

In the Middle of Delfland

The historical landscape where agriculture
and recreation coexist

P5 Carmen Jansen op de Haar - 30 juni 2023



Metropolitan Ecologies of places

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2nd mentor: Birgit Hausleitner
Delegate: Robert Nottrot

2022/2023

Contents.

1. The location & characteristics
2. Introducing the challenges
3. Vision and Goals
4. Excursion through the region
5. Landscape in 2070

Contents.

1. The location & characteristics

2. Introducing the challenges

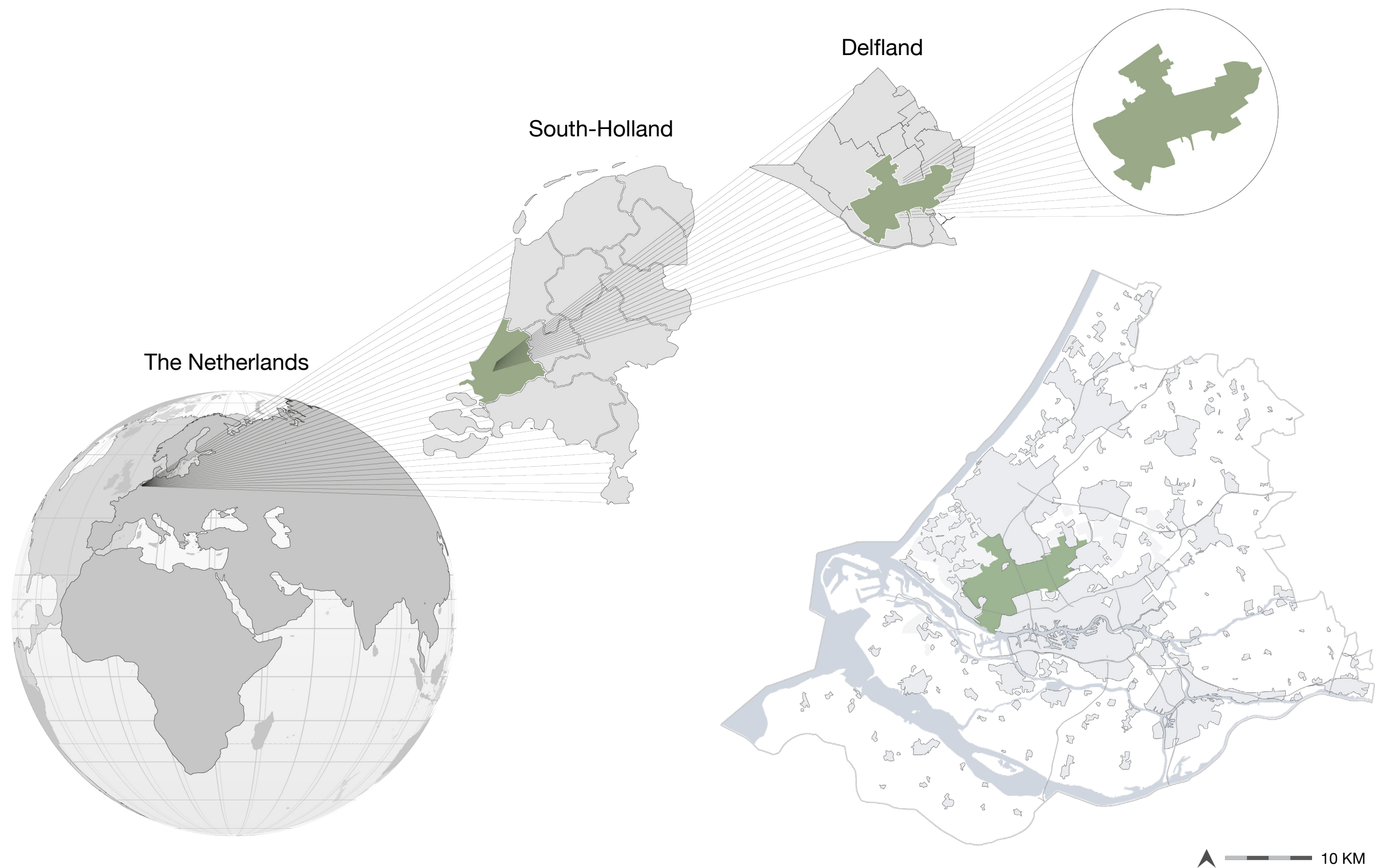
3. Vision and Goals

4. Excursion through the region

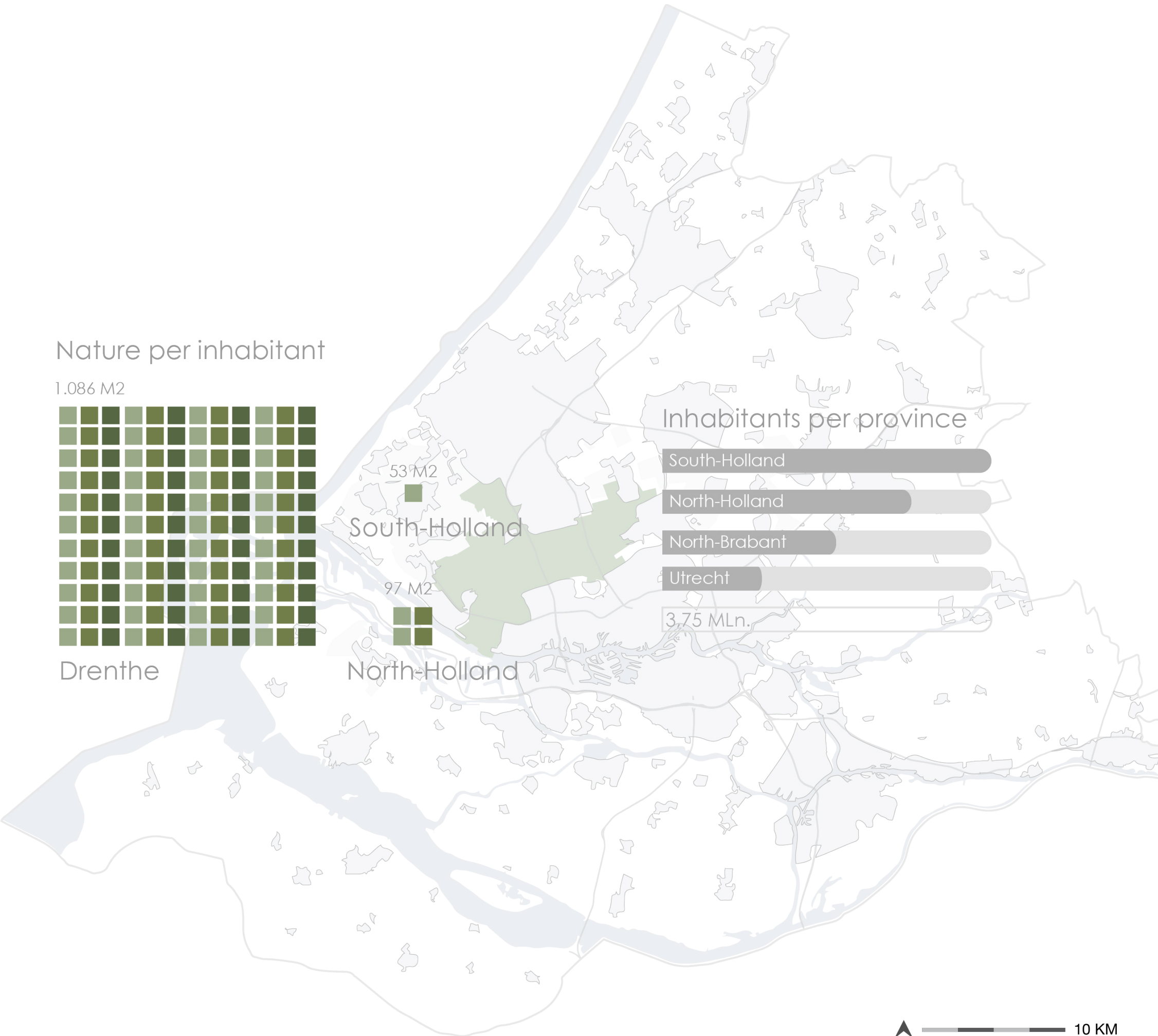
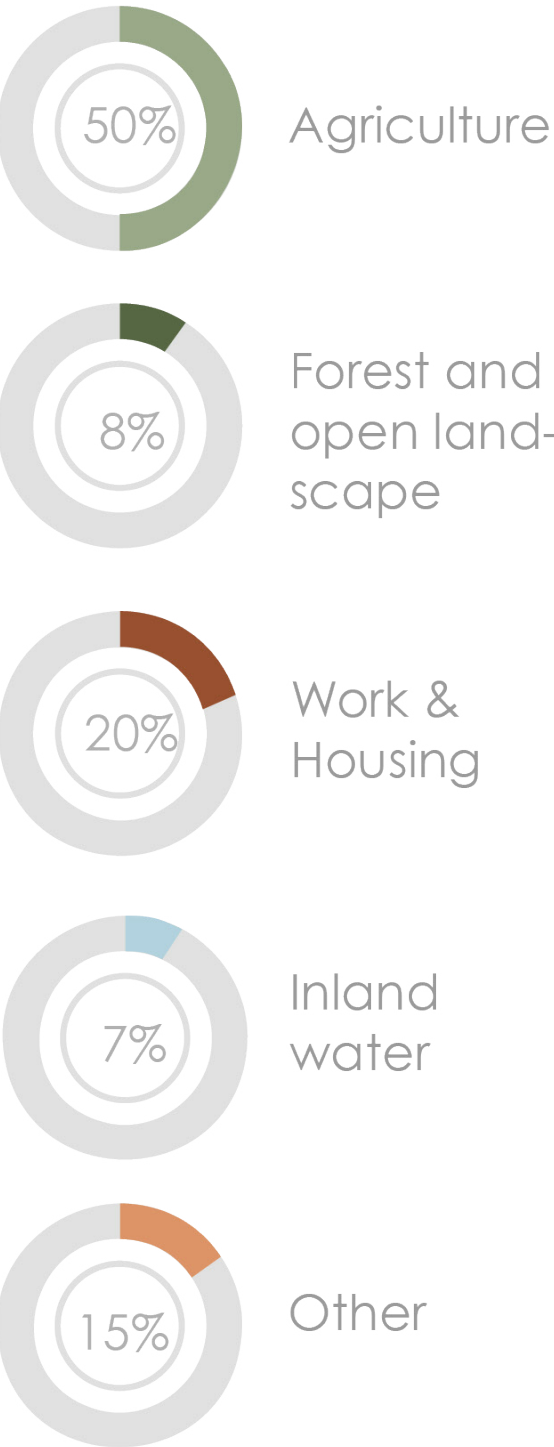
5. Landscape in 2070

Location

Bijzonder Provinciaal Landschap
Midden Delfland

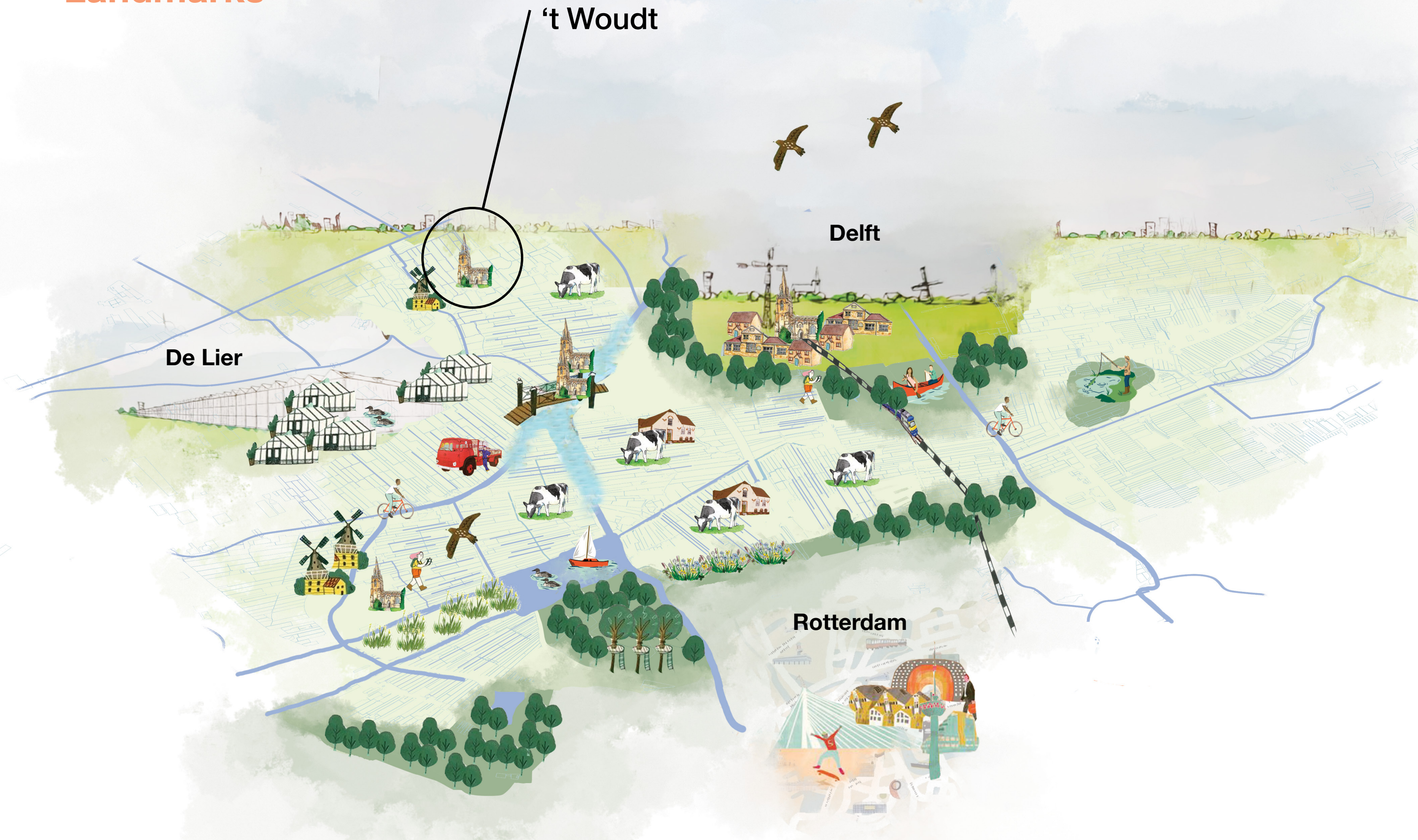


Location

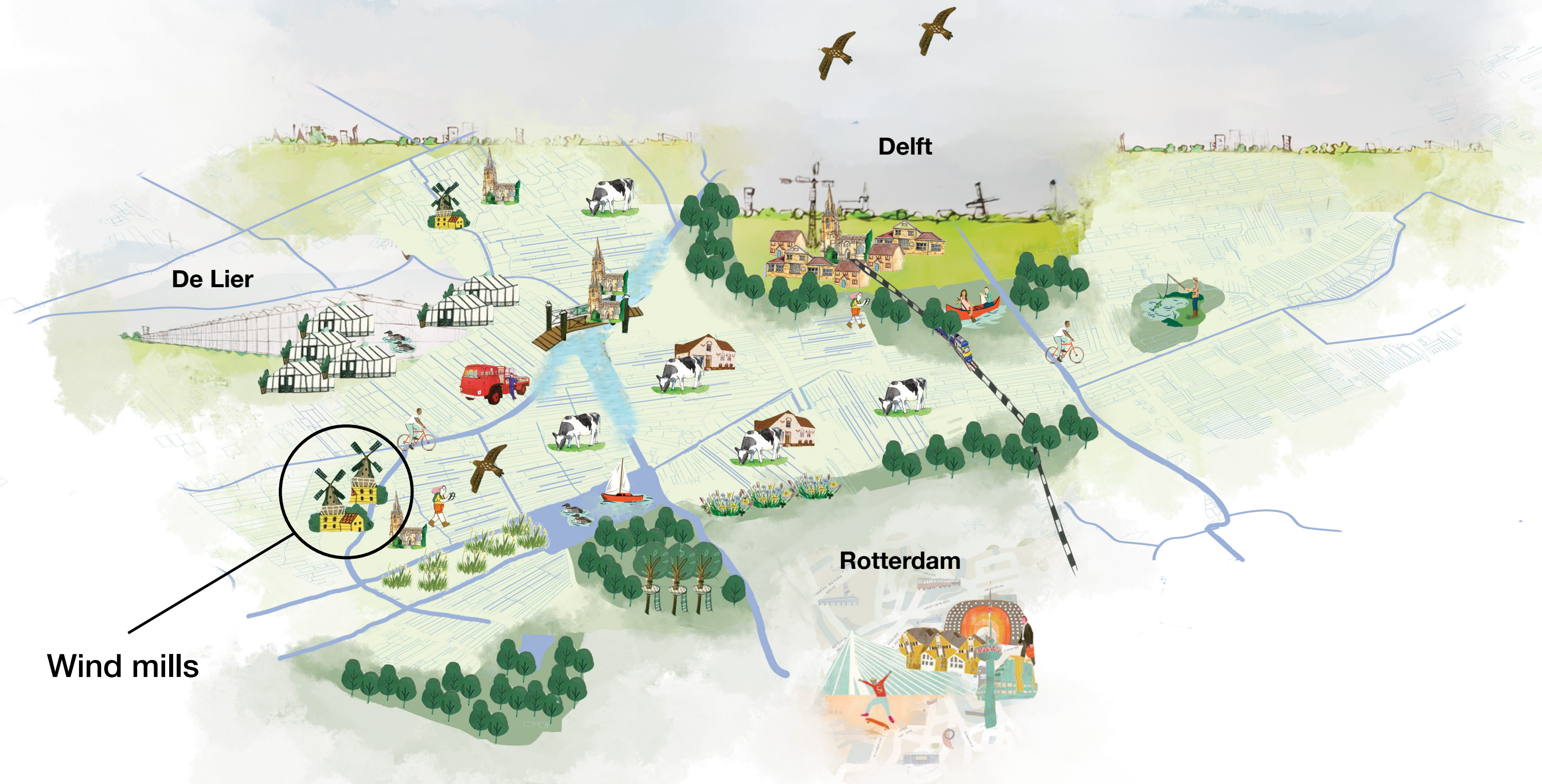




Landmarks



Landmarks



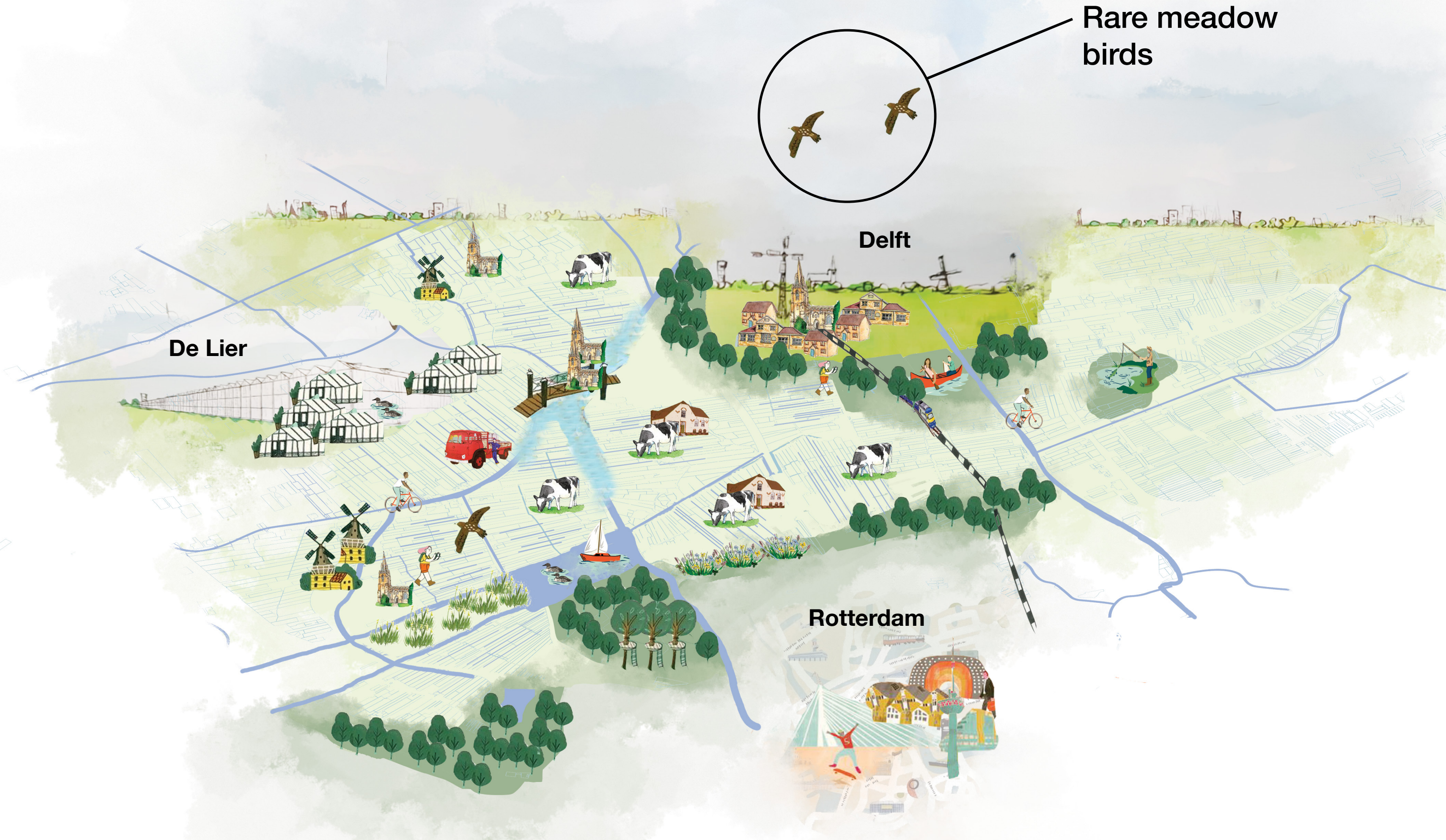
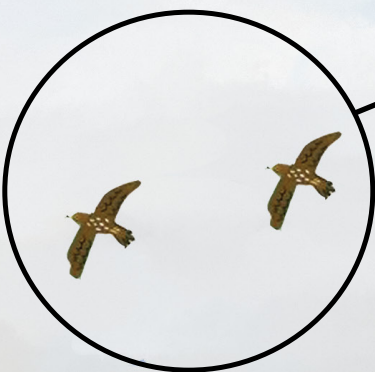
Wind mills

