

SAMEN INVESTEREN IN DE OPEN RUIMTE



# Port of Zeebrugge

## Impact of Harbour-related infrastructure

1777

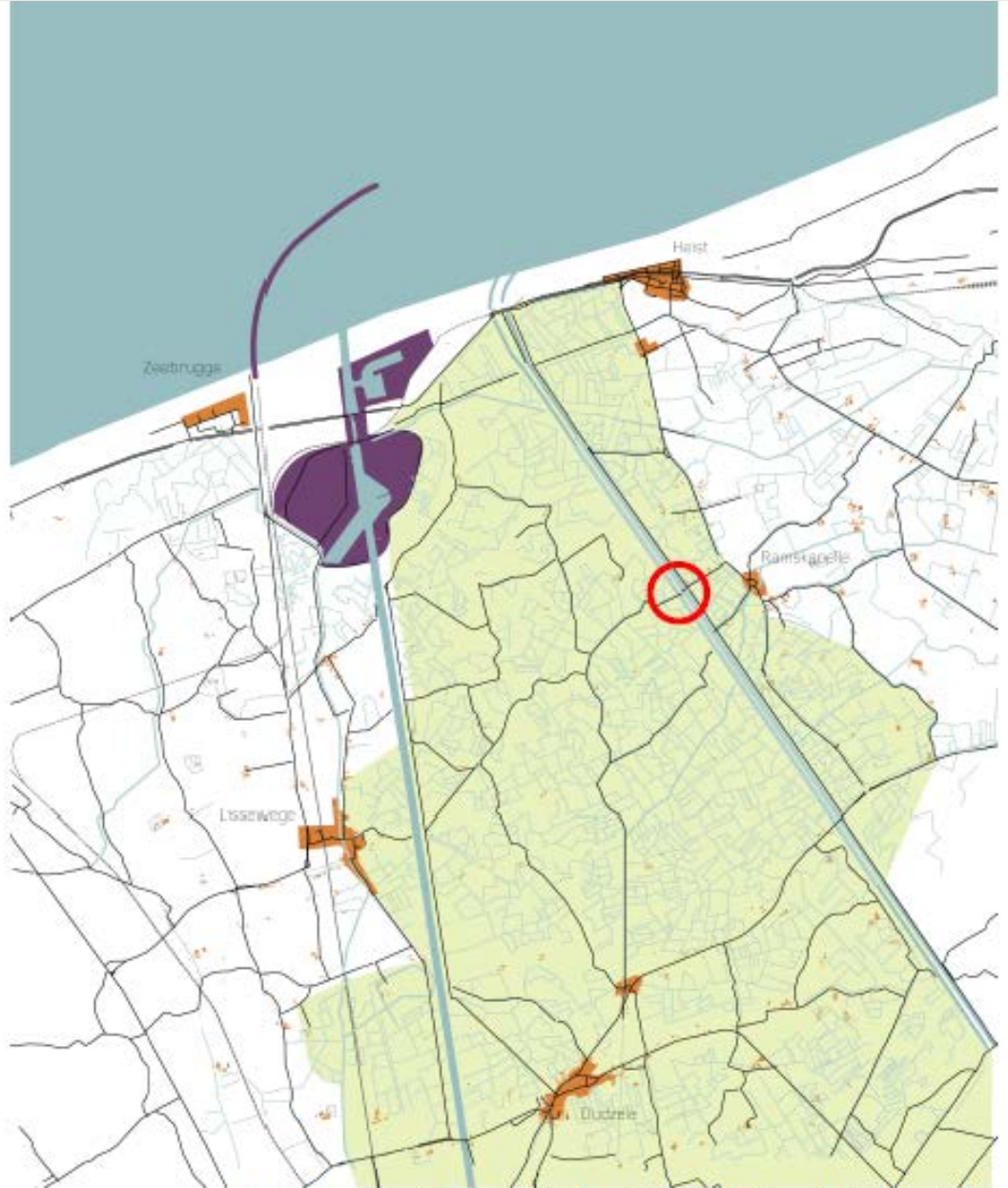


# A short history

- Connecting Bruges to the sea:
  - 1891: “Commission Mixte de Bruges Port de Mer”: commission to develop a sea-harbour connecting Bruges with the sea.
  - 1894: decision to develop the harbour by the “Compagnie des Installations Maritimes de Bruges” (now MBZ)
    - An outer-port in Zeebrugge
    - A sea-canal between Zeebrugge and Brugge
    - An inner-port in Brugge
  - 1896 -1905: construction of the infrastructure

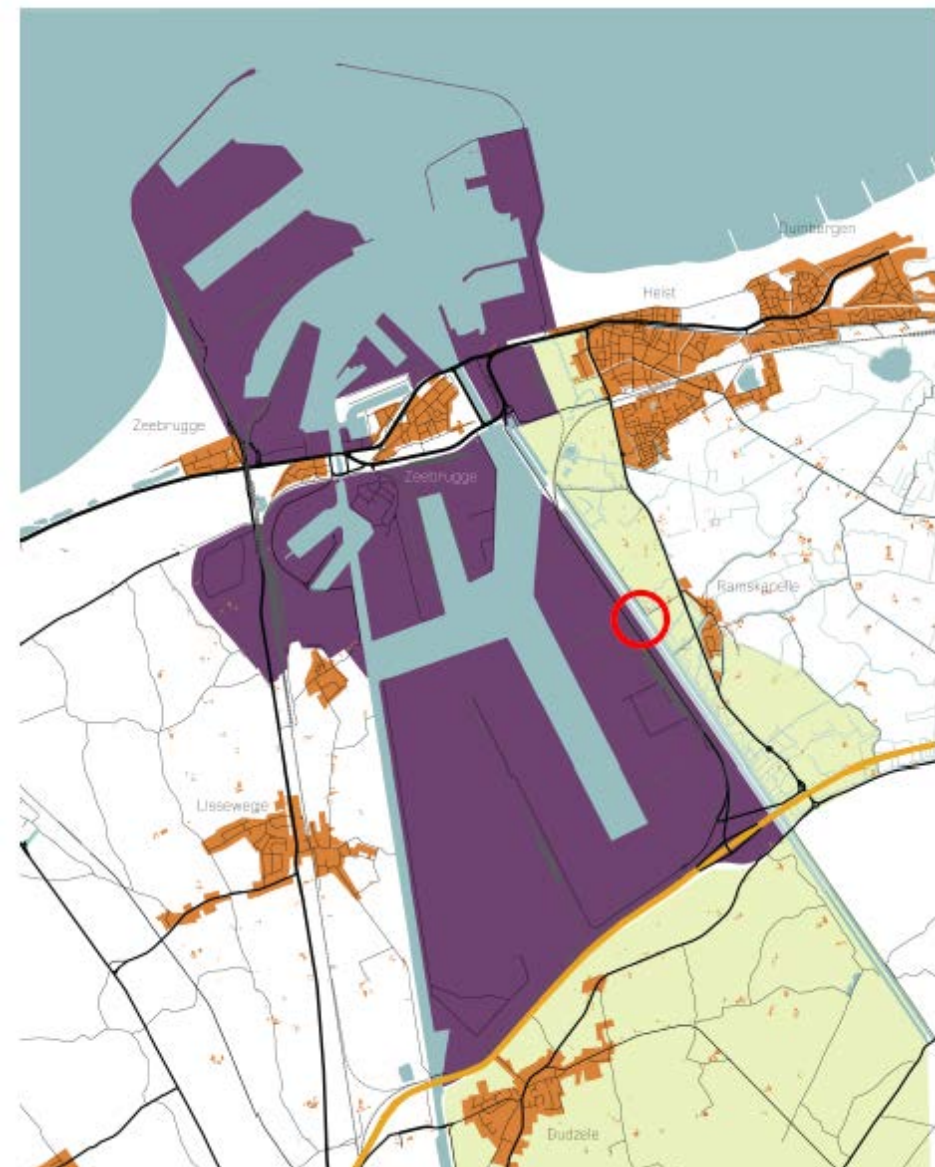


1930





# Now



# Infrastructure for the port of Zeebrugge

- In it's history the port of Zeebrugge has shifted from a traditional “industrial harbour” to a “logistics harbour”
  - In the beginning: harbour related heavy duty production industry: cokes-factory, glass-factory, food-production, ...
  - Now: container transport, car-transport, roll-on/roll-off truck transport, liquid-gas, ... with almost no production-facilities in the harbour.
- In this development to a logistics harbour:
  - Investments in the sea-related infrastructure
  - Less investments in the land-related infrastructure



