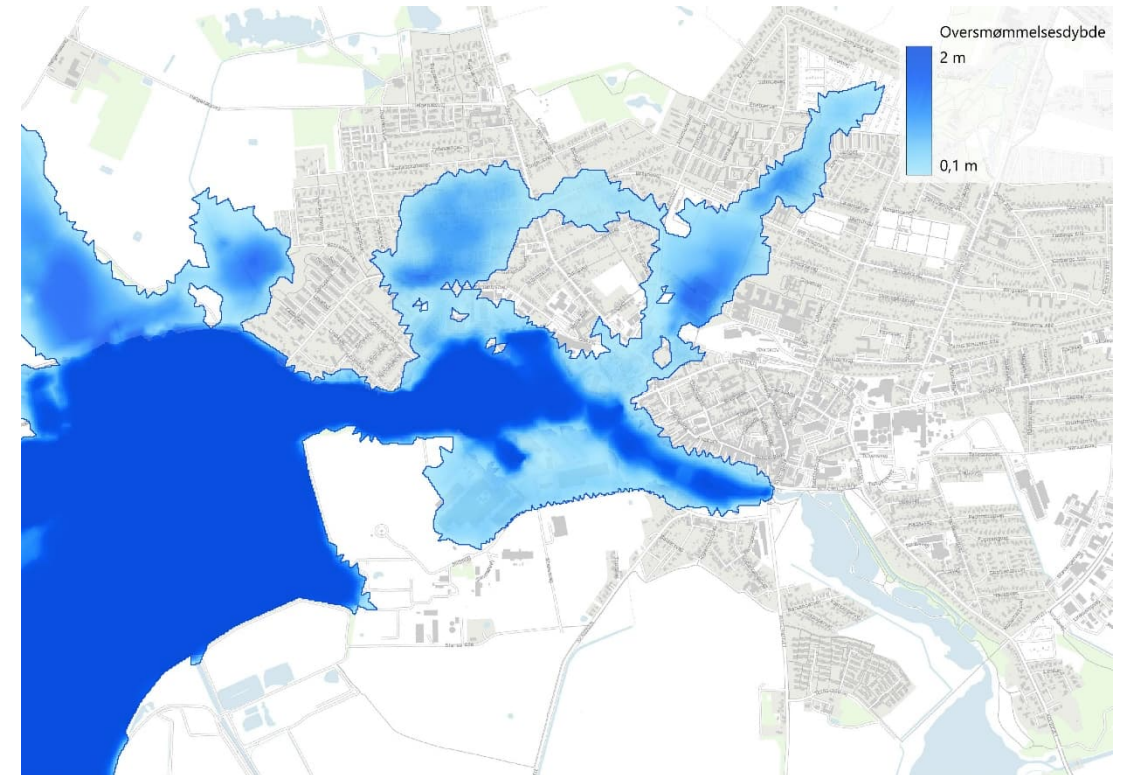
Kystdirektoratet's risk zone around Nakskov (Ref. Klimadatastyrelsen and Kystdirektoratet)

The threat from ocean-based flooding

- Increasing threat
- The economic consequences rise exponentially



Yearly costs from flooding in Nakskov (Ref. Rambøll)



100-year event in 2100 (Ref. Kystdirektoratet)

Legal framework

- EU's Directive 2007/60/EF
 - Directive regarding the risk assessment and management against flooding
- LBK nr. 72 from 18. of January 2024 (latest revision)
 - Law regarding the risk assessment and management against flooding from the waterways and lakes
- BEK nr. 894 from 21. of June 2016
 - Executive order regarding the risk assessment and management against flooding from the ocean, fjords, or other parts of the ocean territory
- LBK nr. 240 from 28. of January 2025 (latest revision)
 - Law regarding coastal protection and funding

Process 2026

- Various rapports are developed in cooperation with our current advisors
 - Including cost-benefit and WTP-analyses
- Public meetings (town halls) with citizens in Nakskov
 - First one held 13. of May
 - Second held 7. of September
 - Third to be held in early December