Landmarks

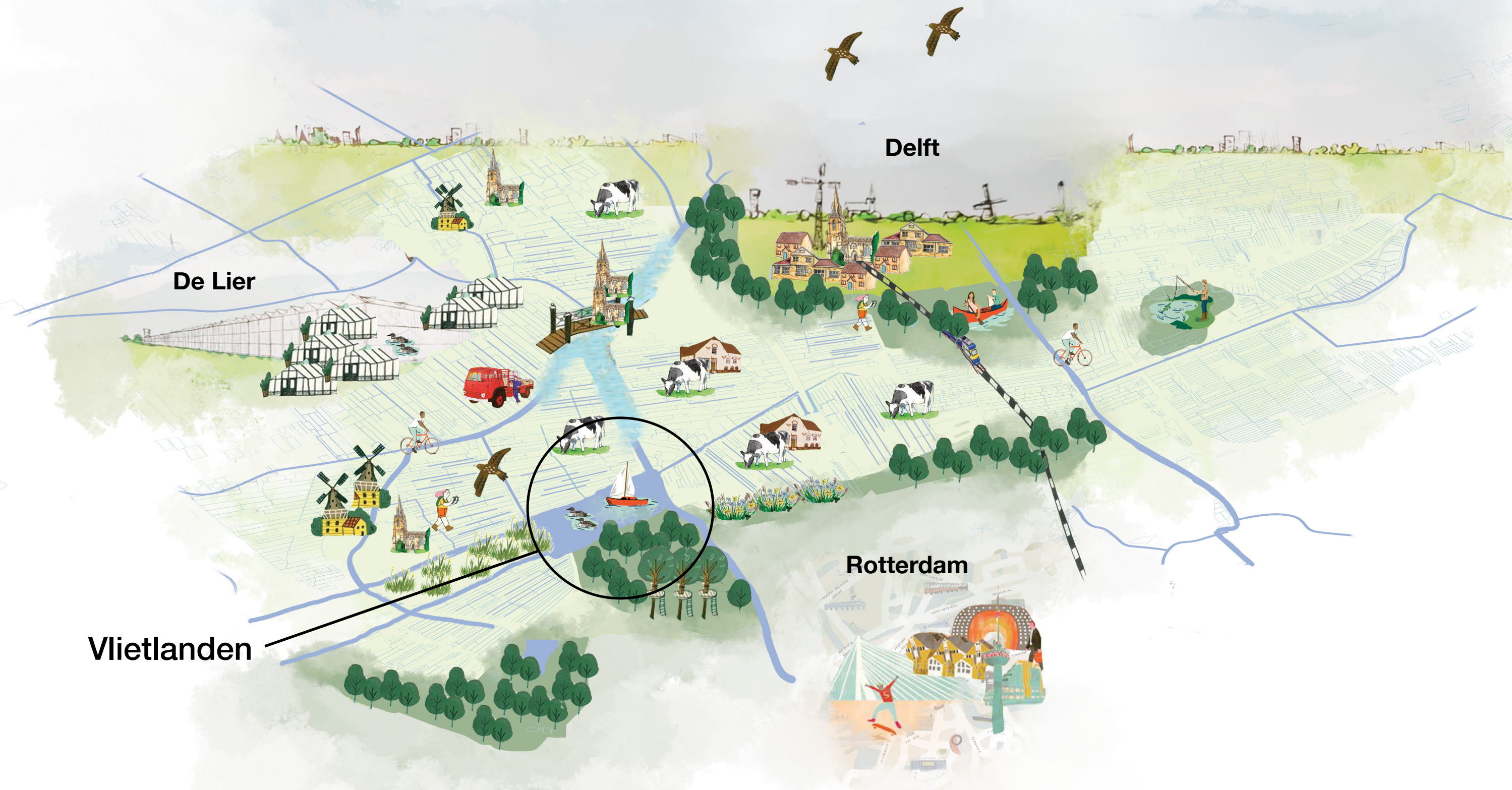


Landmarks

Rare meadow
birds



Landmarks



Landmarks

Tram bridge

Delft

De Lier

Rotterdam

Landmarks

Water structure

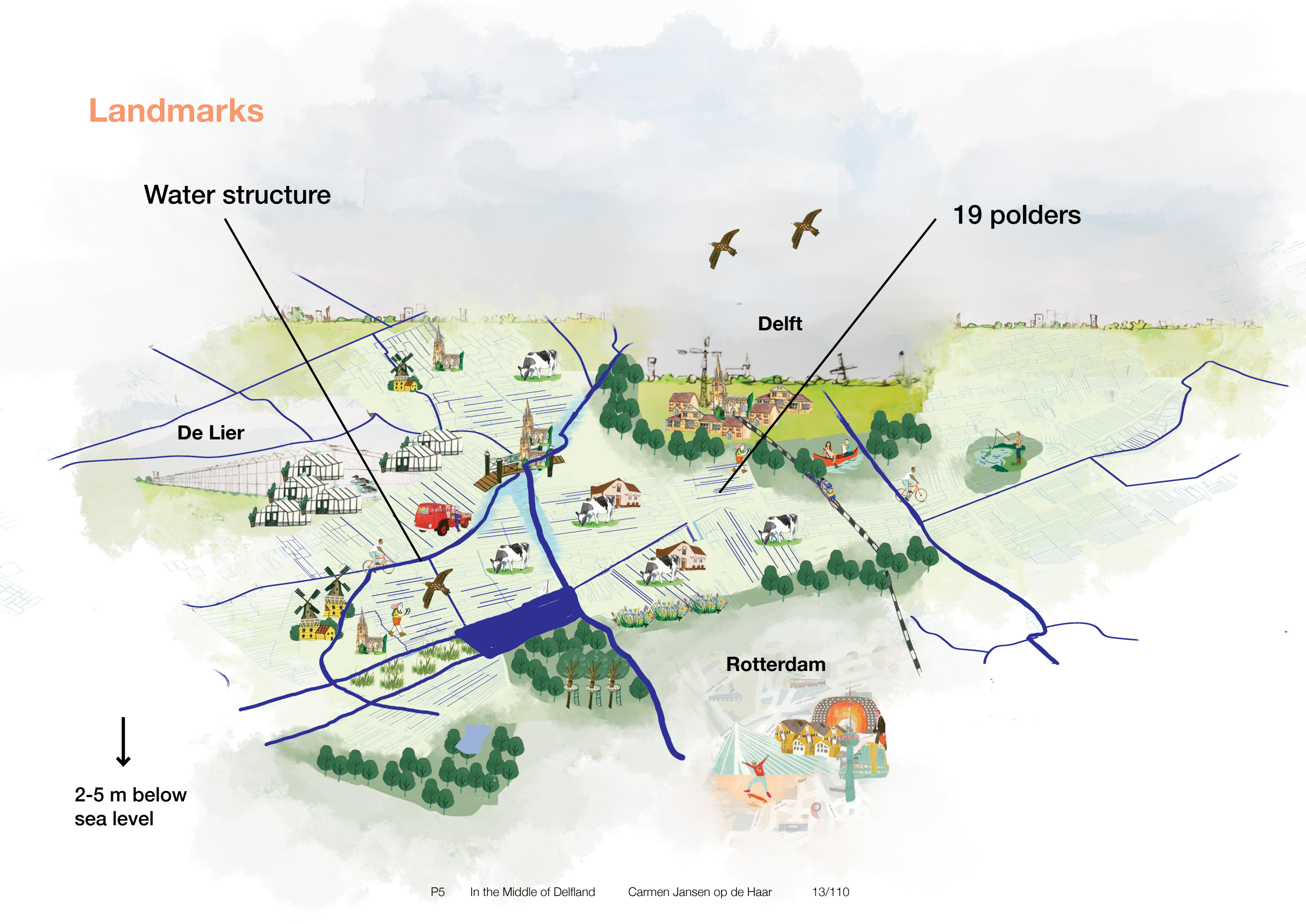
19 polders

Delft

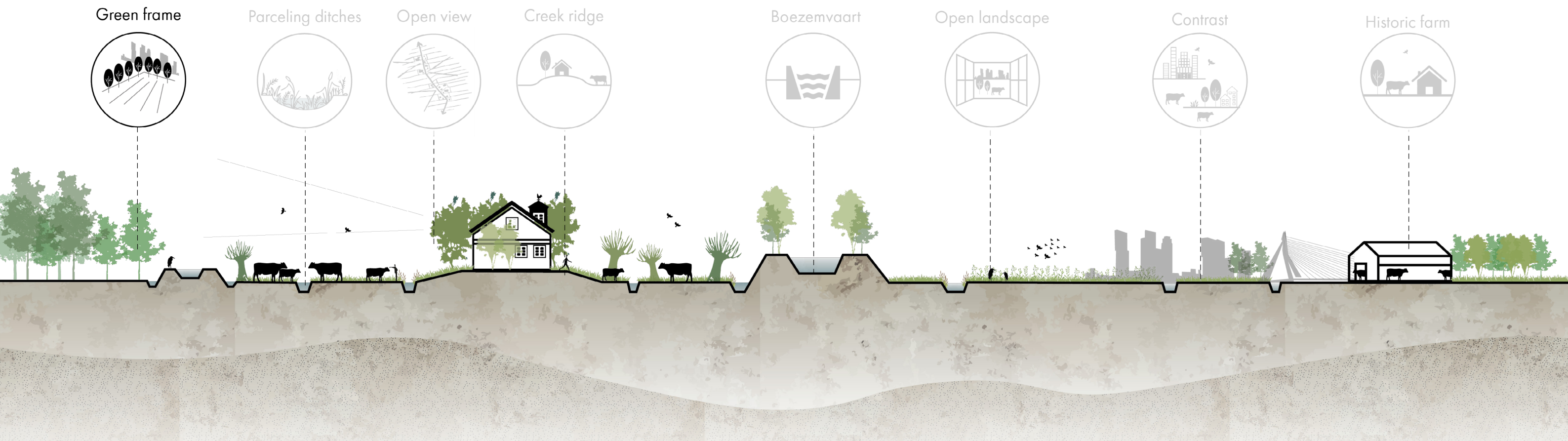
De Lier

Rotterdam

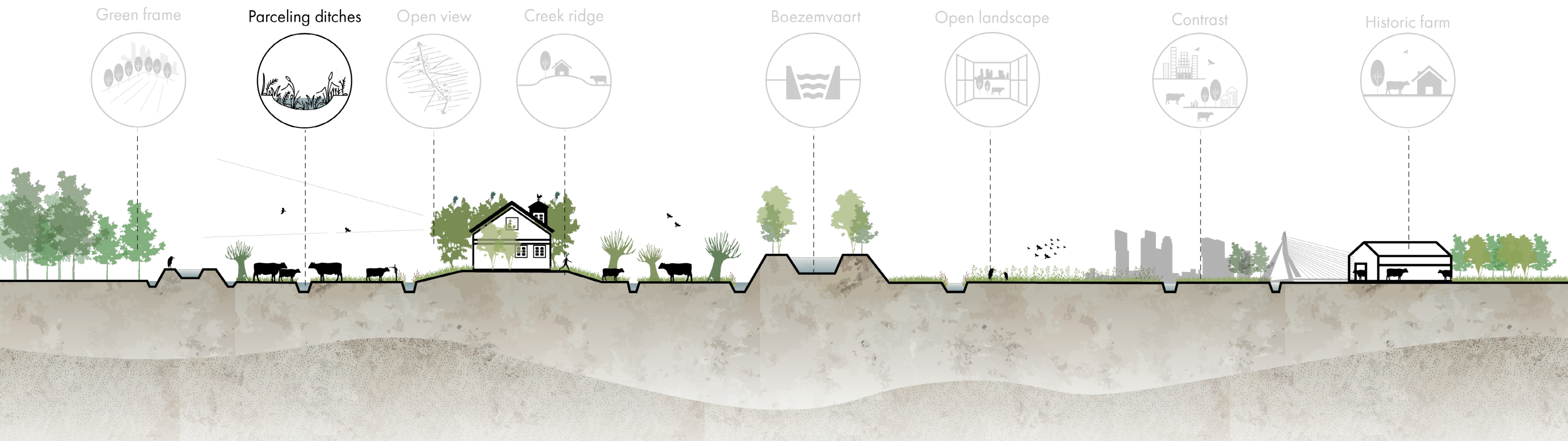
2-5 m below
sea level



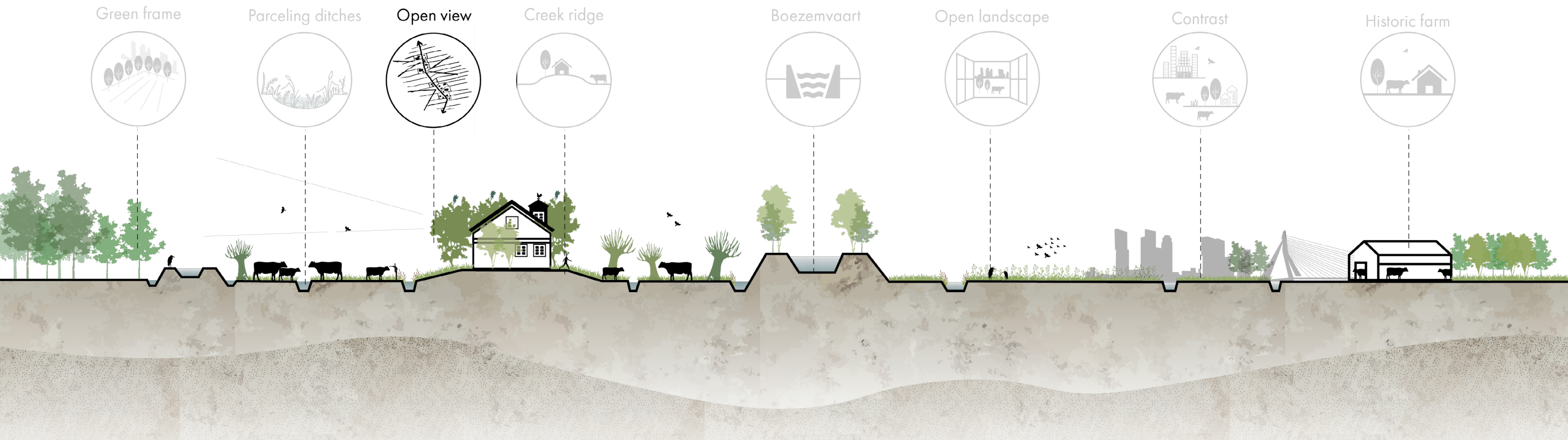
Landscape characteristics



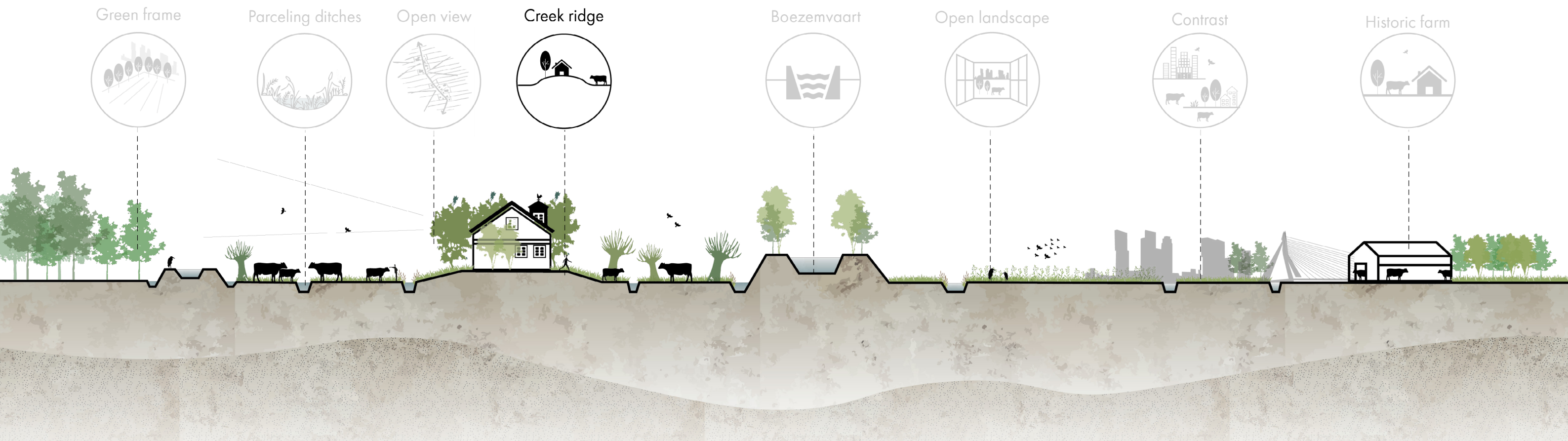
Landscape characteristics



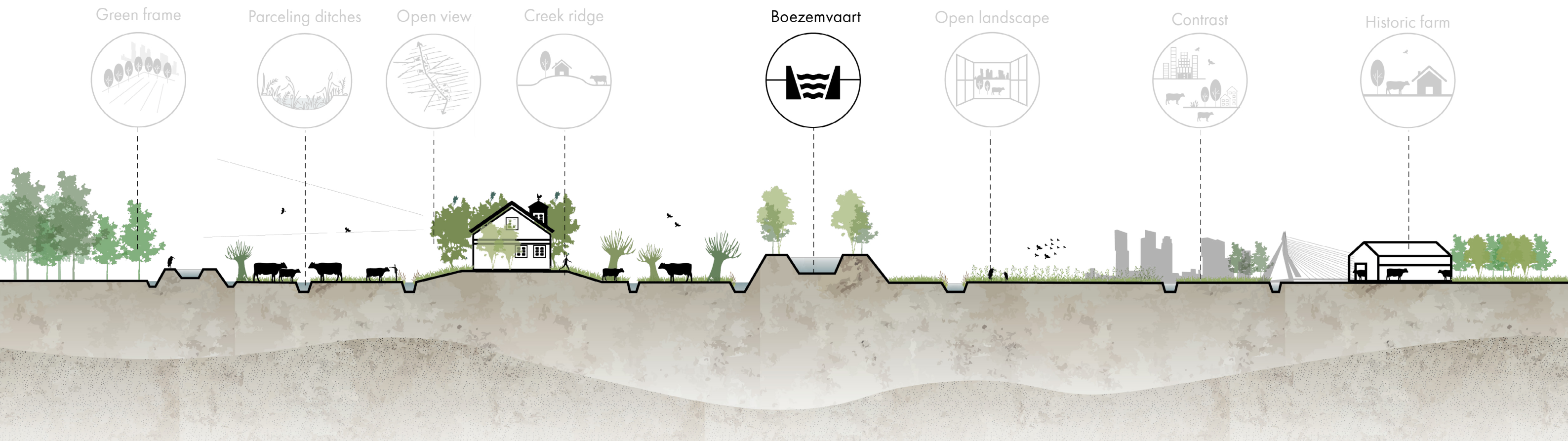
Landscape characteristics



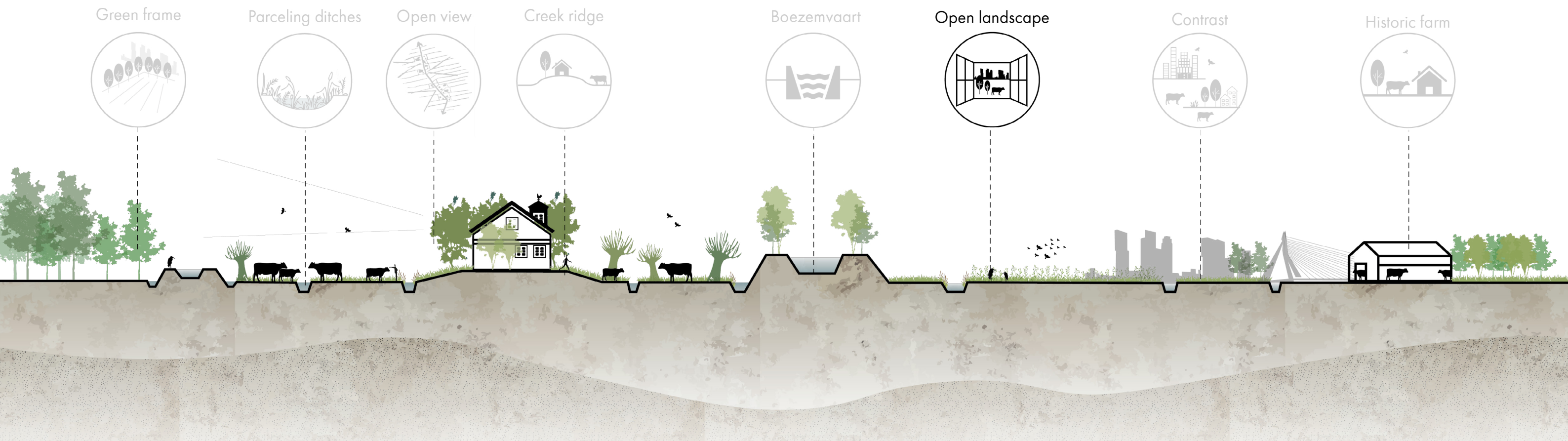
Landscape characteristics



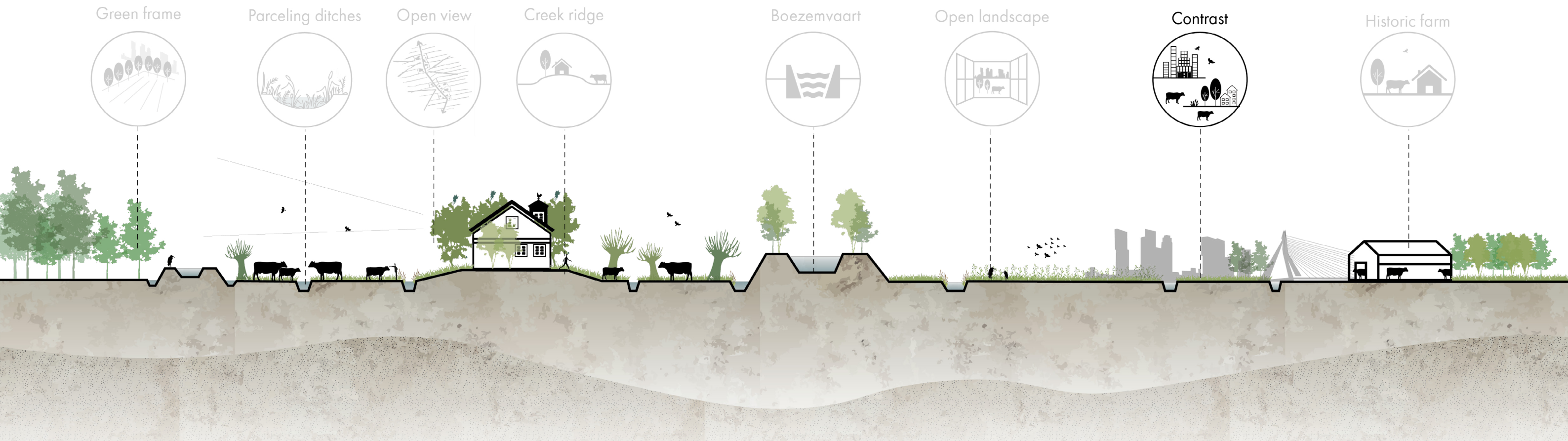
Landscape characteristics



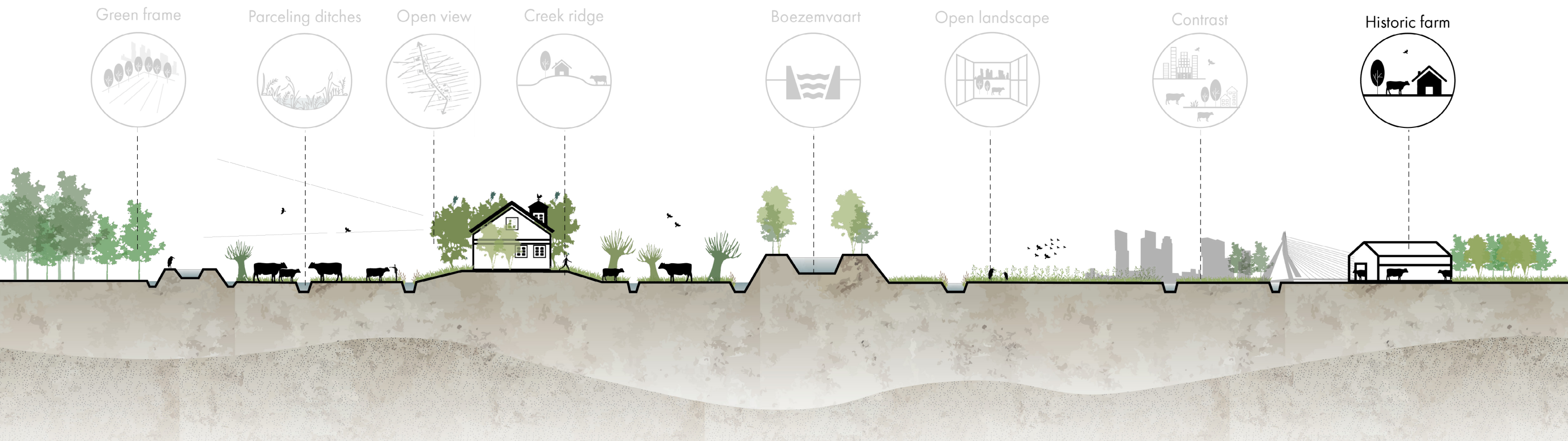
Landscape characteristics



Landscape characteristics



Landscape characteristics





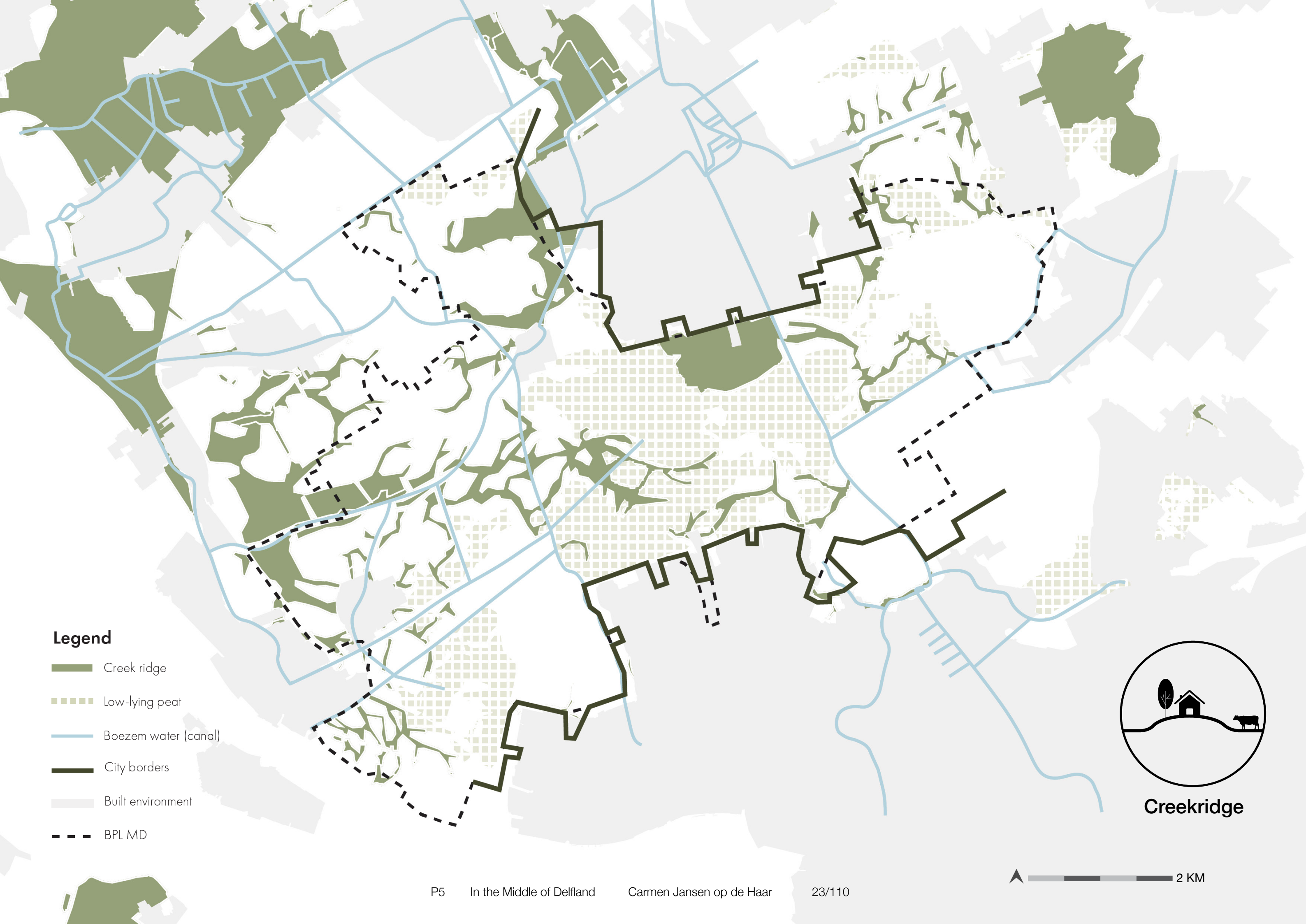
Historical elements still visible



Polder quay with ditches

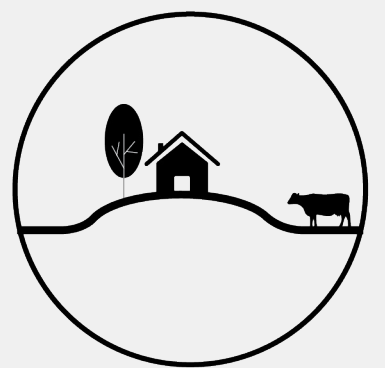


Open landscape with a broad view

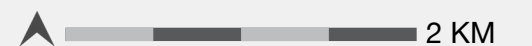


Legend

- Creek ridge
- Low-lying peat
- Boezem water (canal)
- City borders
- Built environment
- BPL MD



Creekridge



Contents.