# Land-related infrastructure

- Connection port with the highway infrastructure:
  - Now: no direct connection to the highway-network
  - Planned:
    - Investments in the ringway-around Bruges and the N31 (Bruges-Zeebrugge): highway connection to Brussels and France)
    - Investments to develop a new highway connecting the ports of Zeebrugge, Gent and Antwerp

# Primary roads in Flanders

Kaart 4

Categorisering  
hoofd- en primaire  
wagennet





# Land-related infrastructure

## ■ Connection port with the railroad-infrastructure:

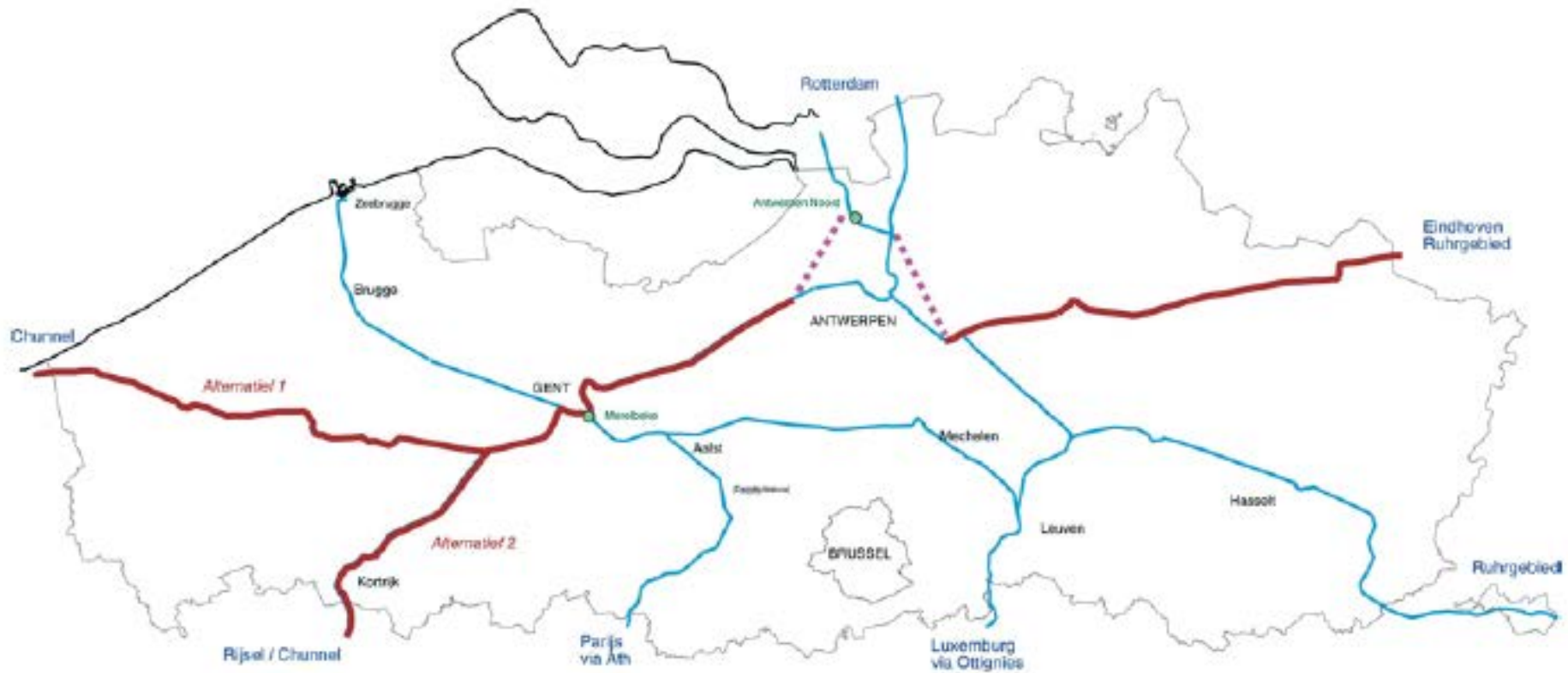
### ■ Now:

- too much interaction between passenger-traffic and industrial-traffic: congestion on the railroad infrastructure
- Train-composing-station of Zeebrugge is congested

### ■ Planned:

- Investments in the railroad Zeebrugge-Brugge-Gent-Brussels (doubling the capacity from 2 railways (one in each direction) to 4 railways (two in each direction))
- Investments in new train-shunting-stations for the port of Zeebrugge