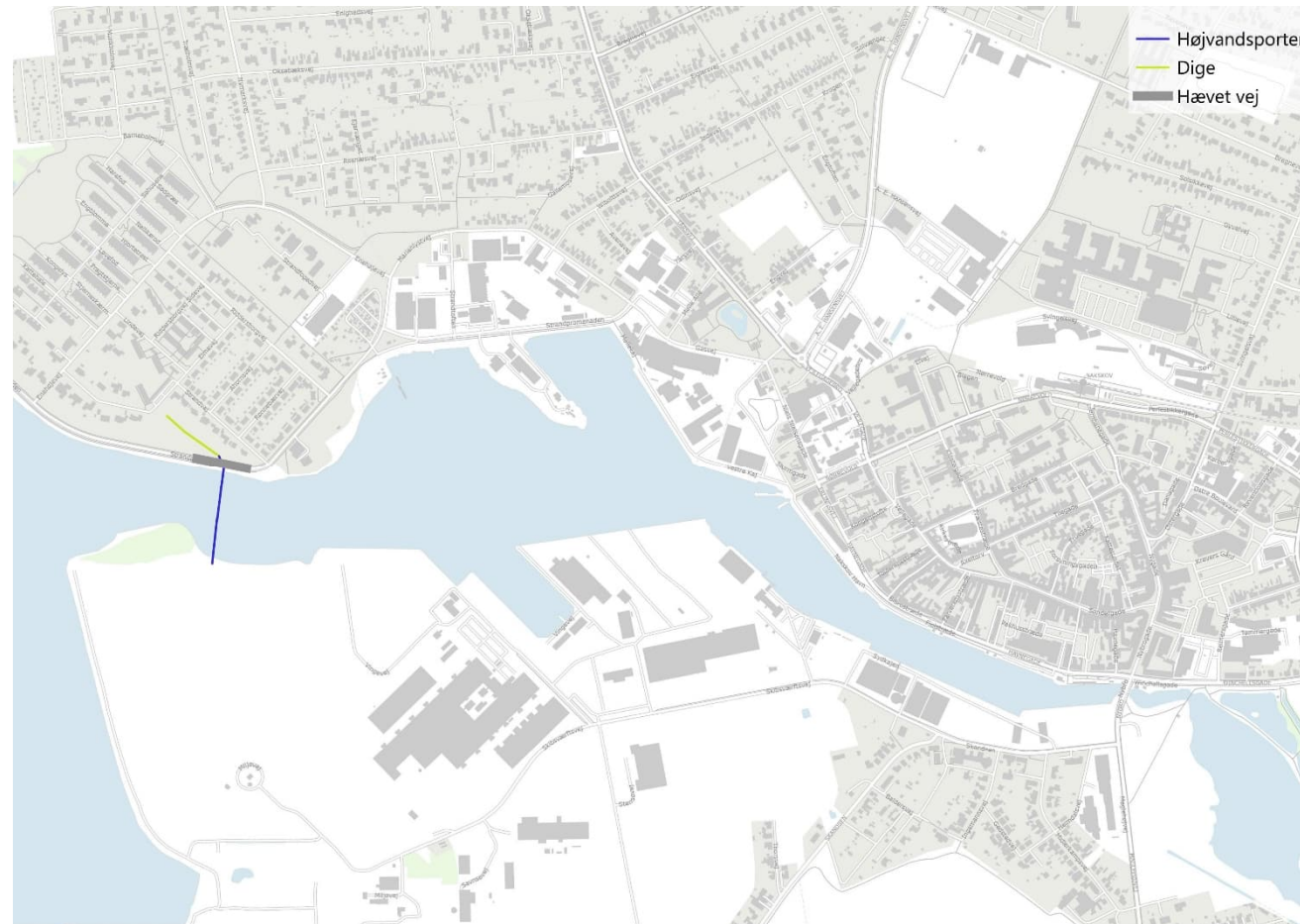
Process 2026

- A proposal for political decision making will be presented to the political Committee of Climate, Technical, and Environment
 - Primary focus will be on the solutions and the administrations recommendations
 - Secondary focus on financing
- The committee's decision will be forwarded to the city council for final approval sometime in 2027

Process 2027 - ?

- Further development of financing solutions and contribution models
- Decisions regarding the operation of the solution
 - New organization or managed by the municipality
- Further technical development of the chosen solution
- Development and hearings for new zoning plan
- Environmental analysis (VVM)
- Possible technical adaptations
- Construction phase

High Water Gate



High Water Gate (Ref. Lolland Kommune)

