

# Changes in the geo-information infrastructure in the Netherlands 1980-2005

Ferjan Ormeling

Cartography Section, Fac. Geosciences

Utrecht University

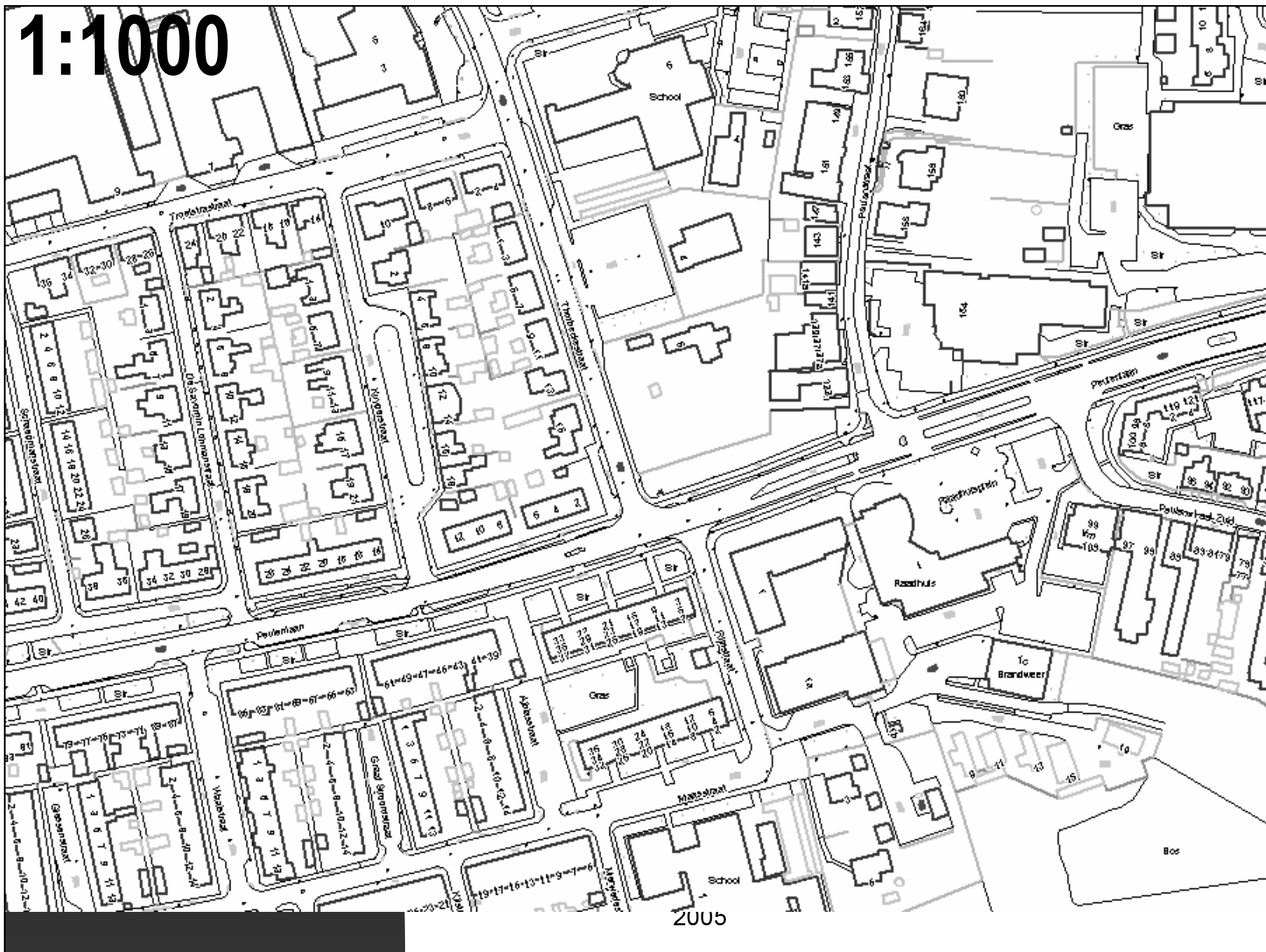
f.ormeling@geo.uu.nl

# Large-scale basic building block:

- Large scale digital basic map of the Netherlands
  - (“Grootschalige BasisKaart Nederland - GBKN”)
  - scales: 1:1000 – 1:2000
  - production 1976-2001
  - continuous updating
  - project-based realisation
    - > differences in contents



1:1000



2005

Fragmentation,  
no standardi-  
sation, difficult  
to procure  
larger areas

ORG\_NAAM = Stichting GBKN Gelderland  
AFDELING = p/a Kadaster Directie  
Gelderland  
VOORZ\_RSV = Dhr. Drs. J.M. Alma  
CONTACT = Afd. Marketing & klantenservice  
POSTADRES = Postbus 9015  
POSTCODE = 6880 DT  
WOONPLAATS = Arnhem  
TEL\_NR = 026-3226300  
FAX\_NR = 026-3226101  
EMAIL = klantenservice.arnhem@kadaster.nl  
WEBPAGINA =

Lagenbeheer

Naam laag	tonen	actief
Grenzen LSV-organisatie	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gemeentegrenzen	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Autowegen-midden	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Autowegen	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hoofdwegen	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rivieren	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hoofdwaterwegen	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Laag:

Warning: Applet Window

Online Services  
Woordenbo...  
Nieuws - M...  
GBKN lin...  
File Edit  
Back  
Address  
Overig v...  
Applet started

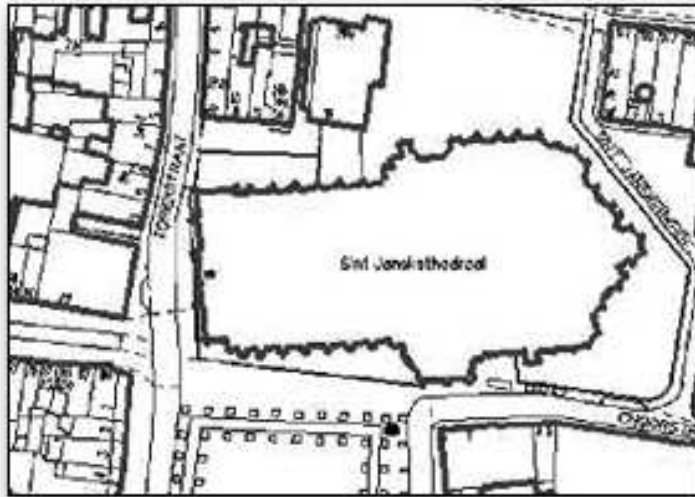
De GBKN wordt beheerd en bijgehouden bij een aantal Regionale Samenwerkingsverbanden en een aantal gemeenten. Door te klikken op de kaart ziet u voor welk gebied welke GBKN-organisatie verantwoordelijk is en waar u terecht kunt voor nadere informatie.

Informatie bijgewerkt tot: 16-08-2001.

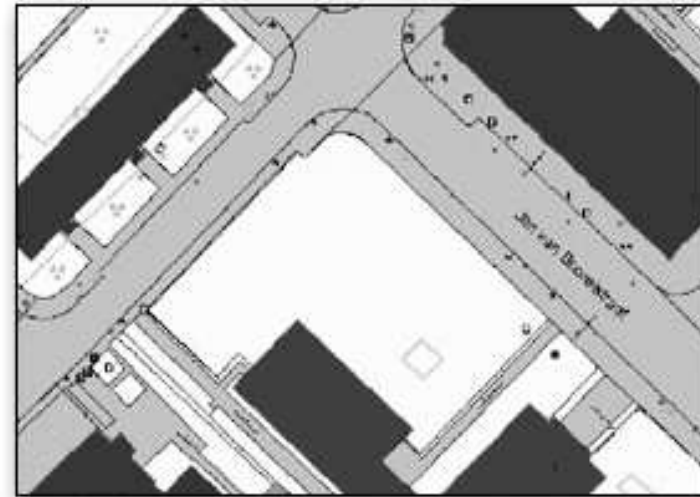
s - Microsoft Internet Explorer

92268.2 - 474532.1

Internet

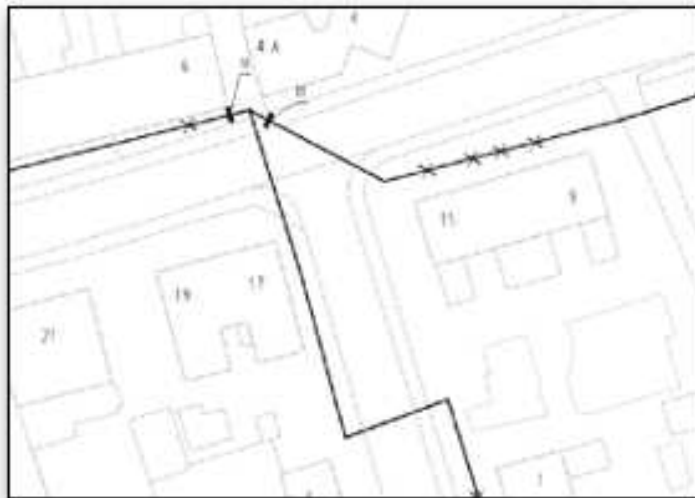


Line map

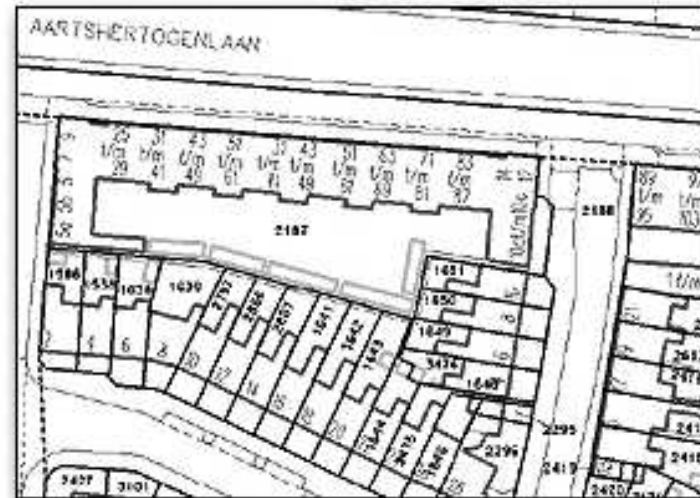


Area map

Base map for conduits



Comb. with cadastral map



# Digital Cadastral maps (AKI)

The screenshot displays a digital cadastral map with two overlapping windows. The background map shows several parcels with numbers (e.g., 6647, 7288, 7514, 7095, 6640, 6649, 7094, 6650, 746) and street names like 'R Kochstr 4' and 'Woorststraat'. One parcel, 7514, is highlighted with a hatched pattern.

