

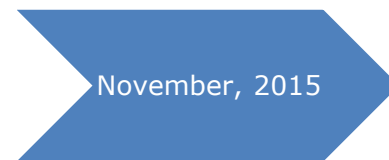
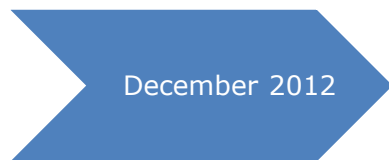
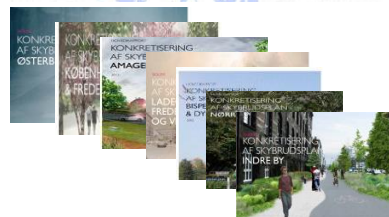
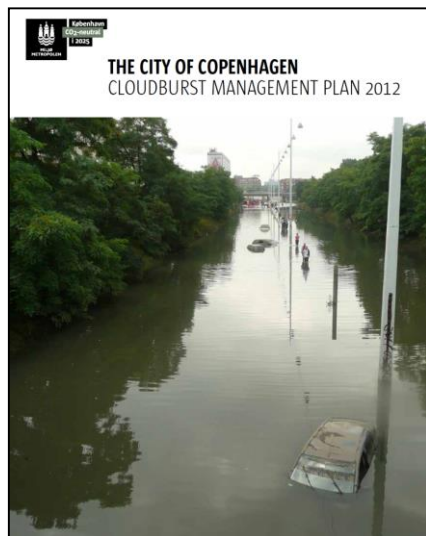
# Implementation of the Cloudburst Management Plan of Copenhagen