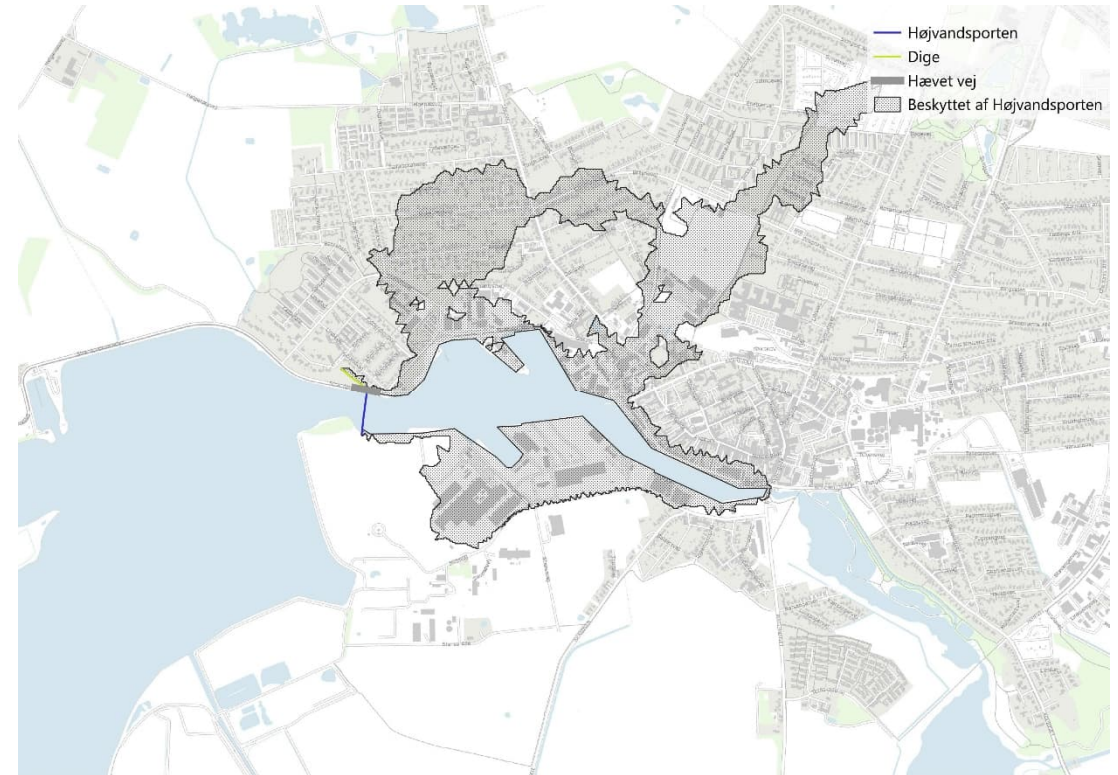
High Water Gate



High Water Gate (Ref. Lolland Kommune)

High Water Gate

- Protects against highwater up to level 2,5 (4,0) m (DVR90)
- Over dimensioned
 - 54 m opening for shipping
- Protects the entire town
- Limited access from the sea in the construction phase
- Price: ca. D.kr. 500 million

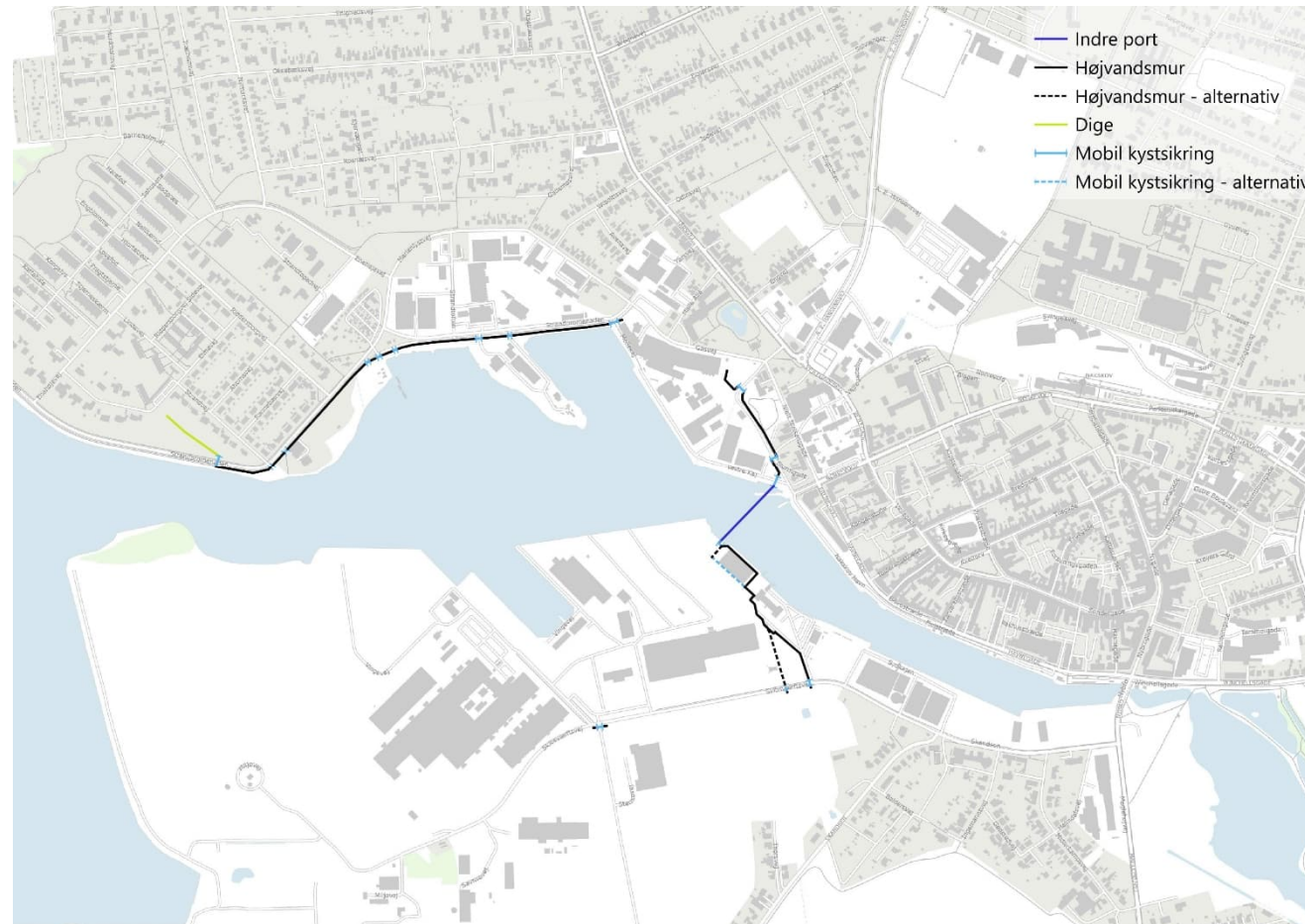


(Ref. Klimadatastyrelsen and Lolland Kommune)