**Munice - Perceelinformatie**

Perceelgegevens

Perceelnummer  
HLM03 H 07554 G 0000

Oppervlakte AKR (m<sup>2</sup>) Koopsom  
1036

Oppervlakte LKI (m<sup>2</sup>) Koopjaar  
1041.5

Adresgegevens Object

Straatnaam en huisnummer  
R Kochstr 4

Postcode Plaats  
1234 AB Woondorp

Gegevens rechthebbende

Belastingplichtige  
1602305976

Naam  
W.A.J.M. Voornaam

Straatnaam en huisnummer  
R Kochstr 4

Postcode Plaats  
1234 AB Woondorp

**Rechten**

Recht  
Soort recht  
Eigendom

Stuk vestiging recht  
84 HLM0346107  Splitsing in appartementsrechten

Ontvangstdatum stuk  Einde filiatie  
19870828

# Core file 1:10 000 Topographic map

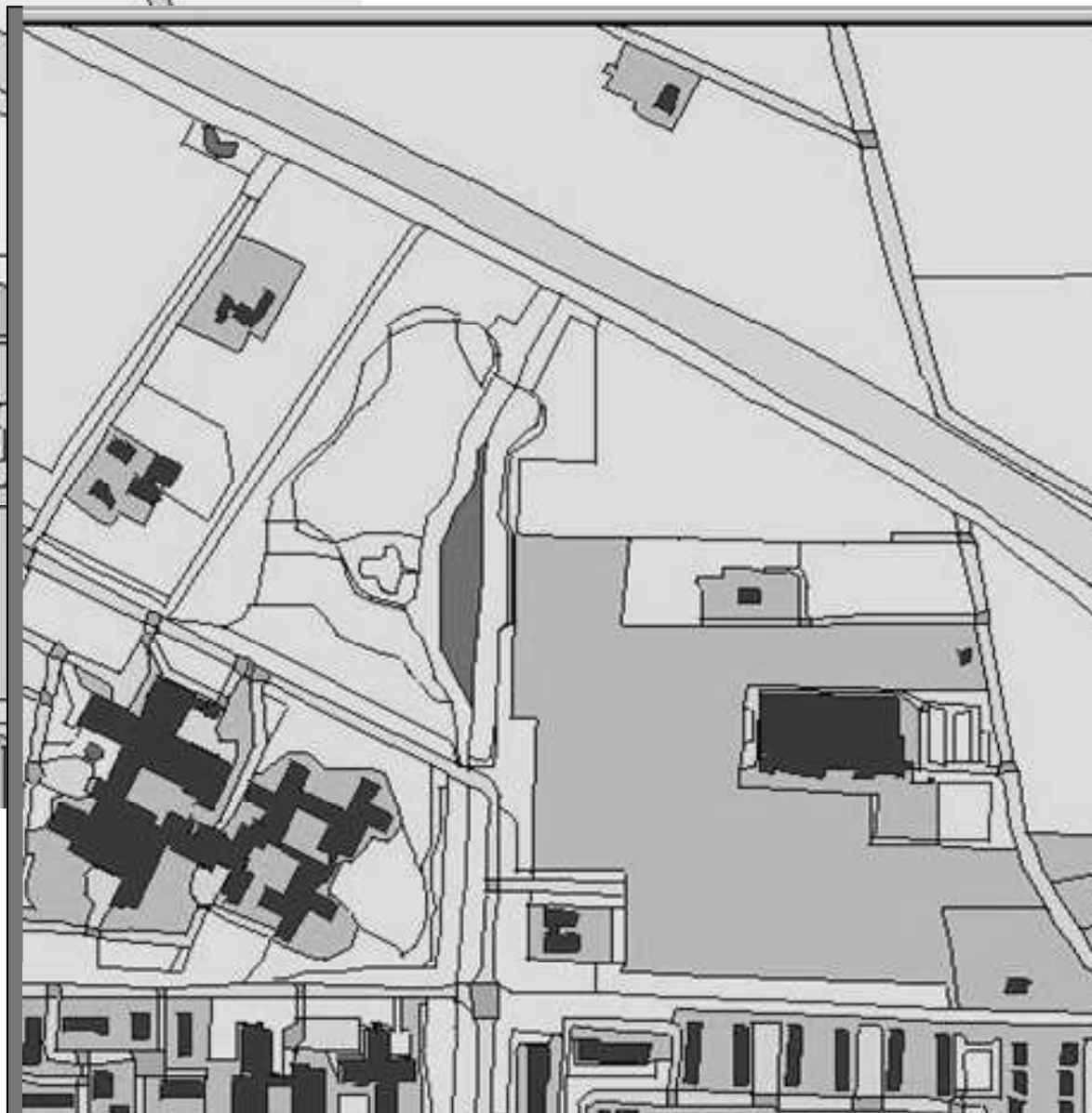
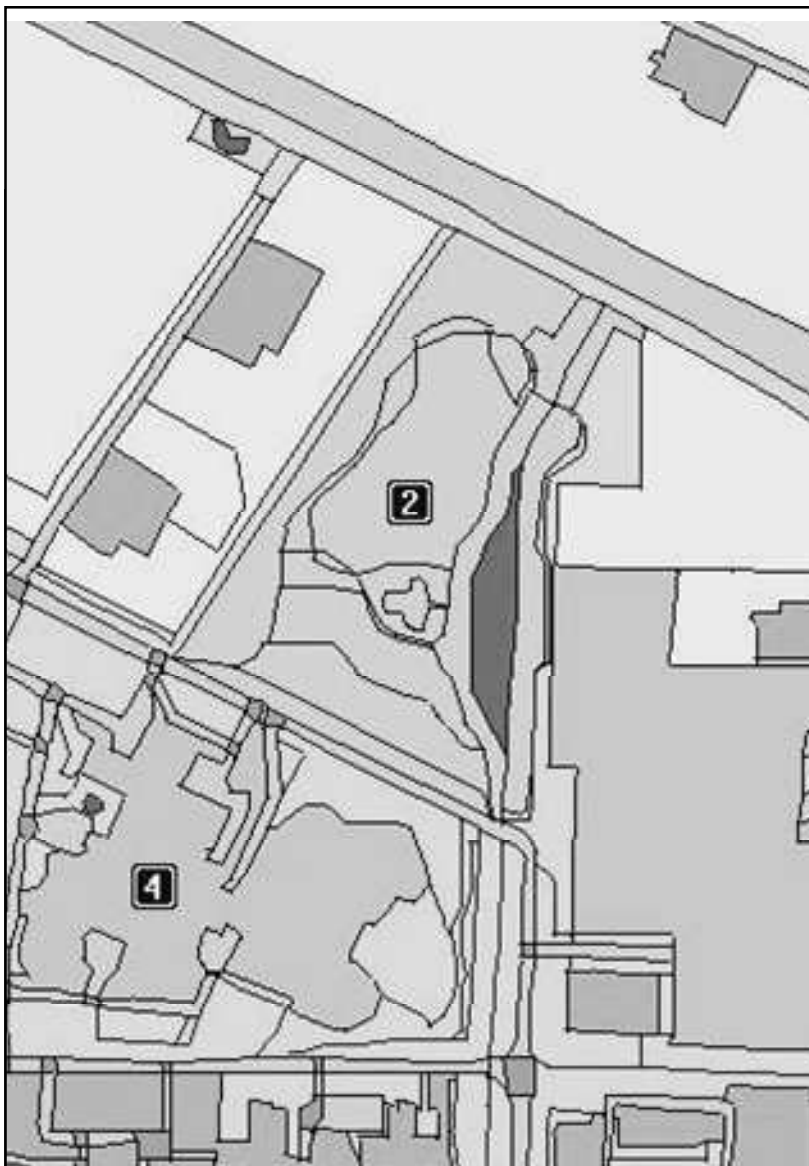