1. The location & characteristics

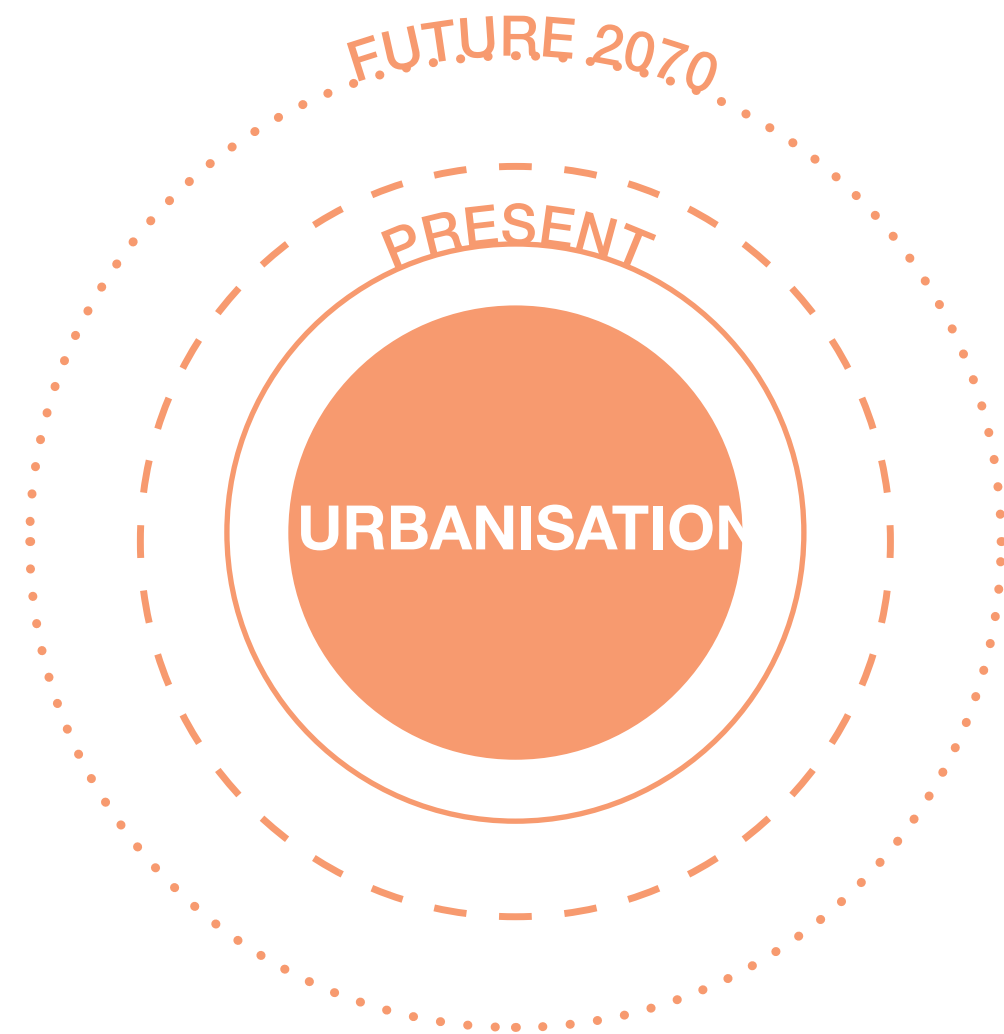
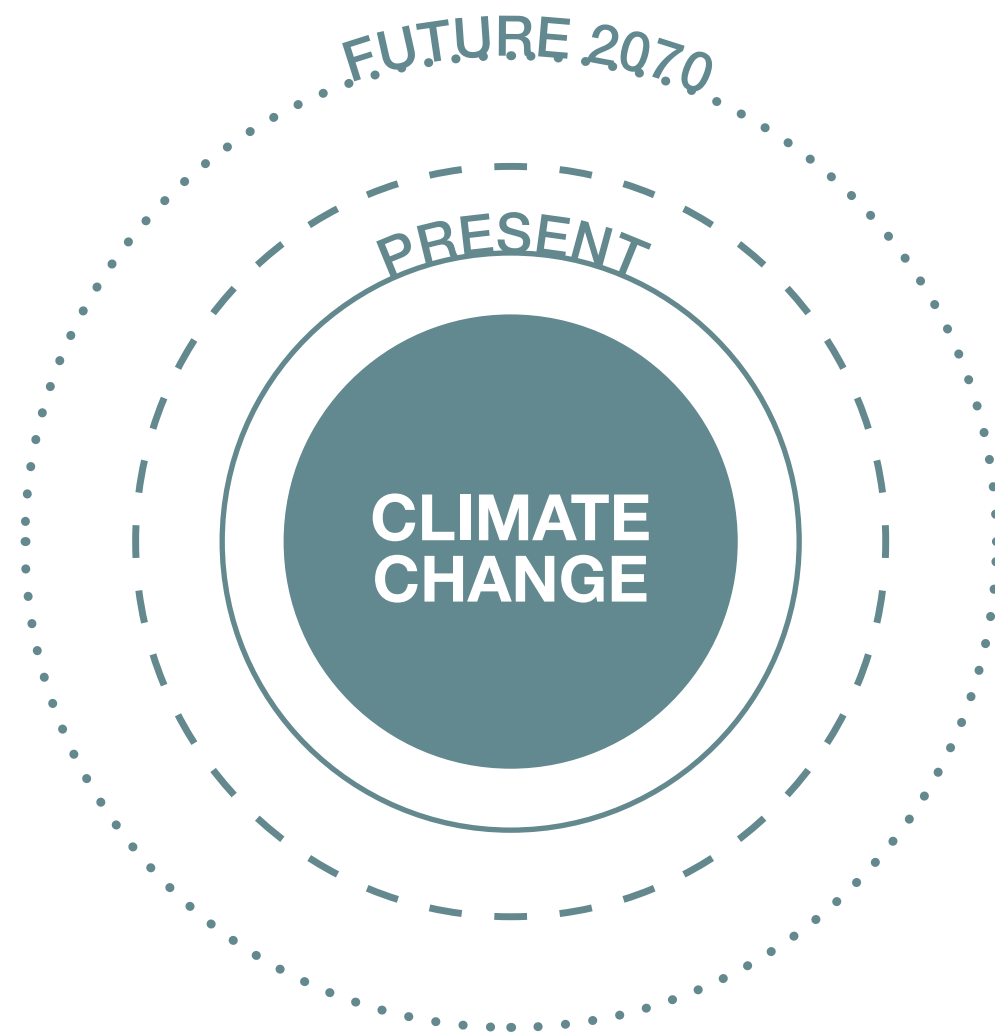
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3. Vision and Goals

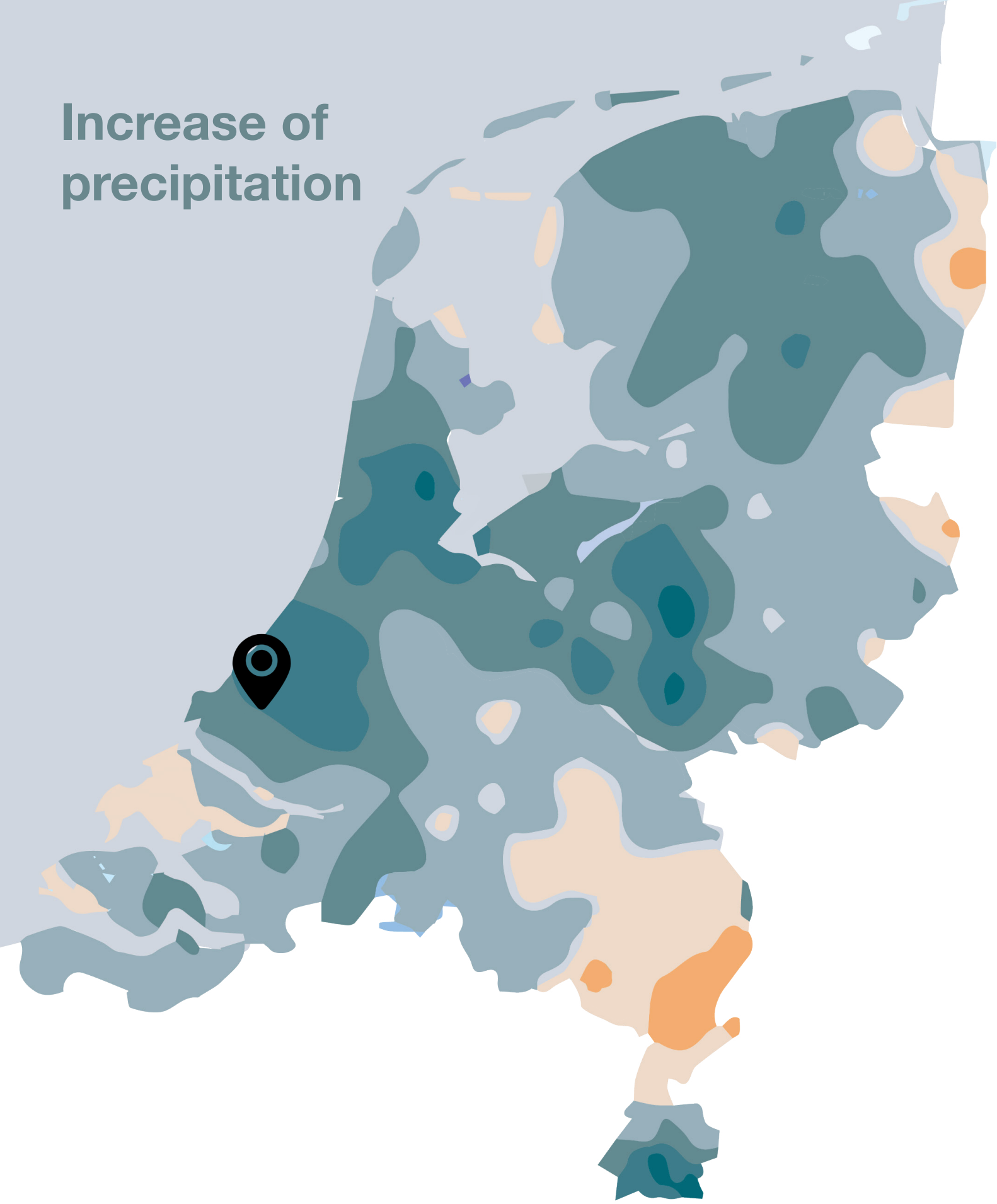
4. Excursion through the region

5. Landscape in 2070

Problem field.



Increase of precipitation



50 KM

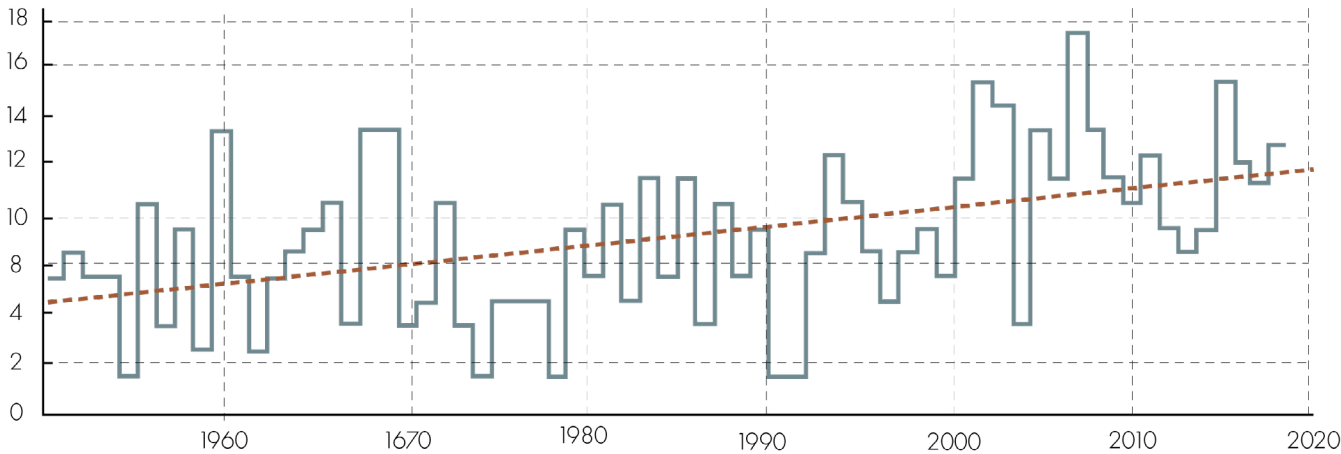
Legend

Yearly precipitation
2050 in mm

- 1000-1050
- 950-1000
- 900-950
- 850-900
- 800-850
- 750-800
- 700-750



[Fig. 1]Midden Delfland, existing waterbuffer



[Fig. 2] KNMI

Legend

- Rainfall
- Precipitation
 - Average precipitation

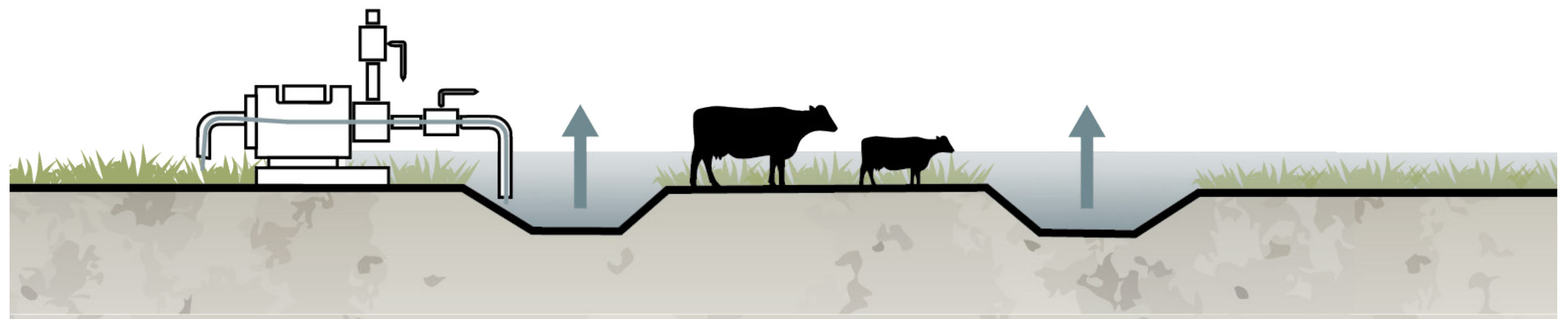
Increase of precipitation



[Fig. 3] Akkerdijksepolder flooded, Bas van den Berg



[Fig. 4] Akkerdijksepolder now, made by author



Increased
heats



50 KM

Legend

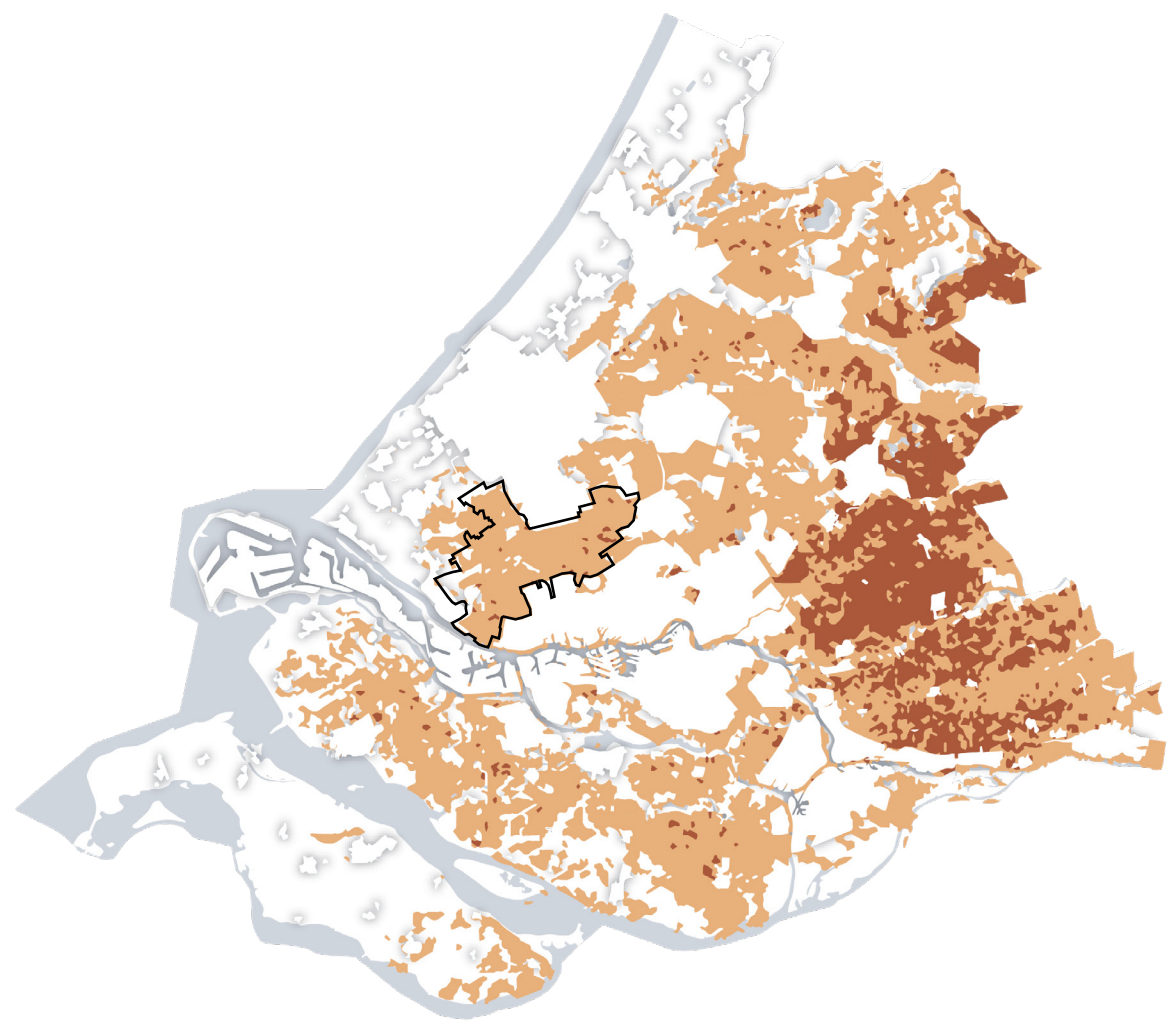
Days above 30°C
in 2050

- 0-3
- 3-6
- 6-9
- 9-12
- 12-15
- 15-18
- 18-21

Legend

Soil subsidence

- Strong
- Moderate



20 KM

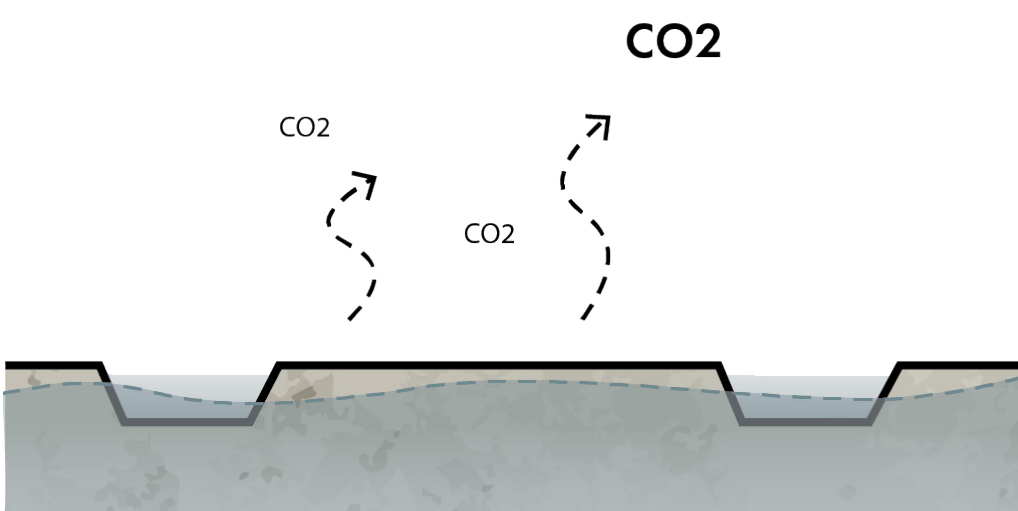
Increased droughts



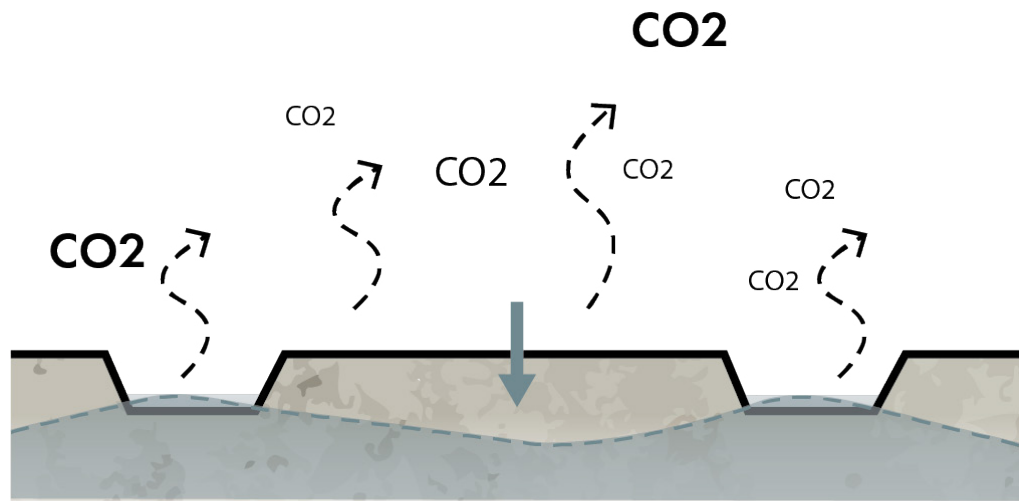
[Photo 2]: Google maps



[Photo 4]: Prolonged drought (Hoogheemraadschap Delfland, 2022)