High Water Gate

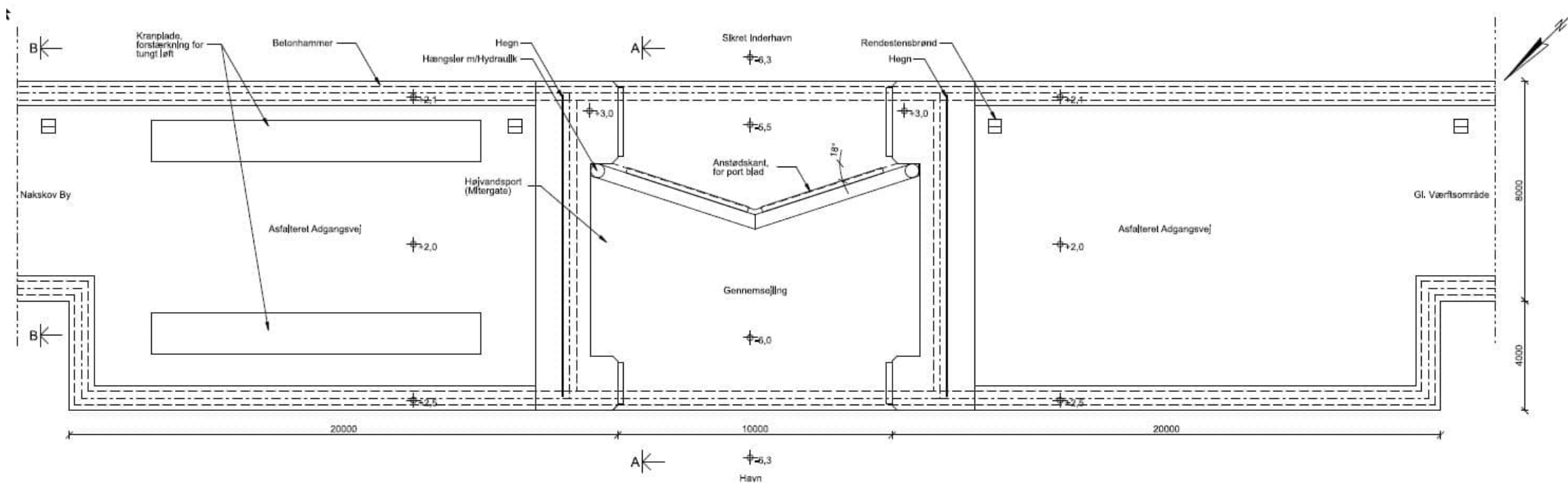
- Demands advanced competencies
- Resource demanding maintenance
 - Painting
 - Replacement of parts
- Continual operational tests
- Can be expanded to level 4.0 m (DVR90) without massive extra costs
- Remote controlled but can be operated at site. Emergency generator can be used in case of power outage

Inner gate



Inner Gate (Ref. Lolland Kommune)