# Core file 1:10 000 plus



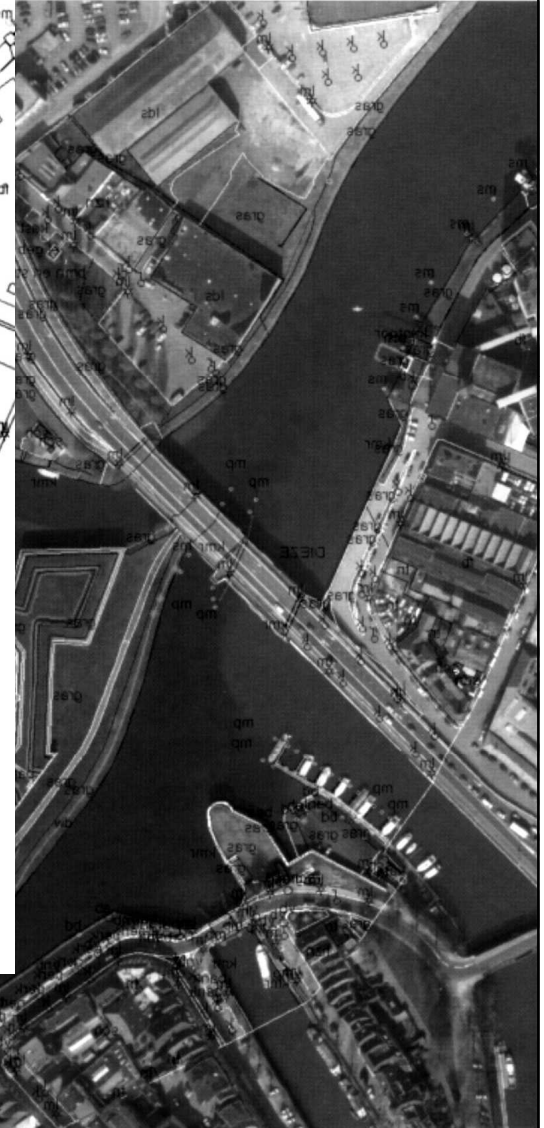
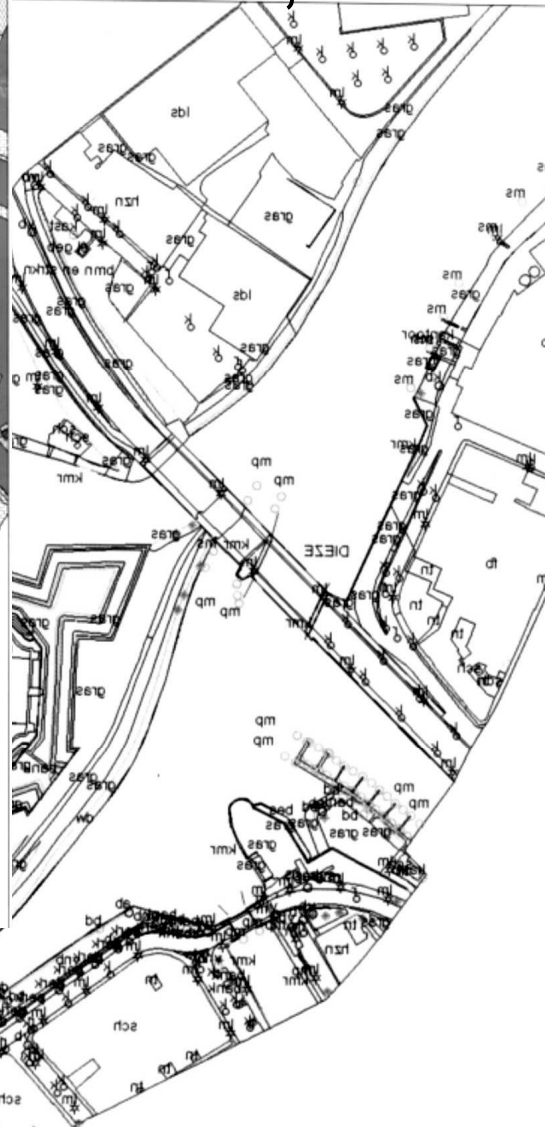
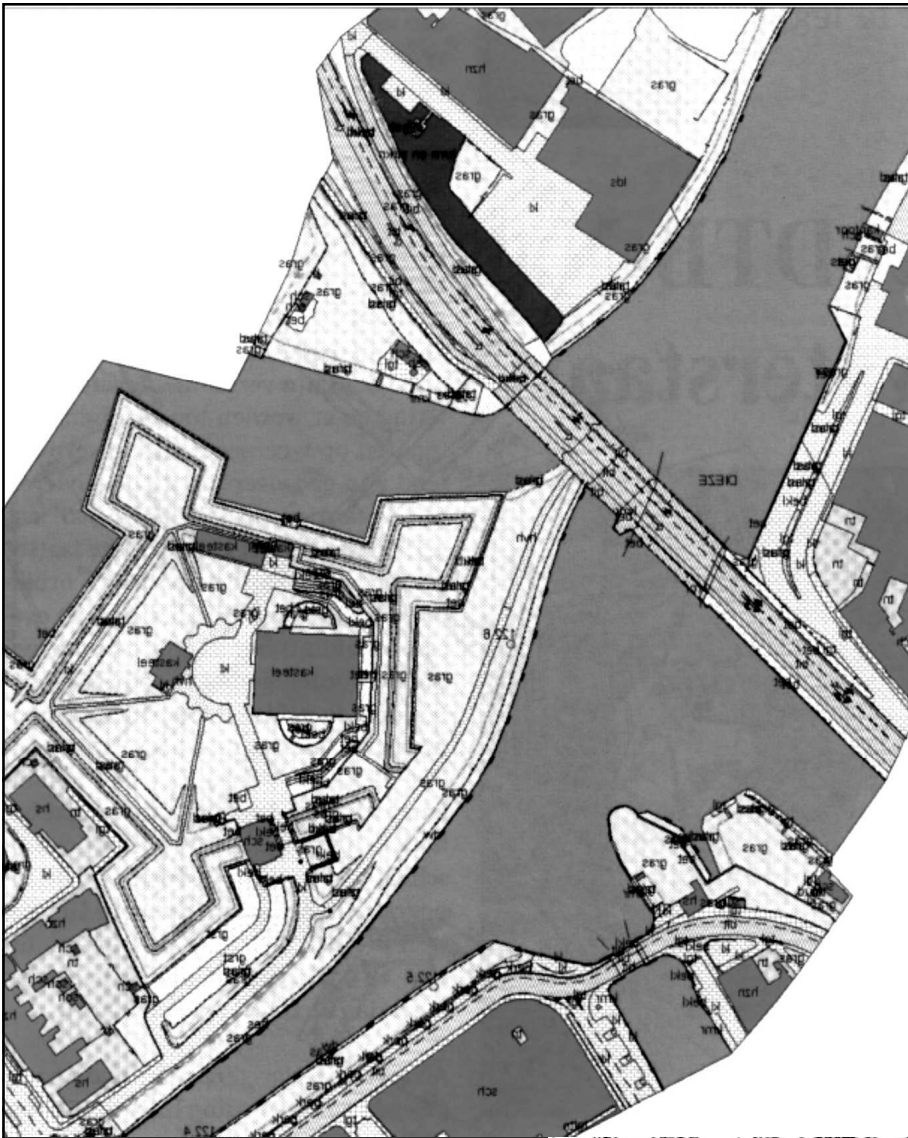


# Core file 1:10 000 with buildings



27/04/2006

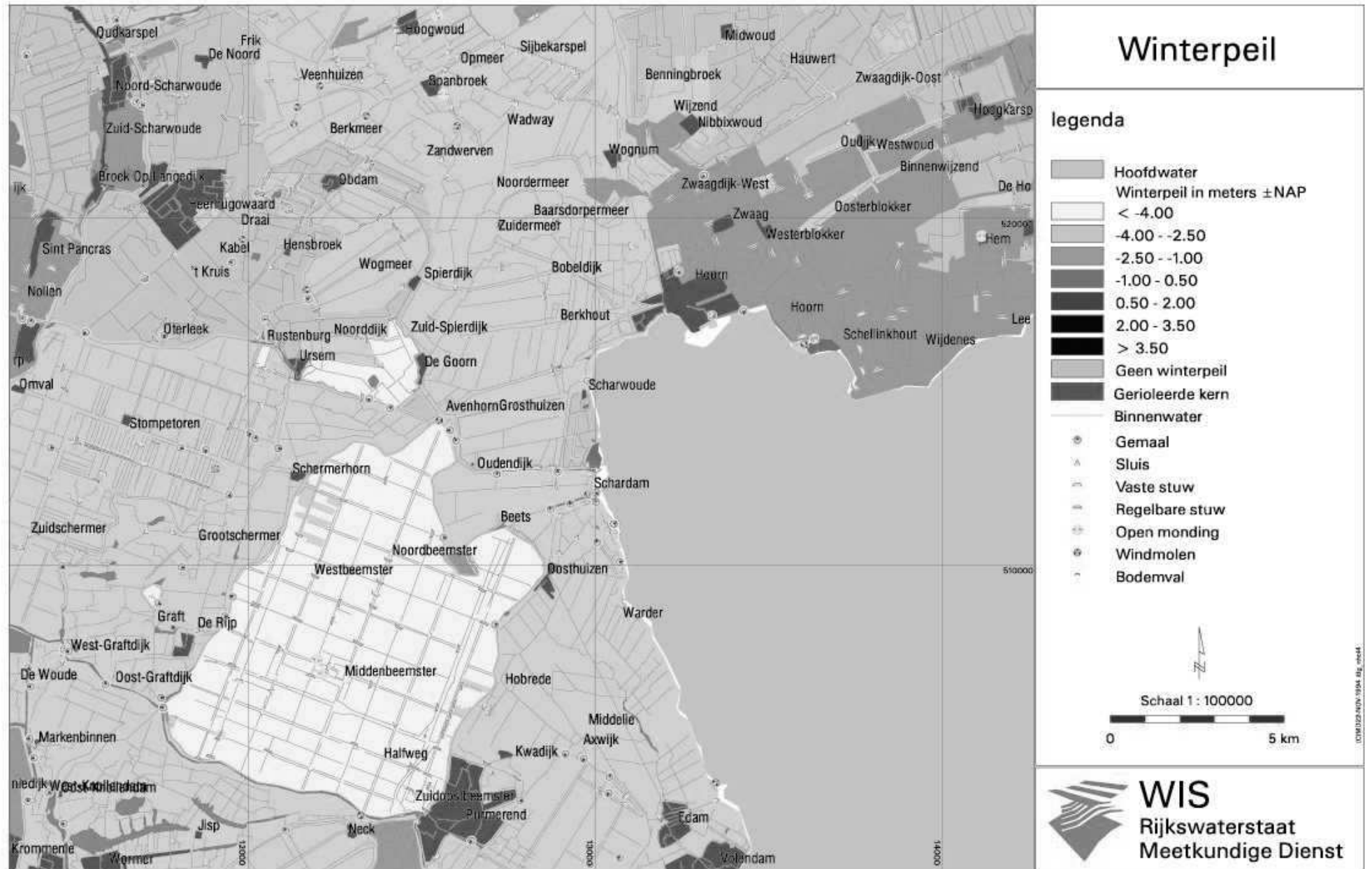
# DTBnat: rivers, canals, banks, shoreline 1:1000