Normal situation

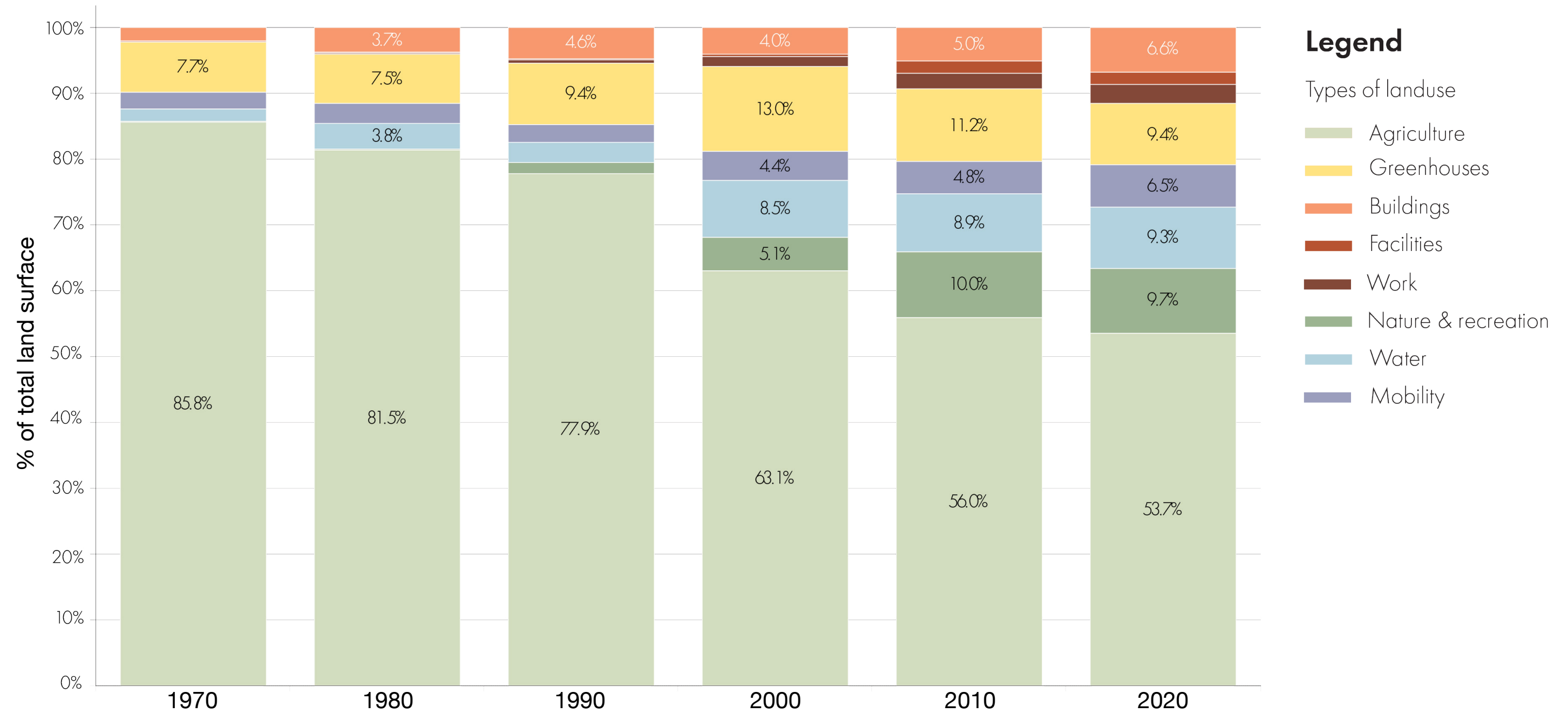


Drought leads to decrease of the groundwater level resulting in oxidation

Problems in the open polder landscape in 2070

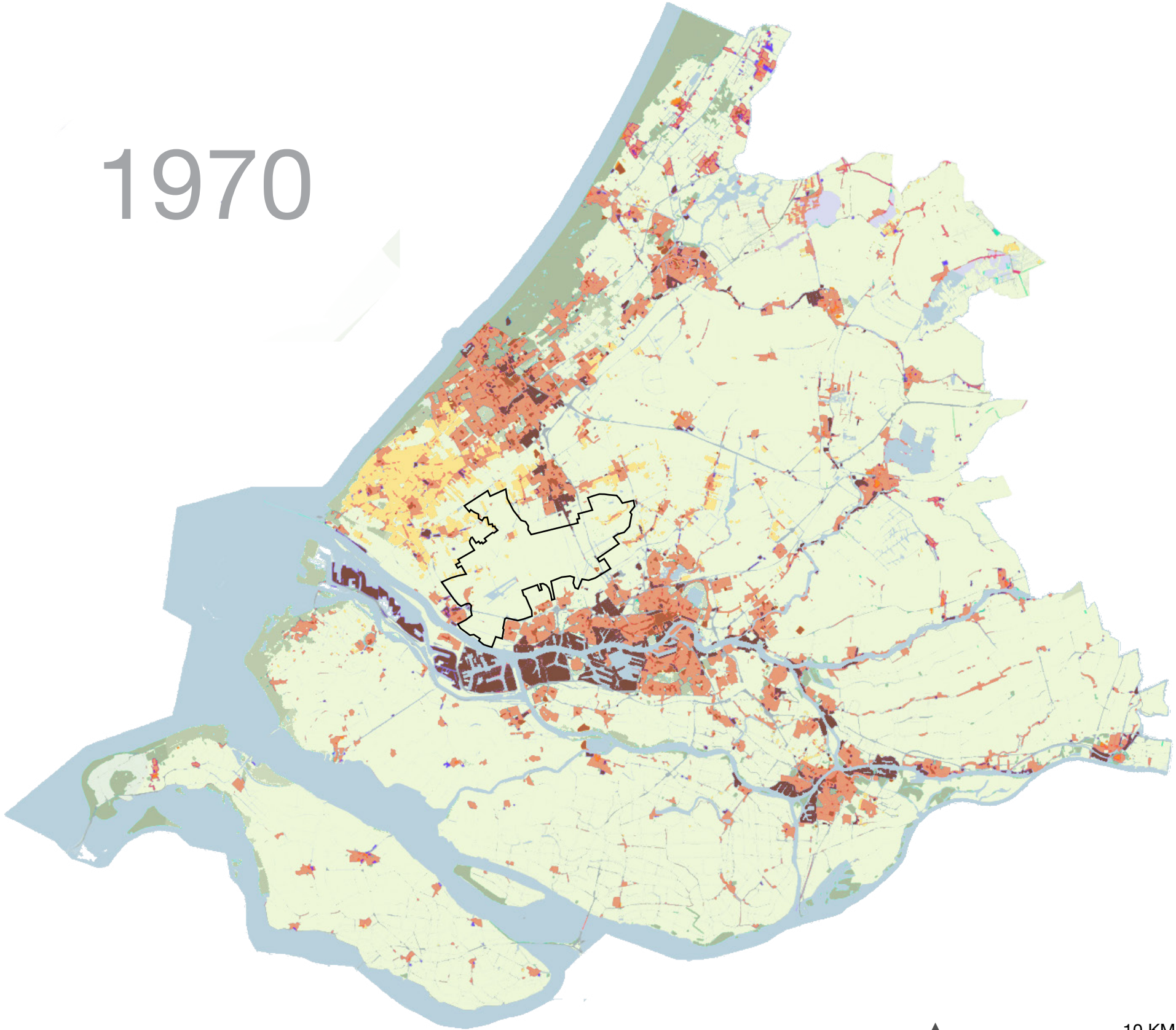


Urbanisation



Urbanisation

1970



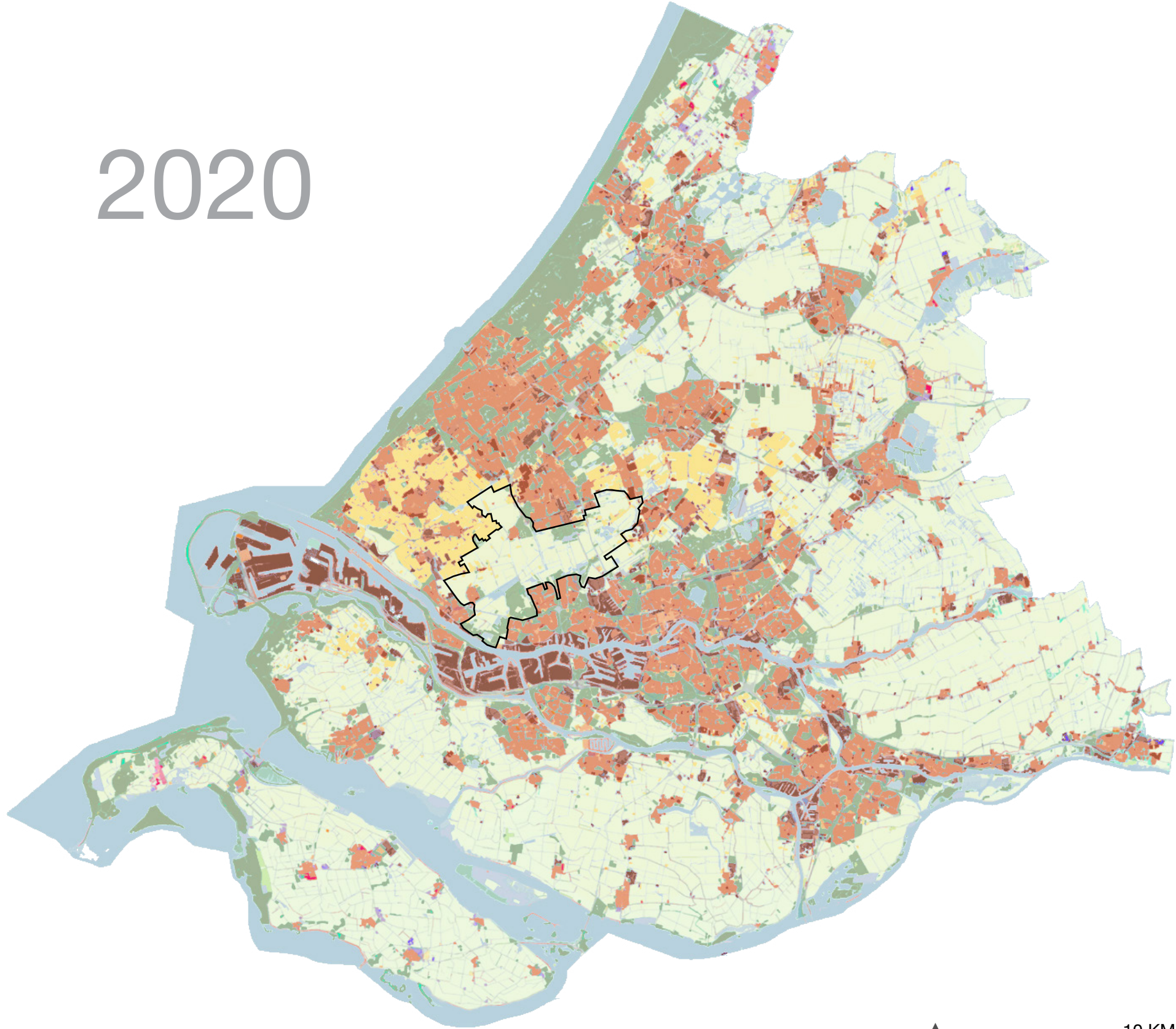
Legend

- Types of landuse
- Agriculture
 - Greenhouses
 - Buildings
 - Facilities
 - Work
 - Nature & recreation
 - Water

10 KM

Urbanisation

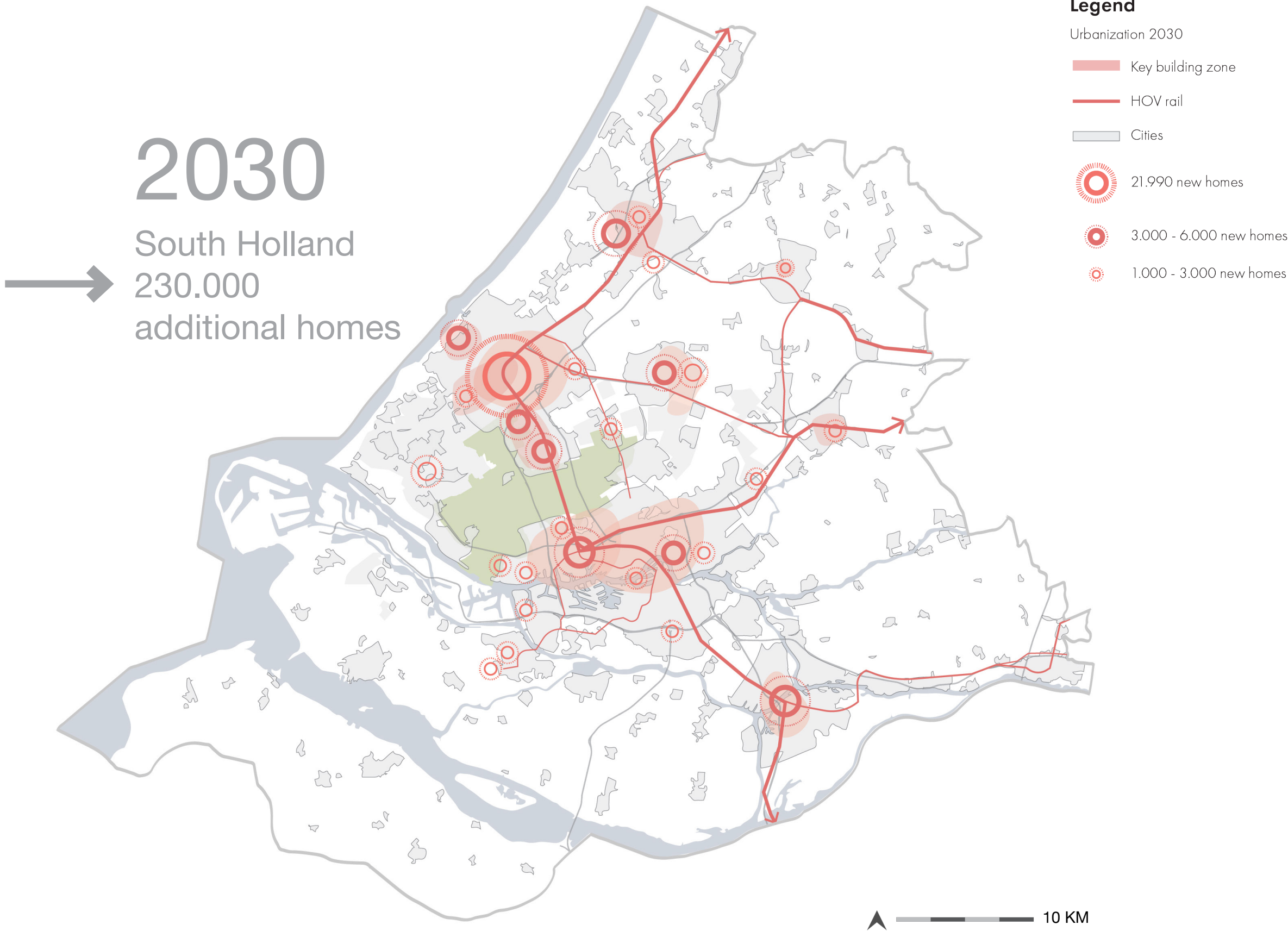
2020



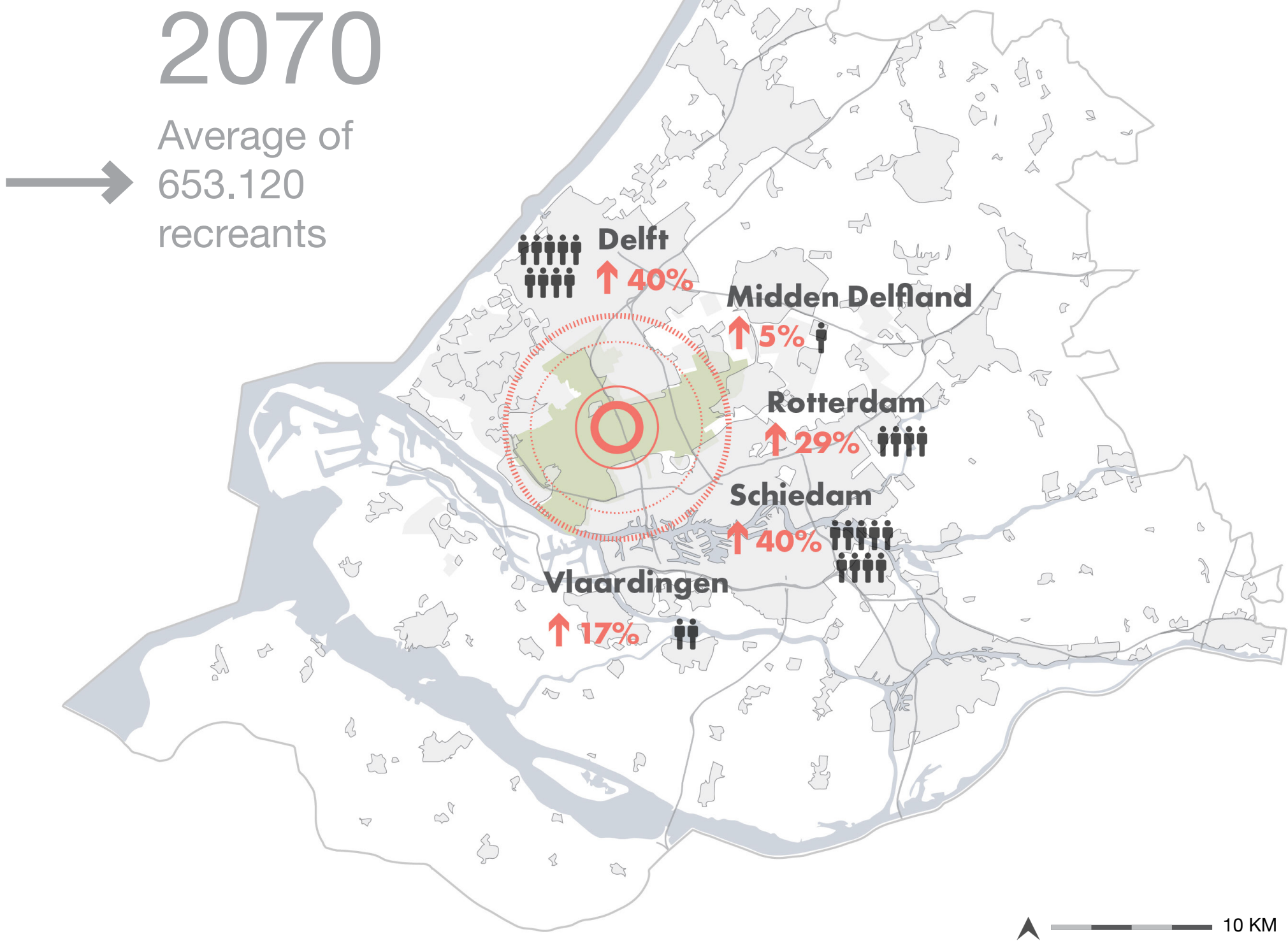
Legend

- Types of landuse
- Agriculture
 - Greenhouses
 - Buildings
 - Facilities
 - Work
 - Nature & recreation
 - Water

Urbanisation



Urbanisation



Problems in the open polder landscape in 2070

Recreation



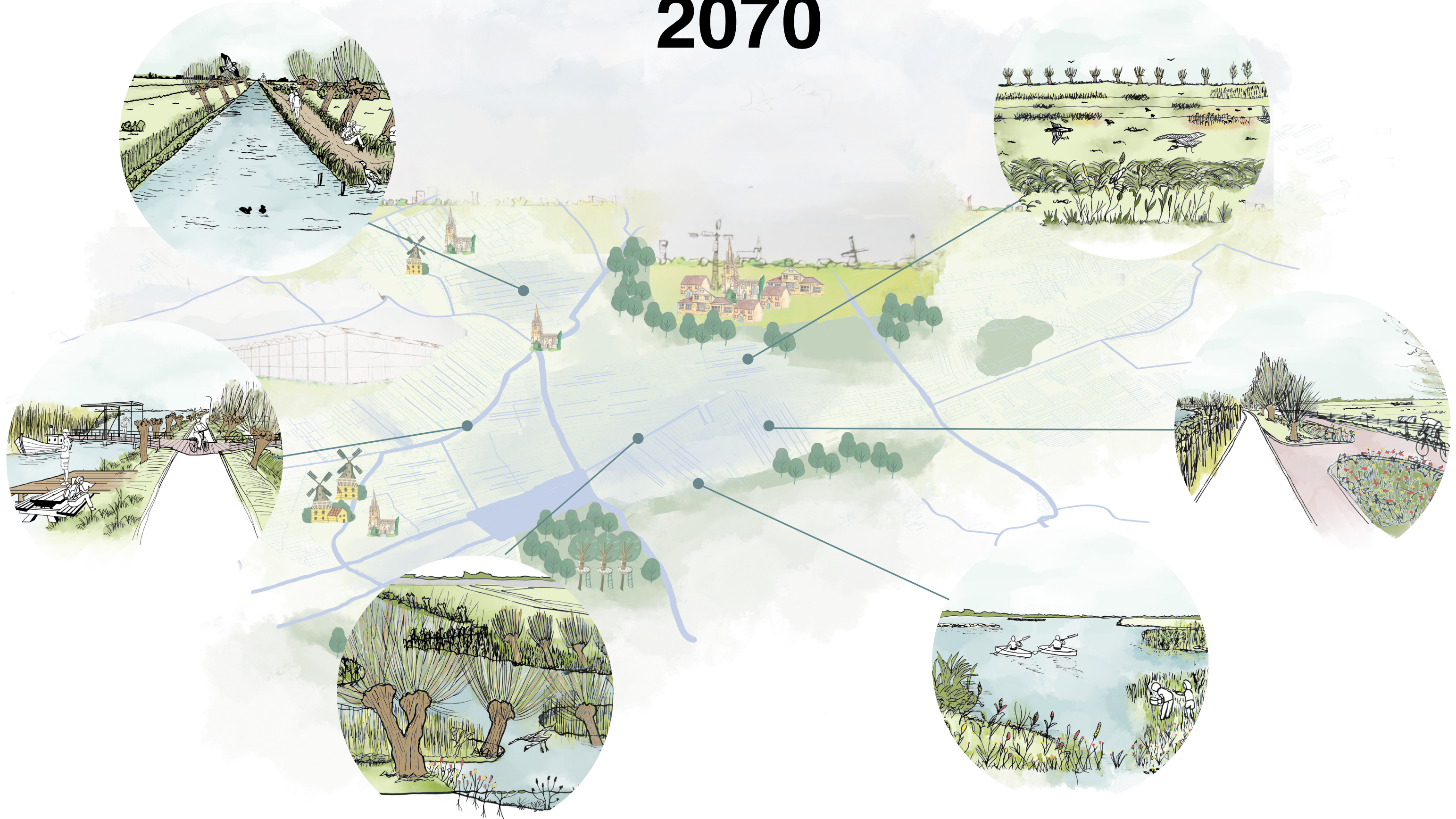
- Overcrowding leads to irritation and vandalism
- Motorbikes disturb meadow birds
- Conflicts between recreational users
- Pressure on natural value
- Lack of facilities

Research question

“How can the **landscape characteristics of BPL MD** effectively be preserved and strengthened to respond to the **challenges of climate change and population growth** towards 2070 while simultaneously meeting the **evolving needs of its users** and **preserving its agricultural and recreational functions?**”

BPL MD = ‘Bijzonder Provinciaal landschap Midden Delfland’

2070



Contents.

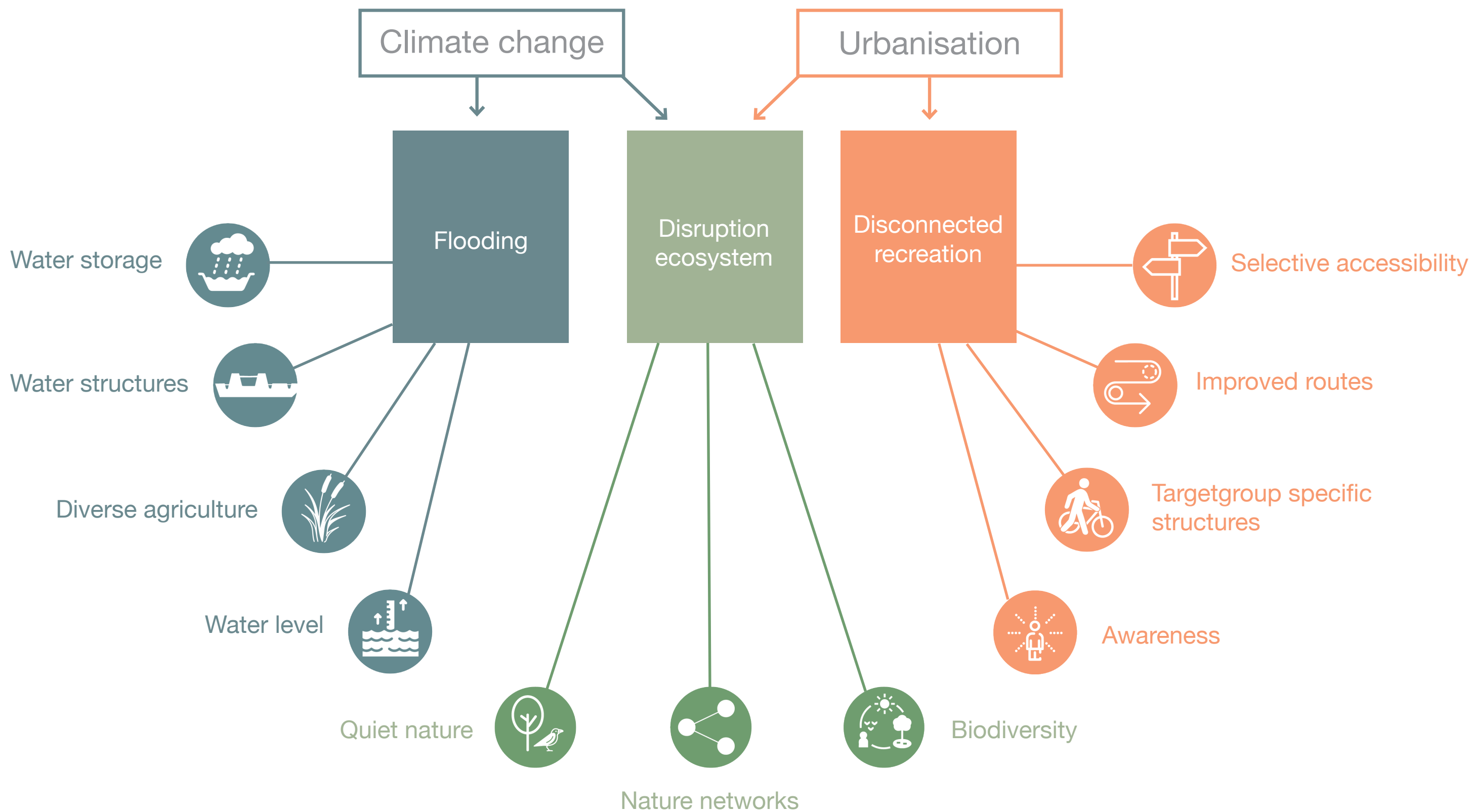
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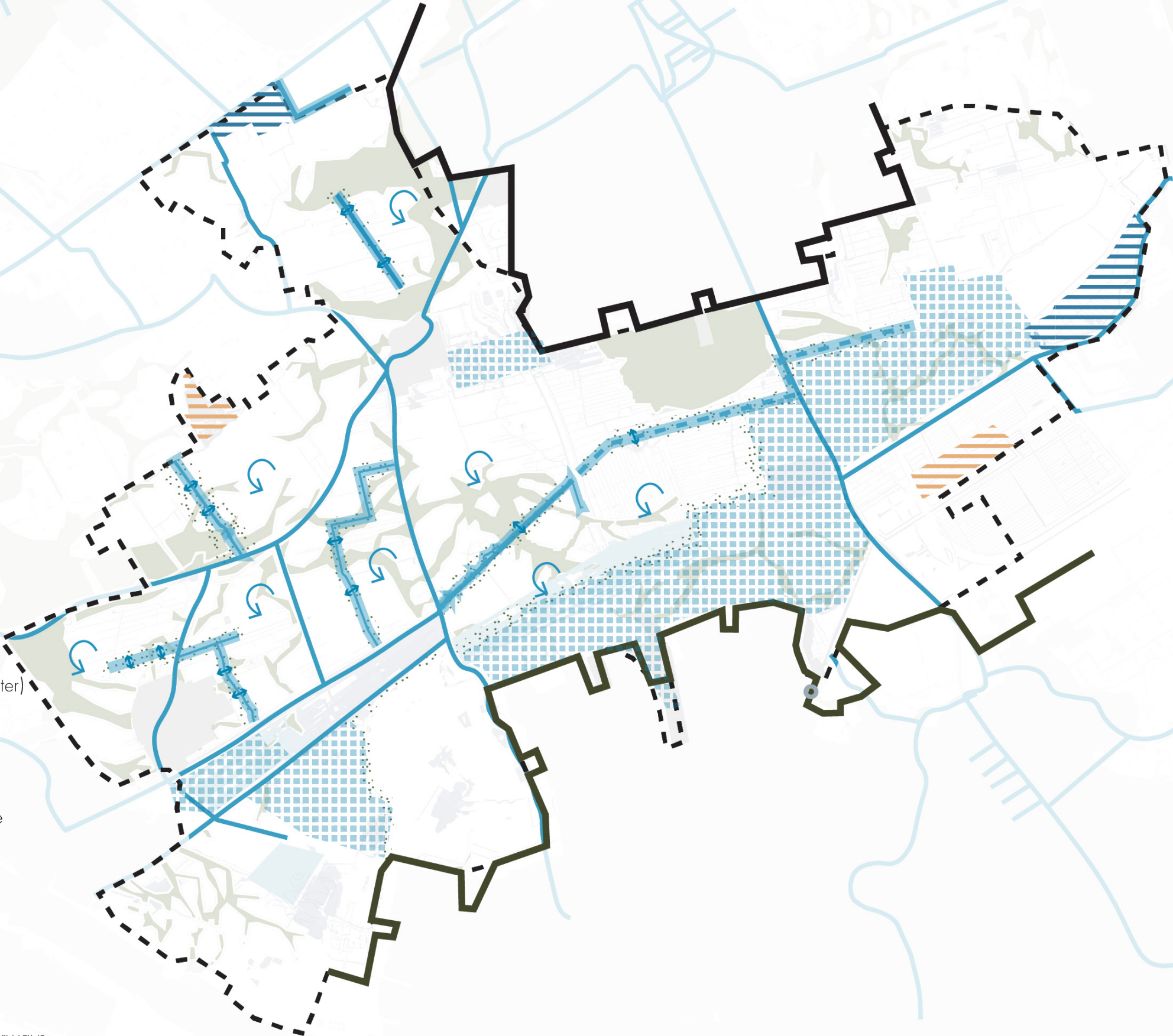
5. Landscape in 2070



Water

Legend

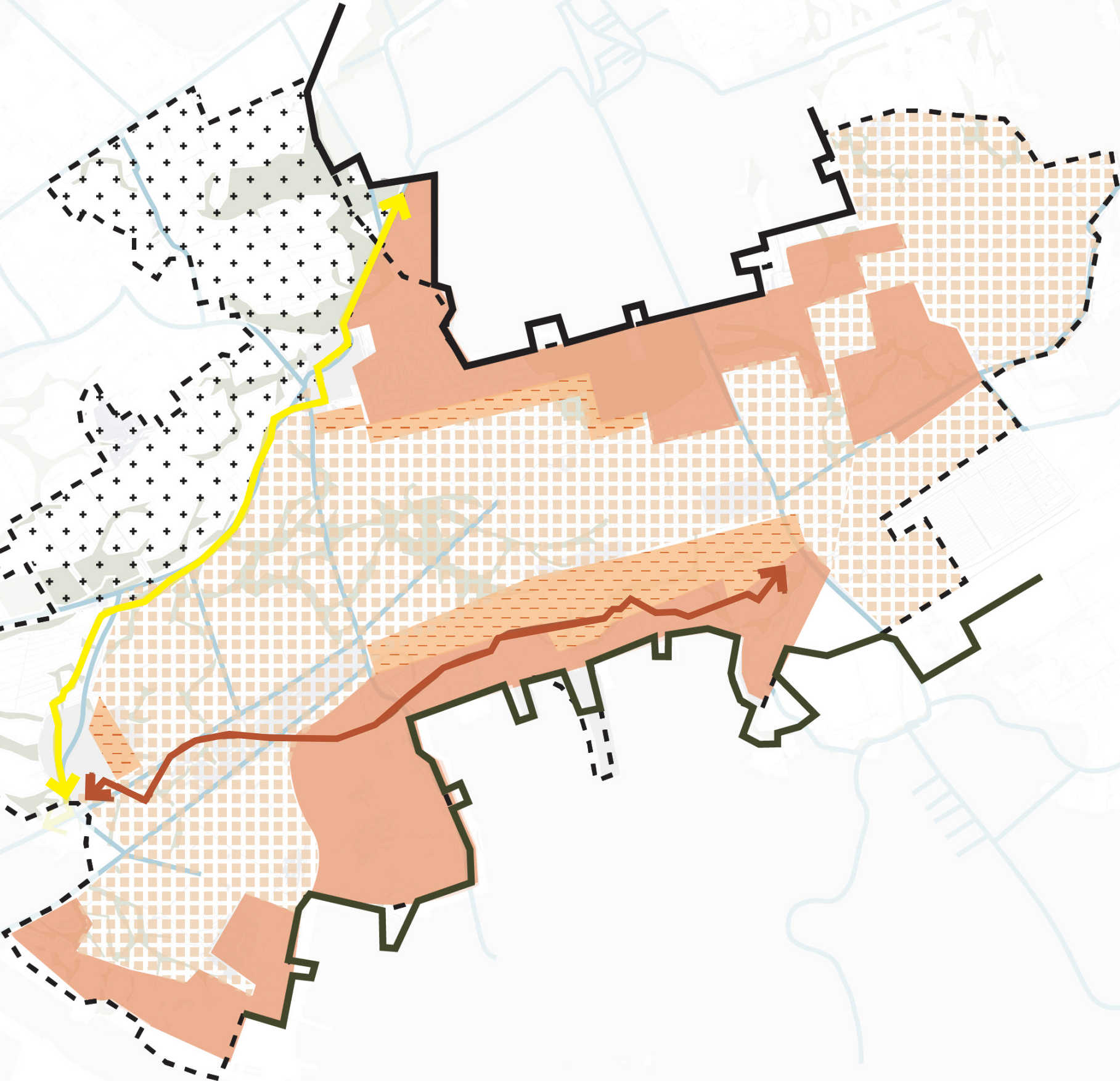
- Canal water (boezemwater)
- Polder water
- Widening polder water
- Emergency water storage
- Possible water storage
- Dynamical water storage
- Water outside BPL MD
- Ecological banks
- Connecting existing waterways
- New waterway



