Interreg North Sea Region FAIR
European Regional Development Fund

EUROPEAN UNION

LSBG Landesbetrieb Straßen, Brücken und Gewässer Hamburg

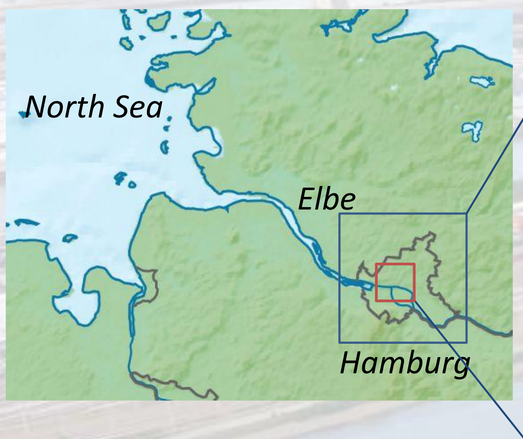
TUHH Technische Universität Hamburg

WASSERBAU River and Coastal Engineering

# FAIR pilot site

# Hamburg flood gates

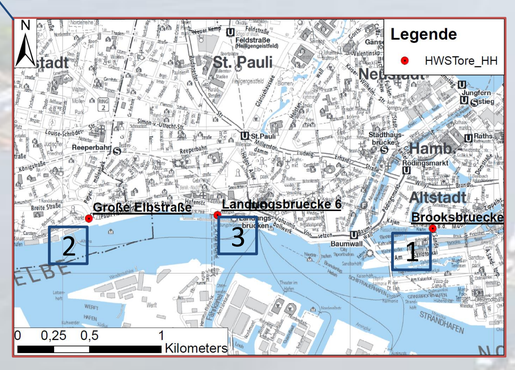
## Region

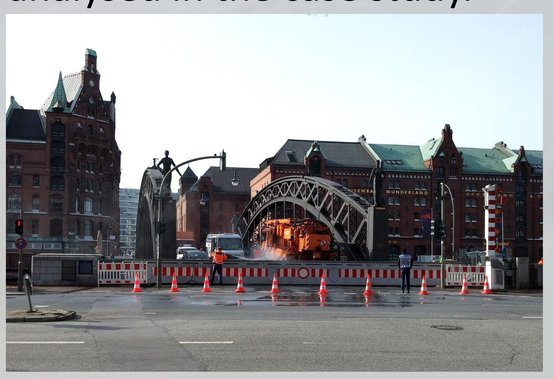



- ***Hamburg***, Germany's second largest city at the banks of the river Elbe with approximately 1.8 million inhabitants
- Case study in an ***urban and densely populated area***
- Residential and office buildings, industry, infrastructure and tourism are located ***right behind the dike line***
- Gates, dikes and walls keep the city of Hamburg safe from flooding of the ***Elbe Estuary*** and storm surge impacts from the ***North Sea***

## Pilots

Within flood protection, gates are considered to be the most sensitive parts. Of ***40 flood gates*** in Hamburg's public flood protection line, three representative, automatic gates are selected to be analysed in the case study.



1) sliding gate at Brooksbruecke

2) sliding gate at Große Elbstraße

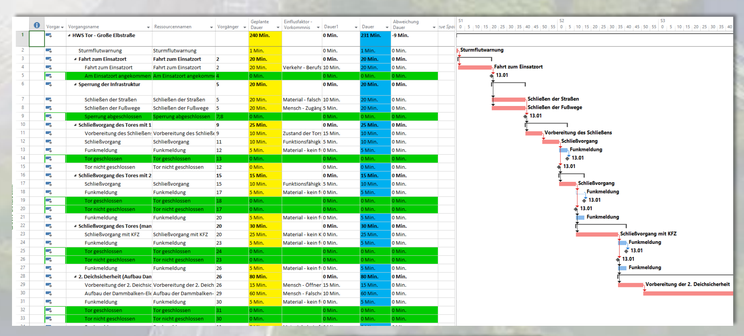
3) flap gate at Landungs-bruecke 6

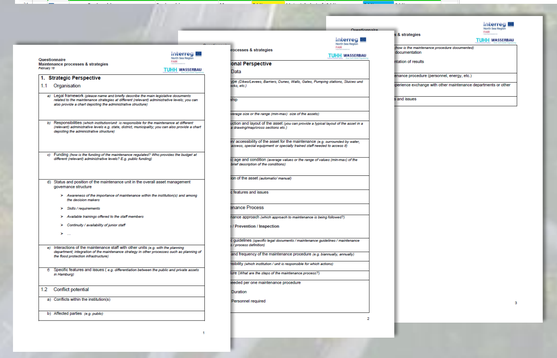
## Objective

- Analysis of ***maintenance processes*** and strategies to improve maintenance in respect to the reduction of costs and the optimisation of investments
- Development of a ***risk based maintenance strategy*** to advance asset management through optimisation of design and emergency management procedures

## Approach

- Survey of existing maintenance strategies in the NSR countries by ***questionnaires***; detailed analysis of maintenance procedures in the German federal states alongside the North Sea via ***expert interviews***
- ***Risk based analysis*** including a detailed process analysis in the Hamburg case study on three flood gates: gain experience from the operation of flood gates as a basis for maintenance and to ***identify points that need to be optimised*** in the design





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