**COPENHAGEN  
TOGETHER**

CITY OF COPENHAGEN  
The Technical and  
Environmental Administration

# Time line of adaptation process in Copenhagen



**Plan approved by City Council**

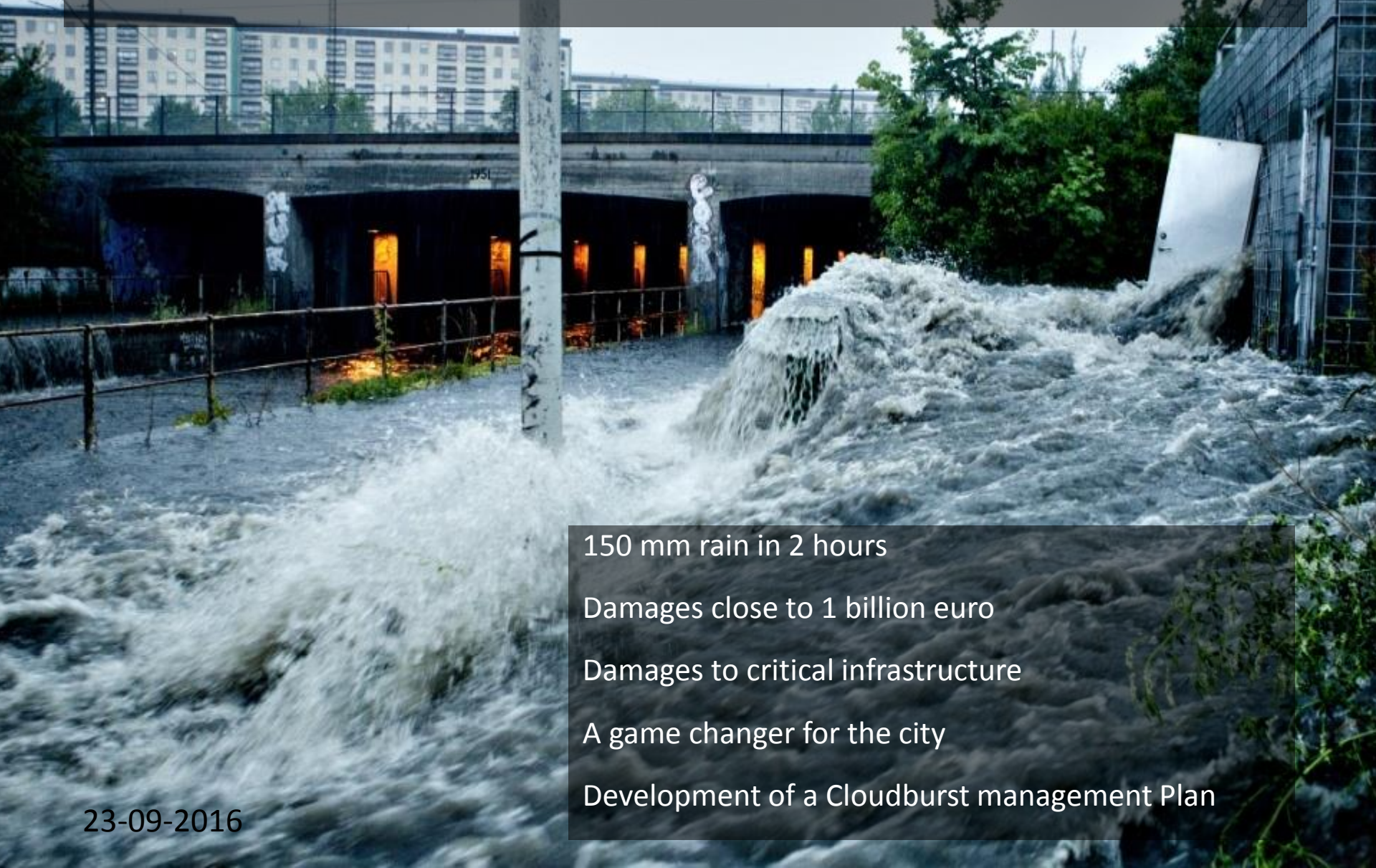
**Plan approved by City Council**

**Preparation of plan for each water catchment area**

**Political decision for implementation**



# Cloudburst in Copenhagen



150 mm rain in 2 hours

Damages close to 1 billion euro

Damages to critical infrastructure

A game changer for the city

Development of a Cloudburst management Plan

23-09-2016

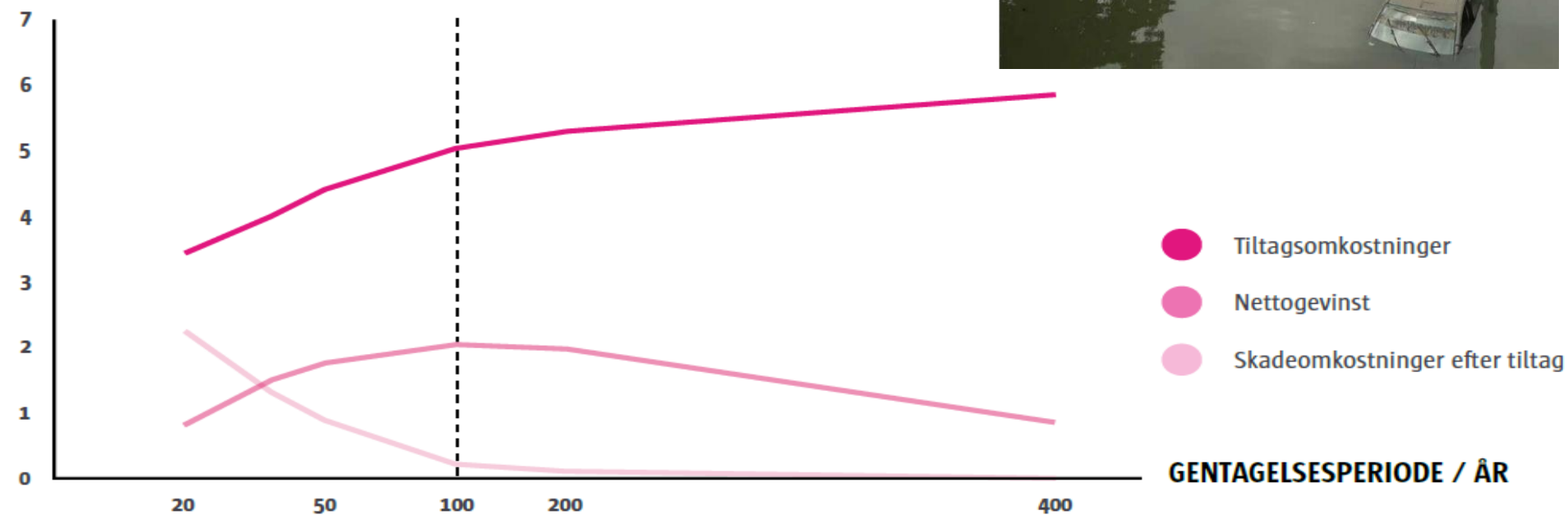
# The Cloudburst Management Plan



THE CITY OF COPENHAGEN  
CLOUDBURST MANAGEMENT PLAN 2012



MIA KR.

