

Kystdirektoratet (Coastal Directorate)

Flood protection pumps in the coastal area 'Ribe Kog'

DOKUMENTATION AND MAPING

Requestor The Danish Authority (DCA), Kystdirektoratet
Højbovej 1, 7620 Lemvig
CVR-nr. 36876115

Adviser Orbicon A/S
Jens Juuls Vej 16
8260 Viby J

Projectnumber 1331700126

Project Manager Vicky Gydesen Madsen

Quality assurance Peter Fjordside Linde

Revision no. 1

Approved by Louise Skytte Clausen

Published 30-01-2018

TABLE OF CONTENTS

1. Introduction	4
2. Project area.....	4
3. Geographical locations of existing pumps	5
3.1. Pump located at Sædding Strandvej 107	6
3.2. Pump located at Taurusvej/Mådevej	7
3.3. Planned pumps	8
4. Conclusion.....	8

LIST OF APPENDICES

1. Sources for the required information
2. Email from 'Din Forsyning' Utility Company
3. Email from Esbjerg Municipality
4. List of dikes

1. INTRODUCTION

This report comprises mapping and documentation of existing and planned flood protection pumps in the coastal area called 'Ribe Flood Plain' (in Danish 'Ribe Kog'). DCA is taking part in an Interreg North Sea project, FAIR. The project's main objective is to reduce flood risk across the North Sea region.

FAIR is organized in 6 work packages, of which work package 4 is regarding this report. Work package 4 concerns adaptive design and mainstreaming of flood protection measures and makes use of this pilot case called Ribe Flood Plain.

The mapping and documentation of the pumps is a part of a 'Systems Analysis' where also flood gates, sluices, dikes and other relevant flood protection are analyzed.

2. PROJECT AREA

The map below shows where in Denmark the project area is located. The name of the municipality is 'Esbjerg Kommune'.

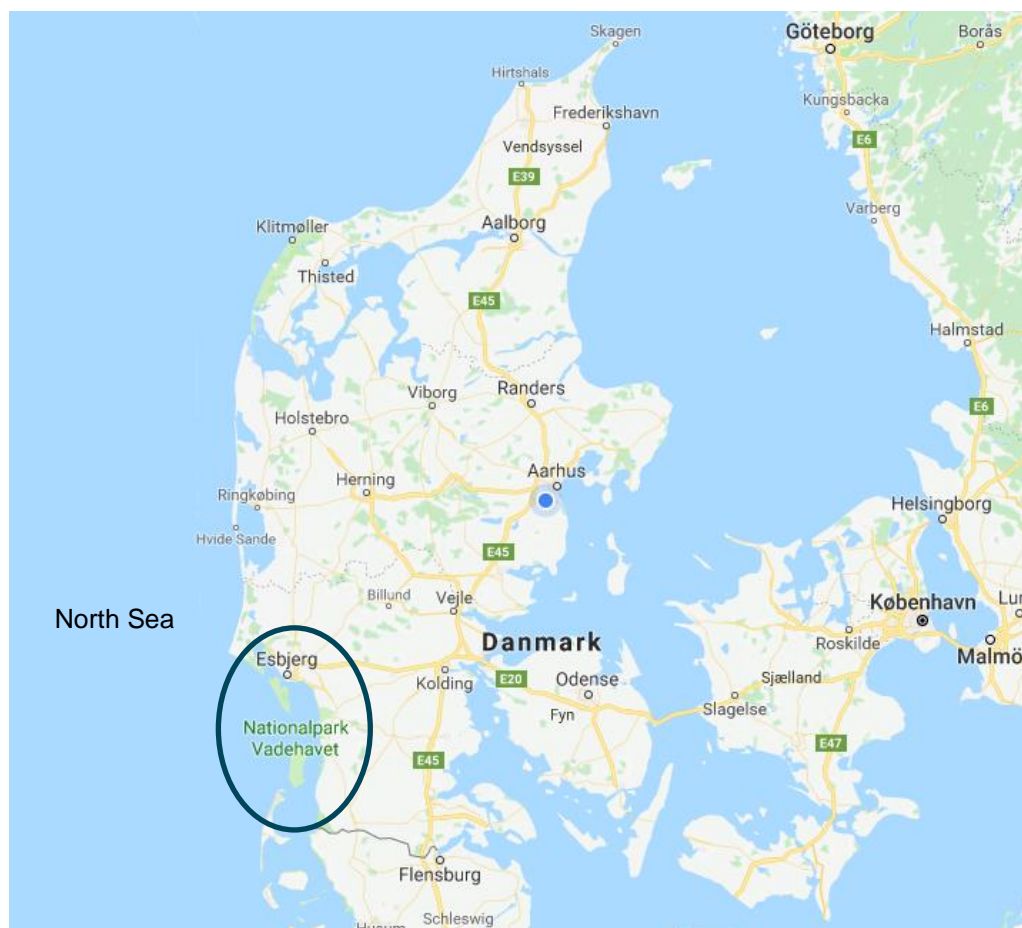


Table 1 Project area

'Ribe Kog' is the Danish name for Ribe Flood Plain. It is located in the western part of Jutland in Denmark where you can find Wadden Sea National Park.