27/04/2006

Masaryk Unive  
2

# Drainage information system WIS



# Planning Information System

## De Nieuwe Kaart van Nederland



# AHN – hypsometric file: 1 measurement per 16m<sup>2</sup>



# AHN – hypsometric file: 1 measurement per 16m<sup>2</sup>



# LGN - Land use information system

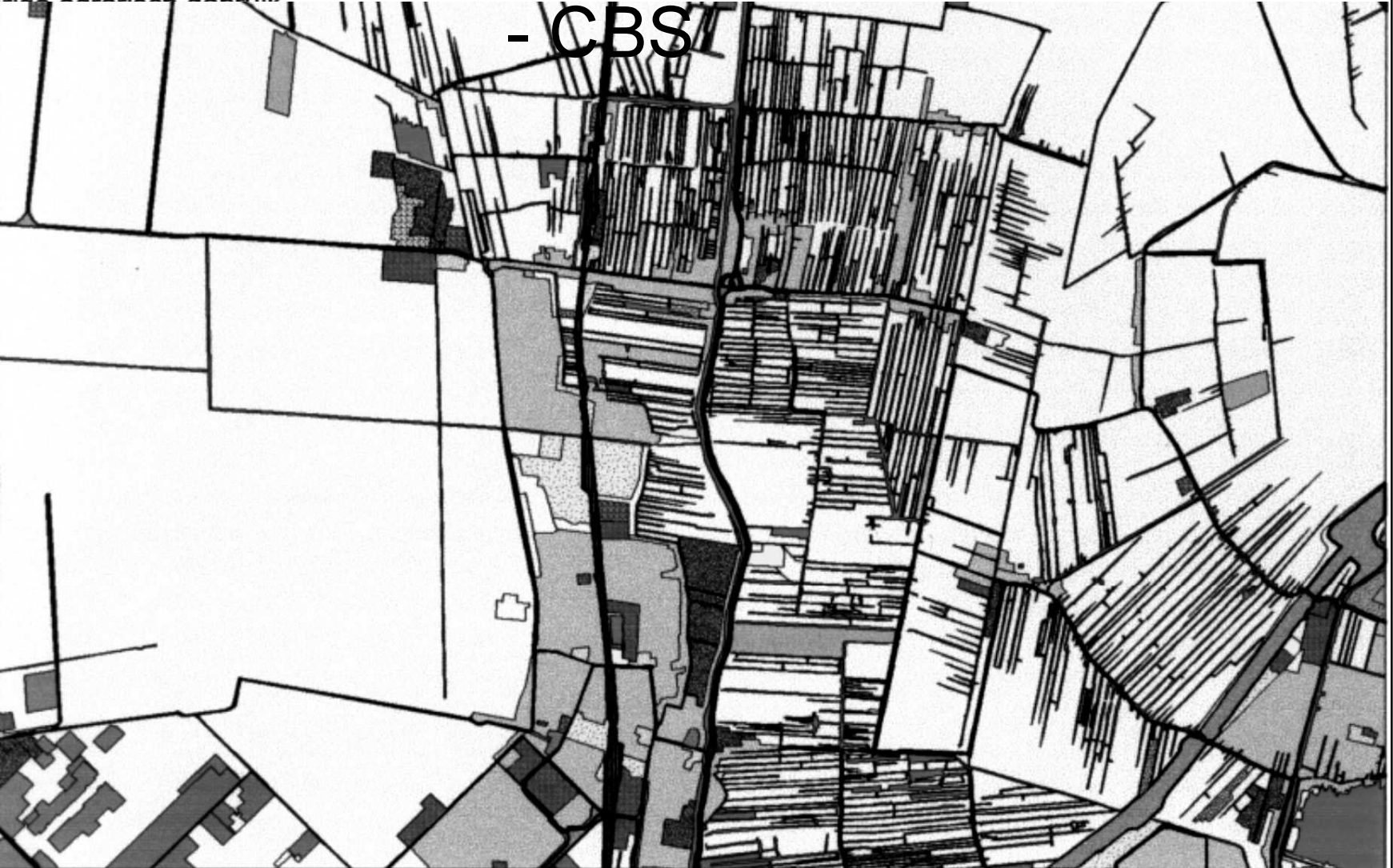


# Soil statistics (functional land use)

Central Bureau of Statistics

- CBS

- 11 - glastuinbouw
- 12 - overig openbaar gebied
- 21 - bos
- 31 - woongebied
- 32 - delfland
- 33 - bedijkte landbouw
- 34 - dijk
- 35 - overig gebied
- 36 - sociaal gebied
- 41 - sportterrein
- 42 - verkeer
- 43 - onbebouwd
- 44 - vliegveld
- 51 - park
- 52 - sportterrein
- 53 - dagbesteding
- 54 - volkstuin
- 55 - verkeer
- 61 - droog
- 62 - nat
- 71 - storingsgebied
- 72 - wraakgebied
- 73 - begraafplaats
- 74 - bouwterrein
- 75 - bouwterrein
- 76 - overig
- 81, 85, 82 - spaarwater
- 83 - water met een recreatieve functie
- 84 - overig water breder dan 6 meter



AgriX University, 2010-12

2005



# Situation in 2005

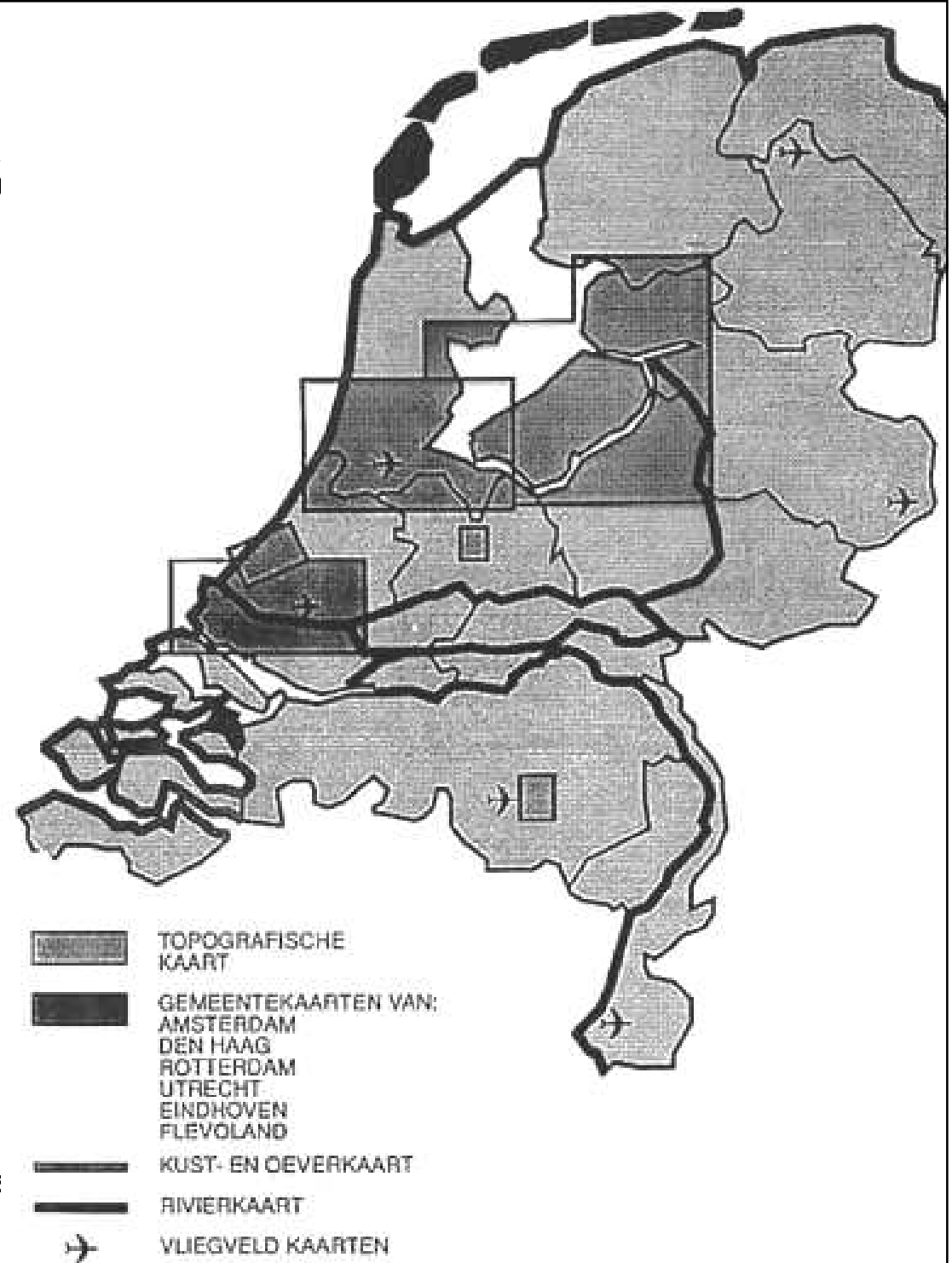
- GBKN:1:1000 digital base map
- Topographic map series: paper and digital  $\leq 1:10\ 000$
- LKI: digital Cadastral maps
- DTBnat: Coastal and river zone information system
- AHN: Hypsometric information System
- BIS: Soil information system
- Geological information system
- WIS: Water management information system
- LGN: Land use information system
- CBS: Soil statistics and Socio-economic inform.systems
- Nieuwe Kaart: planning information system
- Municipal digital files (large cities)

# situation in 1980 paper map series

- Topographic maps
- Municipal maps
- Coast maps
- River maps
- Cadastral maps

Thematic map series 1:50K

- Soil map series
- Geological map series
- Water drainage map series
- Geomorphological map series



# National Clearinghouse GeoInformation: <http://www.ncgi.nl/>

NCGI Geografische Catalogus - Microsoft Internet Explorer

File Edit View Favorites Tools Help Address <http://www.ncgi.nl/catncgi/index.htm> Links

Back Forward Stop Refresh Home Search Favorites History Print



### Zoeken naar geo-informatie

Zoekwoorden:

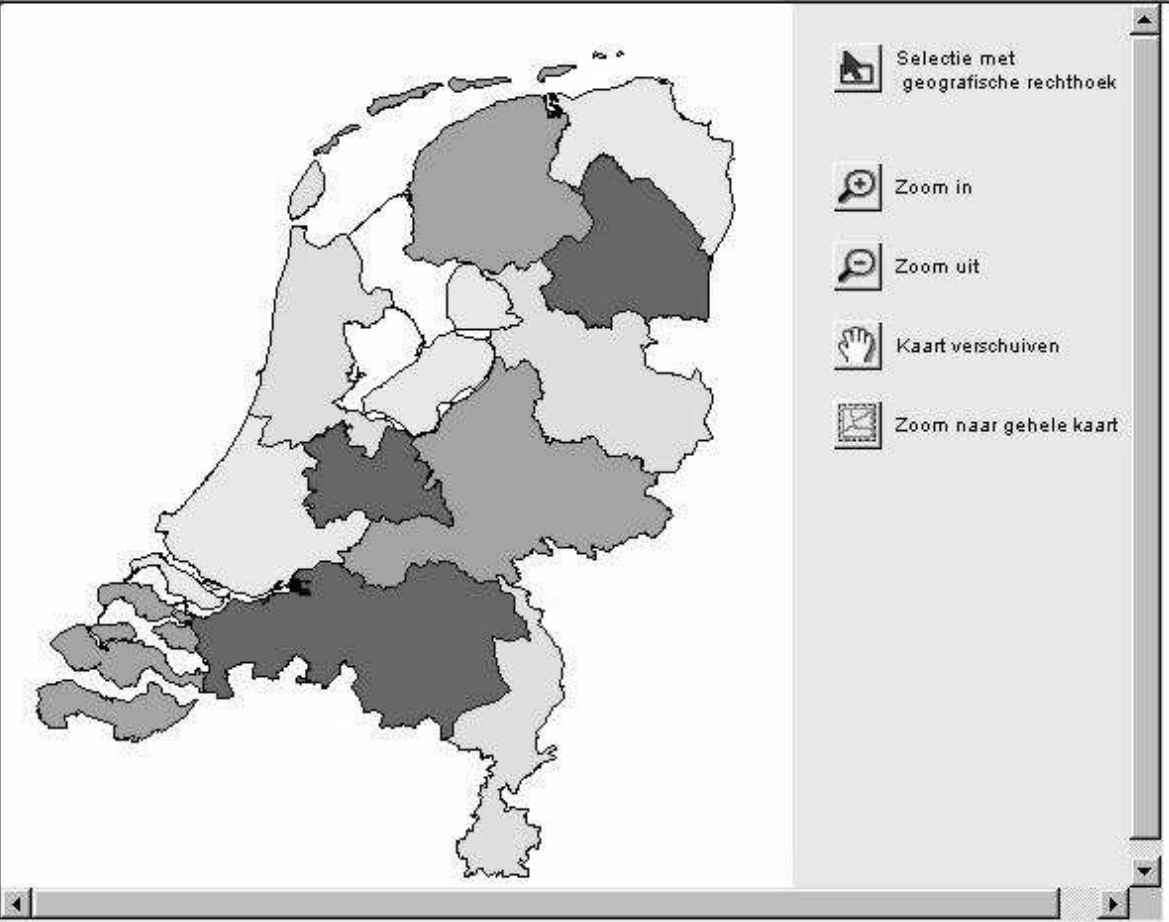
In alle velden  
 Alleen in titel






Op gebied:  Administratief  
 Geografische rechthoek


Op aanbieder

Zoek    

NCGI versie 1.1 © Geodan




-  Selectie met geografische rechthoek
-  Zoom in
-  Zoom uit
-  Kaart verschuiven
-  Zoom naar gehele kaart