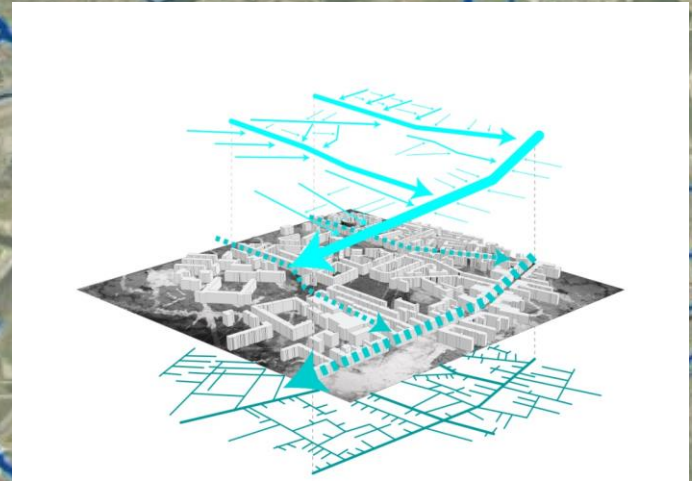


- Tiltagsomkostninger
- Nettogevinst
- Skadeomkostninger efter tiltag

GENTAGELSESPERIODE / ÅR

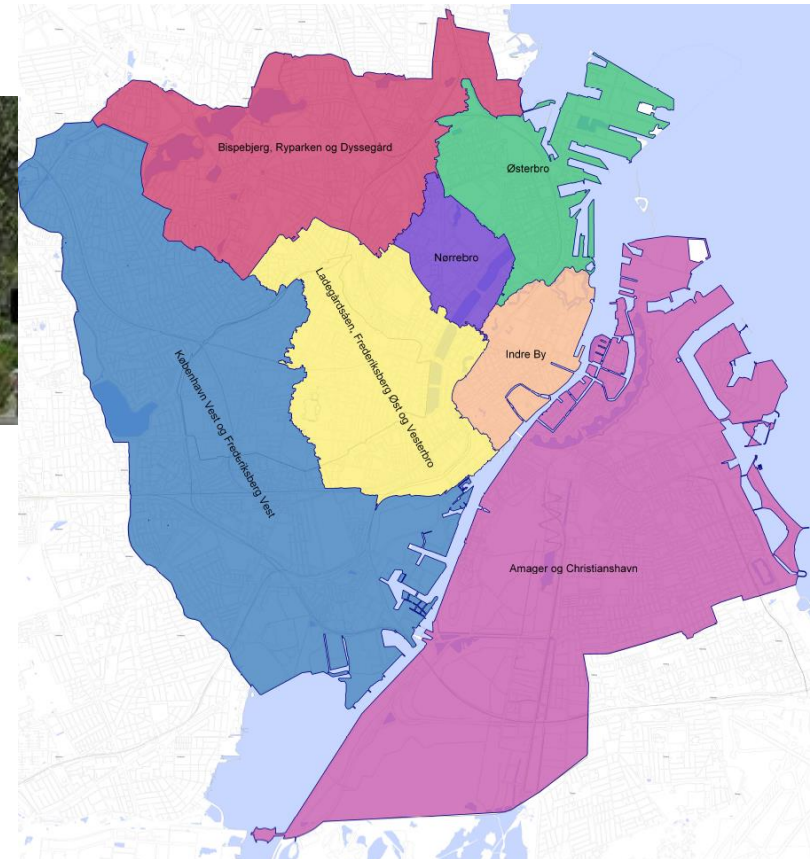