Recreation

Legend

- Intensive recreation
- Extended intensive recreation
- Extensive recreation
- + + + + Local product region
- ➔ New recreation route
- ➔ Shopping route



Extensive



Intensive

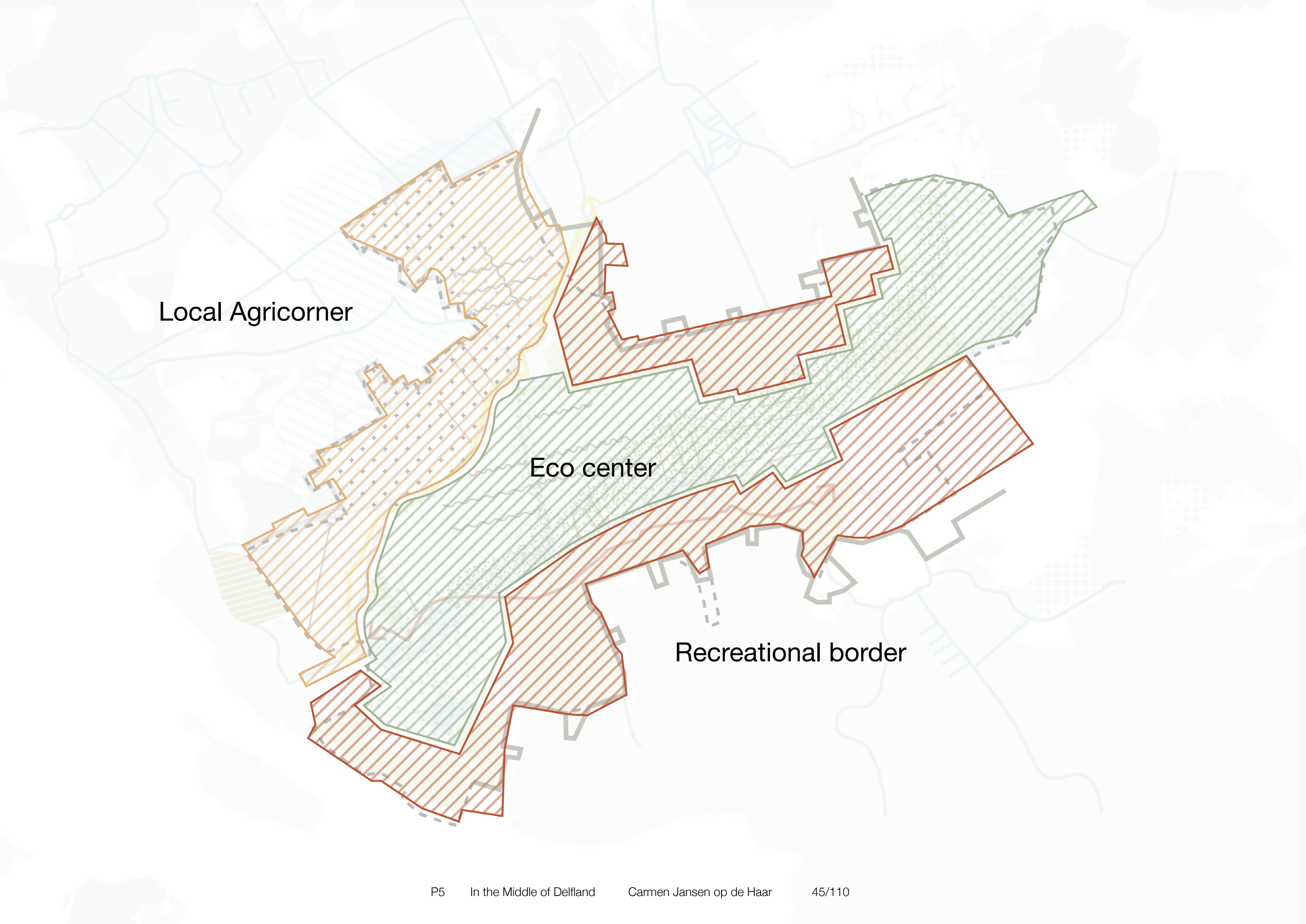


Ecology

Legend

-  Nature network
-  Swamp connection
-  Quiet zone
-  Meadow bird region



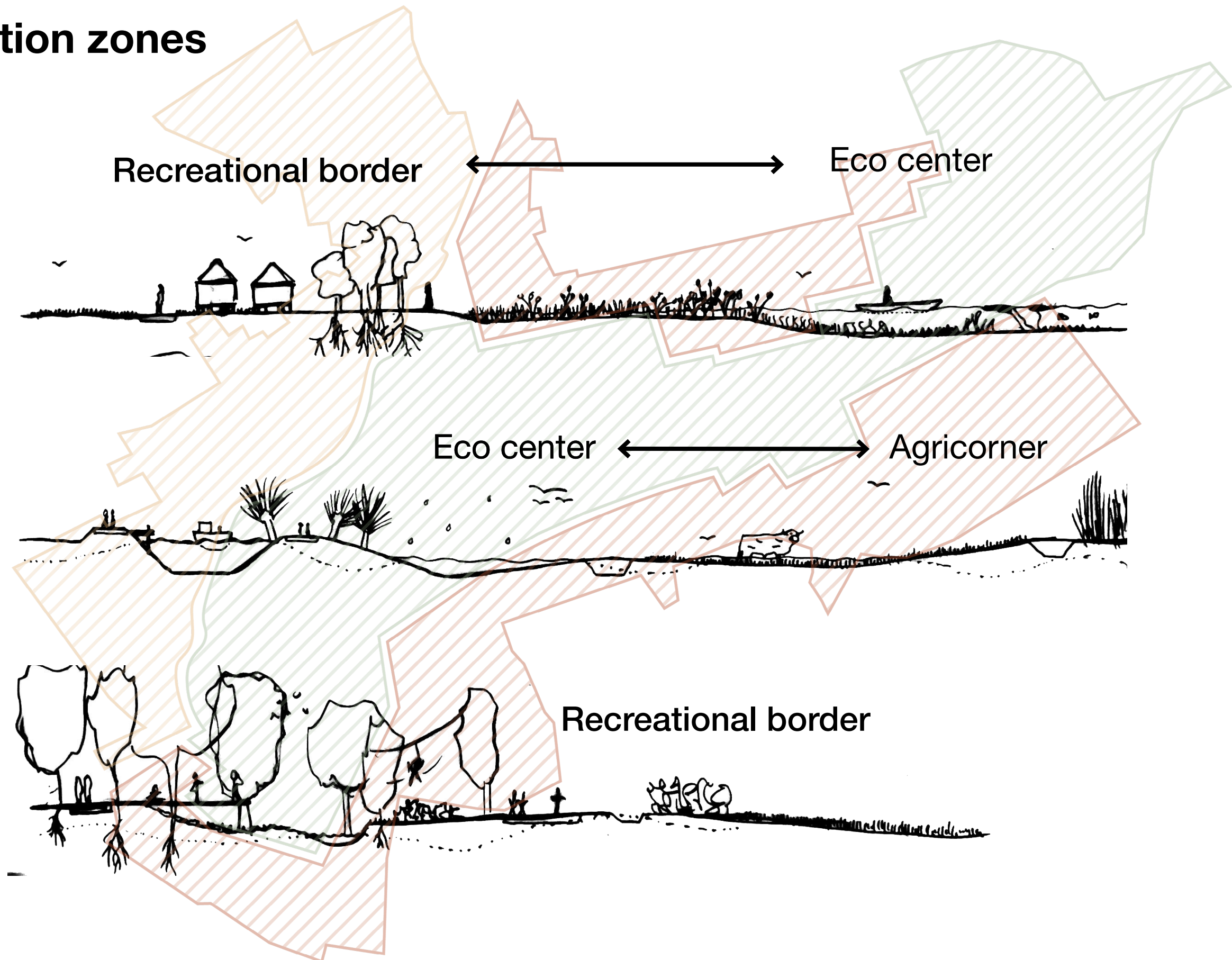


Local Agricorner

Eco center

Recreational border

Transition zones



Goals.

1. Maximizing water potential

‘Creating room for quantity and quality of water’



2. Creating recreational diversity

‘Balancing intensive and extensive recreation’



3. Ecological restoration

‘Increasing biodiversity for improved meadow bird livability’



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Basemap

Legend

- Water buffer
- Improved cycling route
- Improved Gaag
- Improved pedestrian path
- Herb-rich green belt
- Diverse vegetation
- Flower rich region
- Knotwilgen
- Ecological bank
- Food swamp
- Wet cultivation
- Variation in grass height
- Increased waterlevel
- High grass
- Meadow bird zone
- Extensive recreation strip
- Wild flower region
- Parcels
- Existing recreation
- Nature region
- Existing water
- Built environment
- Existing cycling route

Legend

- Water buffer
- Improved cycling route
- Improved Gaag
- Improved pedestrian path
- Herb-rich green belt
- Diverse vegetation
- Flower rich region
- Knotwilgen
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- Nature region
- Existing water
- Built environment
- Existing cycling route

ROUTE 2
"Graag
via Gaag"

ROUTE 1
"Van Zweth
tot Slink"

'Van Zweth tot Slink'

Route 1



2023



2023



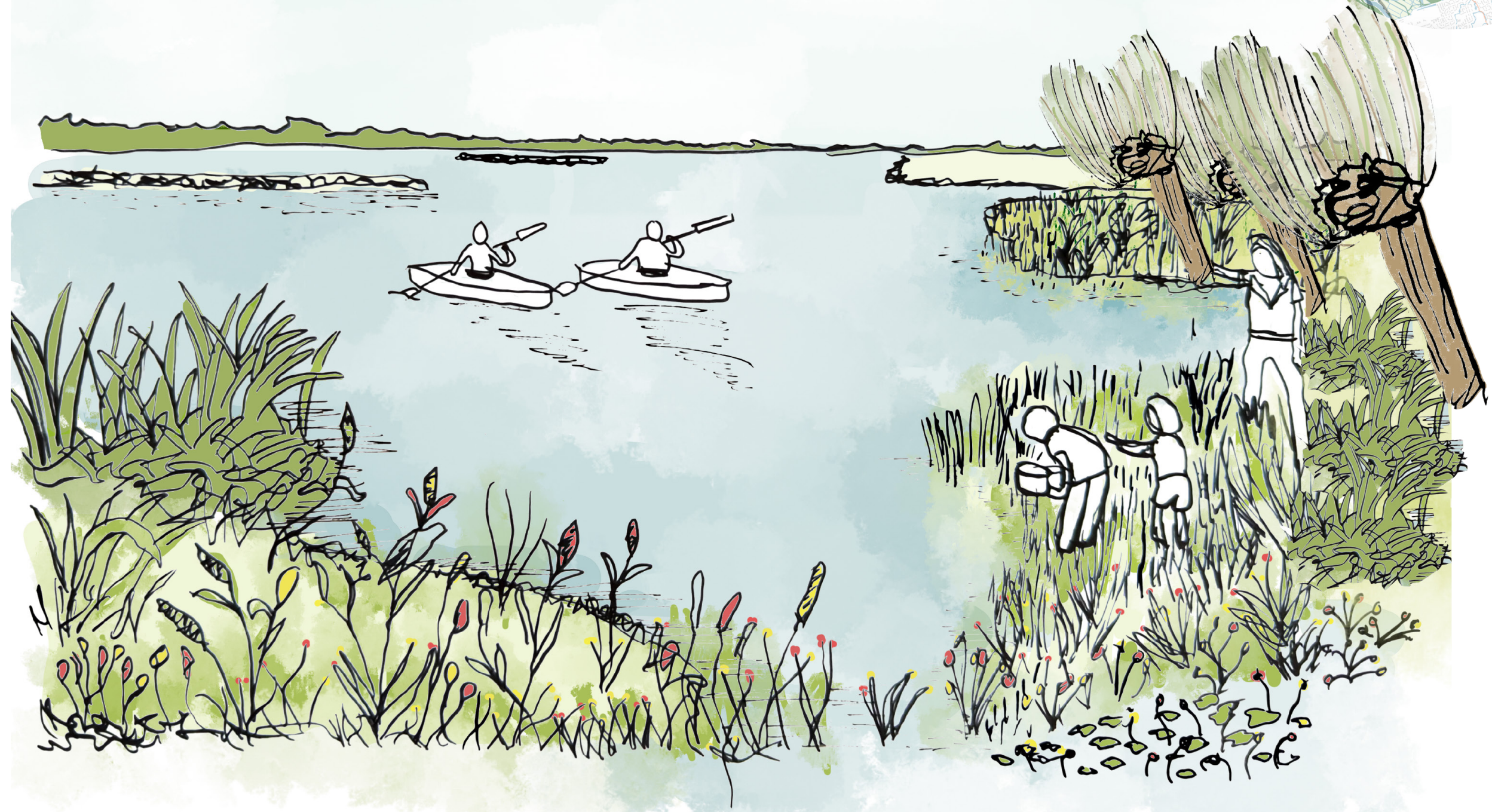
2023

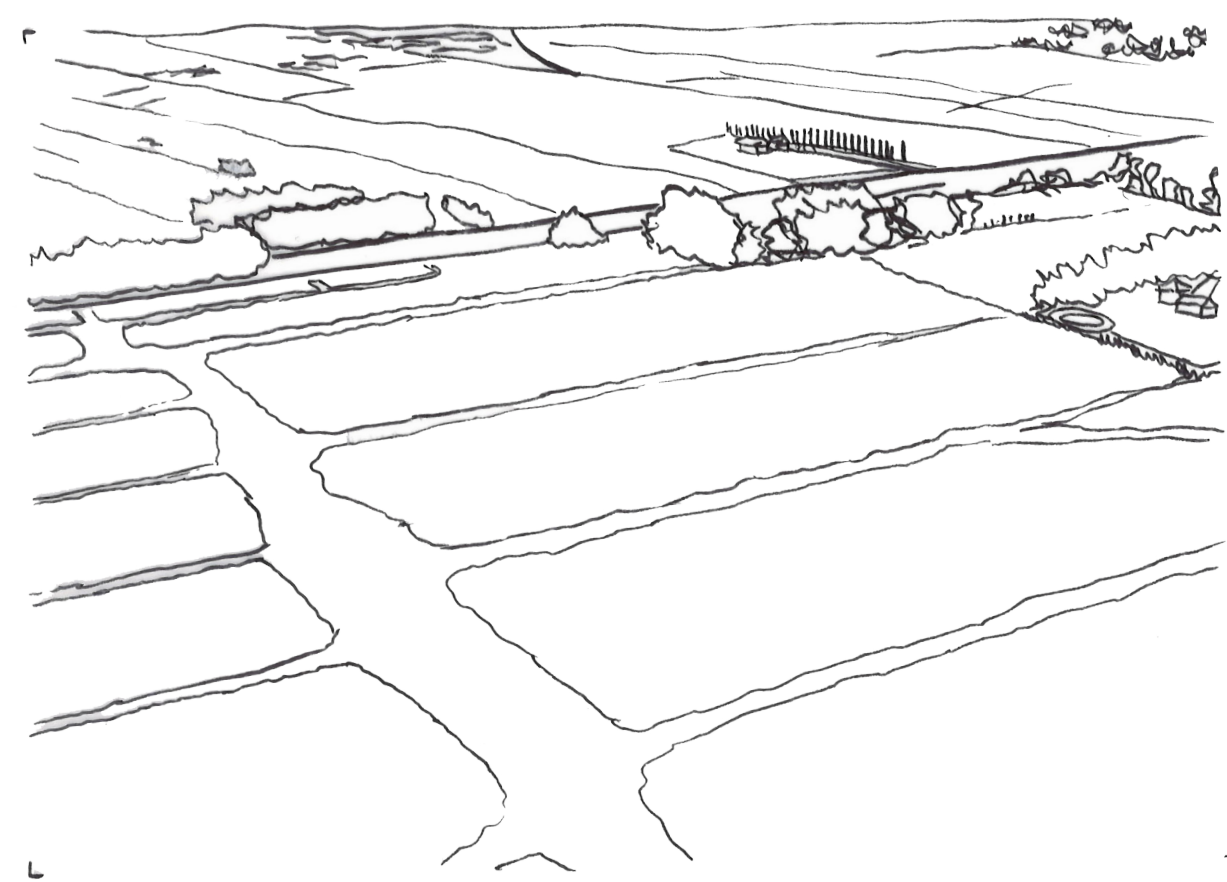


220 ha water

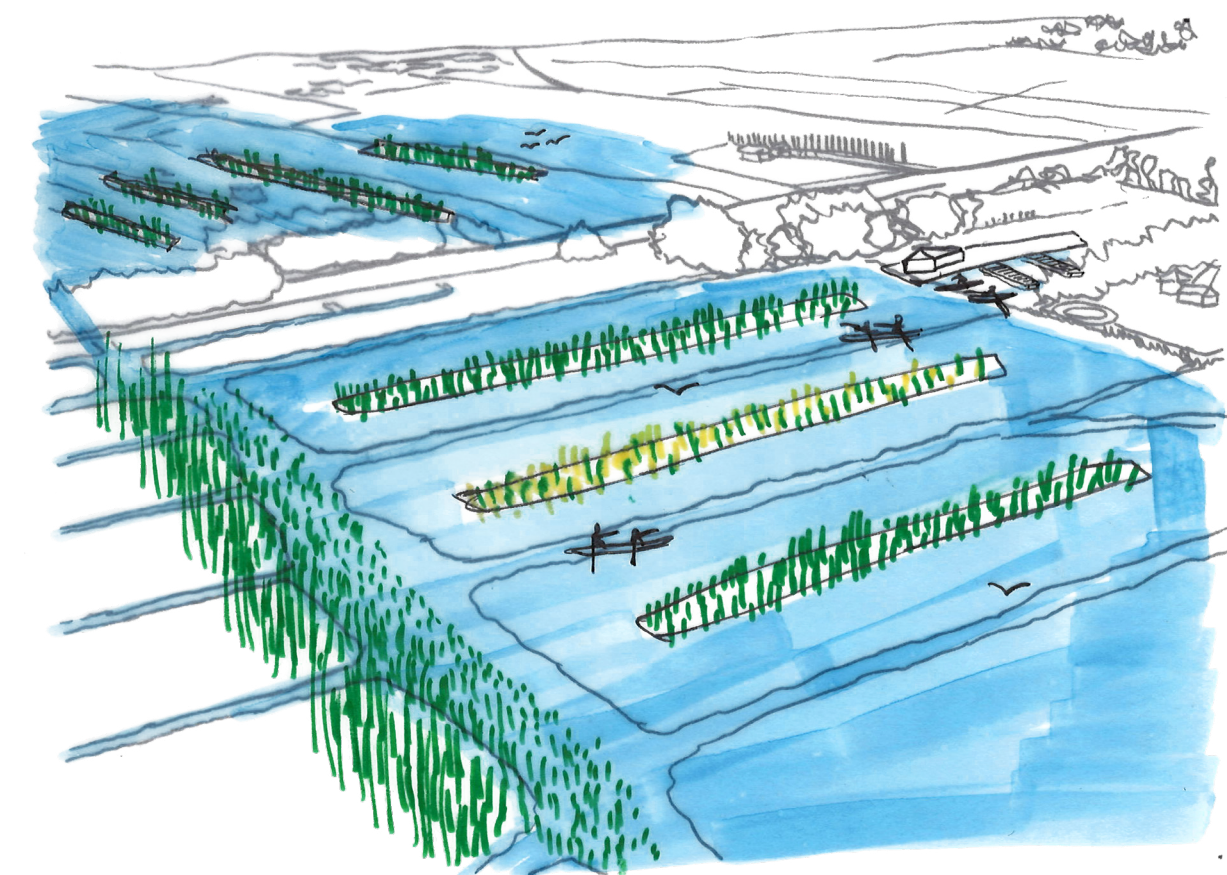
1,5% → 4%

2070

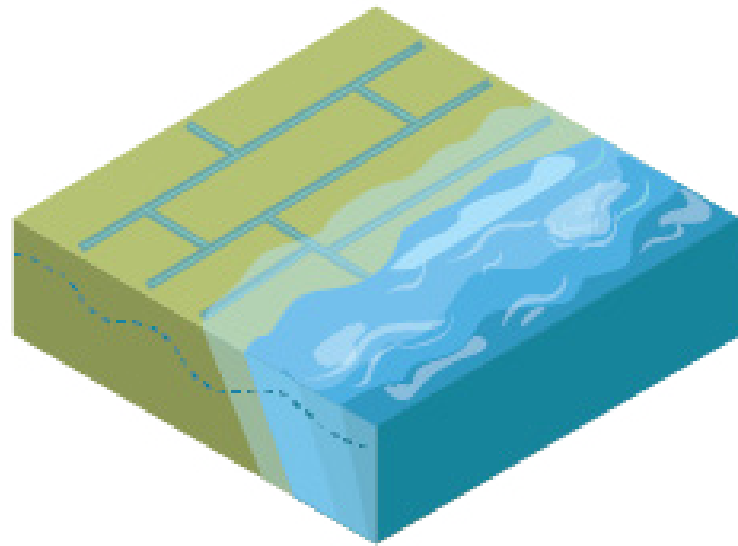




- Strips of land
-> new habitat
-> showing the old structure
- Wet cultivation on the borders
- Ecological embankments

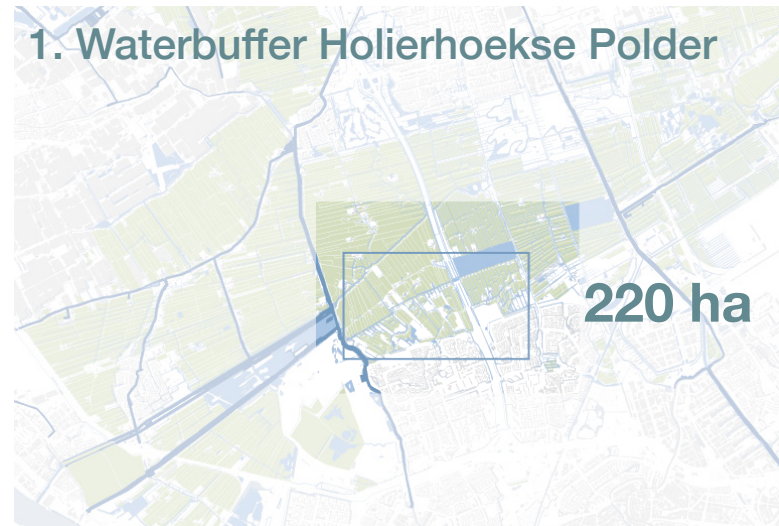


Waterbuffer

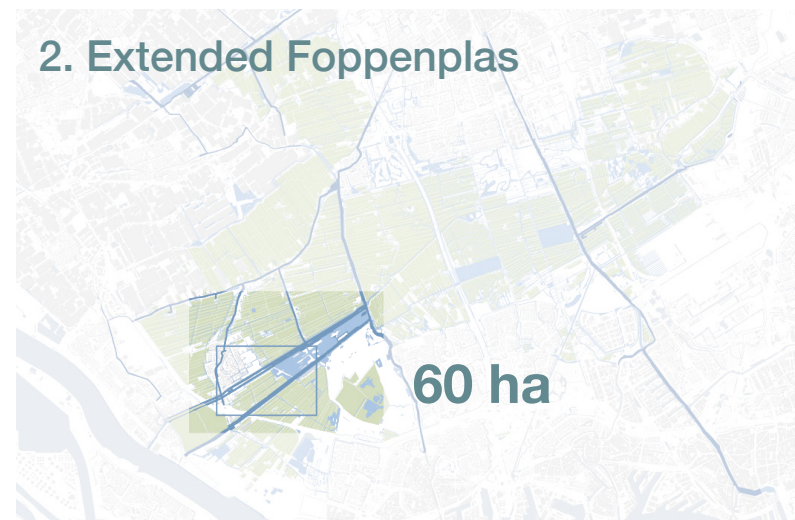


- 1,5 m deep
- Trees around the waterbuffer for shadow and less evaporation
- Floodzones on the borders of the buffer improves ecology
- High water level