# Primary railroads for industrial traffic



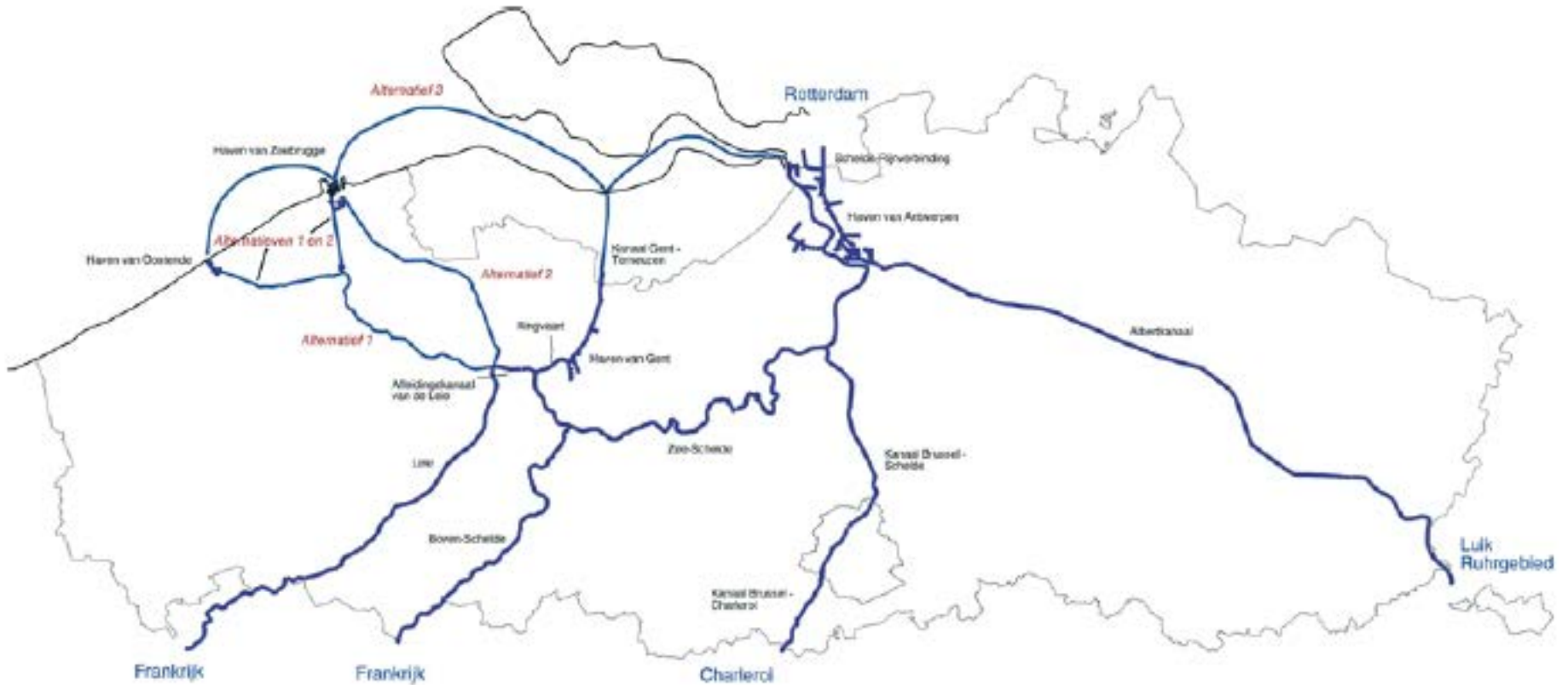
Schaal 1: 1.000.000



# Land-related infrastructure

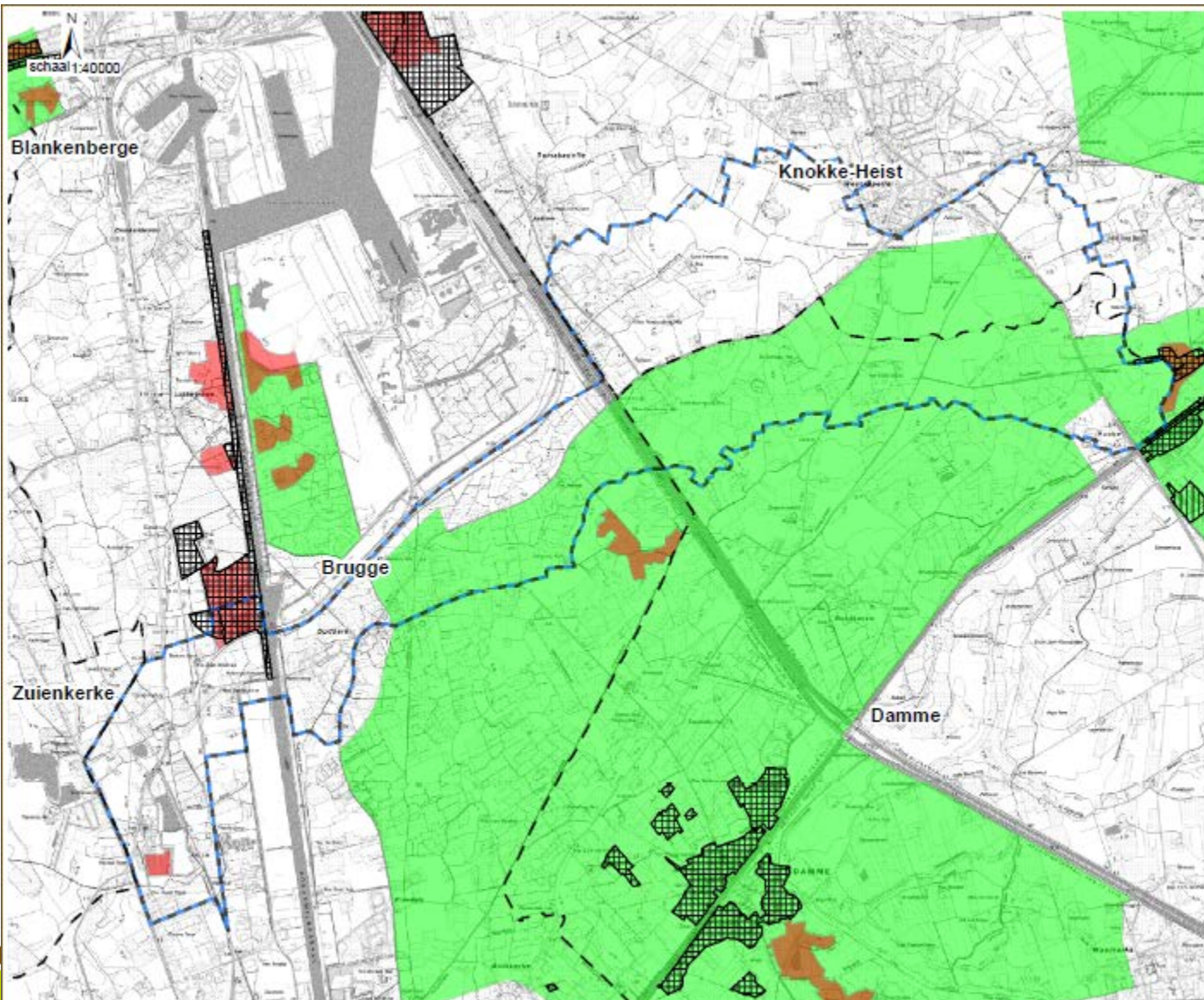
- Connection port with the canal-infrastructure:
  - Now:
    - Only waterway connection is congested around Brugge and has a low capacity of shiploads
  - Planned:
    - Development of short-sea-shipping
    - Development of new canal between Zeebrugge and Gent

# Primary Waterways



# Impact infrastructure: ecology

## EU-protected area's



# Projects to diminish impact on surroundings infrastructure

- Nature-compensation projects
- Land-development projects
- Land-consolidation projects