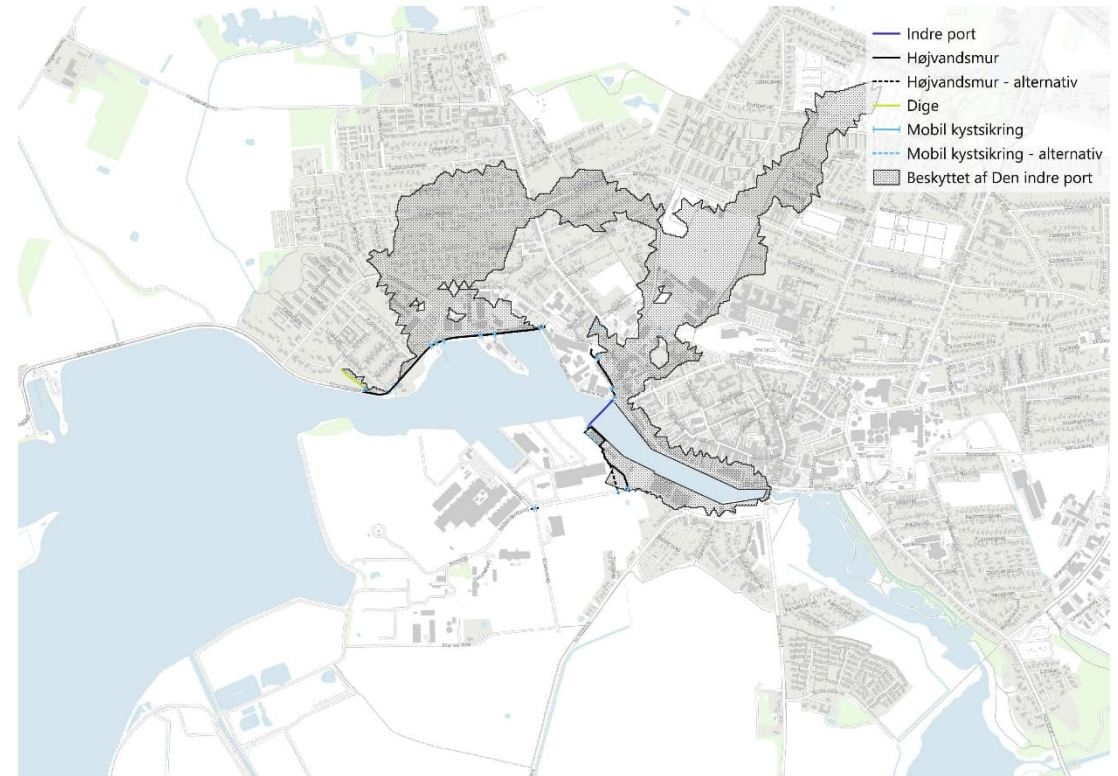
Inner gate



Inner Gate (Ref. Lolland Kommune)

Inner gate

- Protects against highwater up to level 2,5 m (DVR90)
- Transforms the inner harbour to recreational purposes
- Primarily protects the residential areas
- Limit to the size of vessels in the inner harbour
- Price: ca. D.kr. 140 million

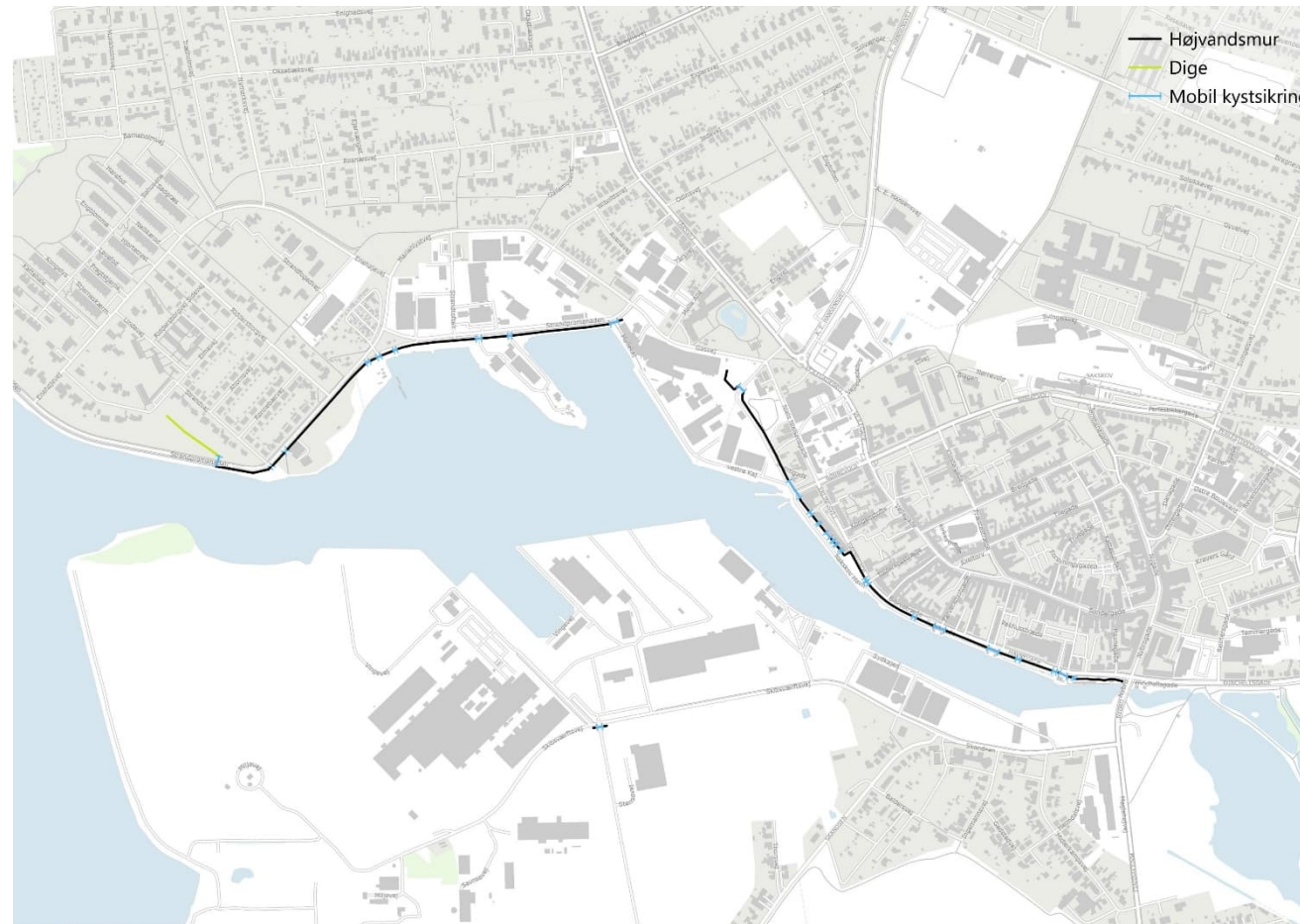


(Ref. Klimadatastyrelsen and Lolland Kommune)