**Following the natural flow of water – and creating a new infrastructure**





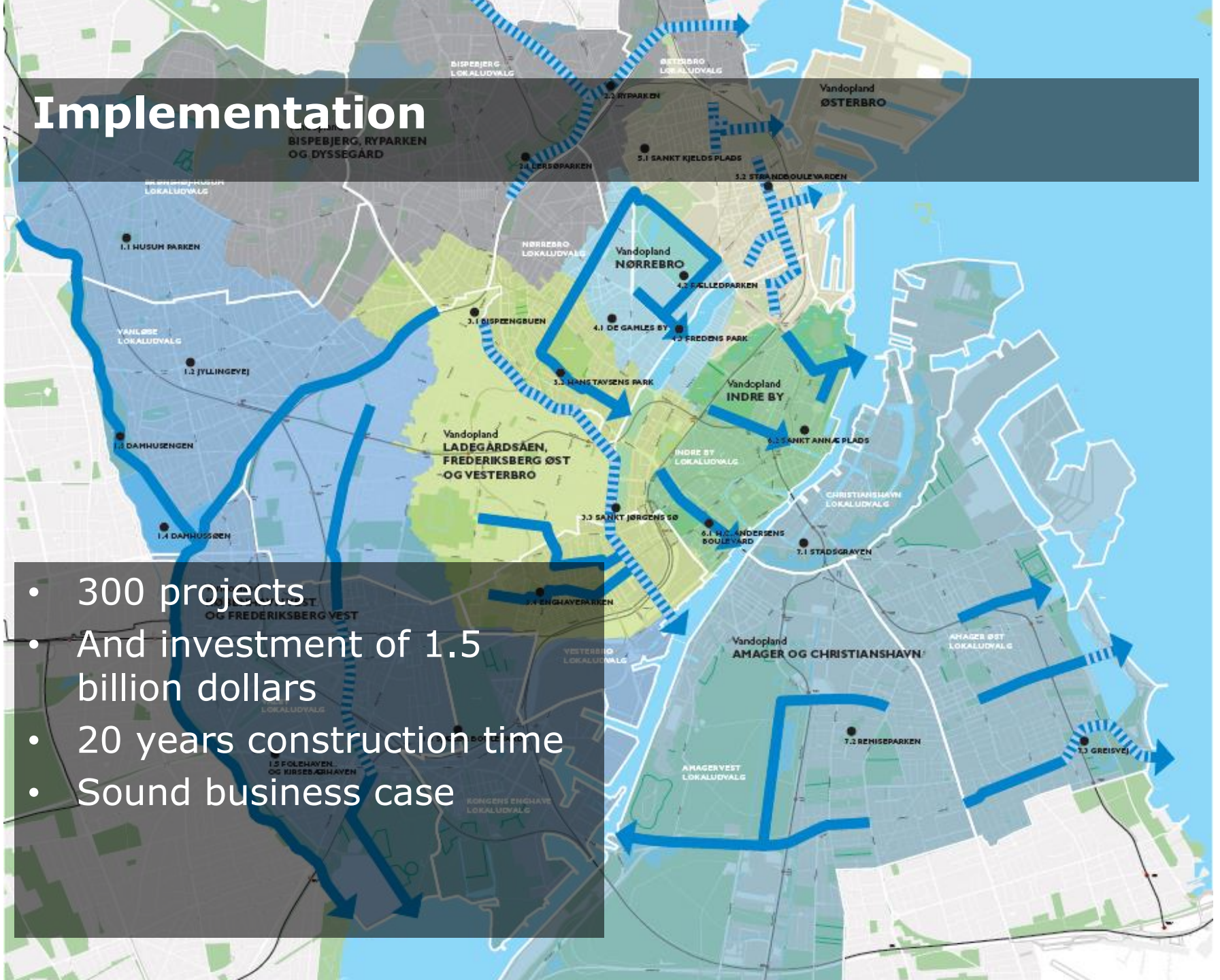
# Dividing the city into catchment areas