SAMEN INVESTEREN IN DE OPEN RUIMTE

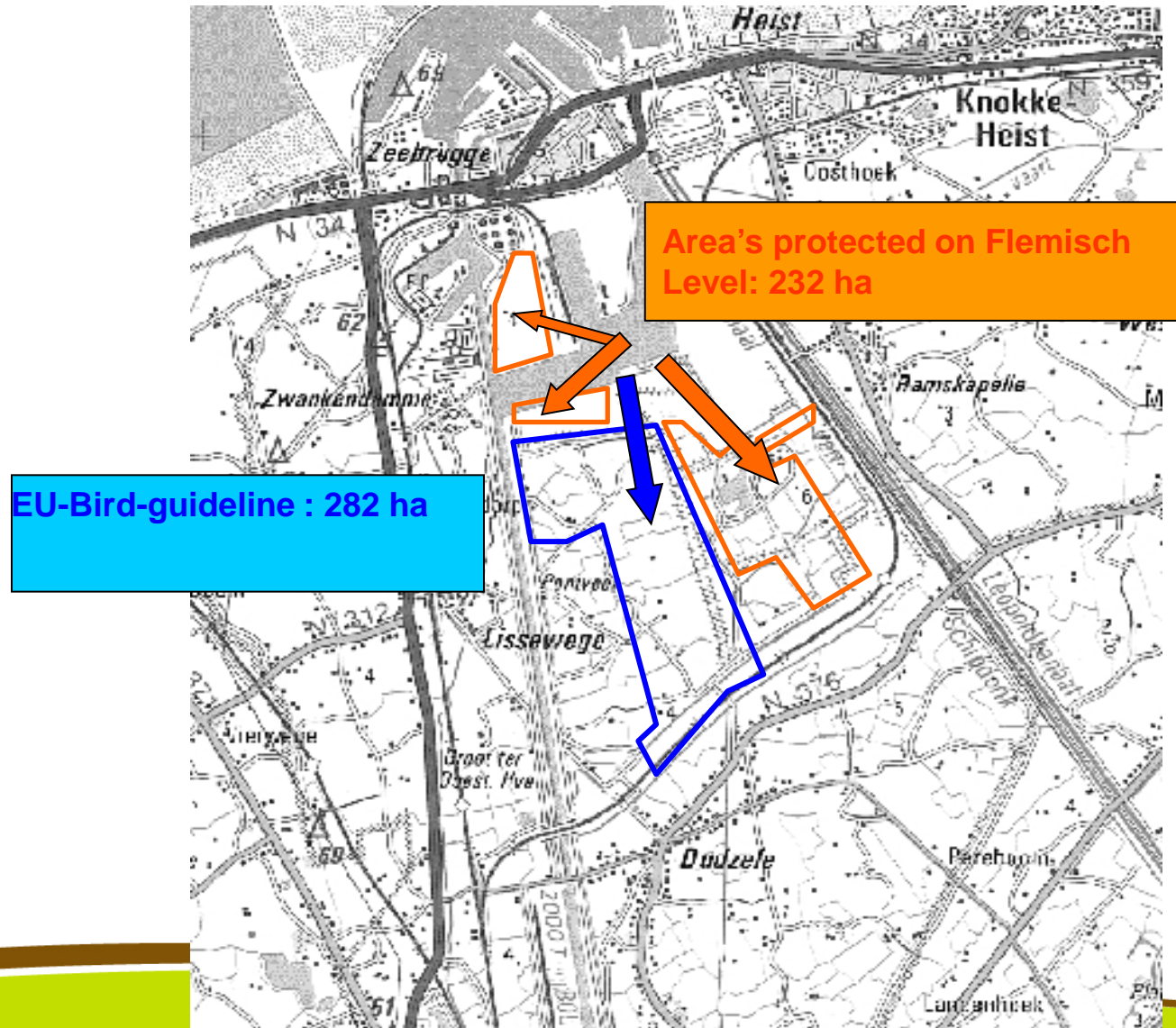


# Nature compensation projects

# Nature-compensation projects

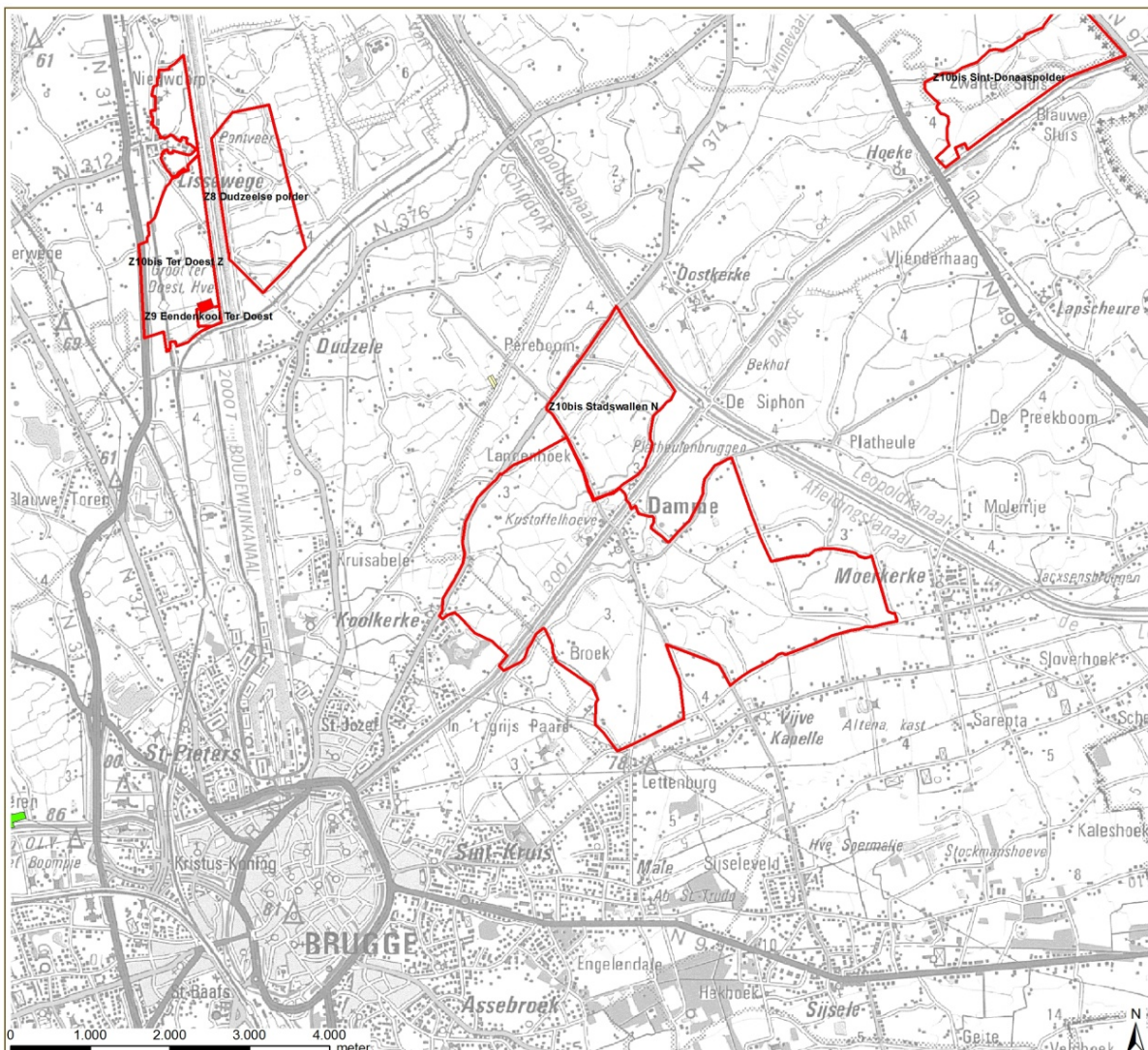
- Nature compensation for the development of the inner-port of Zeebrugge
- Nature compensation A11: nature compensation for the construction of the new A11 highway

# Nature compensation development inner port





# Compensation Area's



## Natuurcompensaties Achterhaven Zeebrugge

Grondzaken:  
potentieel in te richten  
gronden in zoekzones -  
ruilgronden grondenbank

### Potentieel in te richten

<all other values>

### Doelhabita

Hpr\*

Hpr\*+da

Mr

### Ruilgronden in grondenbank op 1-10-2011

#### Grondenbank 8-11\_vIII

##### Toest 8\_11, Comp

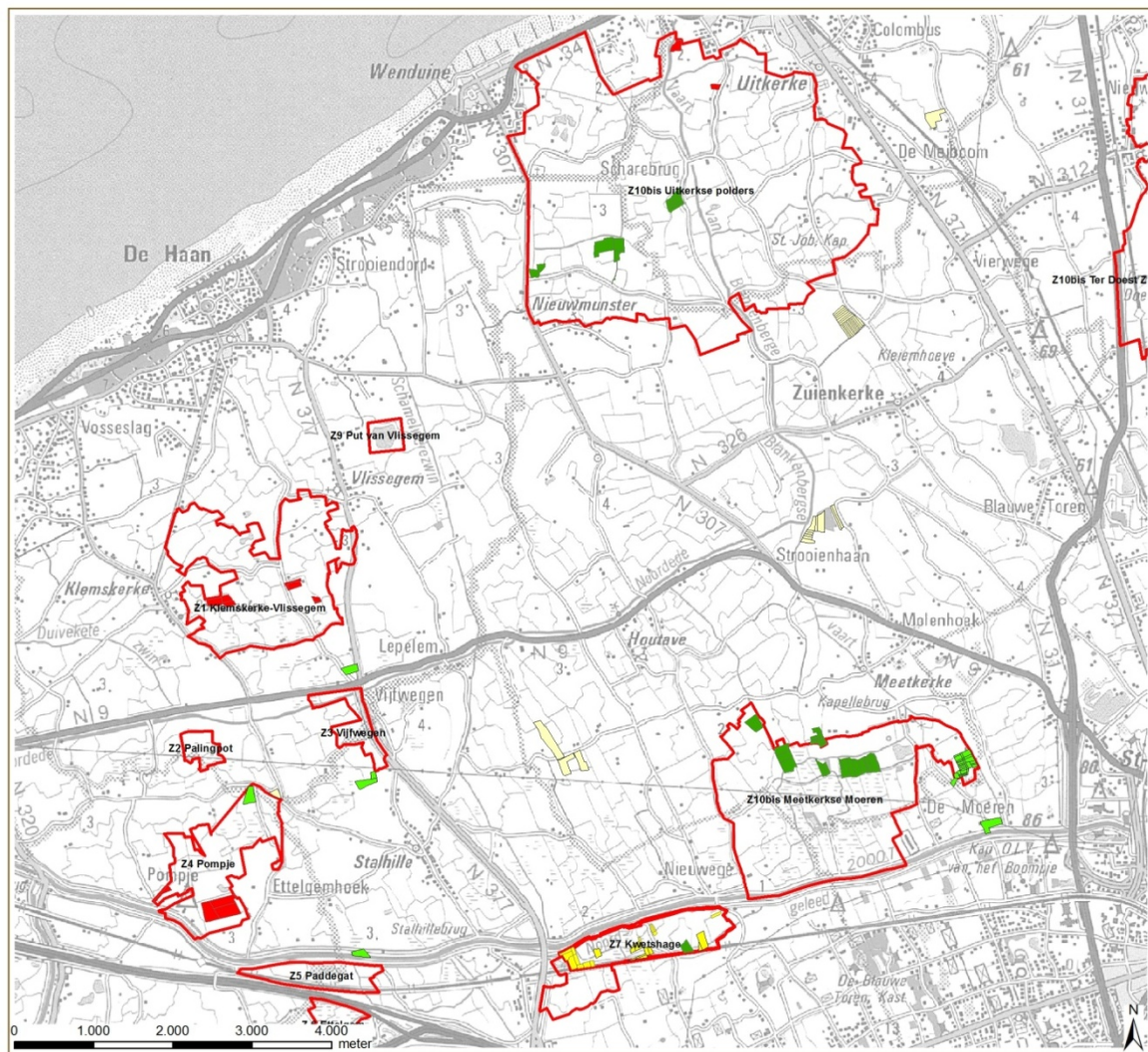
1, Akkerland

1, Weiland

Bron:  
Digitale versie van de topografische kaart  
1/10.000, raster, kleur, NGI, opname 1991-2002 (GIS-Vlaanderen)  
aangemaakt op: 3/10/2011




# Compensation Areas



## Natuurcompensaties Achterhaven Zeebrugge

Grondzaken:  
potentieel in te richten  
gronden in zoekzones -  
ruilgronden grondenbank

### Potentieel in te richten

 <all other values>

### Doelhabita

-  Hpr\*
-  Hpr\*+da
-  Mr

### Ruilgronden in grondenbank op1-10-2011

#### Grondenbank\_8-11\_vIII

#### Toest\_8\_11, Comp

-  1. Akkerland
-  1. Weiland

Bron:  
Digitale versie van de topografische kaart  
1/10.000, raster, kleur, NGI, opname 1991-2002 (GIS-Vlaanderen)  
aangemaakt op: 3/10/2011



# Goal of the nature compensation project

- A total of 290 ha “new nature” to create of which:
  - Salty pasture: 172 ha
  - Polder pasture: 44 ha
  - Reed wetland: 65 ha
  - Brackish pond: 9 ha
- Pro-active compensation: industrial development/harbour development can only start when nature is compensated.
- Results:
  - +/- 40 % is already compensated
  - +/- 75 % of needed surface for compensation is purchased



