

# Municipality to State - geostatistics

Studies on how to make statistics from digital maps

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# Overview of the presentation

- Background – introduction
- Data sources in Norway Digital
- First Pilot project
- Second Pilot Project
- Further work

# KOSTRA – municipality to state reporting

- The KOSTRA-project started in 1995 as project with four municipalities as participants.
- The first full scale reporting took place in March 2002.
- **KOSTRA focuses on two purposes:**
- **To give better information about the municipalities**, both for the central and for the local governments. (more coherent data collection to combine data from many sources, comparability between municipalities, to make benchmarking possible as a part of the management process, timeliness is vital).
- **More efficient reporting.** All data reporting from the municipalities are electronic, by use of electronic forms or file extracts. And the same data should be collected only once, even if it is used for many purposes.

# Example on publishing - article

Adresse  [http://www.ssb.no/english/subjects/00/00/20/kostra\\_en/](http://www.ssb.no/english/subjects/00/00/20/kostra_en/)  Gå til [Koblinger](#)

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## Key figures for municipal activities

**Key figures for municipal activities in 2006 were published 15 June 2007. KOSTRA (Municipality-State-Reporting) is a national information system that provides information on municipal and county municipal activities.**

The data collection includes most of the municipal and county municipal activities, including economy, schools, health, culture, the environment, social services, public housing, technical services and transport and communication. The figures focus on the priorities, the productivity and the coverage of needs, using a vast number of key indicators.

### Steady data entry from municipalities and county municipalities

All of the municipalities and county municipalities have reported their data, and there are very few shortages in the total material. The account figures are based on file extracts from all county municipalities and the municipalities, except from three. Reporting from the own units with separate accounts and the municipal inter-authority companies have now reached 71<sup>1</sup> per cent. With regard to the reports from the service areas, the response rate varies from approximately 92 per cent to 100 per cent, with kindergartens, municipal health and care services at top rate. In addition to figures from Statistics Norway, data have been collected from several sources outside Statistics Norway, for instance from directorates who also collect data from the municipalities.

The reported data have gone through several controls, both locally and in Statistics Norway. In some areas, the data can be regarded as the final figures, whereas it in other areas changes may occur after this publication.

The data material for the reporting year 2006 will be updated with any corrections and forms received late, together with the publication of un-revised figures for 2007 on 15 March 2008.

### Changes in the publication

Six new fact sheets have been added to this publication:

Consolidated accounts – transport and communications, level 2 and 3, shows key figures and basic data for the county municipal employment in local roads etc.

Consolidated accounts – public housing, level 2 and 3, shows key figures and basic data for the county municipal public housing and related services.

[KOSTRA in Norwegian](#)[Latest article](#)[Previous articles](#)[More tables in StatBank](#)[About KOSTRA](#)[Contacts](#)

# Example on publishing – figures in StatBank

Adresse  [http://www.ssb.no/english/subjects/00/00/20/kostra\\_en/arkiv/](http://www.ssb.no/english/subjects/00/00/20/kostra_en/arkiv/)   Gå til Koblinger[Advanced search](#)[A-Z](#) | [Help](#) | [Contact](#) | [Norwegian](#)[Statistics by subject](#)[Publications](#)[Research](#)[About Statistics Norway](#)[» Main page](#) » [Statistics by Subjects](#) » [00](#) » [00](#) » [20](#) » [KOSTRA](#)[Latest article](#)[Contacts](#)

## 00.00.20 KOSTRA

### Previous releases

2006, revised:	<a href="#">Key figures for municipal activities are ready</a>	(15.03.2007)
2005:	<a href="#">Key figures for municipal activities</a>	(14.06.2006)
2005, revised:	<a href="#">Key figures for municipal activities</a>	(15.03.2006)
2004, revised:	<a href="#">Key figures for municipal activities</a>	(15.06.2005)
2004:	<a href="#">Improved economy for municipalities</a>	Tables (29.03.2005)
2004, revised:	<a href="#">Key figures for municipal activities</a>	(15.03.2005)
2003:	<a href="#">New tables of key figures for municipal buildings, purchase of services and user payments</a>	Tables (15.06.2004)
2003:	<a href="#">Another year of weak municipality finances</a>	Tables (22.03.2004)

# Example on publishing – StatBank and PX-iMap

Adresse <http://statbank.ssb.no/map/PXIMap.asp?PXfile=20079313525492145983Kostra2KOTilrett.px&TempPath=/statistikbanken/temp/&language=1&SessionName=73584235>  Koblinger

## O. Arrangements and assistance to trade and industry - level 2 (K) by region, time and contents

Variable:

Map type:

Classification (for choropleth map):