# Socio-economic data per district or ward for each municipality: <http://www.cbs.nl>

**Buurt in Beeld** Statistische informatie op wijk- en buurt niveau

Map navigation icons: Home, Arrow, Lasso, Zoom In, Zoom Out, Cloud, Hand, Info, Location, Print, Table, Help



**Locatie**  
Gemeente: Utrecht  
 Wijken  Buurten

**Onderwerp**  
 Geografie en vastgoed  
Aantal woningen  
 Bevolking  
Allochtonen [%]  
 Inkomen en bedrijven

Toon kaart

Nieuw

# Waterland: <http://www.waterland.net>

**WATERLAND** - Microsoft Internet Explorer

File Edit View Favorites Tools Help | Address <http://www.waterland.net/>

Back Forward Stop Refresh Home Search Favorites History Print

**WATERLAND** De wereld van het water op internet. [ZOEK](#) [HOME](#)

**Actueel**  
ANP-flitsen  
Scheepvaart-berichten  
Meetgegevens

**Watermanagement**

Dossier Waterbeheer in de 21e eeuw

**VACATUREBANK**

**Opleiding & educatie**

**Wateremissies**

[NIEUW](#) [EVENEMENTEN](#) [FORUM](#) [PARTNERS](#) [INFO](#)

**WATERLAND COURANT**

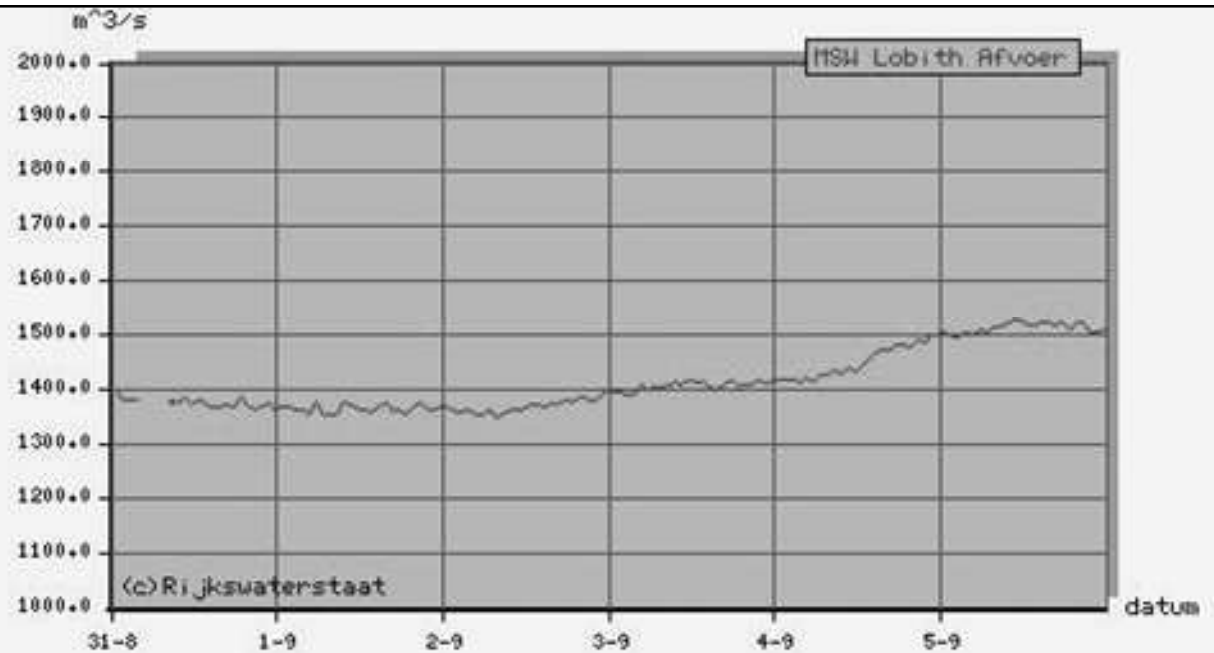
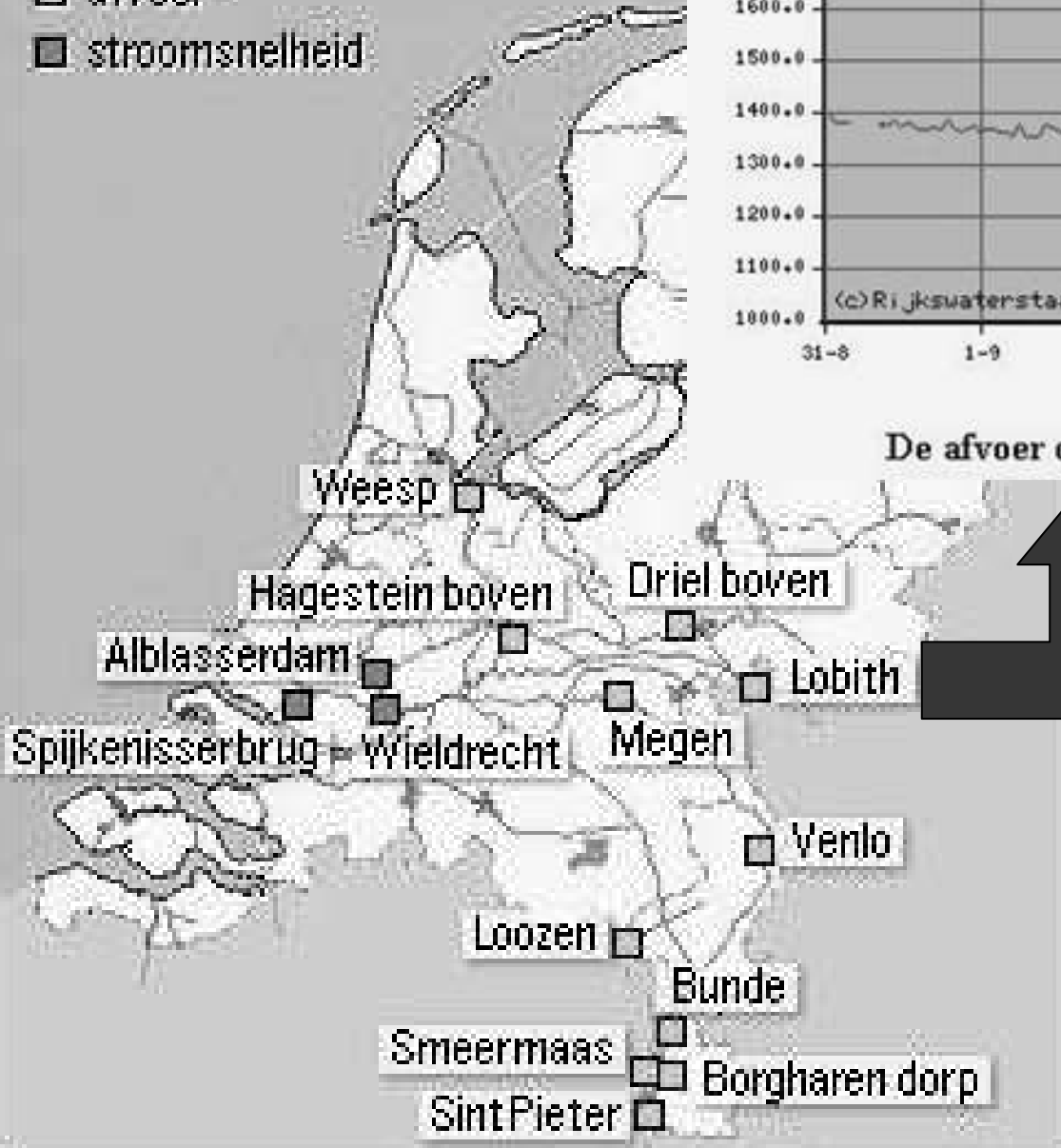
# Waterland : water capacity and velocity



, Brno 19-12-

# Waterland

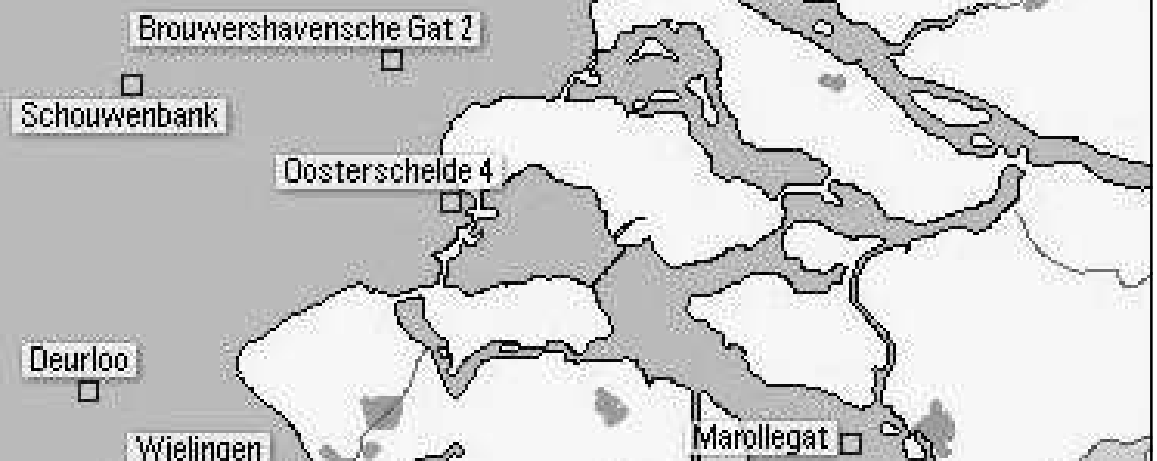
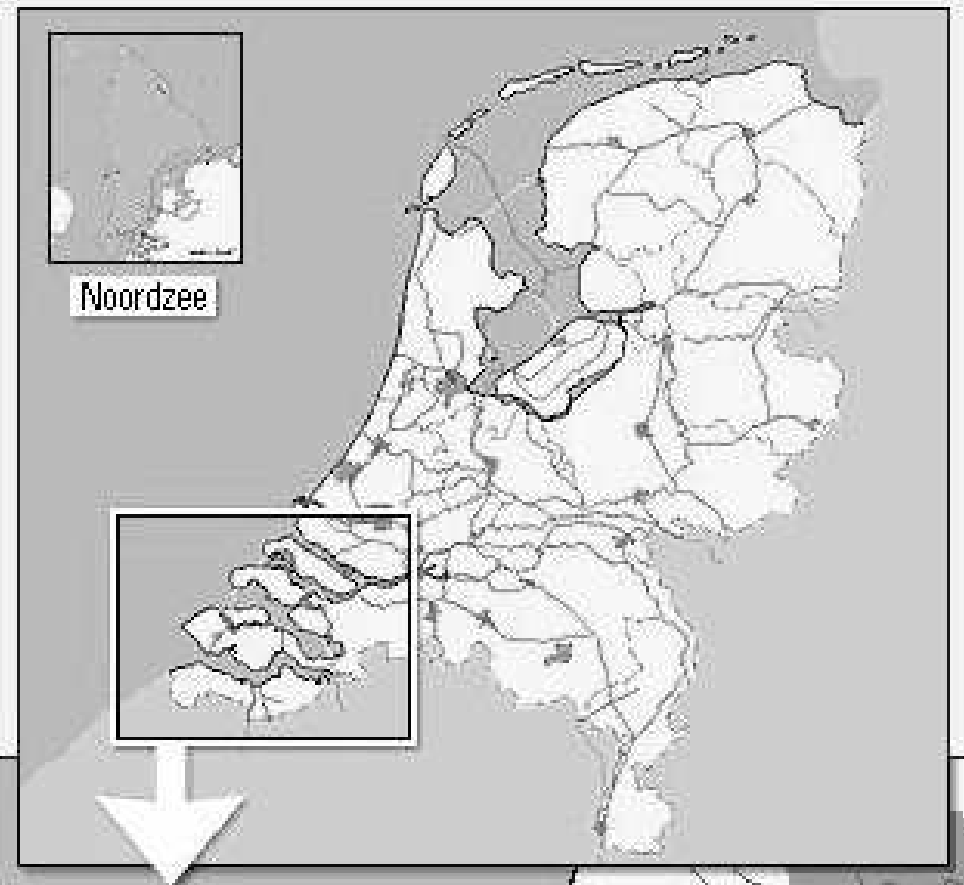
- afvoer
- stroomsnelheid