# Dudzeelse polder





# Put Wenduine





# Klemskerke





# Pompje





# Kwetsbage





# Damme





SAMEN INVESTEREN IN DE OPEN RUIMTE



# Land-development projects



# Land-development project “Mobility-axis Gent-Brugge-Zeebrugge”

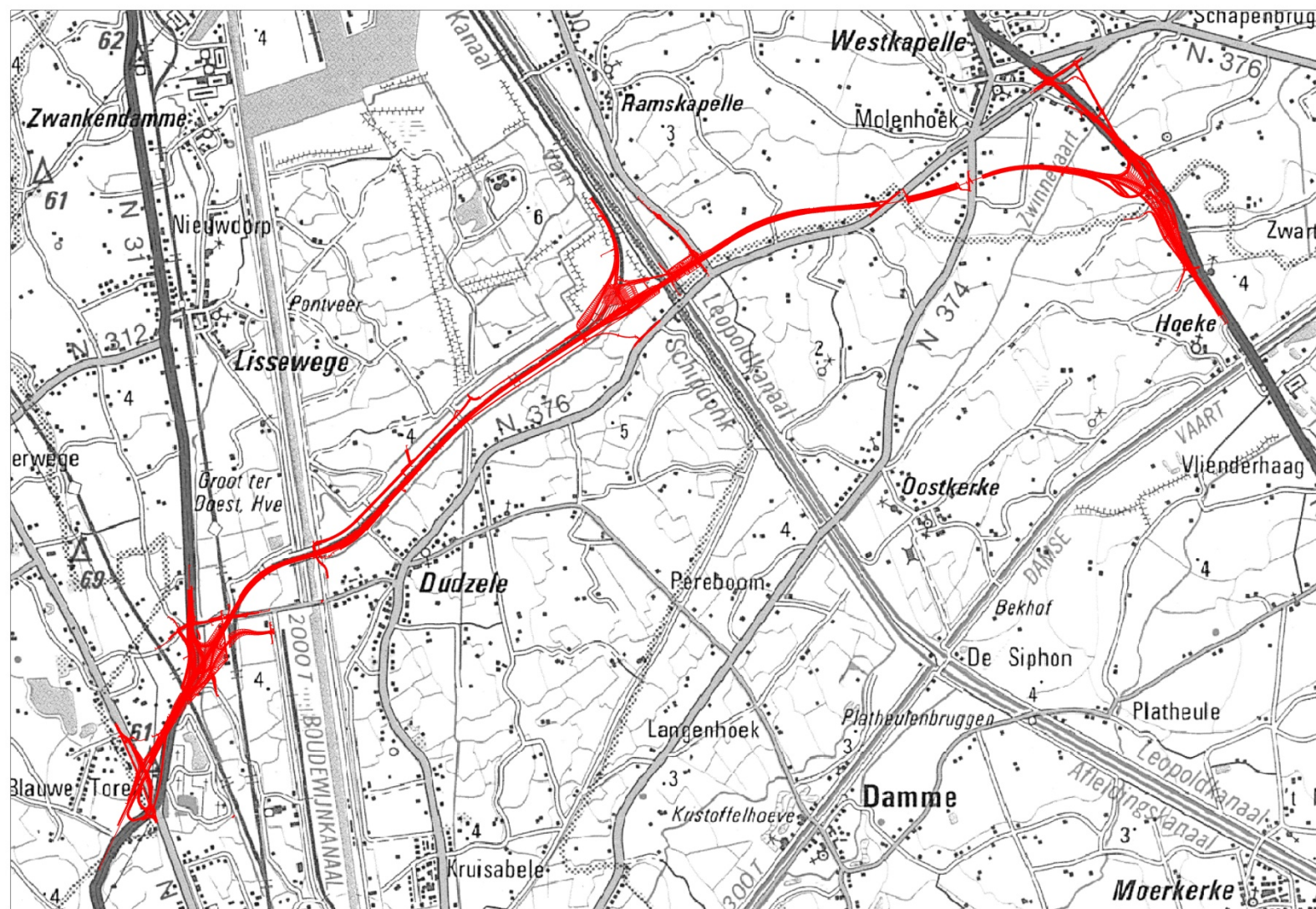


# Land-development project “Mobility-axis Gent-Brugge-Zeebrugge”

- Goals of the land-development project:
  - Establish projects to reduce the impact of **NEW** infrastructure-projects on the surroundings of the infrastructure-project
  - Establish projects to reduce the impact of **EXISTING** infrastructure on the surroundings of the infrastructure



# Project "A11"



# Project “A11”

- Landscape restoration
- Establish buffer-area between village of Dudzele and the A11-port of Zeebrugge