Inner gate

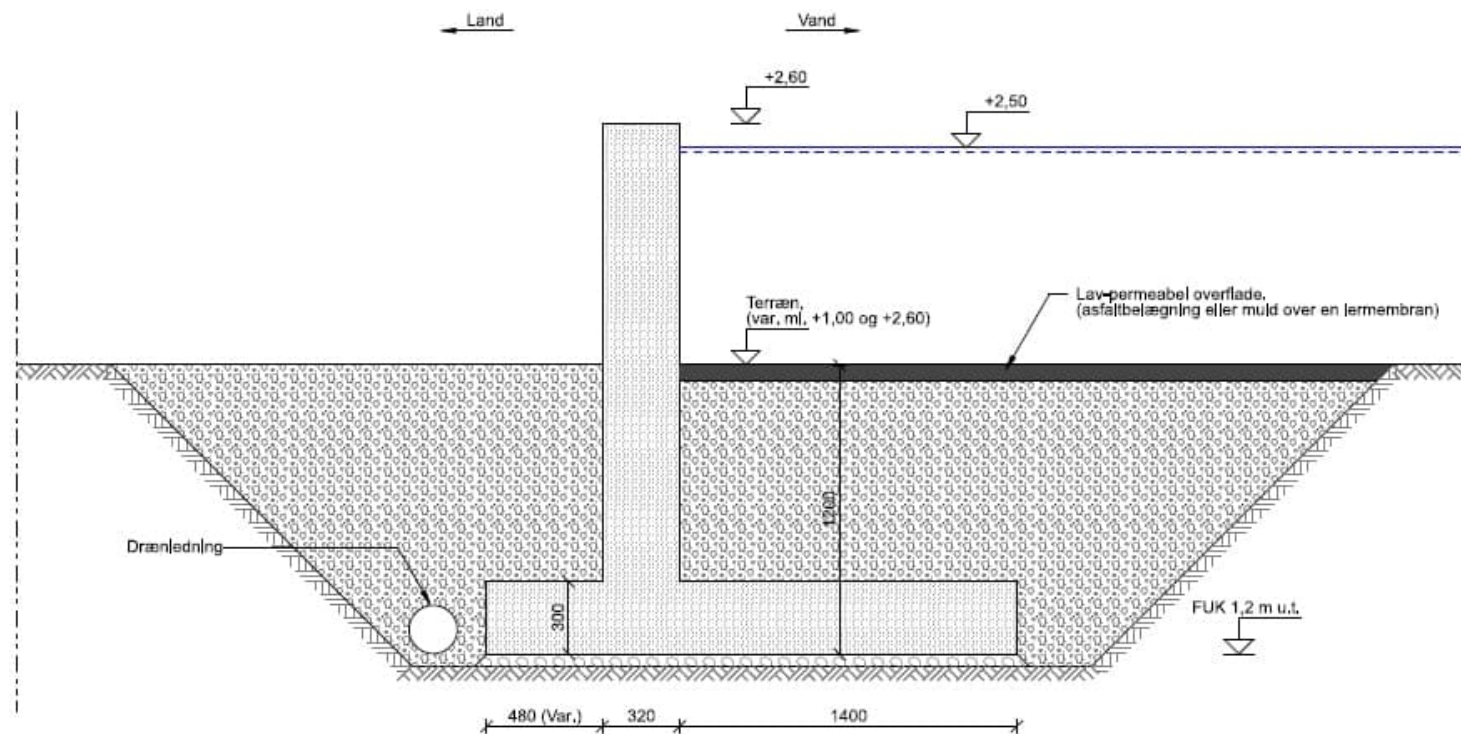
- Demands advanced competencies
- Resource demanding maintenance
 - Painting
 - Replacement of parts
- Continual operational tests
- High Water Wall can be beautified
- Remotely operated but can be operated at site. Emergency generator can be used in case of power outage and can be closed with manual labour in an extreme emergency.

High Water Wall



High Water Wall (Ref. Lolland Kommune)