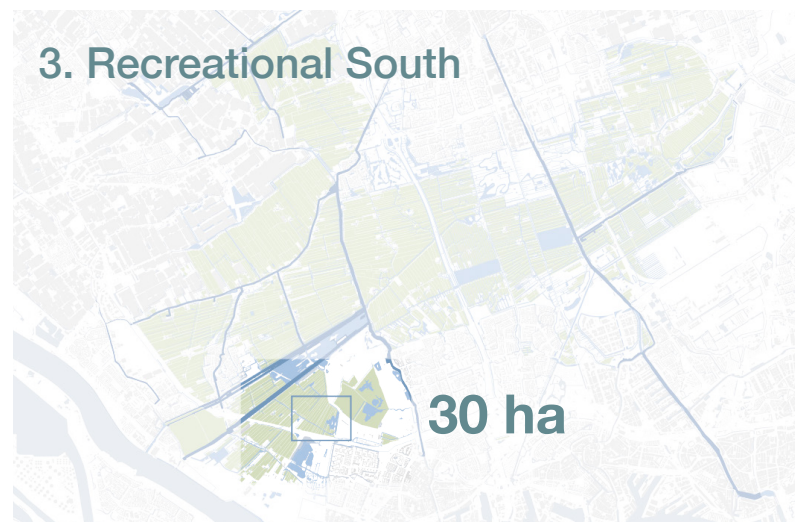
1. Waterbuffer Holierhoekse Polder

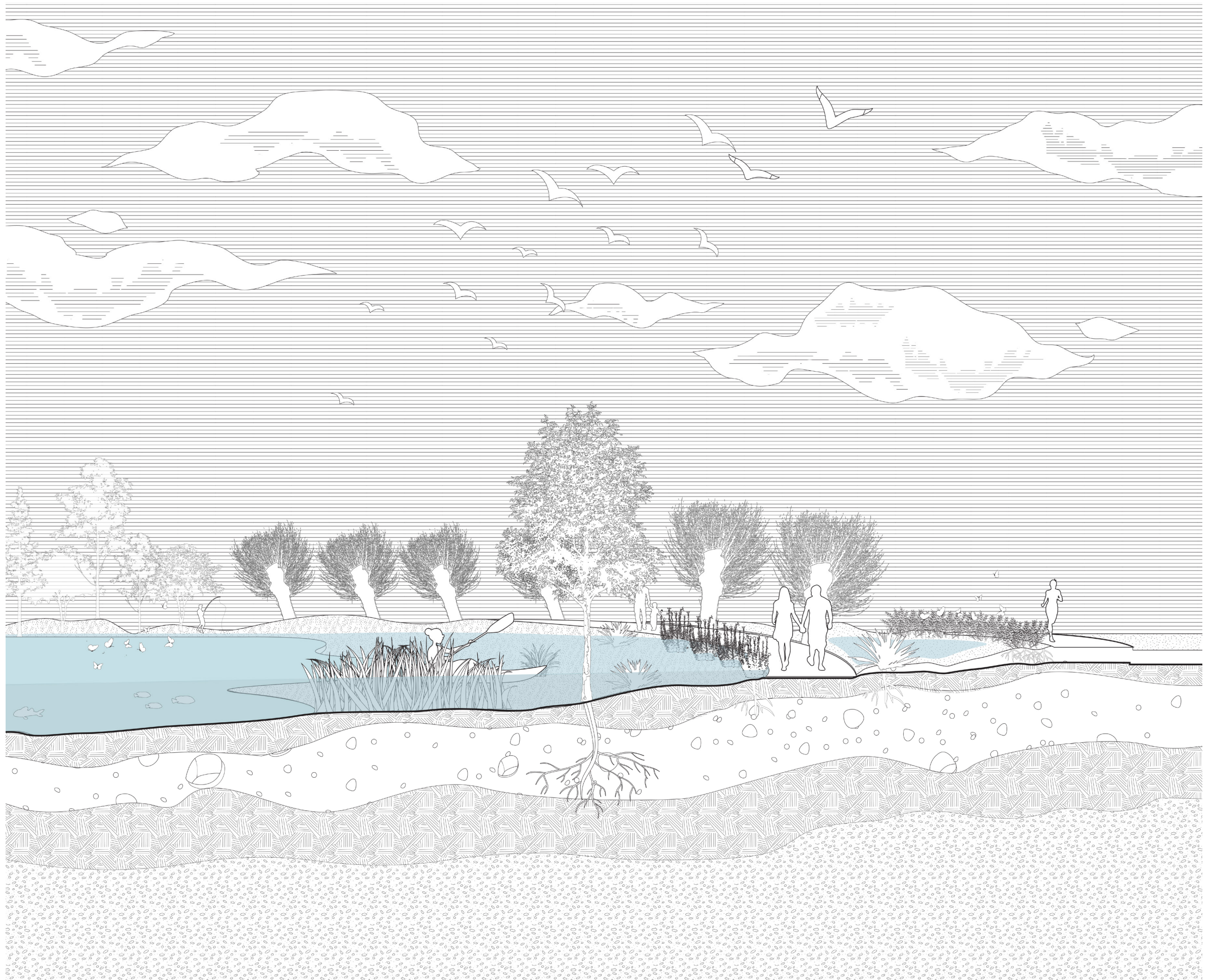


2. Extended Foppenplas

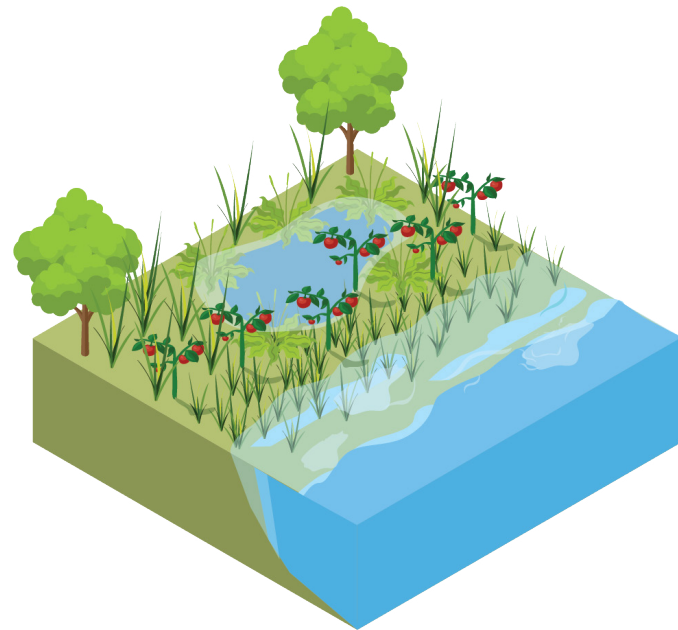


3. Recreational South

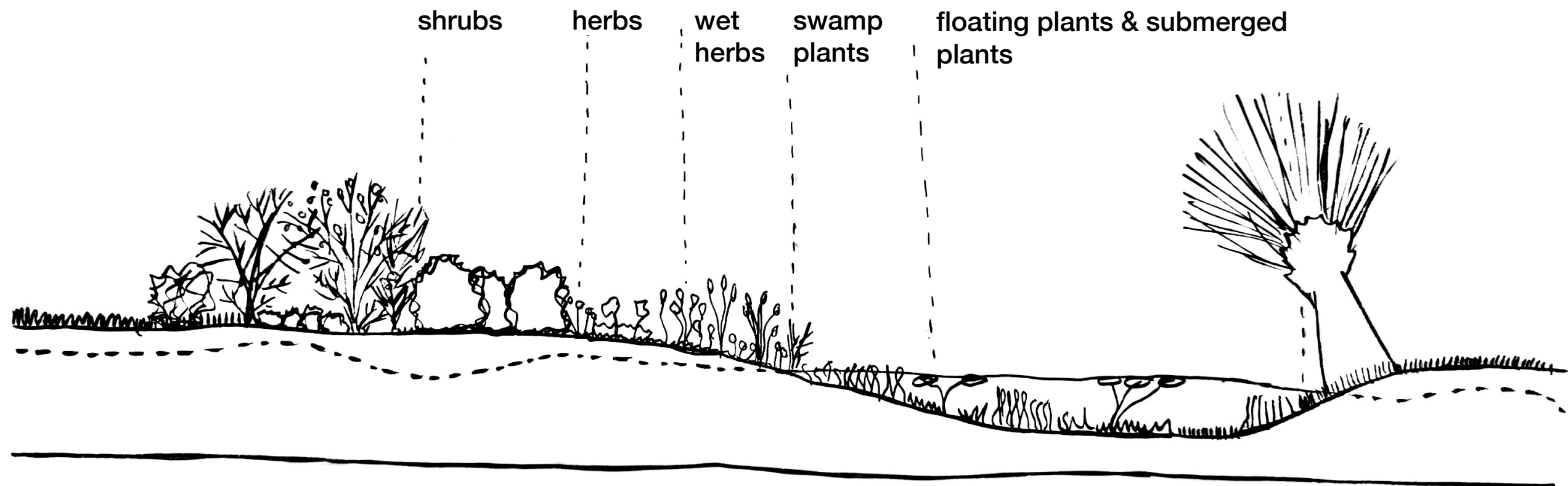




Foodswamp



- Combining food & nature
- Wet cultivation
- High water level



'Van Zweth tot Slink'

Route 1



Zoutveenseweg

Slink

Vlaardingervaart

A4

Zweth

Schie

2

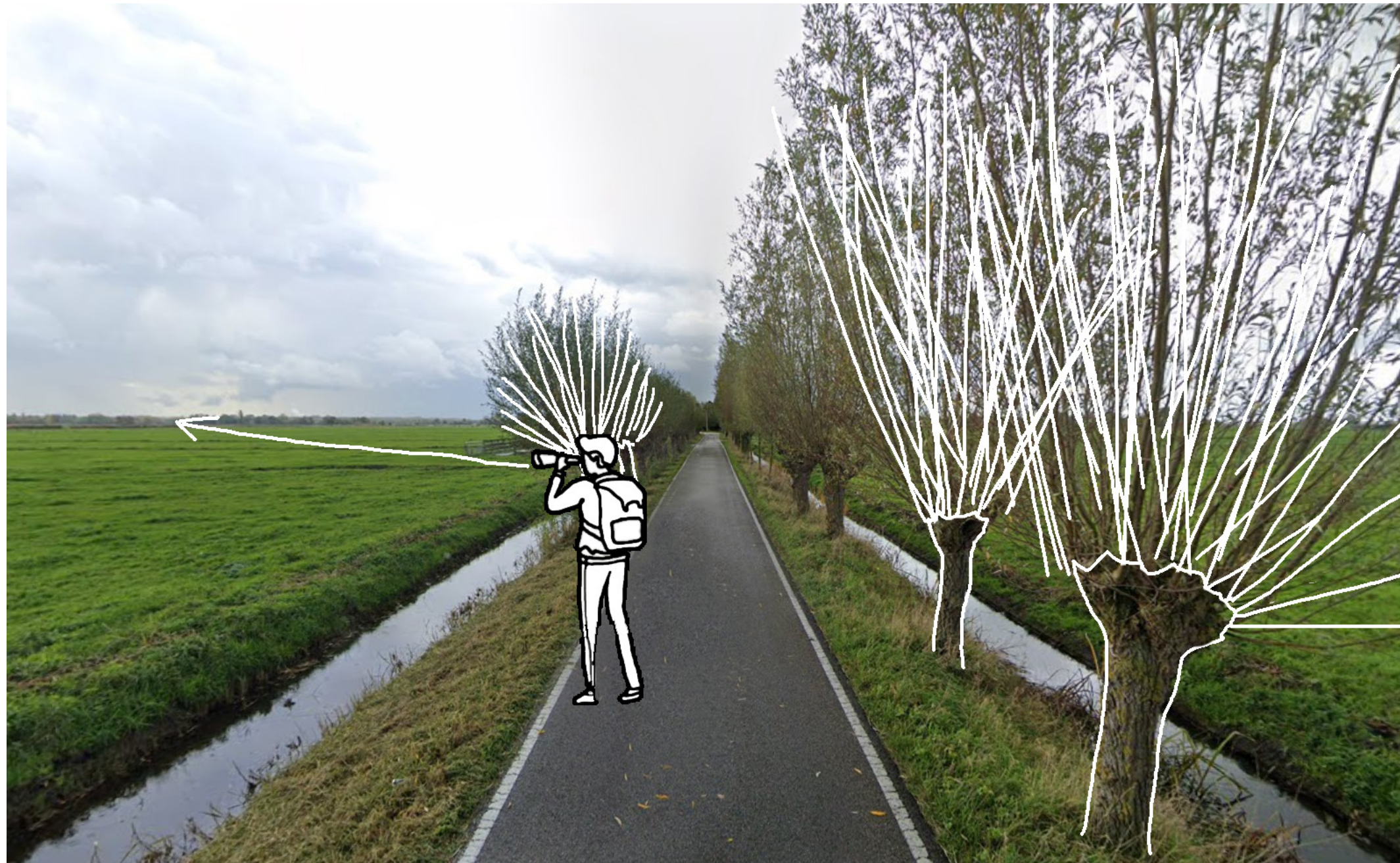
2023



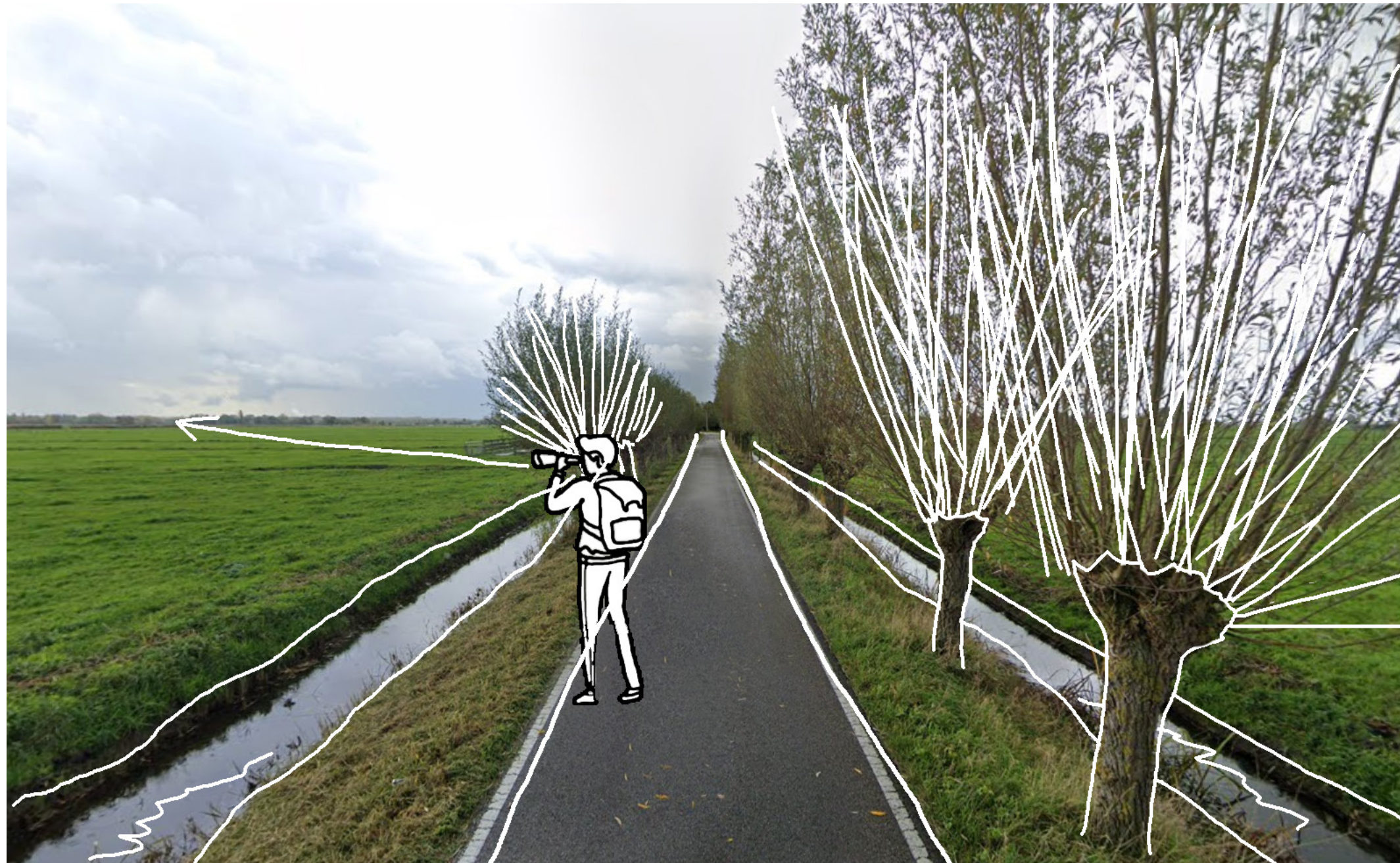
2023



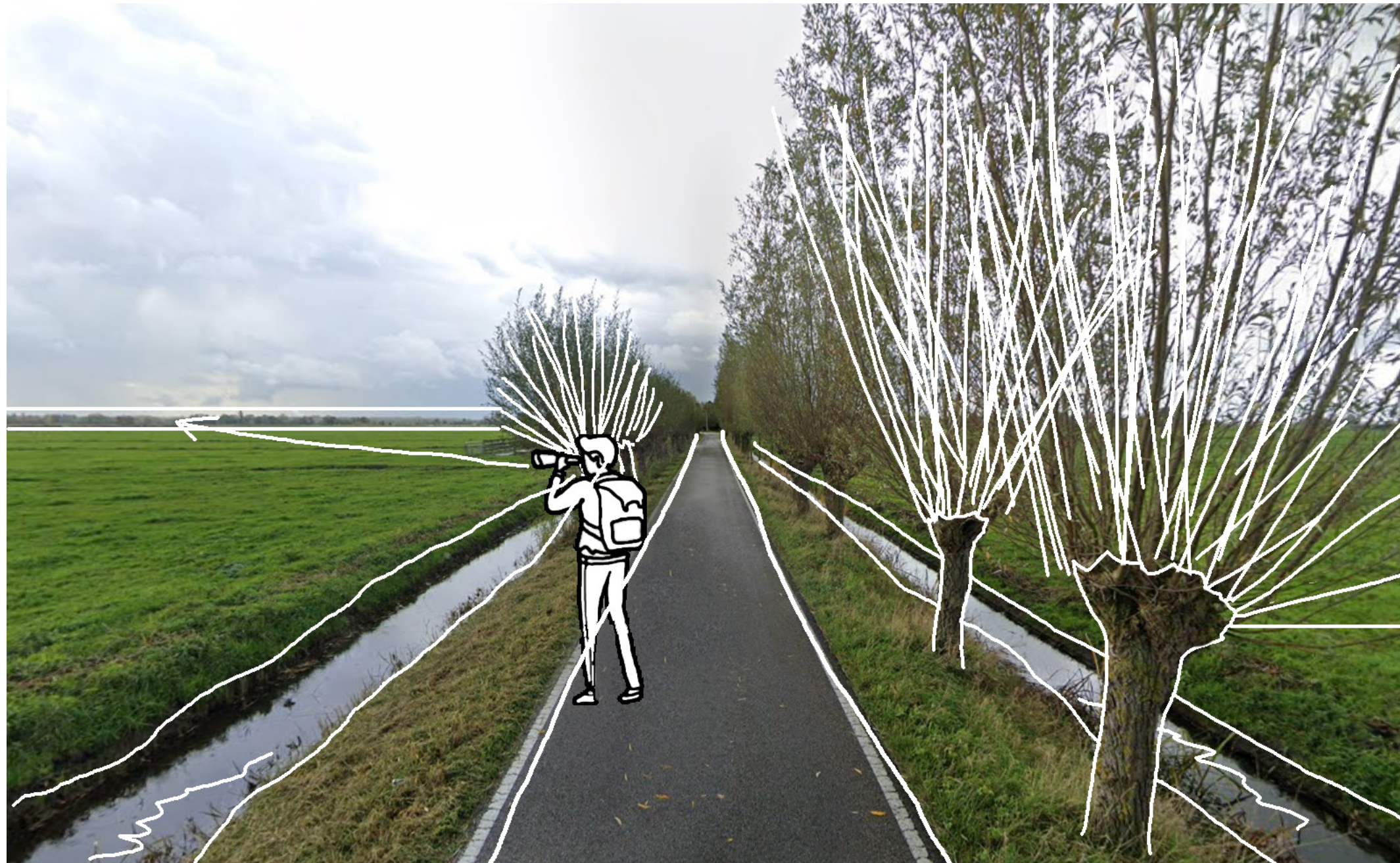
2023



2023



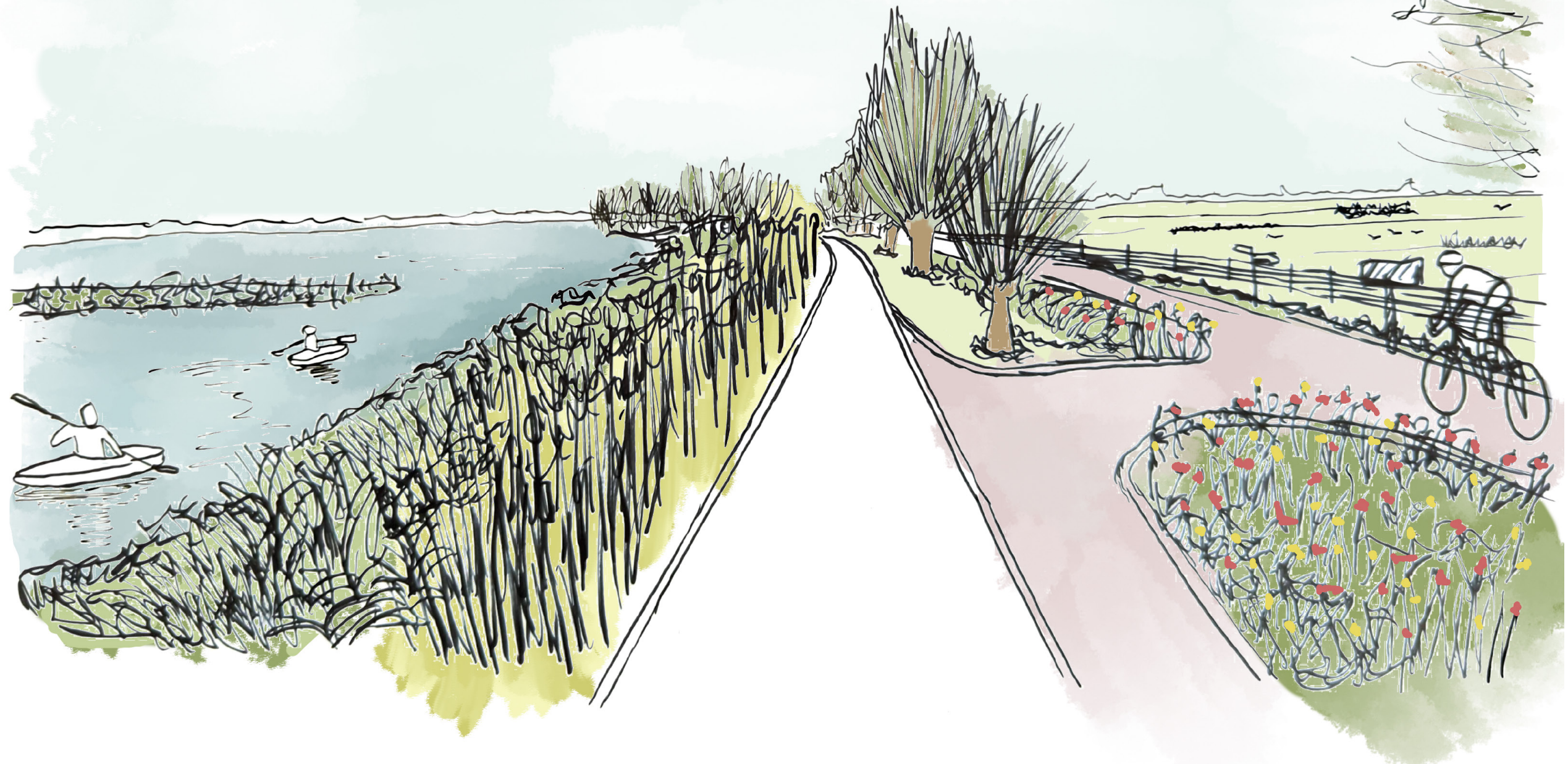
2023



714 ha recreation

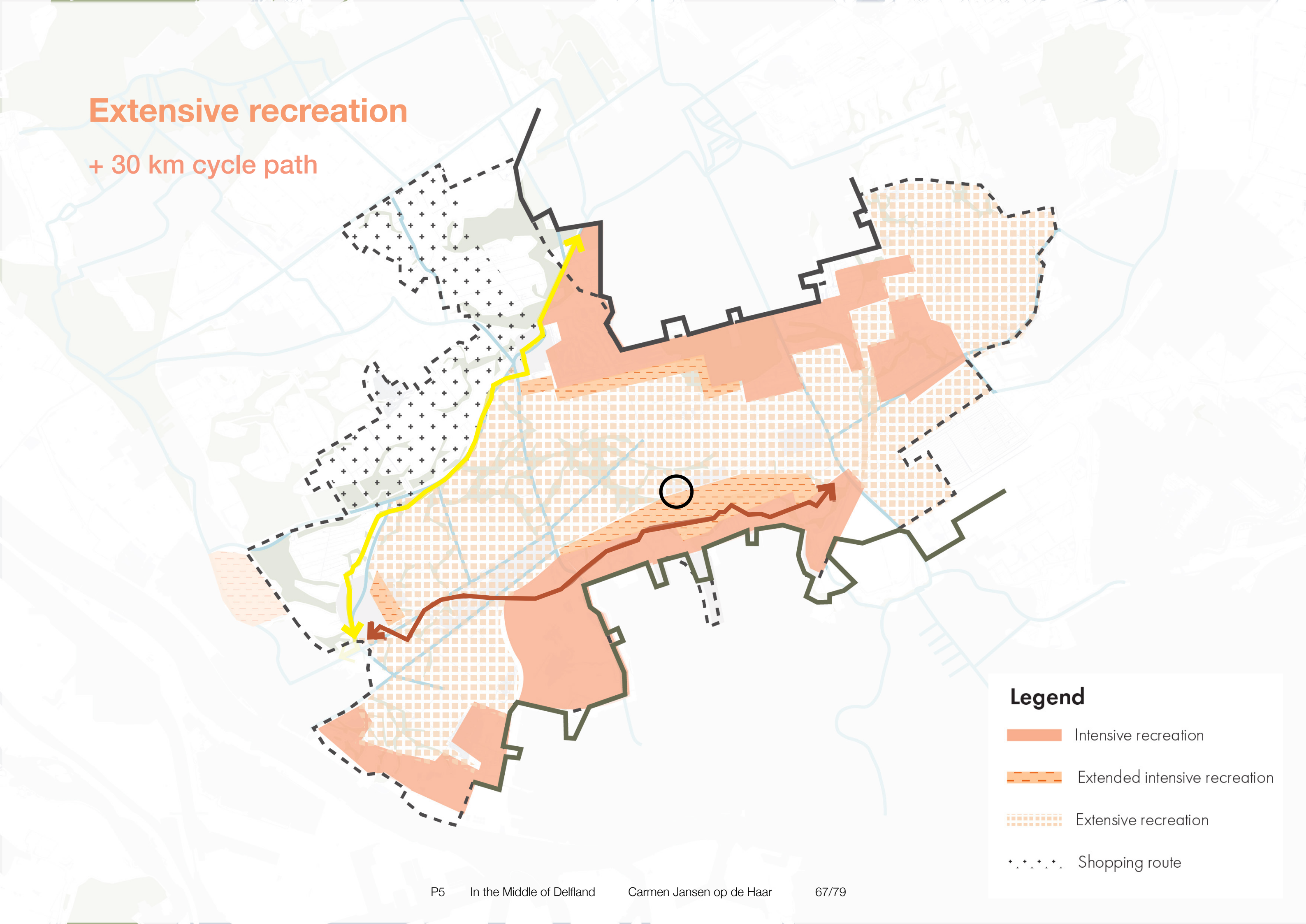
2070

4,4% → 8% of total
land surface



Extensive recreation

+ 30 km cycle path



Legend

- Intensive recreation
- Extended intensive recreation
- Extensive recreation
- Shopping route