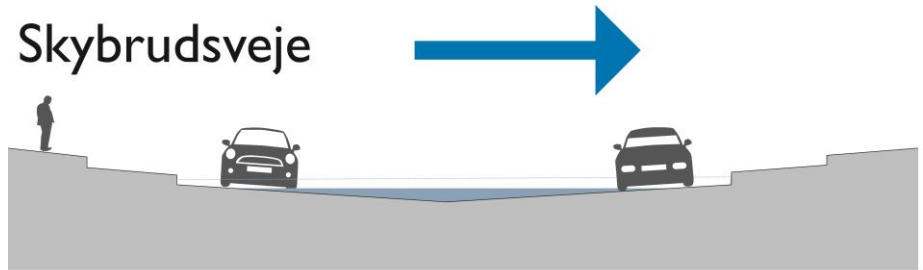
# Implementation

- 300 projects
- And investment of 1.5 billion dollars
- 20 years construction time
- Sound business case

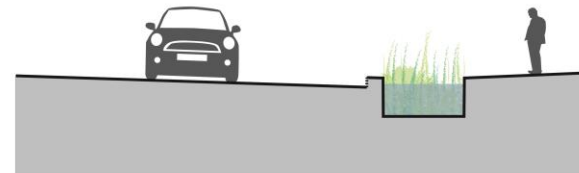


# New typologies – to increase flexibility

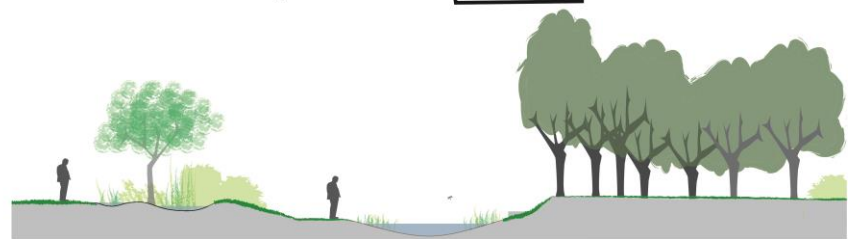
- Cloudburst boulevards – transporting water
- Retention boulevards – delaying water
- Central delays – for storing water