De afvoer op 05 september, 23:20 uur is 1512.9 m<sup>3</sup>/s

On-line link to water-gauge

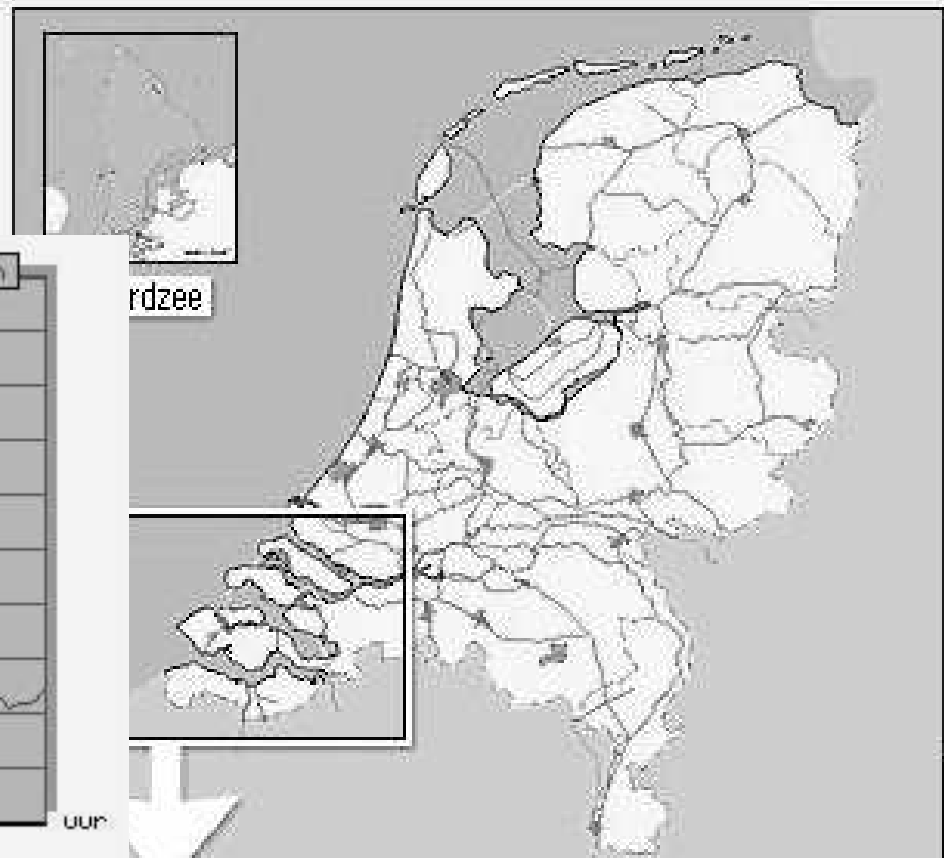
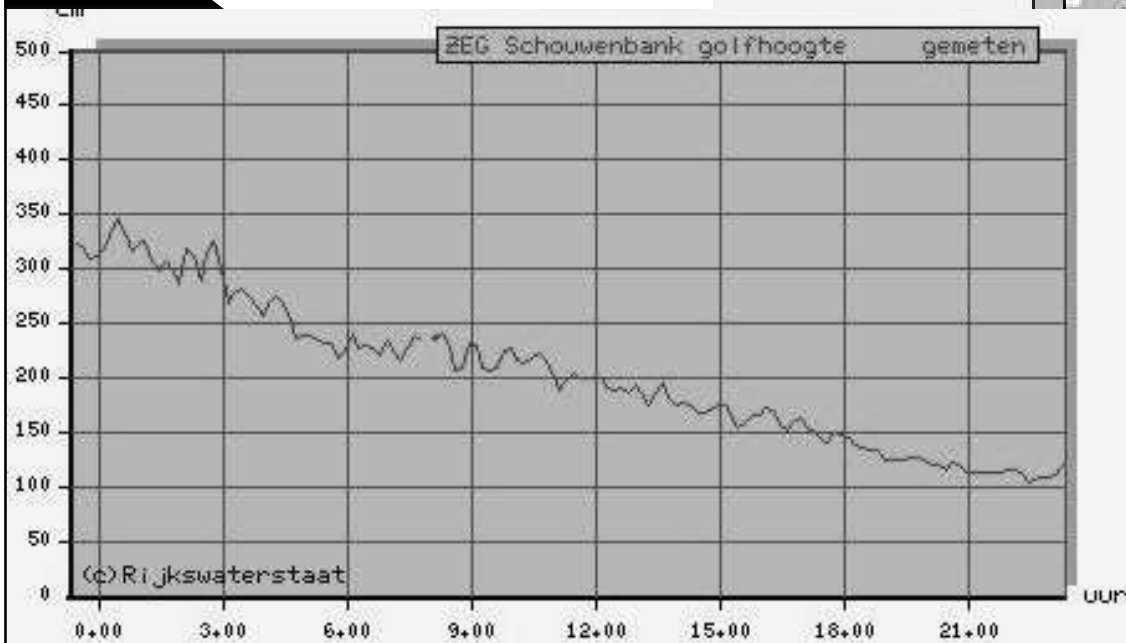
# Waterland



27/04/2006



# Waterland



De significante golfhoogte op 05 september, 23:00 uur is 121 cm

On-line link with  
wave height  
gauging station

27/04/2006



# National atlas website: <http://avn.geo.uu.nl>

## Inleiding

1. Bevolking
2. Bewoningsgeschiedenis
3. Steden
4. Dorpen
5. Wonen
6. Voorzieningen
7. Recreatie
8. Werken
9. Bedrijven
10. Landbouw
11. Poort van Europa
12. Infrastructuur
13. Geologie
14. Bodem
15. Water
16. Landschap
17. Milieu
18. Ruimtelijke ordening
19. Stadsinrichting
20. Landinrichting

## Links






## Atlas van Nederland

Heel Nederland in woord en kaart

*updated: 30 mei '01*

# Geoparty: Integration of planning information at provincial level

Address  <http://www.geoparty.com/n/menu4/progis.html>  Go  Li

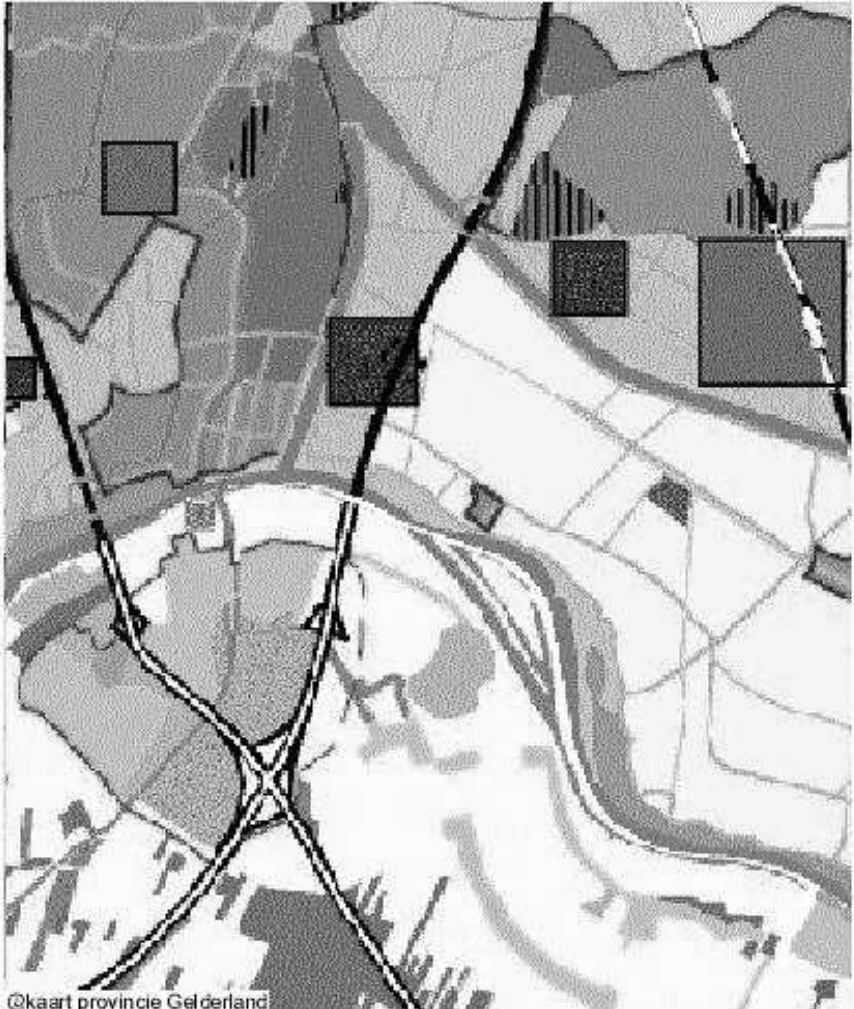
**geoparty**  
.com

Geobureau's  
Statistieken  
Gelderland  
Kerncentrales  
Open kaart

Streekplankaarten van alle provincies aan elkaar geplakt en interactief te benaderen.

Initiatief van Progis  
(Interprovinciaal Overleg GIS)  
om gezamenlijk iets te doen met  
Internetkaarten.