'Van Zweth tot Slink'

Route 1



2023



714 ha recreational
zone

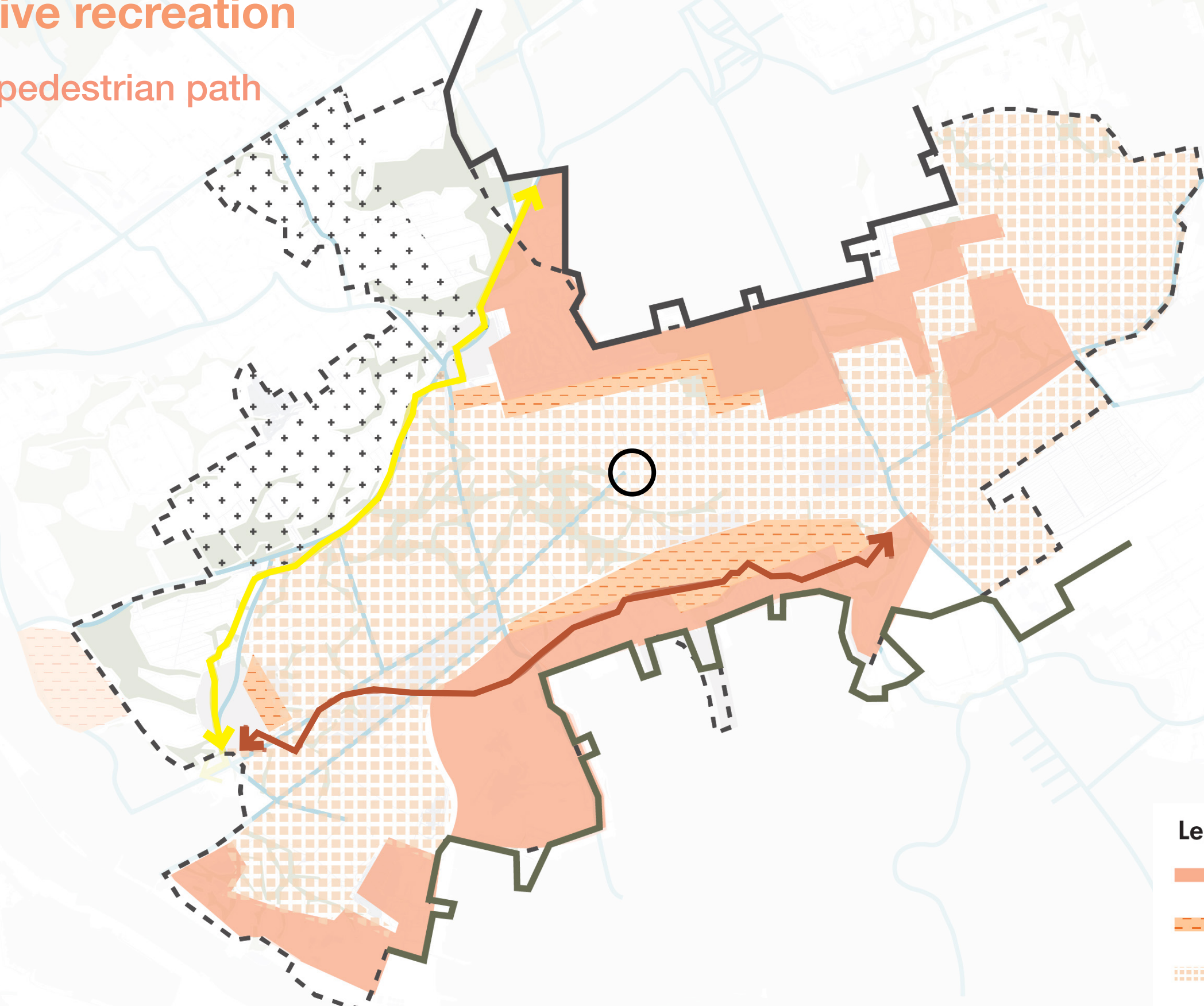
4,4% → 11%

2070



Extensive recreation

+ 10 km pedestrian path



Legend

Intensive recreation

Extended intensive recreation

Extensive recreation

+.+.+.+

Shopping route

'Van Zweth tot Slink'

Route 1



3

Zoutveenseweg

Slink

Vlaardingenvaart

Schie

Zweth

A4

675 ha eco zones

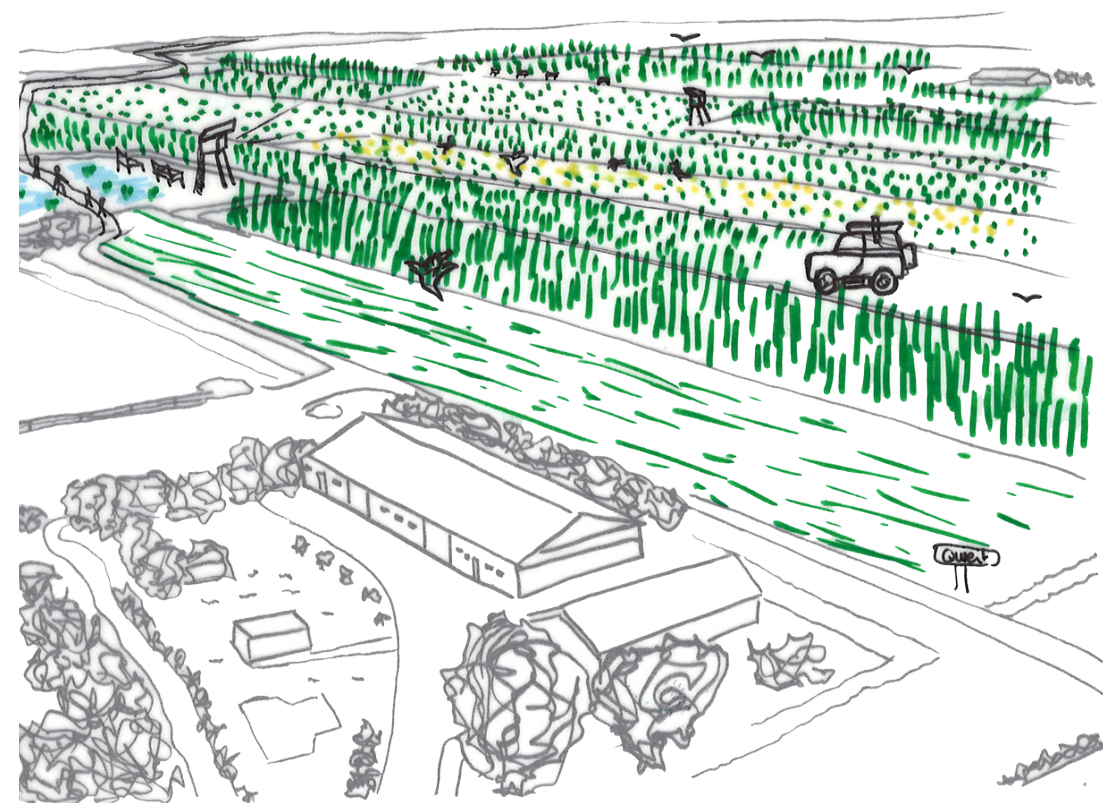
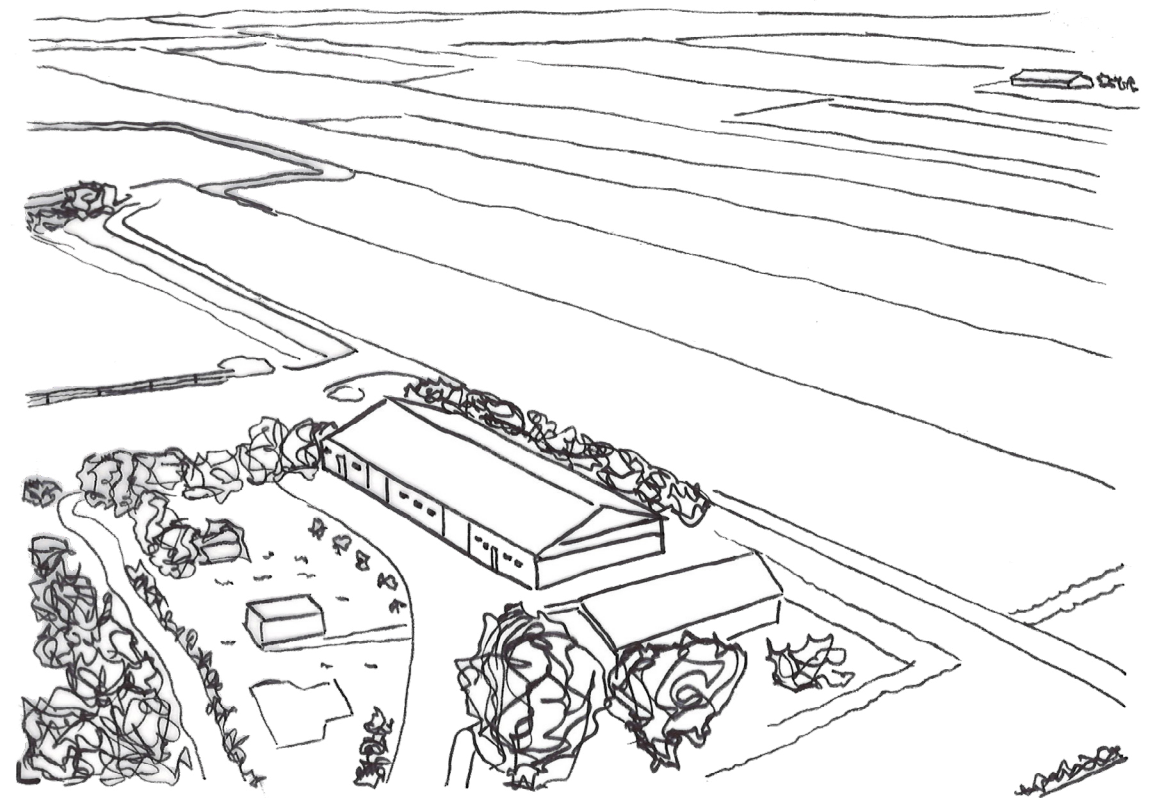
2070

6,5% → 8%

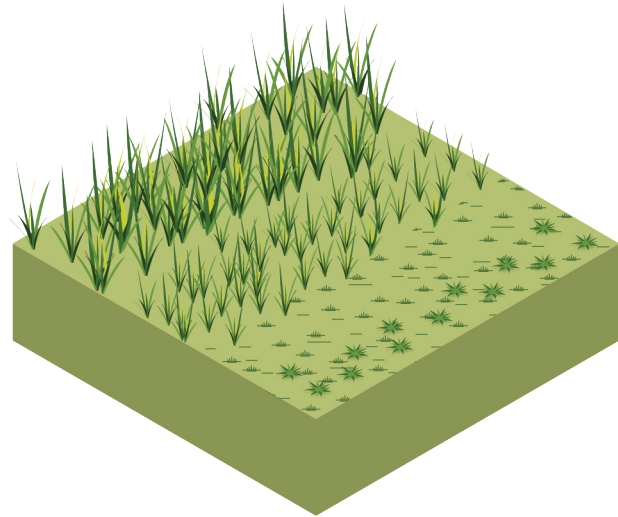




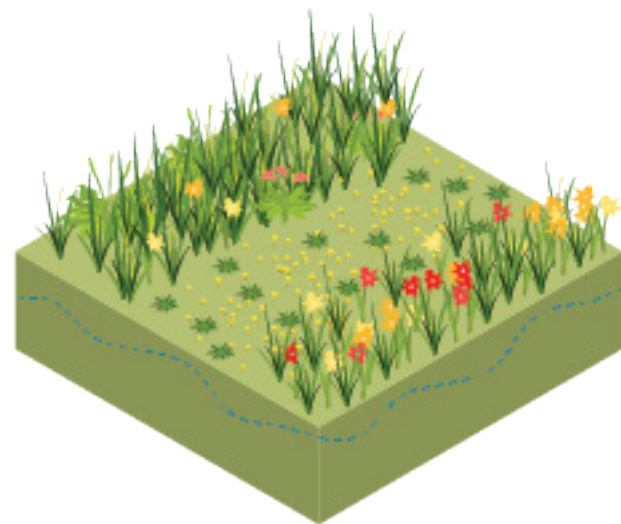
- Observation tower
- Strip cultivation
- Meadow bird safari
- New pedestrian route
- Exclusively for nature enthusiast



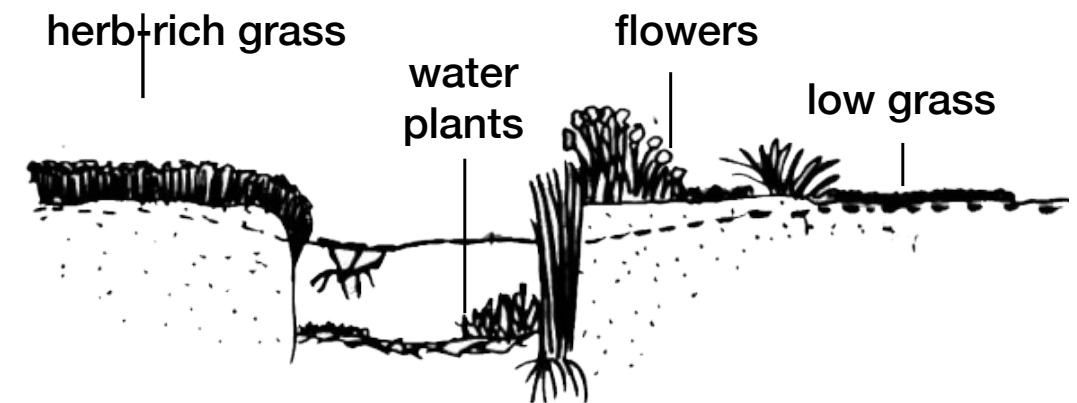
Variation in vegetation



Different heights of plants
5-60 cm



Different types of plants



‘Van Zweth tot Slink’

Route 1

Schie

Zoutveenseweg

Slink

Vlaardingervaart

Zweth

A4

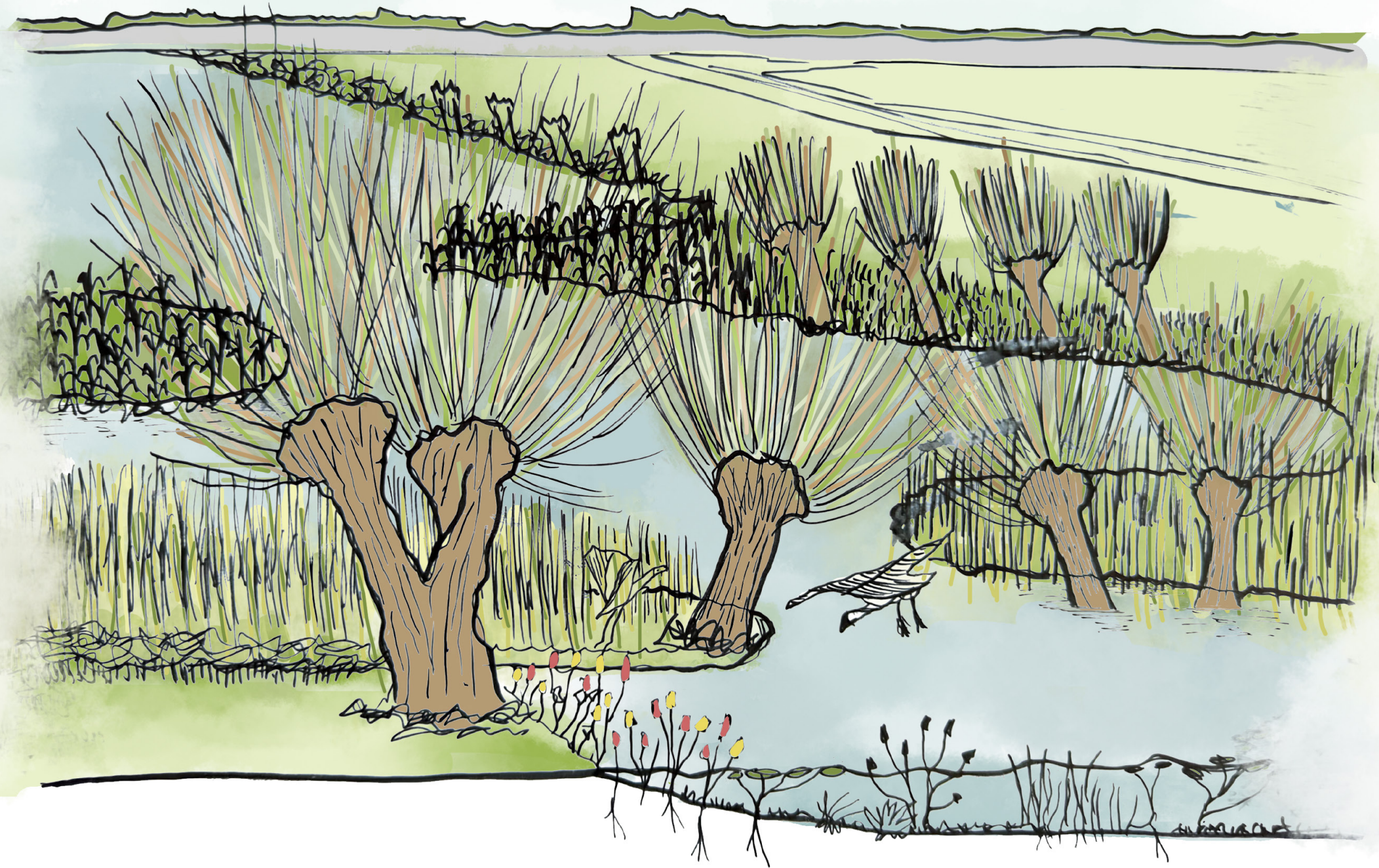
2023



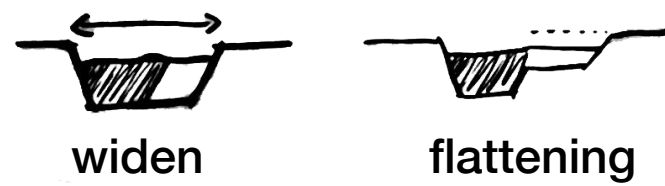
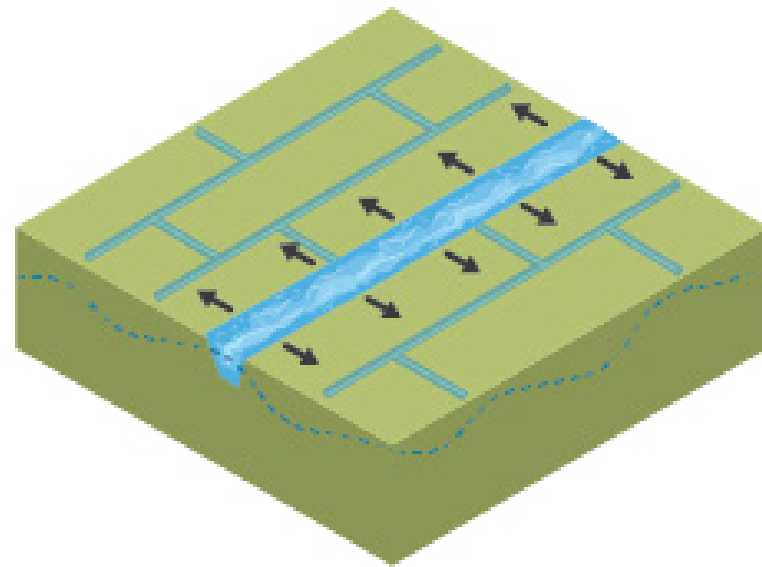
675 ha eco zones

2070

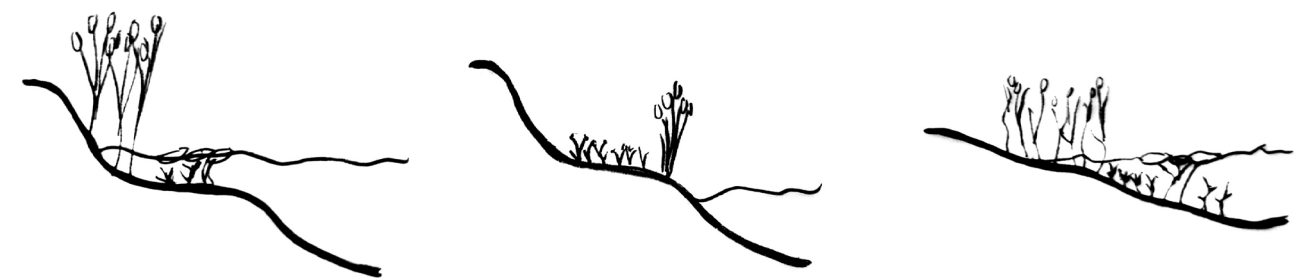
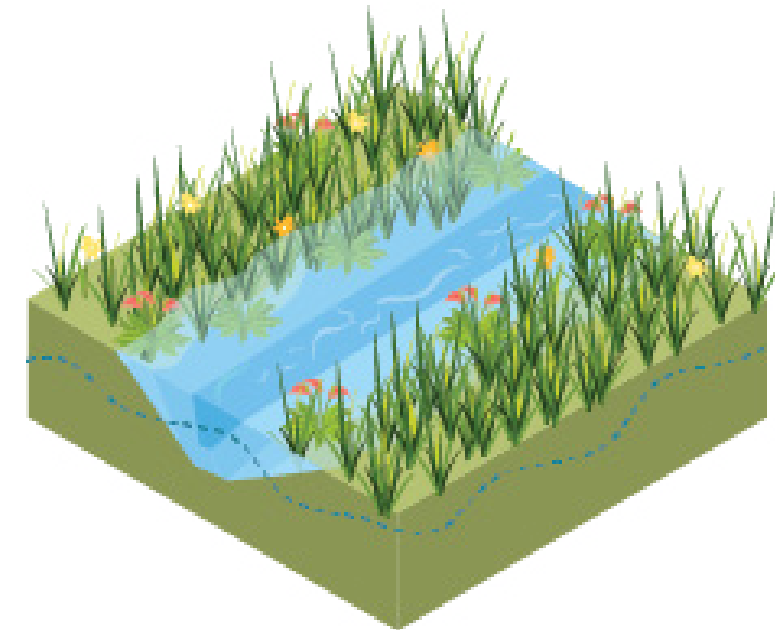
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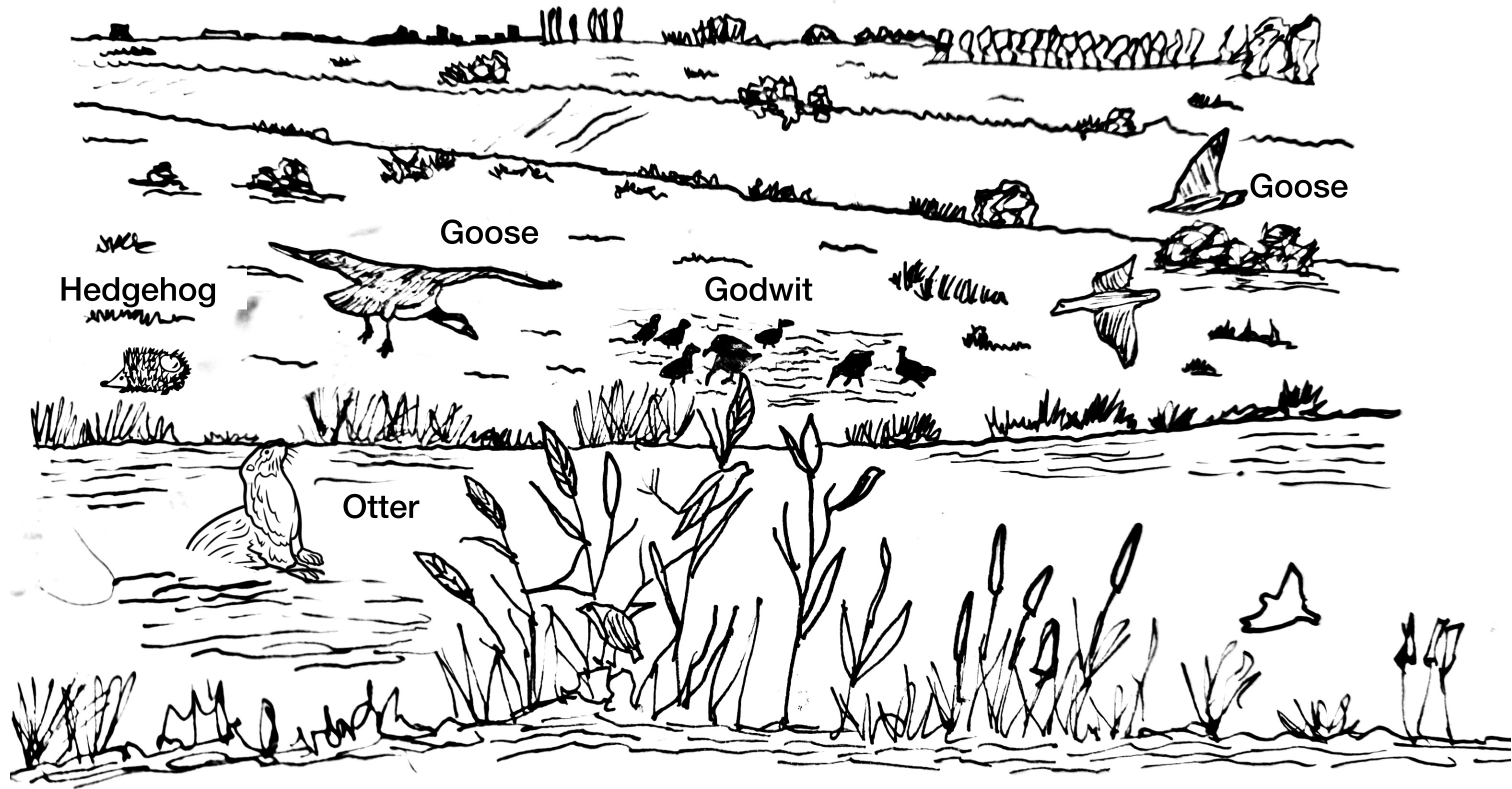


Widening ditches



Ecological banks





Big 5 of Midden Delfland

-> measurement for biodiversity

Natterjack toad



Dragonfly (Grasjager)