Forsinkelsesveje 



Forsinkelsespladser 



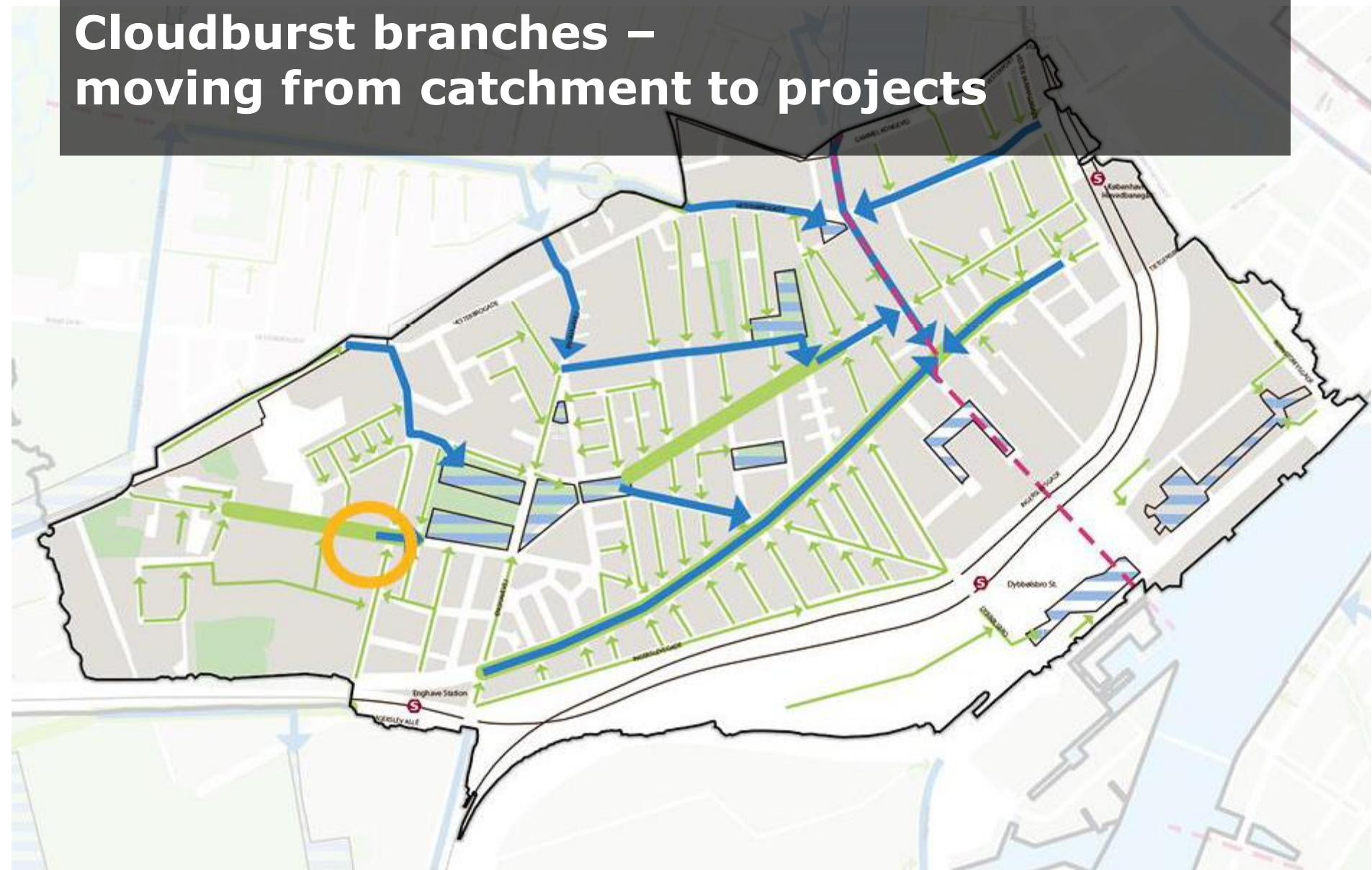


# System based on Cloudburst Branches



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# Cloudburst branches – moving from catchment to projects