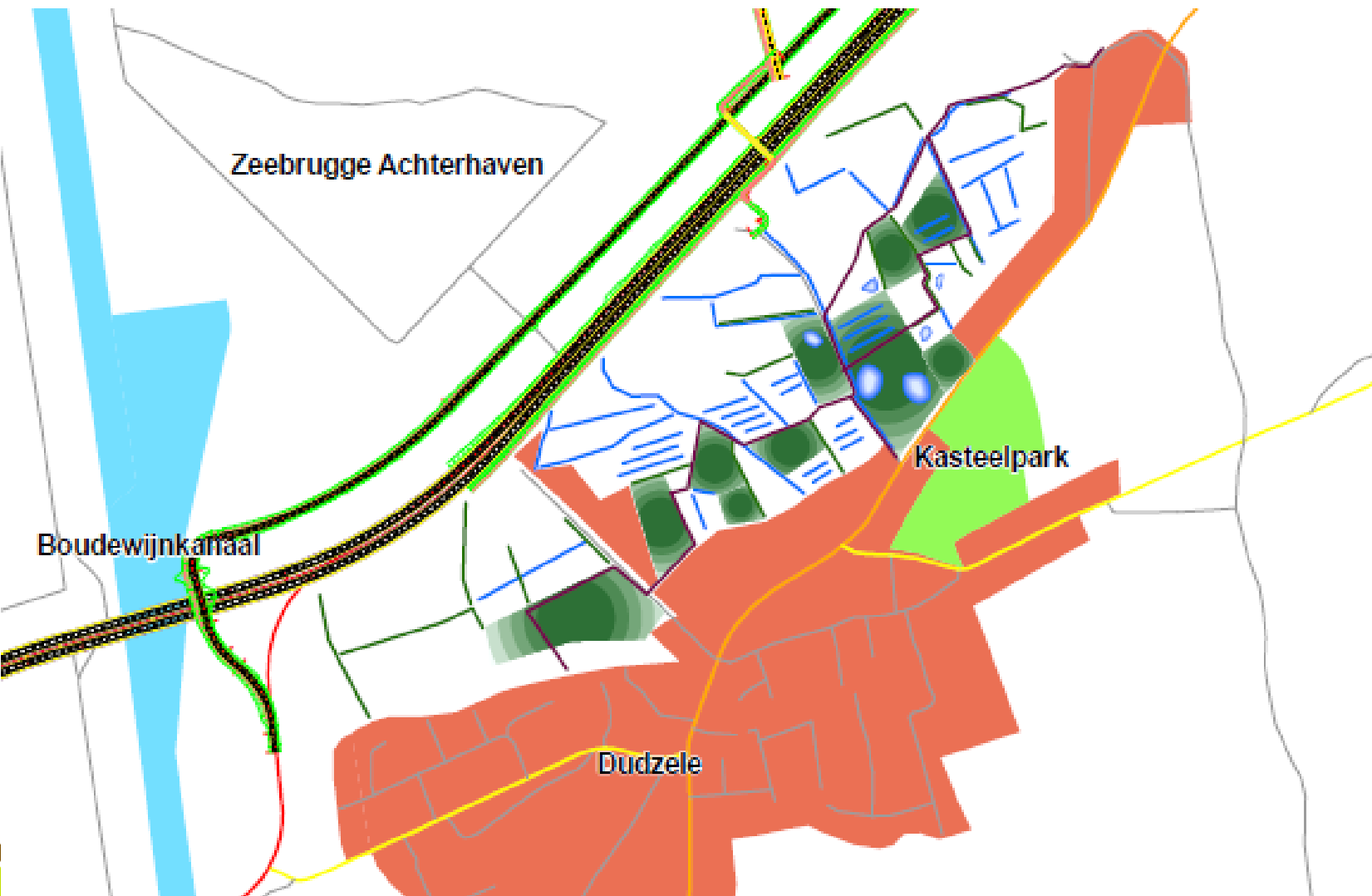


# Project “A11”: buffer-area village of Dudzele

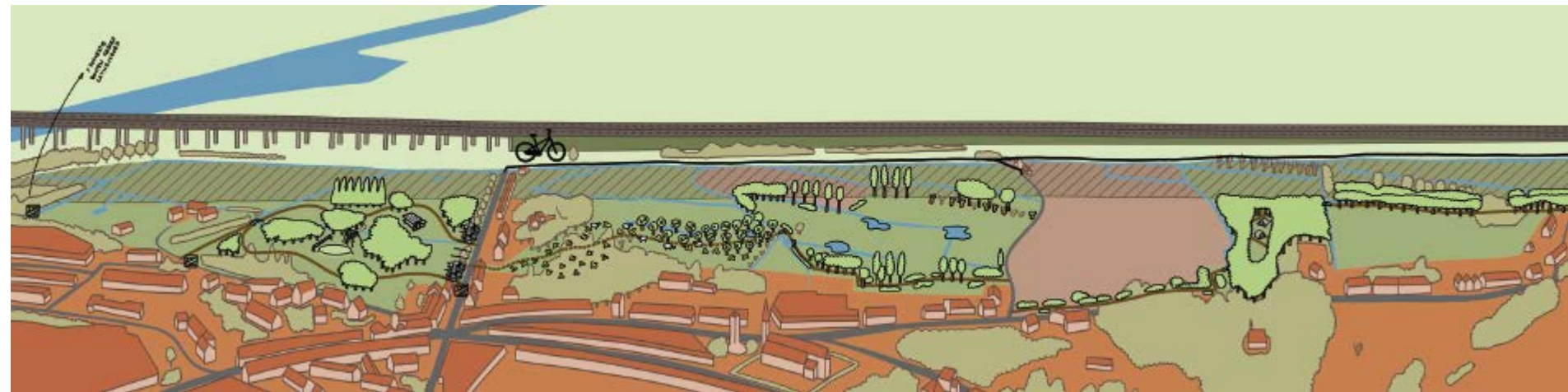




# Project “A11”: concept buffer-area

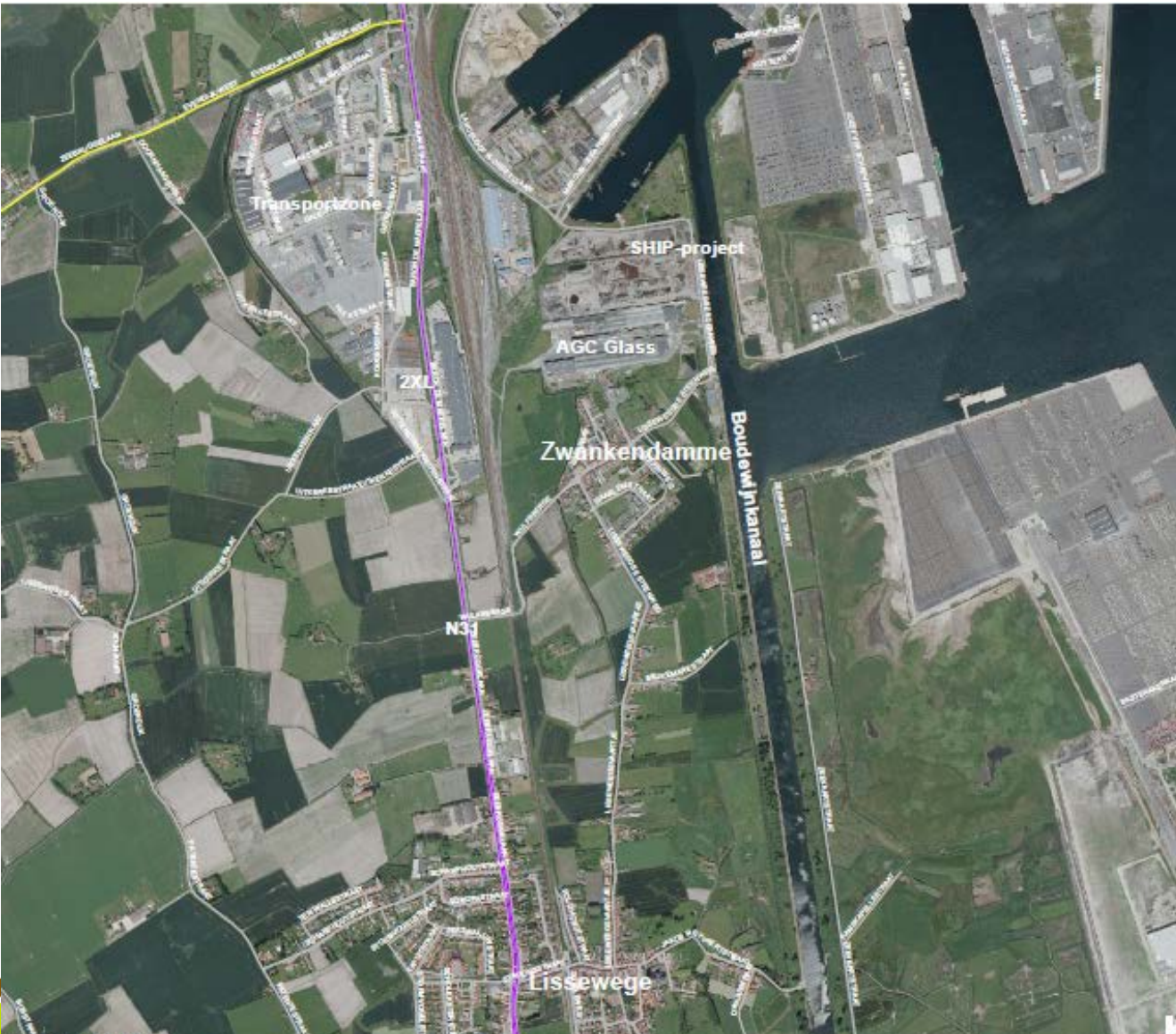


# Project “A11”: concept buffer-area





# Project “Zwankendamme”



# Project “Zwankendamme”

- Establish buffer-area between village of Zwankendamme and the new train-shunting station of Zwankendamme
- Establish buffer-area between village of Zwankendamme and the harbour of Zeebrugge
- Landscape project on the surroundings of the new bridge connecting Zwankendamme with the N31 highway Brugge-Zeebrugge