**Streekplankaart Nederland**



**Utrecht**

Stedelijk gebied

- · — · — · plangrens tevens provinciegrens
- stedelijk gebied
- bedrijventerrein en kantoorruimte
- ▨ restcapaciteit (situatie 1-1-1994)
- nieuwe locatie woningbouw / nieuwbouwoortlocatie
- ▨ doorgroei woningbouwlocatie
- nieuwe locatie bedrijventerrein en kantoorruimte
- ☆ reservelocatie verstedelijking
- · — · — · bebouwingscontour

Landelijk gebied

- landelijk gebied 1
- landelijk gebied 2
- landelijk gebied 3
- landelijk gebied 4
- landelijk gebied 5
- ☹ defensie

©kaart provincie Gelderland

# What is planned for the immediate future?

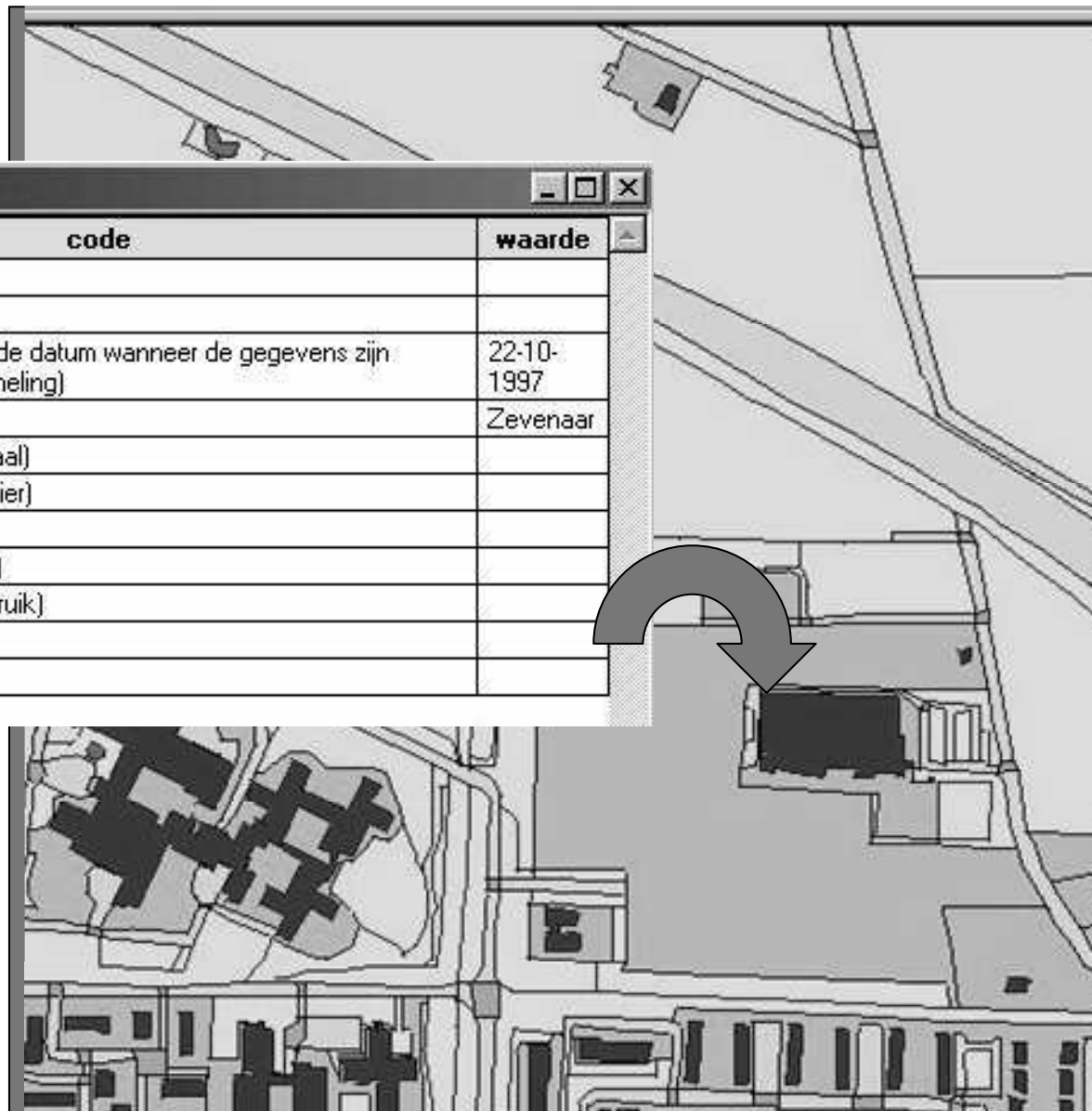
## -Large-scale base map (GBKN)



Planned :

- Unification of contents,
- Unification of price,
- One counter where all files may be procured
- Continuous updating

# Core file 1:10 000 with buildings and link to buildings data file



idn	attribuut	code	waarde
G1110		gbw (gebouw)	
G1110	ard (aard)	04 (werken)	
G1110	gmc (gegevensmanagementcode)	0101 (informatiebeheer: de datum wanneer de gegevens zijn opgenomen in de verzameling)	22-10-1997
G1110	loc (locatiecode)	02 (woonplaats)	Zevenaar
G1110	mac (materiaalcode)	0406 (geconstrueerd: staal)	
G1110	rec (rechtscode)	0101 (eigendom: particulier)	
G1110	rec (rechtscode)	0201 (gebruik: eigen)	
G1110	rec (rechtscode)	0301 (beheer: particulier)	
G1110	stc (statuscode)	03 (gerealiseerd / in gebruik)	
G1110	tbw (type bouwwerk)	01 (hoofdgebouw)	
G1110	tgc (toegankelijkheid)	02 (niet openbaar)	

27/04/2006

# Current ideas/issues for the next 5 years

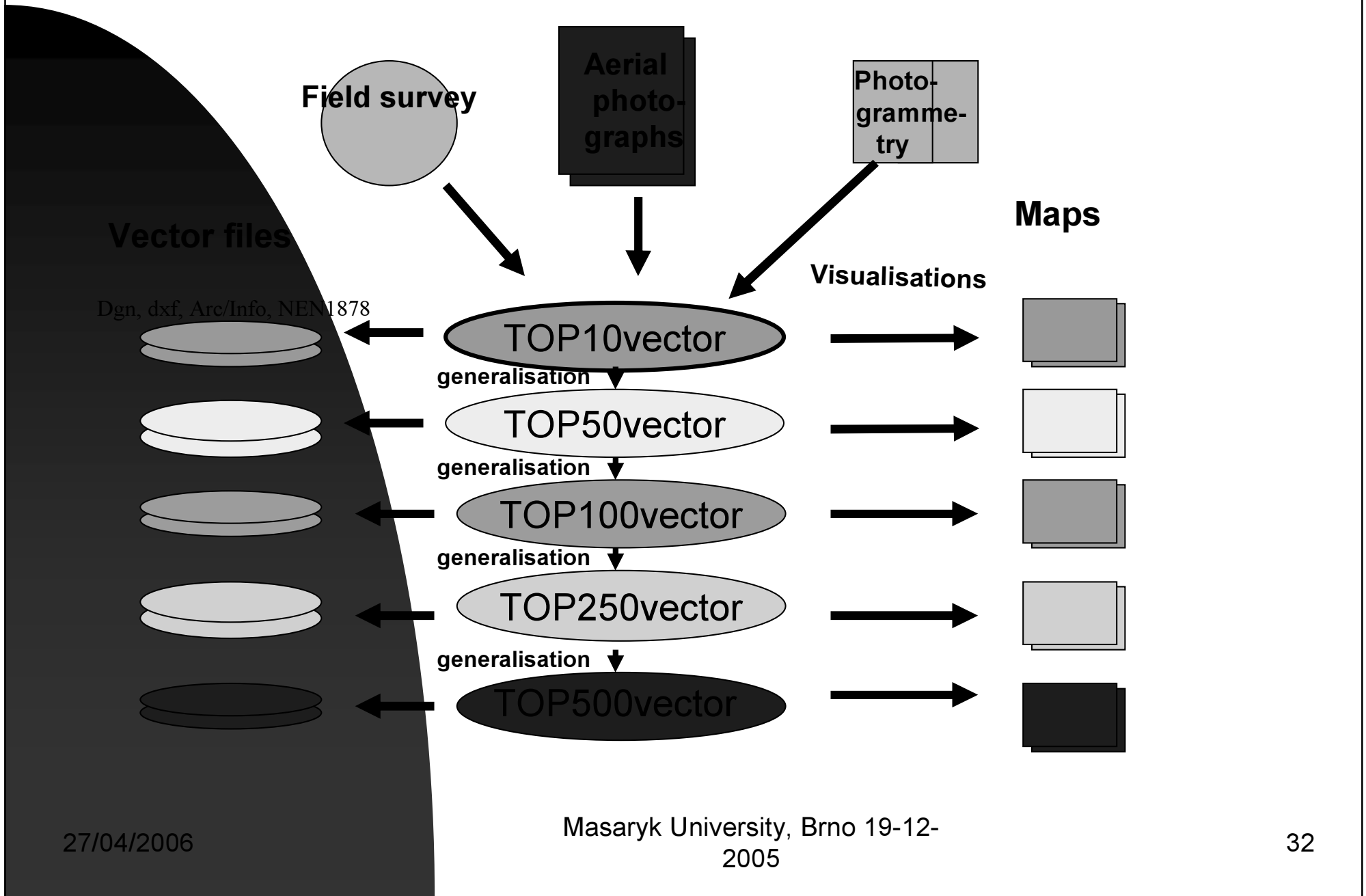
- DataLand
- Law for producing 1:10 000 core file, to which other databases can be linked
- 1:10 000 to be updated from GBKN 1:1000
- 1:10 000 to have a broader, more aggregated land use legend (additional detail to come from linking with other databases)
- Maps to be provided at distribution costs?
- Digital exchange of planning maps