High Water Wall



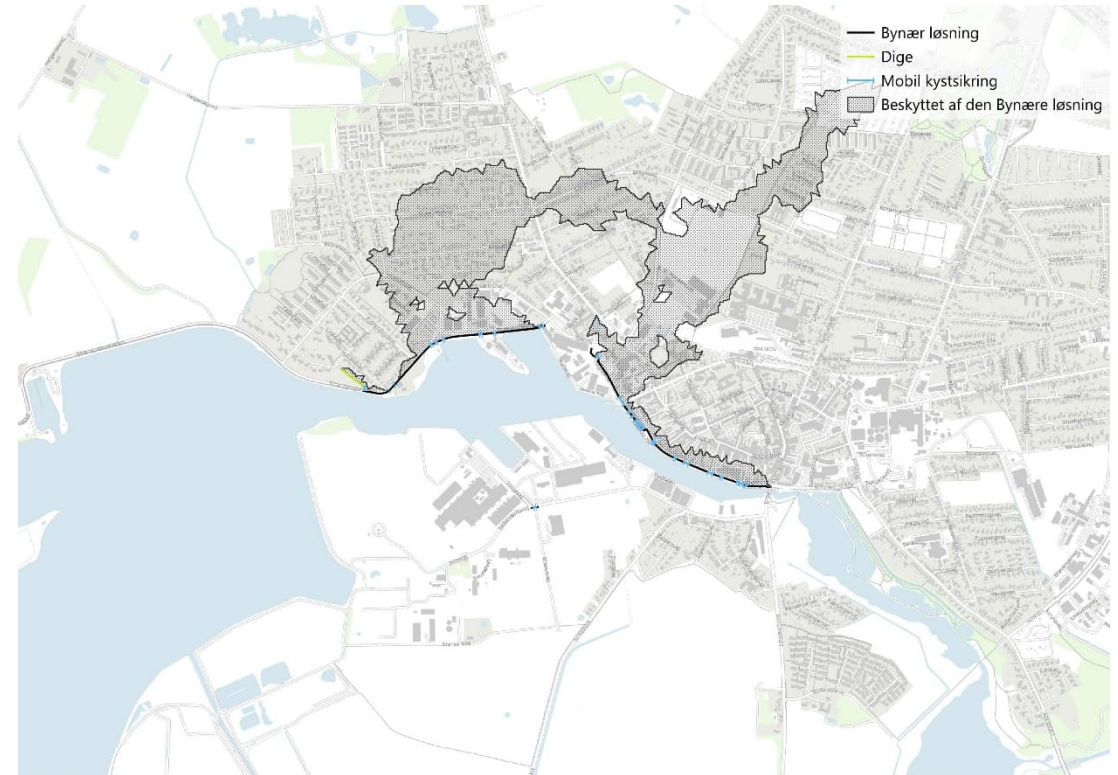
SNIT B-B, 1:20

Principtværsnit for permanent højvandsmur
Gælder hvor terrænkoten varierer mellem +1,0 m til +1,6 m

High Water Wall (Ref. Lolland Kommune)

High Water Wall

- Protects against highwater up to level 2,5 m (DVR90)
- Limited effect on the industrial harbour
- Protects areas of the town north of the harbour
- Price: ca. D.kr. 100 million

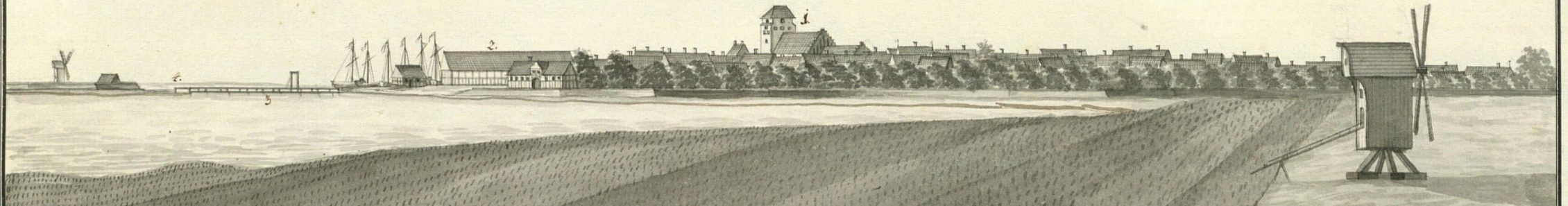


(Ref. Klimadatastyrelsen and Lolland Kommune)

High Water Wall

- Limited maintenance
- High Water Wall can be beautified with for example planters and benches

Ref. Public domain (Nakskov - Johan Jacob Bruun 1754)



Citizen involvement

Communication, involvement, and outreach

Dialogue

- We can learn a great deal about the worries of the citizens by engaging in dialogue
- Citizen dialogue can occasionally highlight problematic areas that has been overseen by the administration or unknown
- The citizens often know the local area, history and possible challenges better than the administration and advisory partners
- By engaging in dialogue, You can allay citizen worries, prepare them for possible adversary effects and mitigate misinformation

Dialogue

- Be...
 - ready to adapt
 - transparent
 - upfront with potential problems
 - clear whether something has been decided or not
 - clear about the decision processes
- Avoid
 - lingo, when possible
 - talking down to people

Homepage

- Part of the municipality's general home page
 - Created with accessibility in mind
 - Multiple languages utilizing Google Translate
 - AI chatbot
 - Under the sub page of Klima (Climate), but can be accessed by a direct link
- Consists of a hub-page with subpages
- Is continually updated
- Content is managed by the project team
- [Lolland.dk/nakskovkystsikring](https://lolland.dk/nakskovkystsikring)

Homepage

- Three-tiered dissemination
 - Basic information for those who only wants the highlights
 - Moderate information for the curious
 - Full information for those who wants the full picture
- Technical rapports are accessible as they are finished