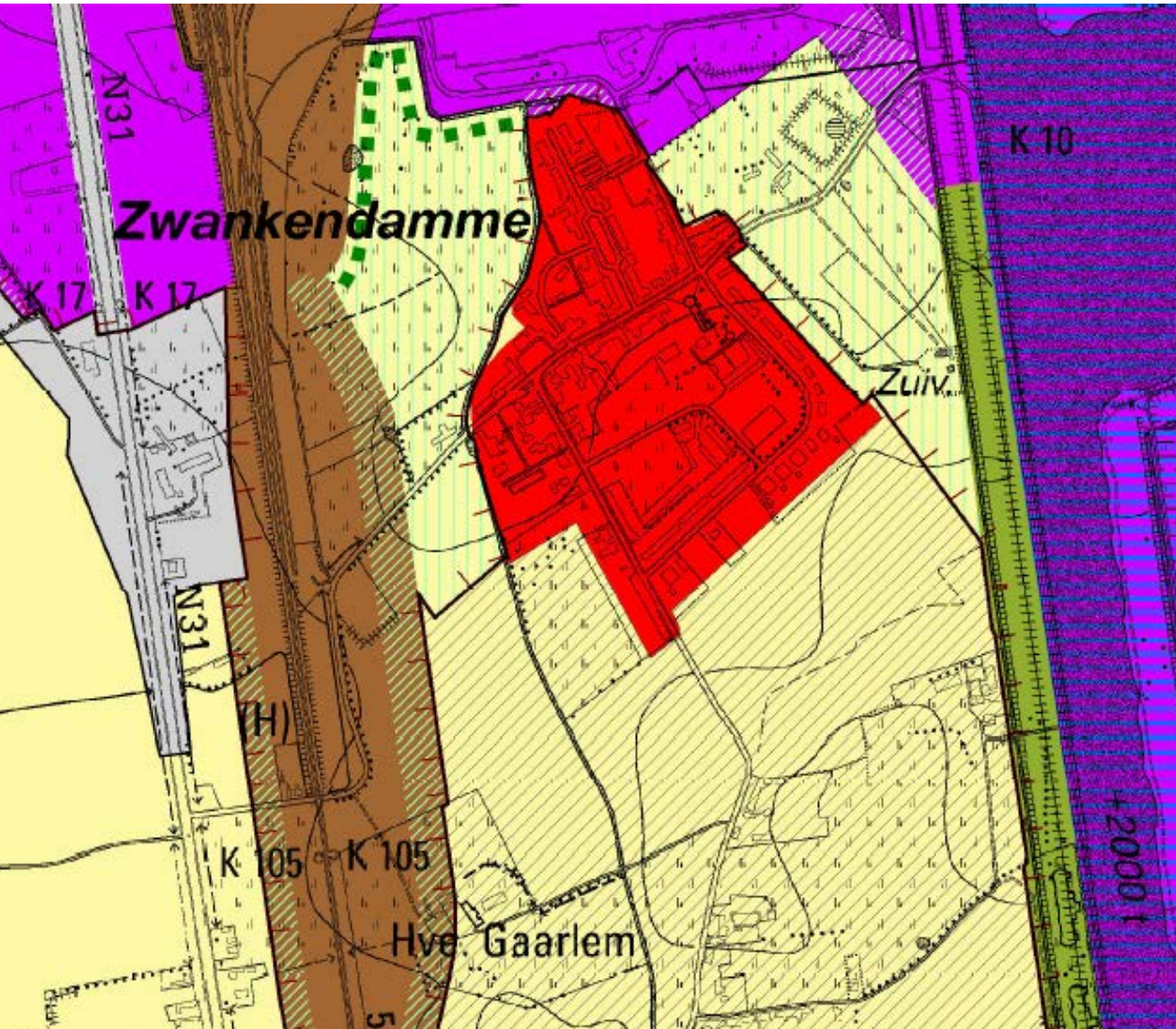


# Project “Zwankendamme”





# Project “Zwankendamme”










# Project “Zwankendamme”












## nieuwe infrastructuur

-  nieuw fietspad
-  nieuwe brug
-  infrastructuur A31
-  sporenbundel

## zones

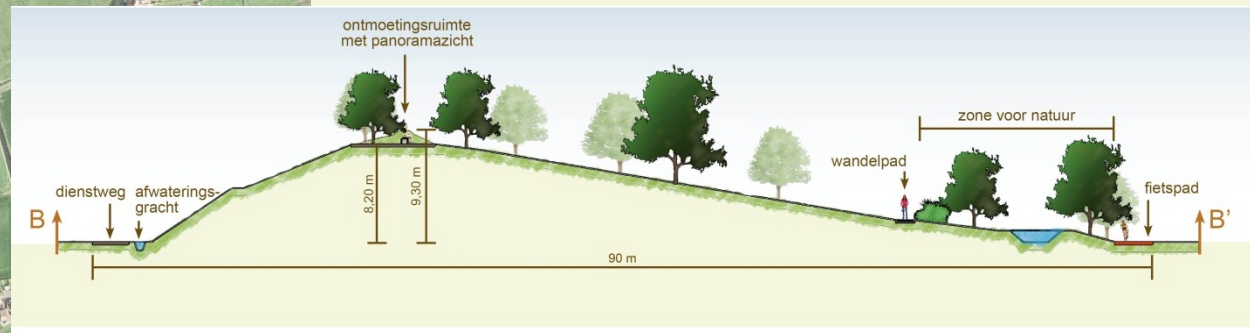
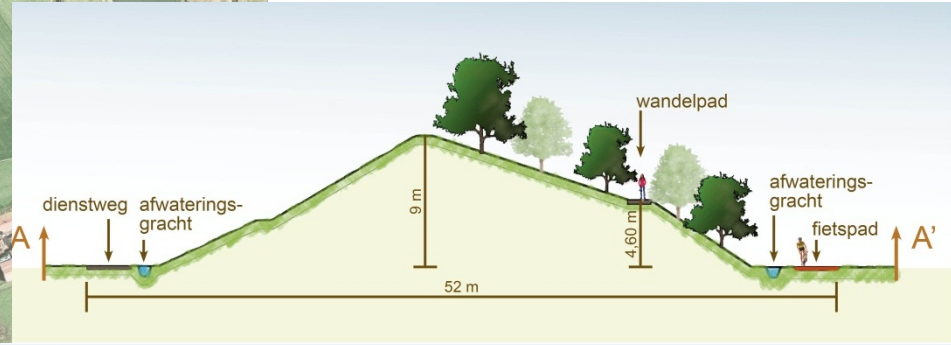
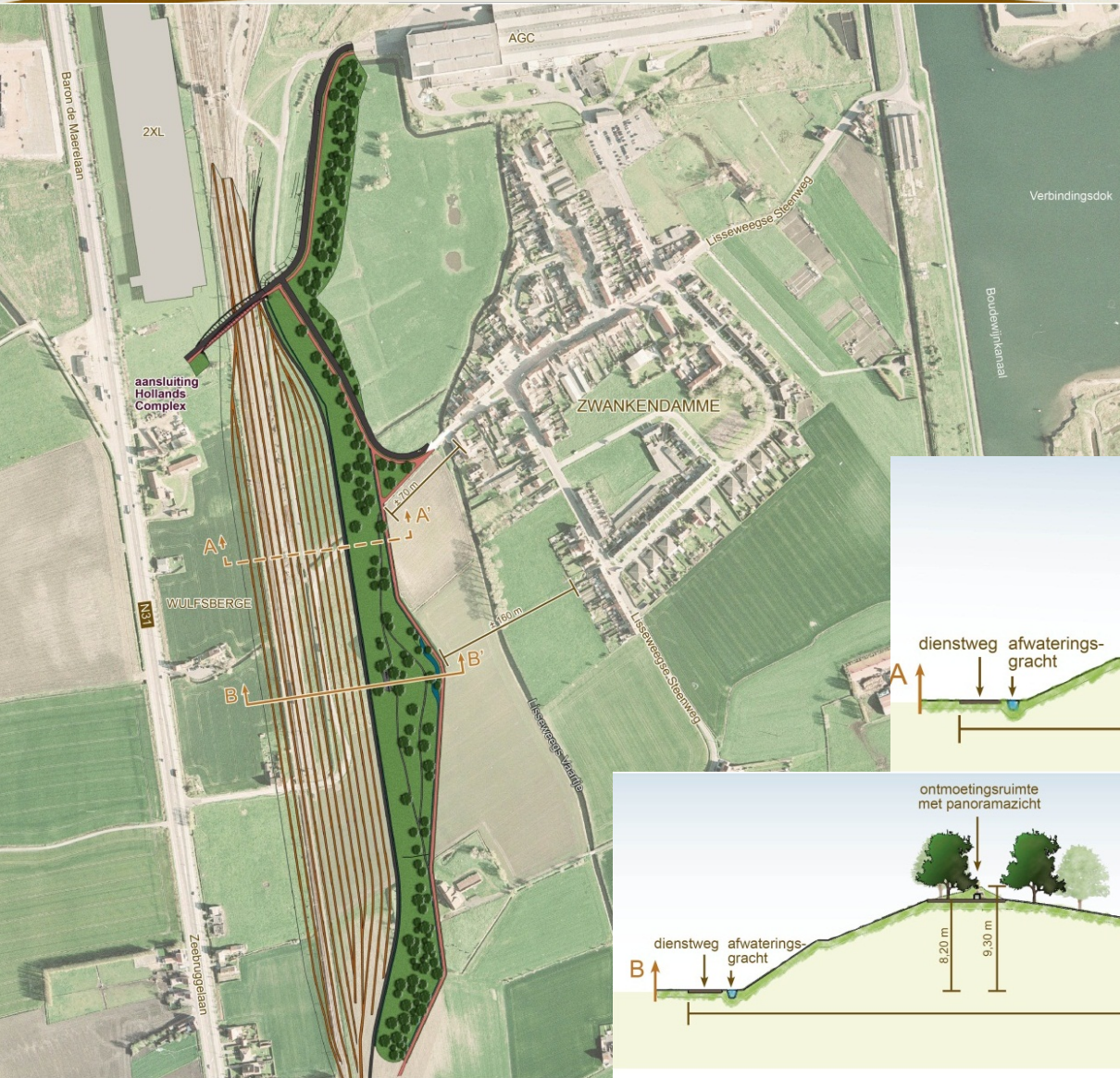
-  bufferzone west
-  talud N31
-  volkstuintcomplex
-  geluidsbuffer
-  bufferzone oost

## maatregelen

-  brug
-  bos
-  vochtige zones
-  ecologische oever
-  fruitbomen
-  hagen
-  nieuw wandelpad
-  aansluiting wandelroute
-  nieuw mountainbikepad