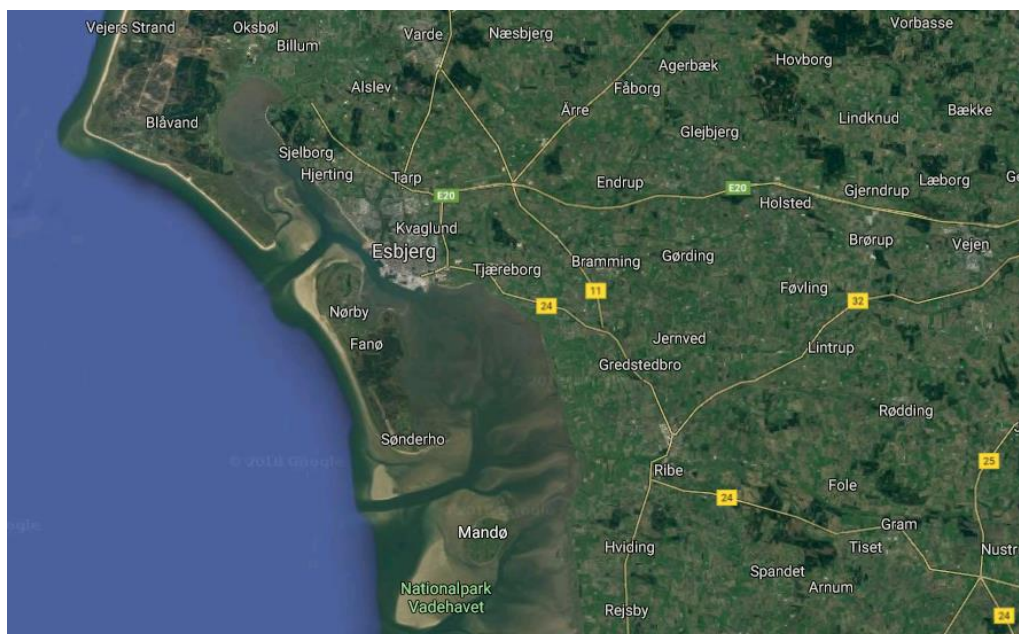


Table 2. Ribe Flood Plain.

3. GEOGRAPHICAL LOCATIONS OF EXISTING PUMPS

Information from the municipality and utility company for wastewater and rainwater were collected to find out what pumps are used for flood protection in Ribe Flood Plain. The contact information is to be found in Appendix 1. 'Din Forsyning' is the name of the utility company and Esbjerg Municipality is the owner. The information from the municipality was that there are no pumps at Ribe Flood Plain. In appendix 2 and 3 the correspondence with 'Din Forsyning' and 'Esbjerg Kommune' is shown.

The utility company 'Din Forsyning' confirmed that there are where no pumps for flood protection at Ribe Flood Plain. The utility also informed about other pumps by the Flood Plain with other purpose.

When the sewer system is overloaded, two pumps are used. The pumps are pumping wastewater in to the flood plain when there is heavy rain.

The pumps are shown in the table below.

Address	Type of pump	System
Sædding Strandvej 107	Overflow	Combined sewer
Taurusvej	Overflow	Combined sewer

Table 3. Existing pumps.

3.1. Pump located at Sædding Strandvej 107

The pump in the location Sædding Strandvej 107 pumps combined water from the sewer and has an overflow to the flood plain. It is located 100 meters from the coast. The utility company 'Din Forsyning' is the owner.