Basic information – low bar for understanding



Moderate information – medium bar for understanding



Full information – high bar for understanding

Citizen meetings

- Democratic involvement
- Information dissemination
- Information gathering
- Dialogue
- Being upfront regarding challenges, costs, and disadvantages
- Listen to the citizens
 - Even when they do not listen to you

8 of November 2022 · First

13 of May 2026 · Second

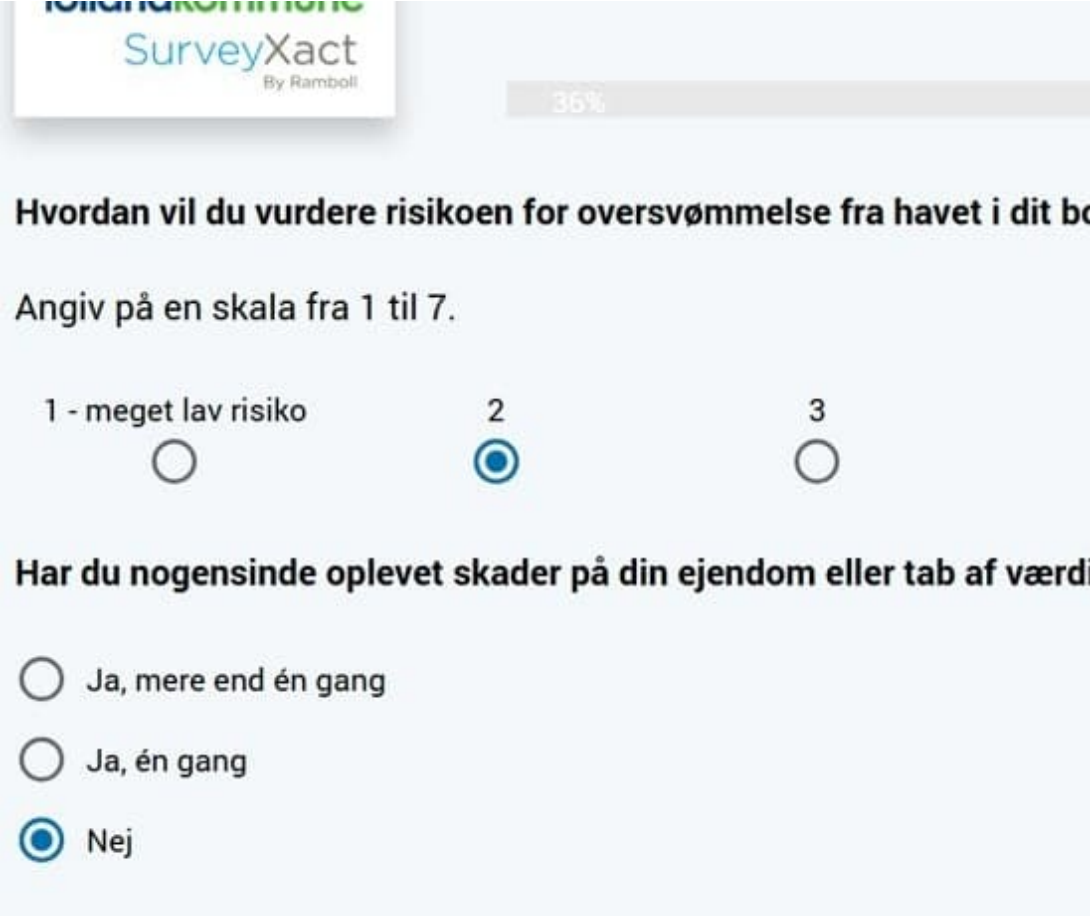
9 of September 2026 · Meeting

First week of December 2026:
Notification that the projects has

Future meetings regarding the for
various steps: politically
decided solution, new zoning
plan/environmental studies,
contribution model, etc.

Questionnaires

- What do we want to know?
- Who do we want to know it from?
- What do we want to use it for?
- Publicize the results
- Be transparent



SurveyXact
By Ramboll

36%

Hvordan vil du vurdere risikoen for oversvømmelse fra havet i dit bo

Angiv på en skala fra 1 til 7.

1 - meget lav risiko 2 3

○ ● ○

Har du nogensinde oplevet skader på din ejendom eller tab af værdi

○ Ja, mere end én gang

○ Ja, én gang

● Nej

E-mail contact

- Lolland Municipality has a direct e-mail address for comments, ideas and questions
 - Automatically journalised
 - Only a few responses so far
 - Few ideas
-
- Useful for letting the citizens feel involved
 - Use SoMe for publicizing news and updates rather than direct dialogue

Media outreach

- Communicate large news via press releases
 - Use SoMe and the homepage for minor news and informal notices
- Be aware of the medias' motives
- Follow their stories about the project
 - If there are misunderstandings or problematic angles, you should react to them based on the degree or severity
 - Make it clear whether something has been decided or not
- Be transparent

Ref. Klimadatastyrelsen (Nakskov 1954)

Questions?

We appreciate your attention!



lollandkommune

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