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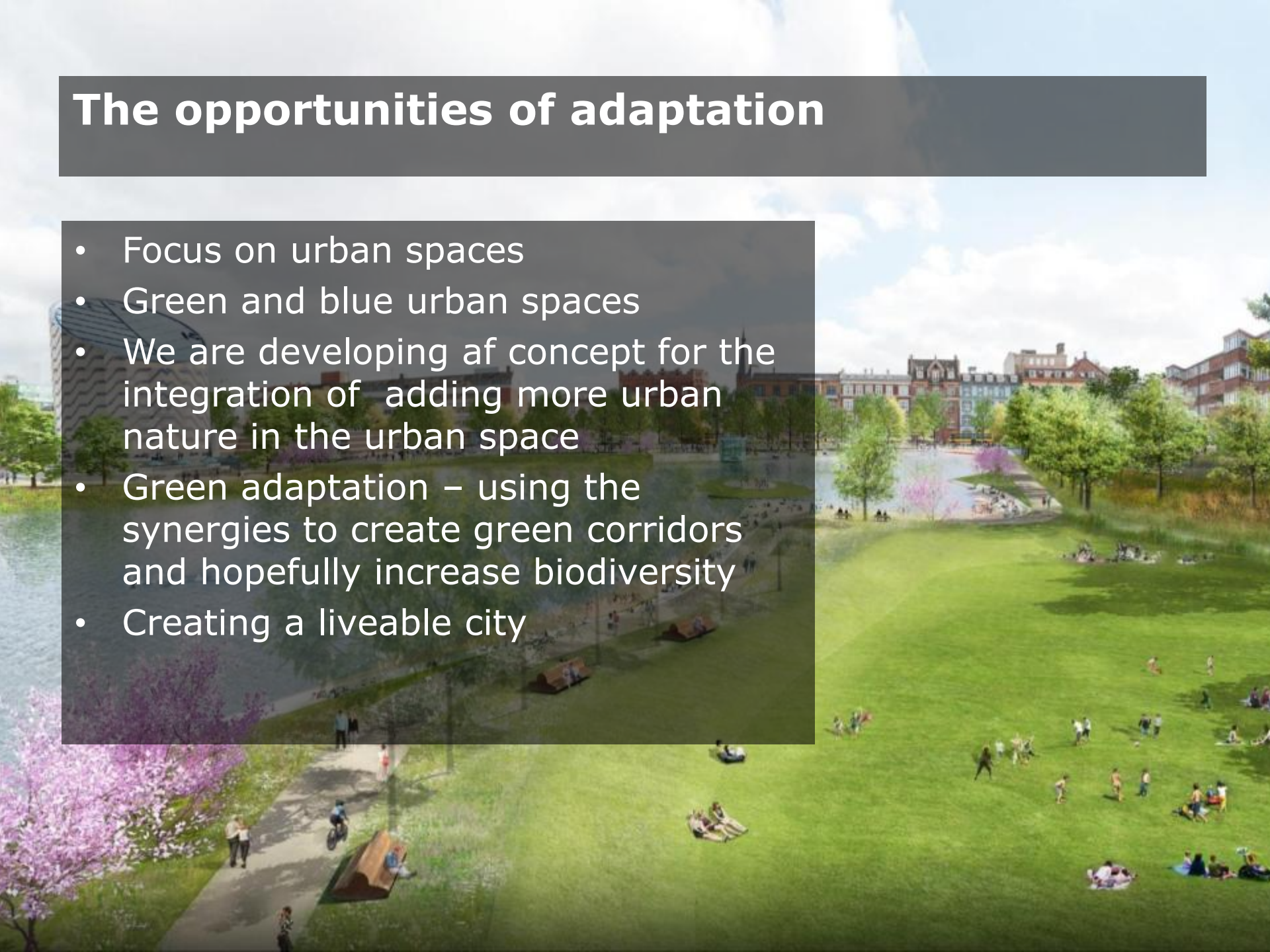






# The opportunities of adaptation

- Focus on urban spaces
- Green and blue urban spaces
- We are developing a concept for the integration of adding more urban nature in the urban space
- Green adaptation – using the synergies to create green corridors and hopefully increase biodiversity
- Creating a liveable city







**How do we know it works???**

**We don't.....**

23-09-2016



## But we hope to find out...

- Monitoring will be part of our work
- Extensive use of modelling
- Registering damages
- Cooperation with academia





# Changing climate projections – and changes in urban life

- Surface solutions will make flexibility higher
- Urban life will also change over the next 20 years





# Annual reports to the political level

- Part of the evaluation
- How many citizens are now protected
- Progress in the implementation
- Investment statements
- Changes in the implementation

# Cloudburst Plan as backbone for physical development in the City

- Hydraulic structure will be the backbone for all urban space developments for the next 20 years.
- It is through the cloudburst projects that other strategies for the city will be implemented – such as urban nature, bicycling etc.
- Annual project packets based on the hydraulic structure – with urban space improvements as parts of the projects







Thank you for your  
attention  
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