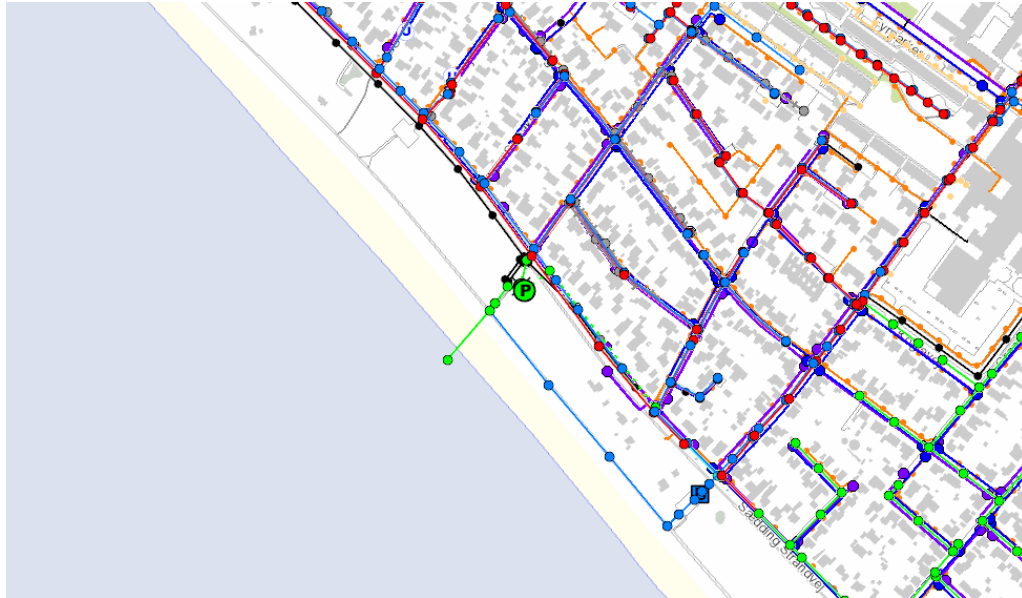


Table 4 Sædding Strandvej 107 - overview

Investigating the pipes upstream in the sewer system, it seems that most of the wastewater is rainwater and not domestic wastewater (toilets ect.). The overflow is therefore less polluted than overflow from a combined sewer in general. Green signature is combined sewer; blue is rainwater and black is 'other owner'.

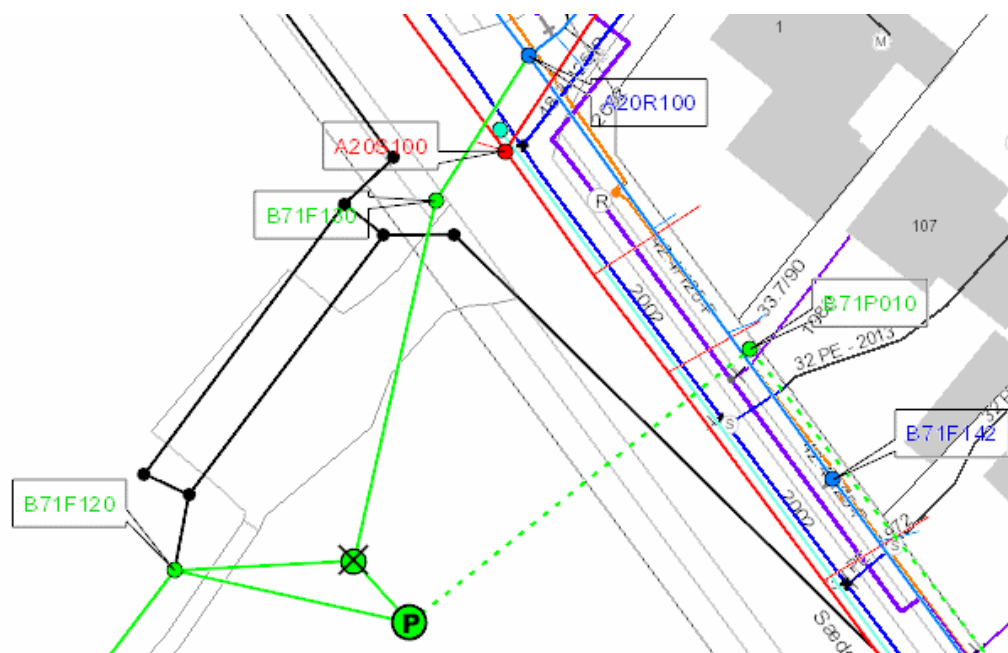


Table 5 Sædding Strandvej 107 - details

3.2. Pump located at Taurusvej/Mådevej

There is also located a pump at Mådevej 52 which has an overflow at Taurusvej. The overflow pipe is 2.700 meters long and is from after the treatment of combined wastewater at the wastewater treatment plant called 'Renseanlæg Øst'. Eight pipes along the harbor by the coast are distributing the outlet.