# Project "Zwankendamme": Sound barrier



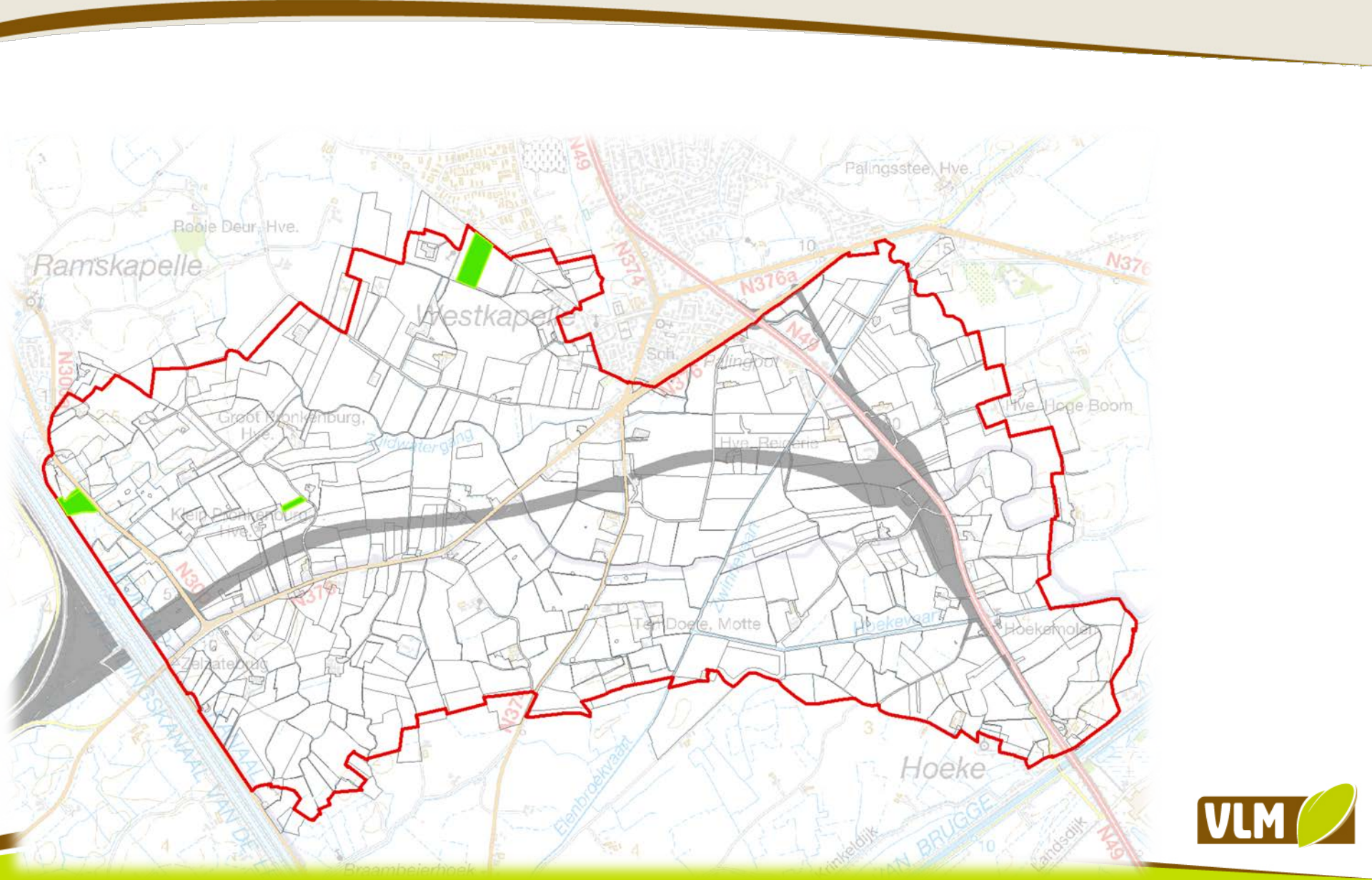


SAMEN INVESTEREN IN DE OPEN RUIMTE



# Land-consolidation project

# Land-consolidation project "A11"



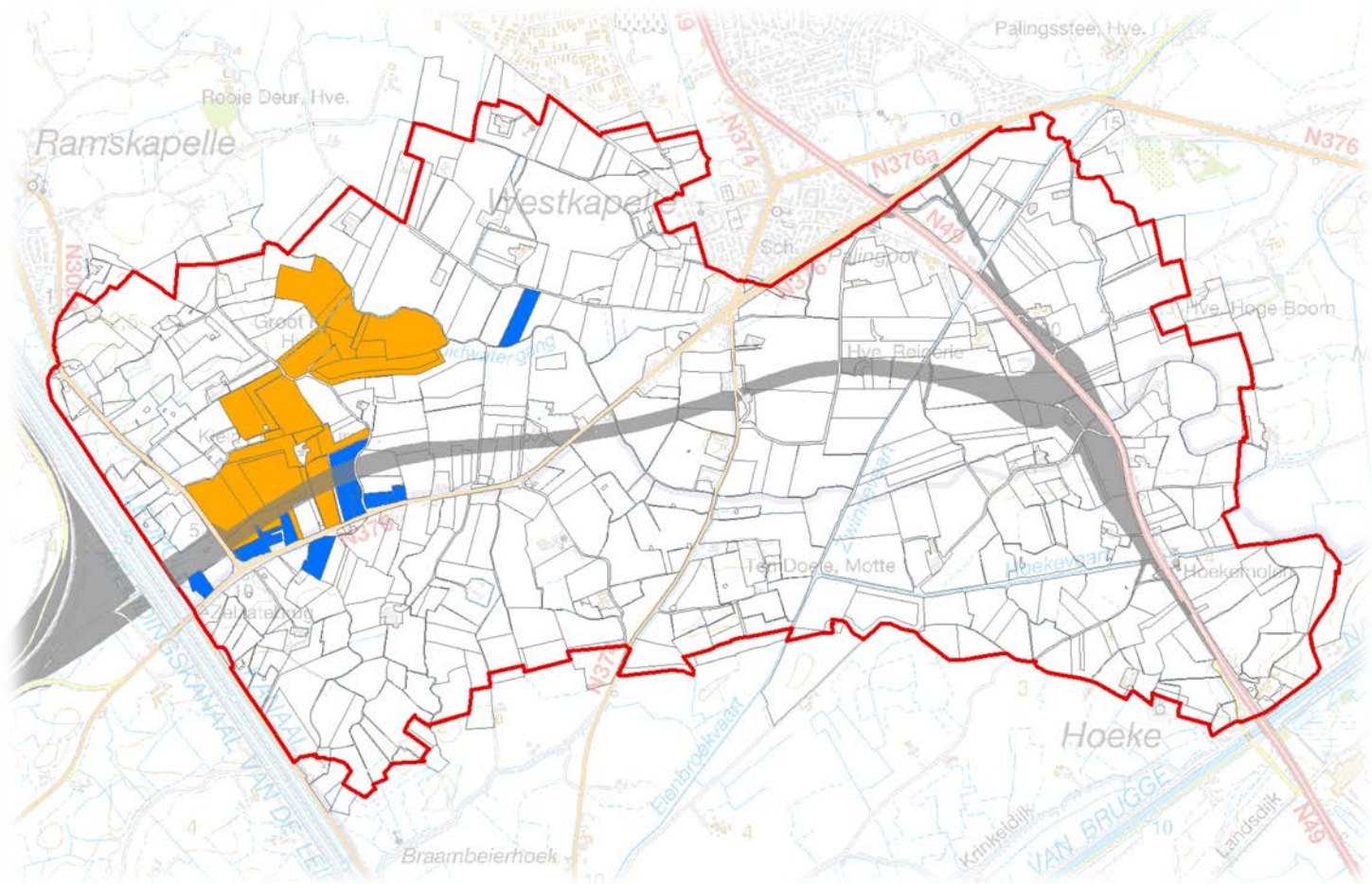


# Land-consolidation project

## “A11”

- Goals of the land-consolidation project:
  - Reduce the impact of the newly constructed highway on agriculture
    - Exchanging land from on side of the new road to the other side: farmer has all his grounds on one side of the new road: reducing costs of construction of the highway as less bridges are needed
    - Exchanging land in order to establish parcels that are usable for modern agriculture
    - Construct new roads to restore accessibility of farmers' land
  - Reduce the impact of the newly constructed highway on its surroundings:
    - Visual buffers between houses and highway
    - Restore landscape-structure
    - New bicycle road

# Example: before





# Example: after