Bitterling



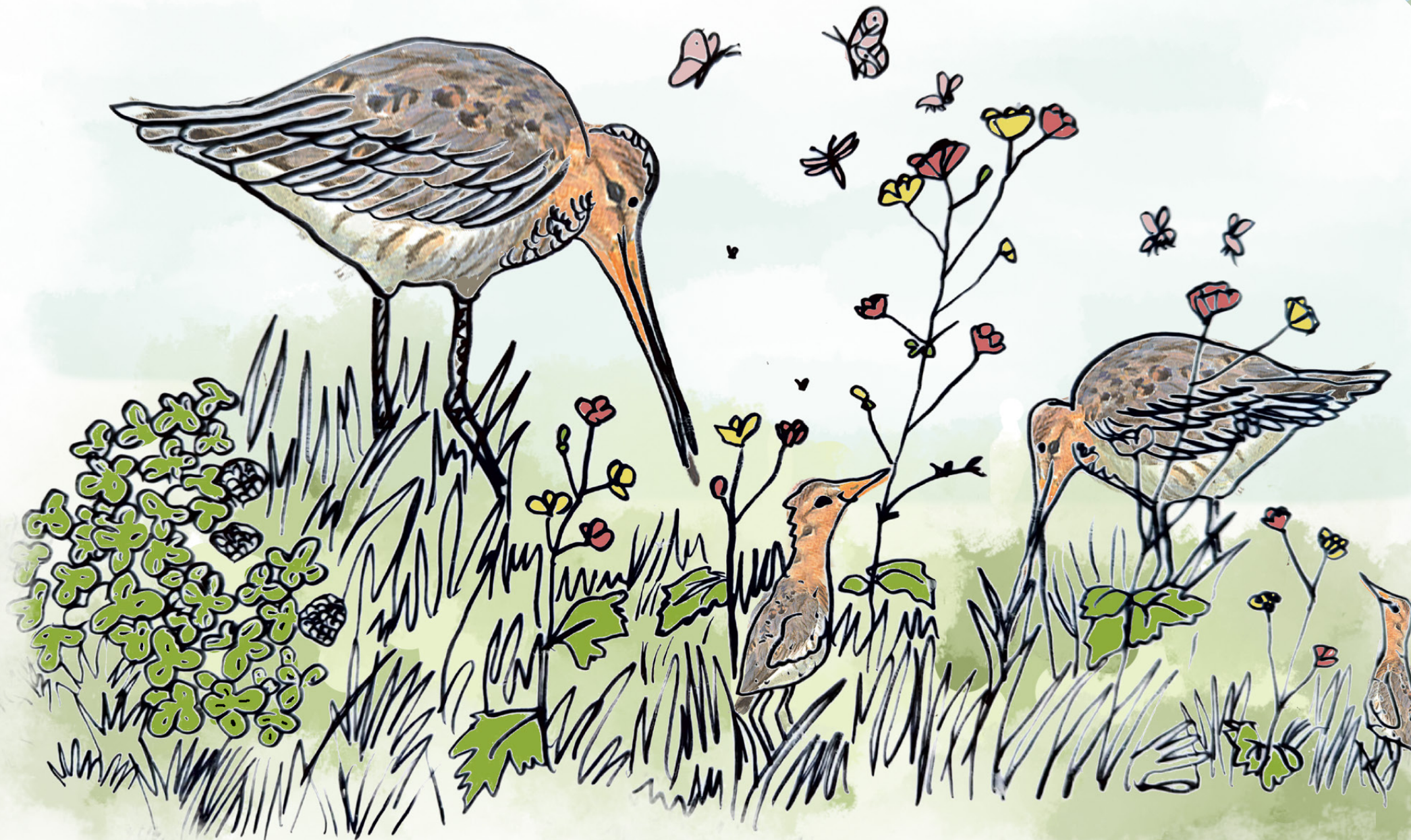
Meadow bumblebee



Godwit

675 ha eco zones

6,5% → 8%



Route 1

Schie

Zoutveenseweg

Slink

Vlaardingervvaart

Zweth

A4

2023



2070





- Car is guest
- More pollard willows
- Information signs
- Emphasizing the road trough vegetation



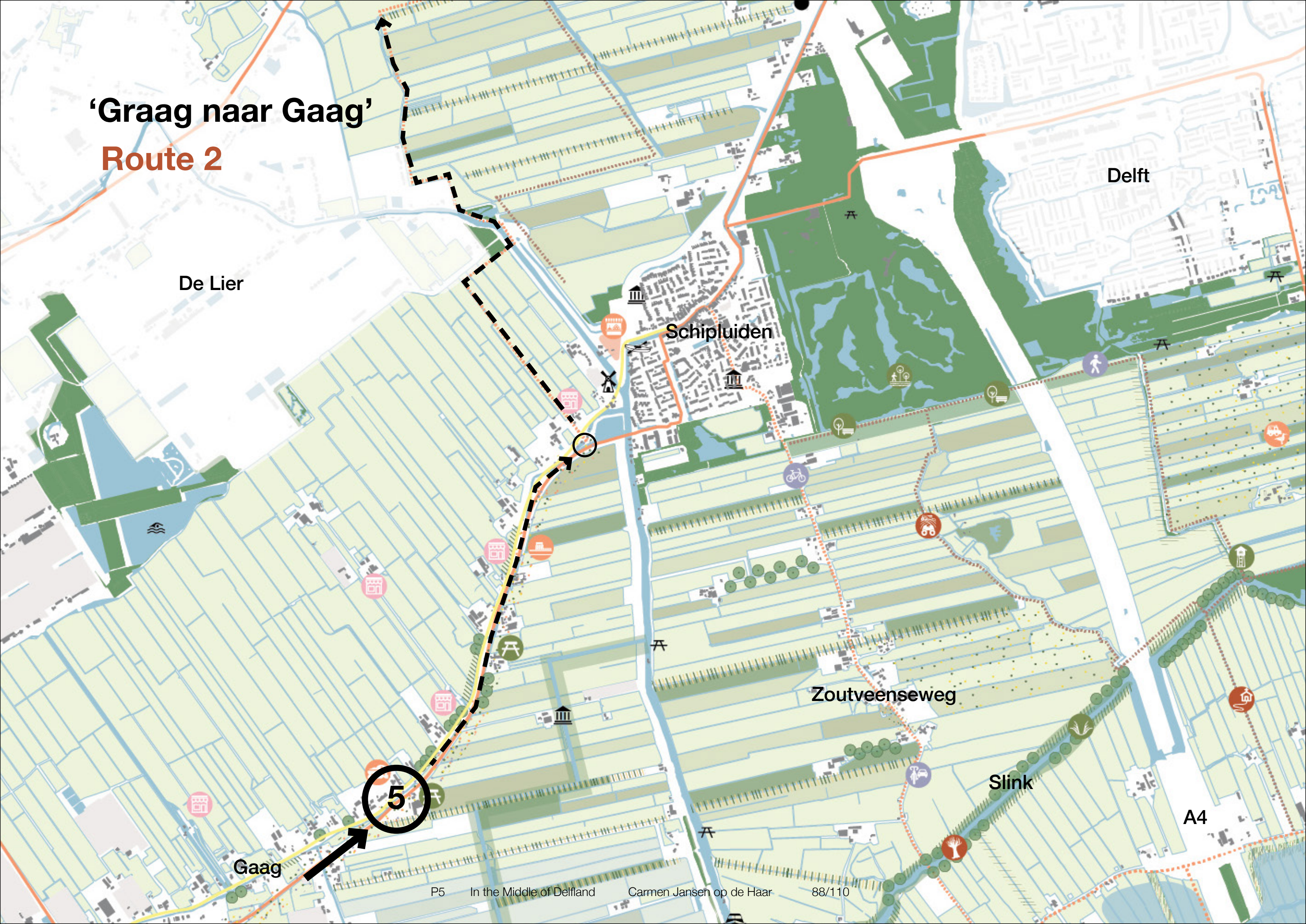


ROUTE 2
"Graag
via Gaag"

ROUTE 1
"Van Zweth
tot Slink"

'Graag naar Gaag'

Route 2



2023



2023



2023



2023



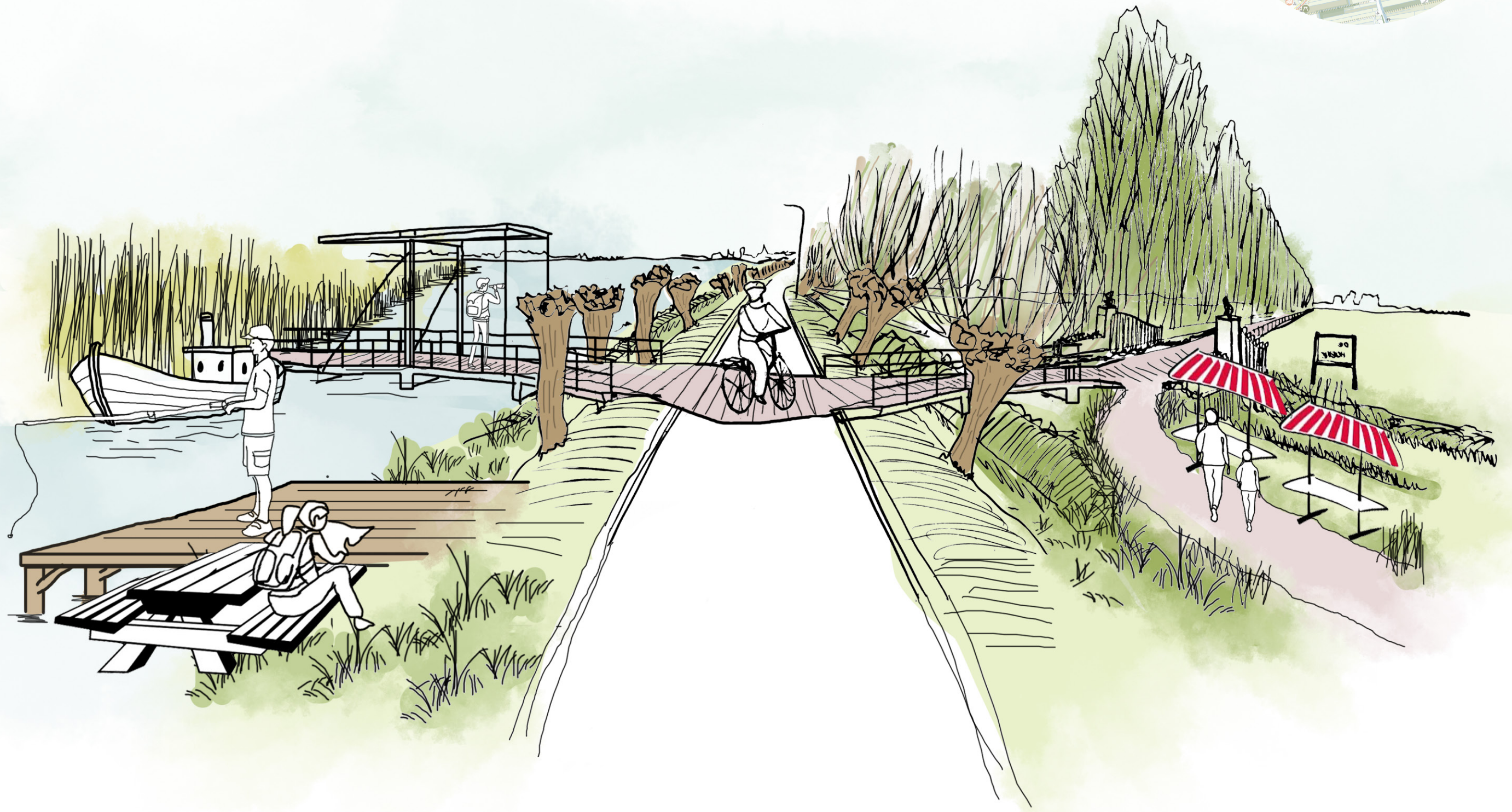
2023



2023

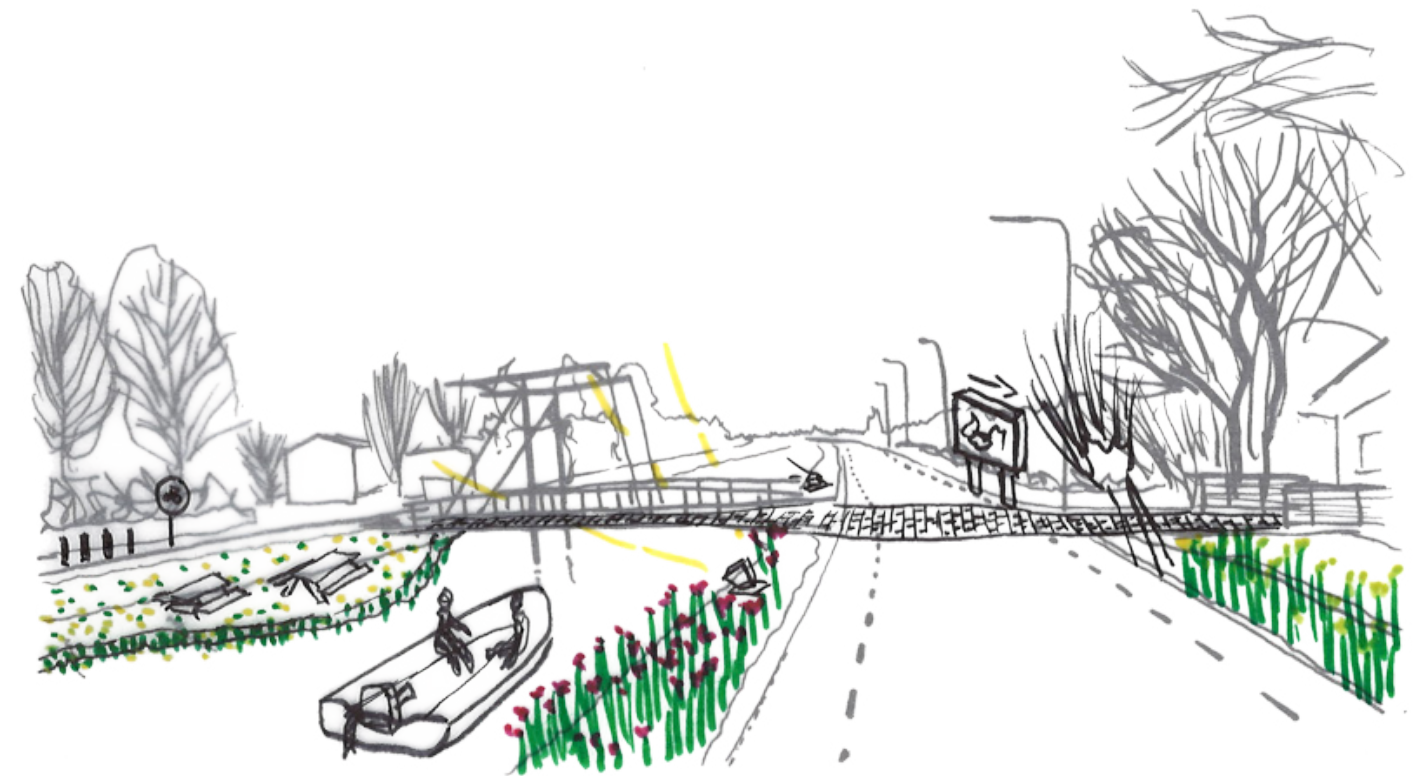


2070



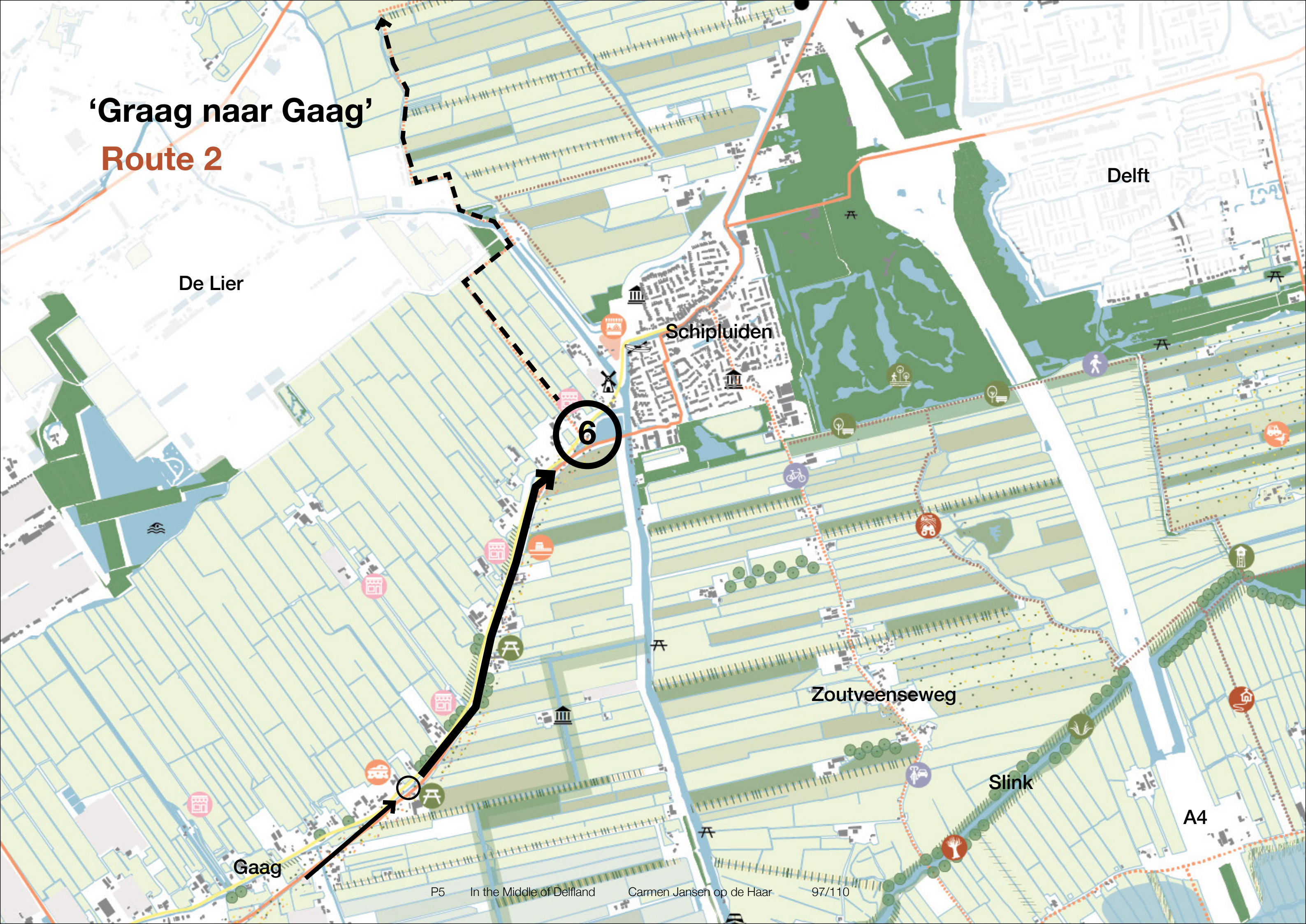


- Different pavement
- Improved connection between cycle path and shops
- Colourful vegetation
- More signs
- Boat stops + picnic



'Graag naar Gaag'

Route 2



Delft

De Lier

Schipluiden

Zoutveenseweg

Slink

A4

Gaag

6

2023



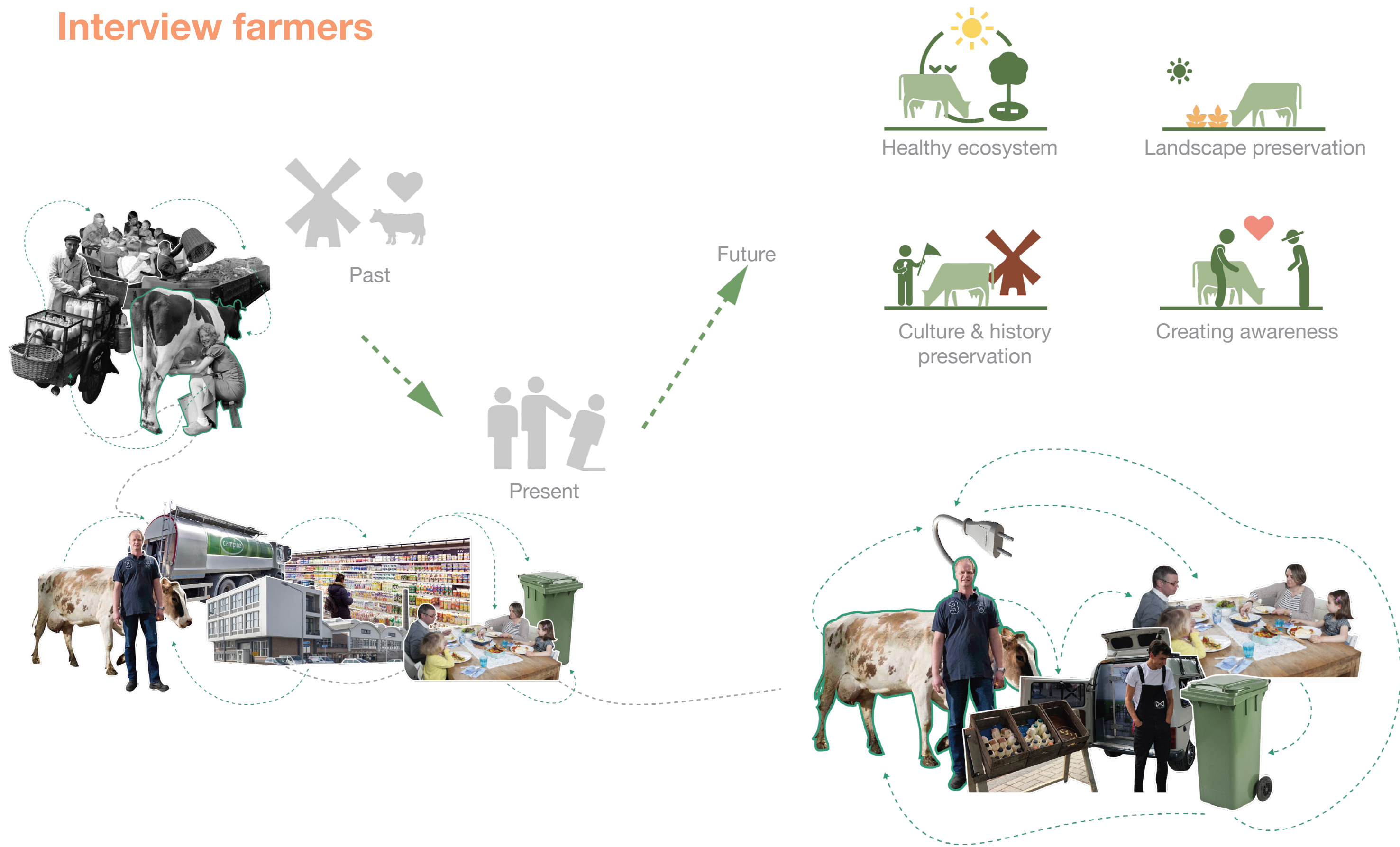
2023



2070



Interview farmers



Contents.

1. The location & characteristics

2. Introducing the challenges

3. Vision and Goals

4. Excursion through the region

5. Landscape in 2070

Maximizing water potential

‘Creating room for quantity and quality of water’



Waterproof landscape

- Water storage
- Water structure
- New agriculture
- Biodiversity
- Nature networks
- Targetgroup specific structures
- Selective acces



Creating recreational diversity

‘balancing intensive and extensive recreation’



Recreational landscapes

- Selective acces
- Improved routes
- Targetgroup specific structures
- Awareness
- Water storage
- New agriculture
- Biodiversity
- Nature networks



Ecological restoration

‘Increasing biodiversity for improved mead bird livability’



Ecological landscape

Biodiversity

Nature networks

Quiet nature

Water structure

New agriculture

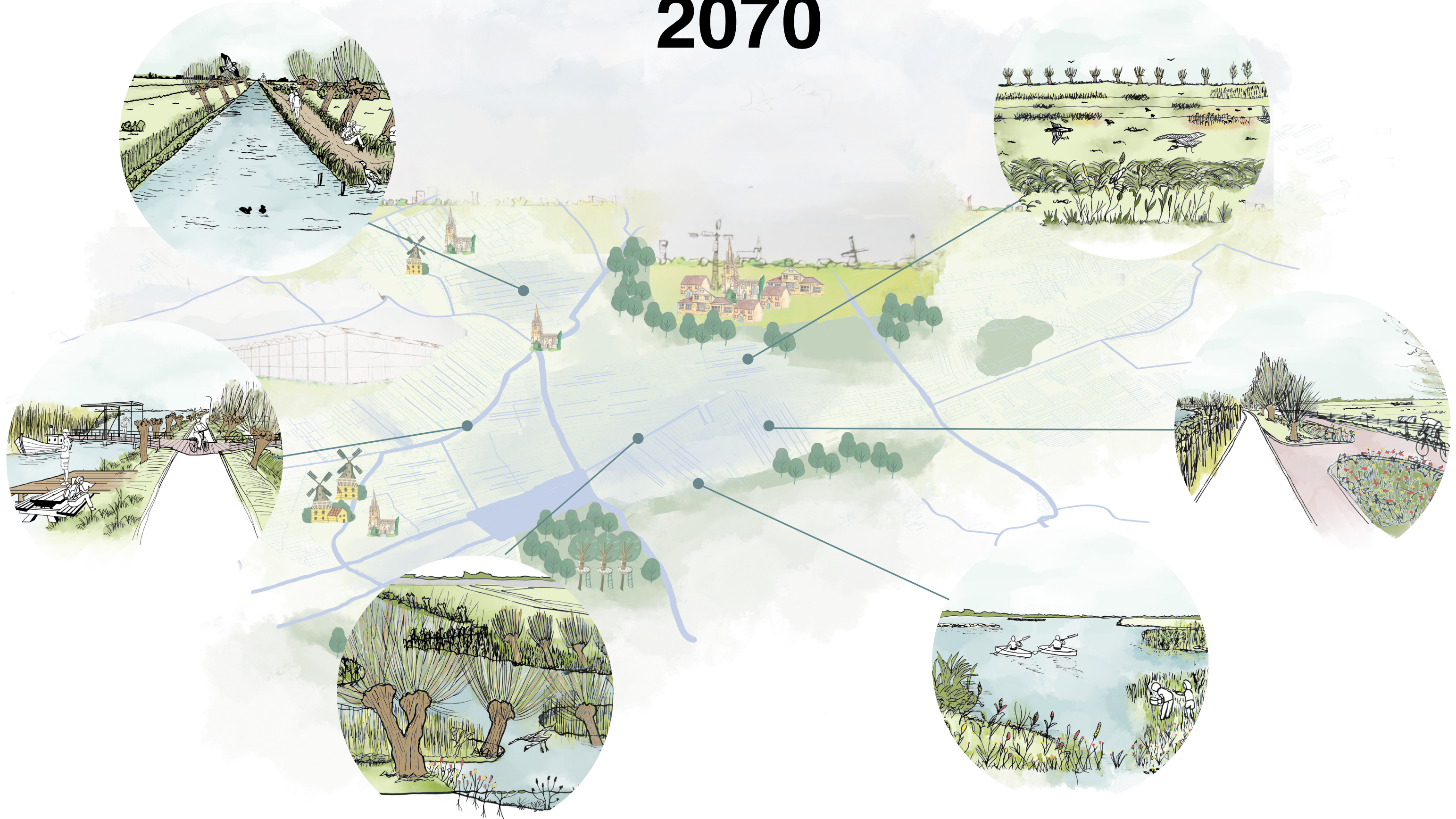
Selective acces

Targetgroup specific
structures

Awareness



2070



Thank you