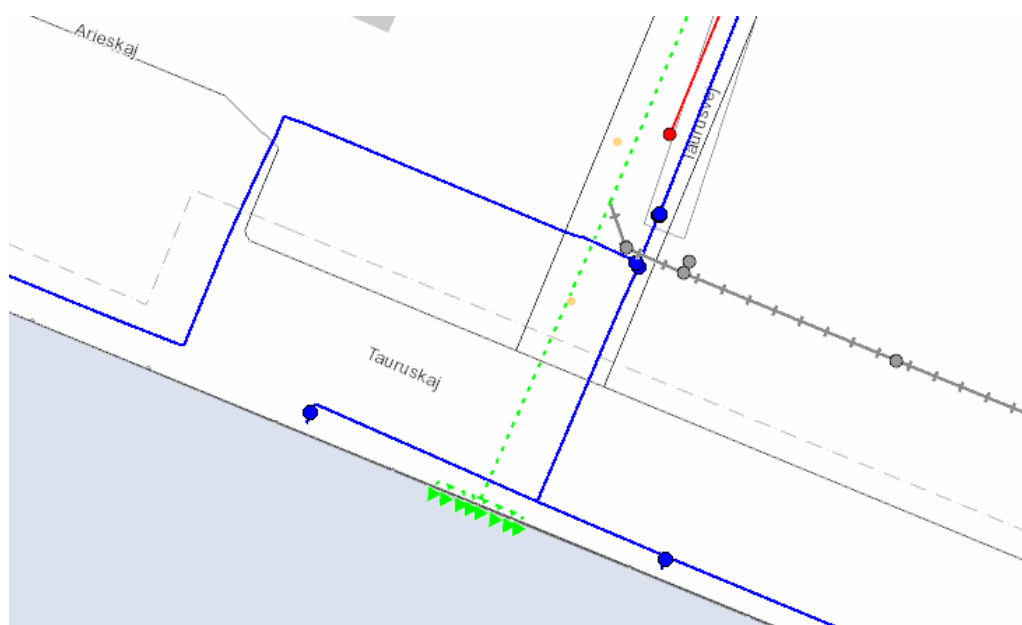
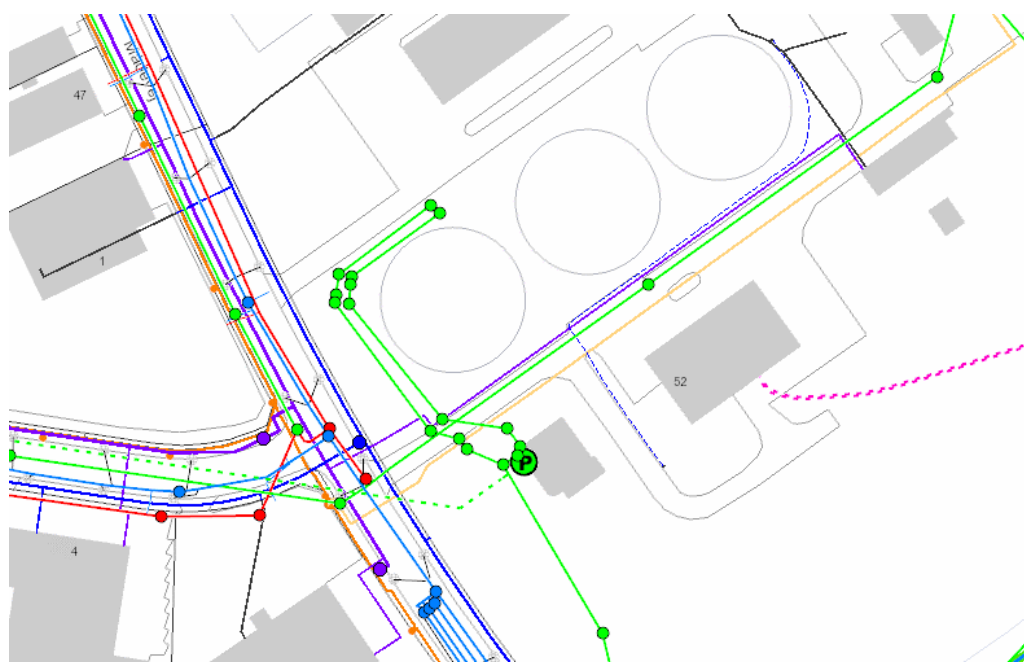


Table 6 Taurusvej by Tauruskaj - outlet



Figur 7 Pump on wastewater treatment plant before outlet

3.3. Planned pumps

According to the information from the municipality and the utility company, there are no future plans for installation of pumps at the flood plain. The information in the climate adaptation plan for Esbjerg municipality confirms this. The municipality has also checked if there were planned pumps by the dikes, which there were not, appendix 4.

4. CONCLUSION

After collecting information from Esbjerg Municipality and Din Forsyning Utility Company the conclusion about the pumps at Ribe Flood Plain is that the existing pumps are of very little importance for the flood protection project.

There are no pumps for flood protection. The purpose of the existing pumps is only for transport of wastewater.

The existing planes have no planned pumps for flood protection.