# But.....

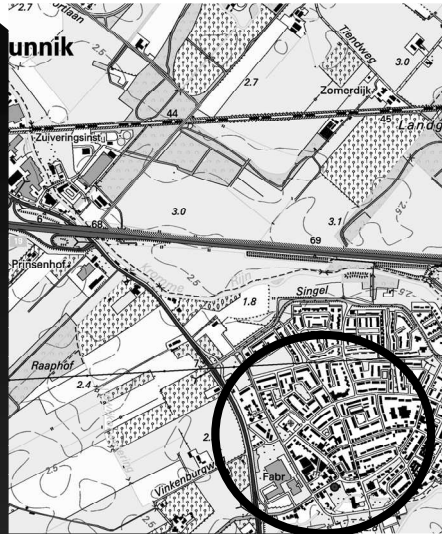
- Digibetes are further marginalised

# Production of topographic map series, Netherlands

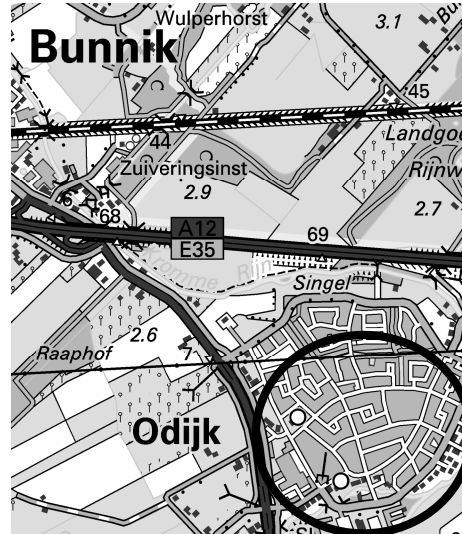




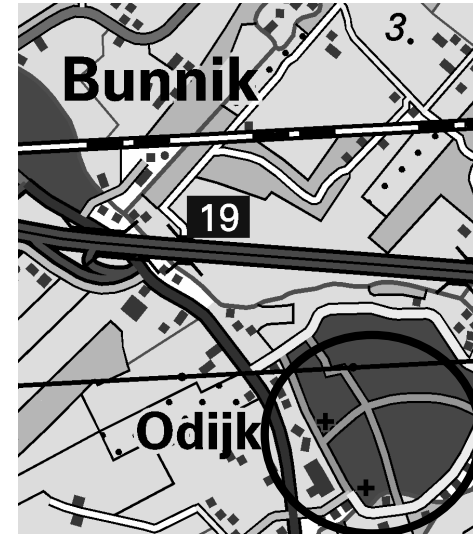
# Generalization from 1:25.000 to 1:500.000



1:25.000



1:50.000



1:100.000



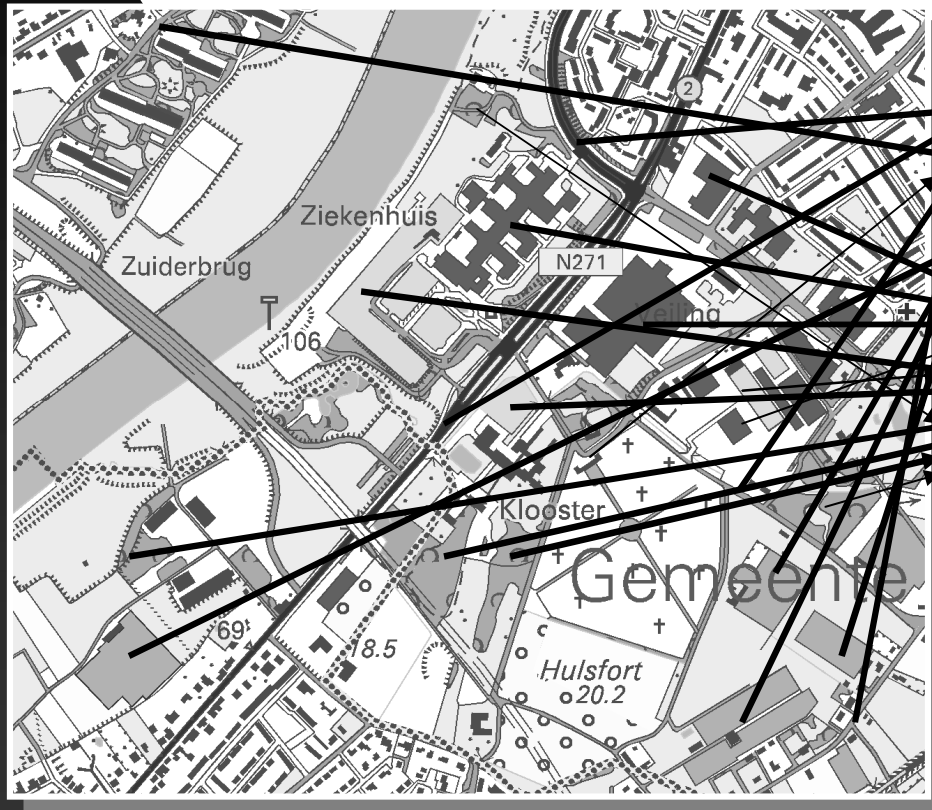
1:250.000



1:500.000

# Current selection possibilities at TDN

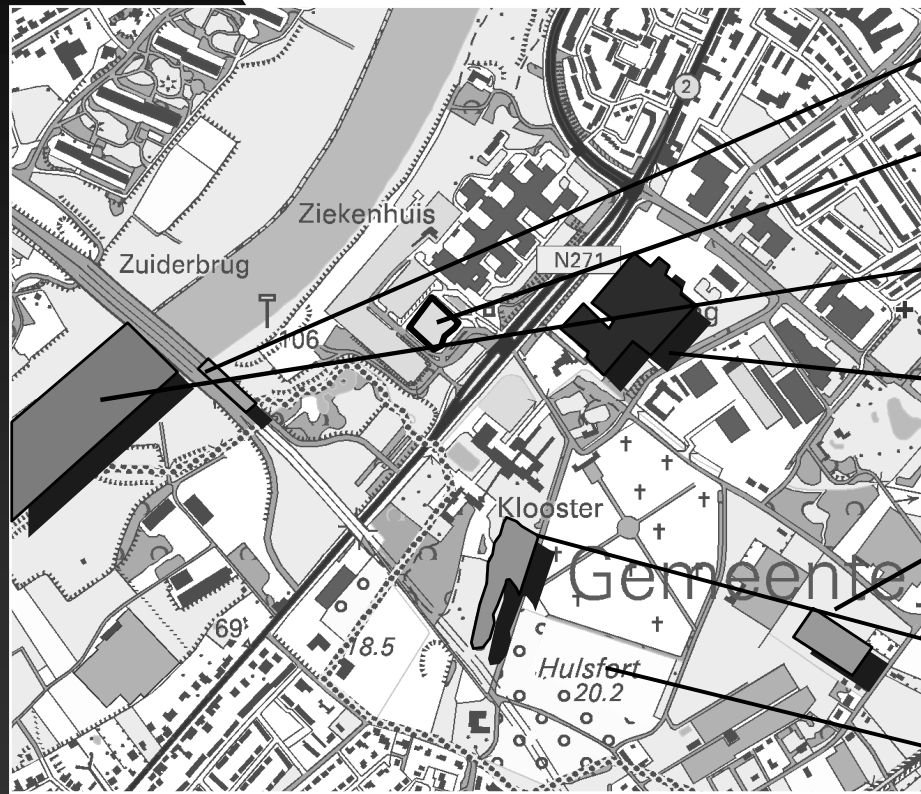
Selection possible on  
Object category code



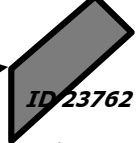






-  Main Road
-  Regional Road
-  Street
-  Hothouses
-  Big building
-  Parking lots
-  Deciduous forest

# Object-oriented data

Individual objects can be selected and presented with their attributes



Feature	Attribute Value	
 ID 12345	Type	Connection
	Class	>7m
	Road type	Regional road
 ID 21345	Type	Area
	Use	Parking
 ID 23762	Type	Connection
	Kind	River
 ID 96735	Function	Auction
 ID 65385	Function	Greenhouse
 ID 76549	kind	Deciduous forest
 <b>Hulsfort</b> ID 24356	Geogr. name	Local name

# Objects with attributes (1)

The screenshot shows the ArcView GIS interface. The main window displays a map with various land use and infrastructure layers. An 'Identify Results' dialog box is open, showing the attributes of a selected building object. The dialog box has a list on the left with '1: Bebouwing\_area.shp' selected. The attributes are listed in a table on the right.

Attribute	Value
Shape	Polygon
Oid	1100341
Top10_id	1100341
Begindatum	24 JUN 2001 15:51
Einddatum	31 DEC 2999 23:59
Type	Gebouw
Functie	Religieus gebouw
Hoogteklas	Laagbouw
Hoogte	Onbekend
Status	In gebruik
Naam	Onbekend
Hoogtenive	0
Tdrcode	1700

The taskbar at the bottom shows the Start button, Microsoft Outlook, and ArcView GIS Version 3.1. The system tray shows the time as 4:12 PM.

# Objects with attributen (cont.)

**Identify Results**

Shape	Polygon
Oid	5100178
Top10_id	5100178
Begindatum	24 JUN 2001 16:03:13
Einddatum	31 DEC 2999 23:59:59
Landgebruik	Loofbos
Voorkomen	Overig
Toegankelijk	Openbaar
Voorkome0	Overig
Naam	Onbekend
Toegentive	0
Topnode	5023

The screenshot shows the ArcView GIS interface with a map of a town. The 'Identify Results' window is open, displaying the attributes of a selected polygon. A black arrow points from the 'Identify Results' window to a specific polygon on the map. The map shows various land use types, including roads, buildings, and green spaces. The 'Identify Results' window has a 'Clear' button and a 'Clear All' button. The map is titled 'View1' and has a scale of 1:158,247.58 and 433,165.78. The ArcView GIS Version 3.1 interface includes a menu bar (File, Edit, View, Theme, Graphics, Window, Help) and a toolbar with various tools. The Windows taskbar at the bottom shows the Start button, several open applications (Office, Microsoft Outlook, ArcView GIS Version, Microsoft PowerPoint), and the system clock (4:15 PM).

# Objects with attributes (cont.)

The screenshot shows the ArcView GIS interface. On the left is a legend with various map layers. The main window displays a map of a city area. An 'Identify Results' window is open, showing the following attributes for a selected road object:

Attribute	Value
Shape	Polygon
Oid	2100196
Top10_id	2100196
Begindatum	24 JUN 2001 16:11
Einddatum	31 DEC 2999 23:59
Type	Verbinding
Wegtype	Regionale weg
Hoofdverke	Gemengd verkeer
Voorkomen	Op verhoogd vlak
Ruisingst	Overig
Verharding	4-7m
Verhard10	Onbekend
Verhard1	Verhard
Verhard2	Onbekend
Rijstroken	Onbekend
Rijrichtin	Tweerichting
Toegankelijk	Openbaar
Status	In gebruik
Straatnaam	Waalstraat
Wegnummer	Onbekend
Hoogtenive	0
Tdncode	3203

A black arrow points from the 'Identify Results' window to a specific road segment on the map.

# User-specifications TOP10-21st century (1) in the Netherlands

- Link older and newer versions Needed
- Open standards (OpenGIS) Needed
- Meta data Needed
- Real world objects Needed
- Covering the whole country, no gaps Needed

# User-specifications TOP10-21st century (2)

- Time aspect of objects *Needed*
- Multi-scale representation *Wished*
- Linking with other (thematic) databases *Wished*
- Payable use *Nice-to-have*
- Usability *Wished*
- Delivery via Internet *Nice-to-have*



# Analogue products from TOPvector