Map size:  %

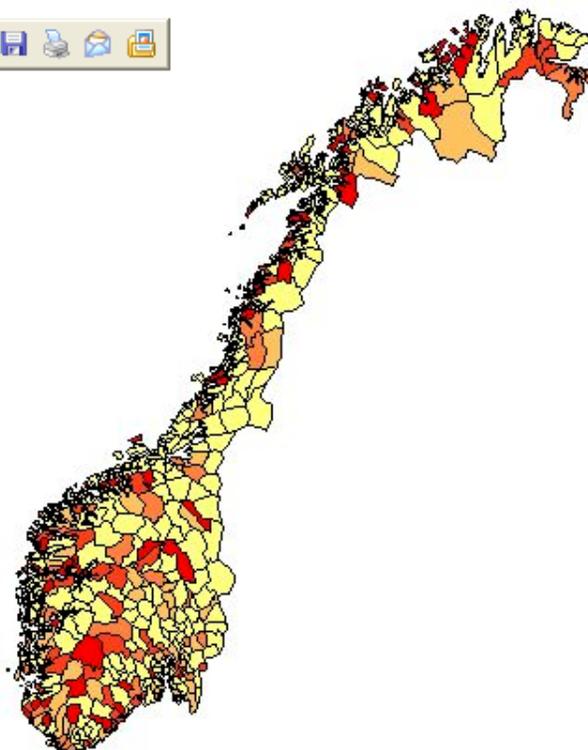


[Download map and statistical data](#)

O. Arrangements and assistance to trade and industry - level 2 (K) by region, time and contents  
time: 2006  
contents: VAT compensation investments per capita, 1

	-273 -	0 (267)
	1 -	3 (60)
	4 -	12 (50)
	13 -	45 (50)
	47 -	1 487 (48)

Datasource: Statistics Norway  
Mapdata : Statens kartverk



# The projects

3 projects in for 4 steps

- Narrow pilot study on possibilities of map based reporting
- Broad pilot study on possibilities of map based reporting
- Develop system for alternative map based reporting
- Establish large scale map based reporting

# Pilot project I: 2005 - 2006

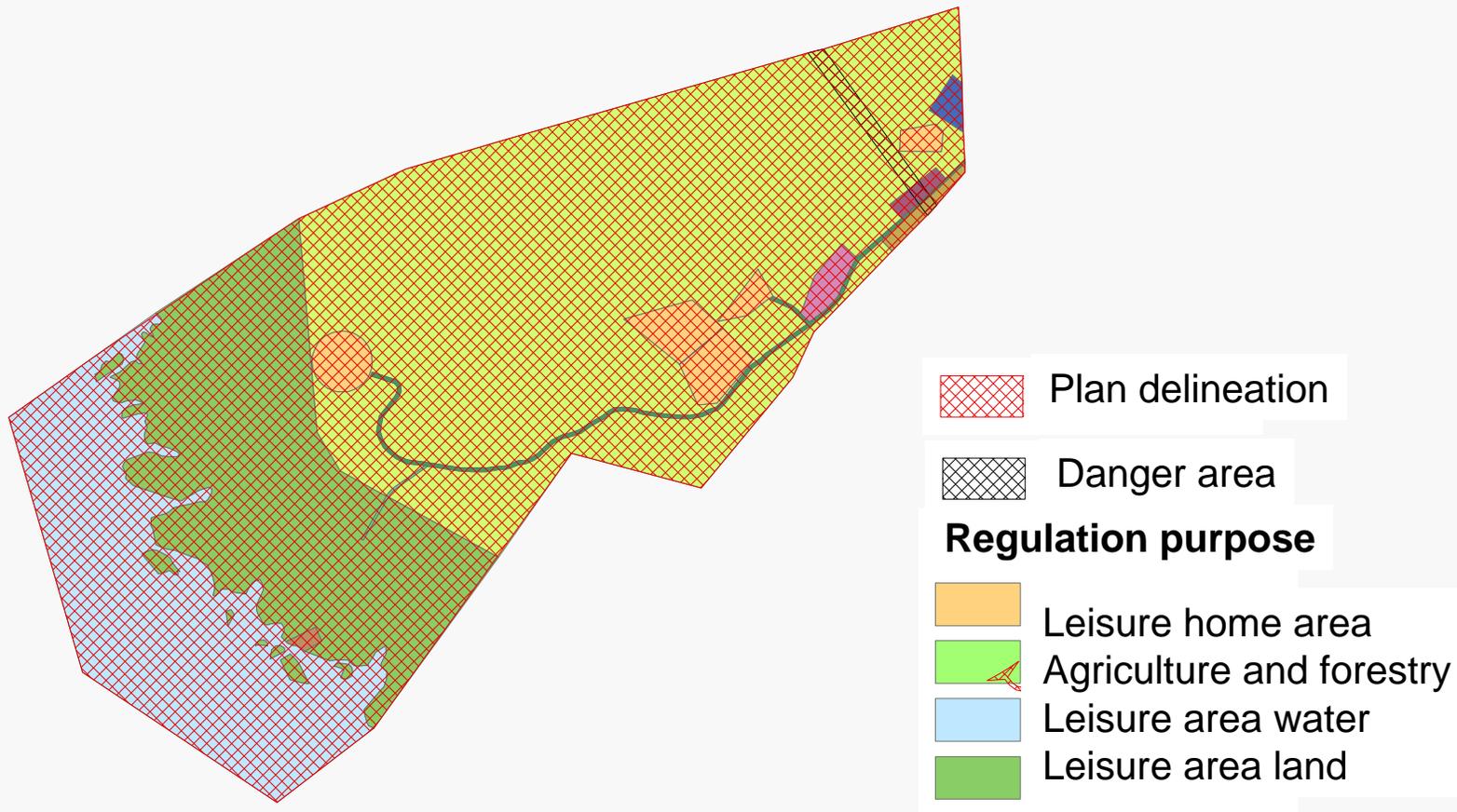
Small and narrow possibility study

A few municipalities

A few topics:

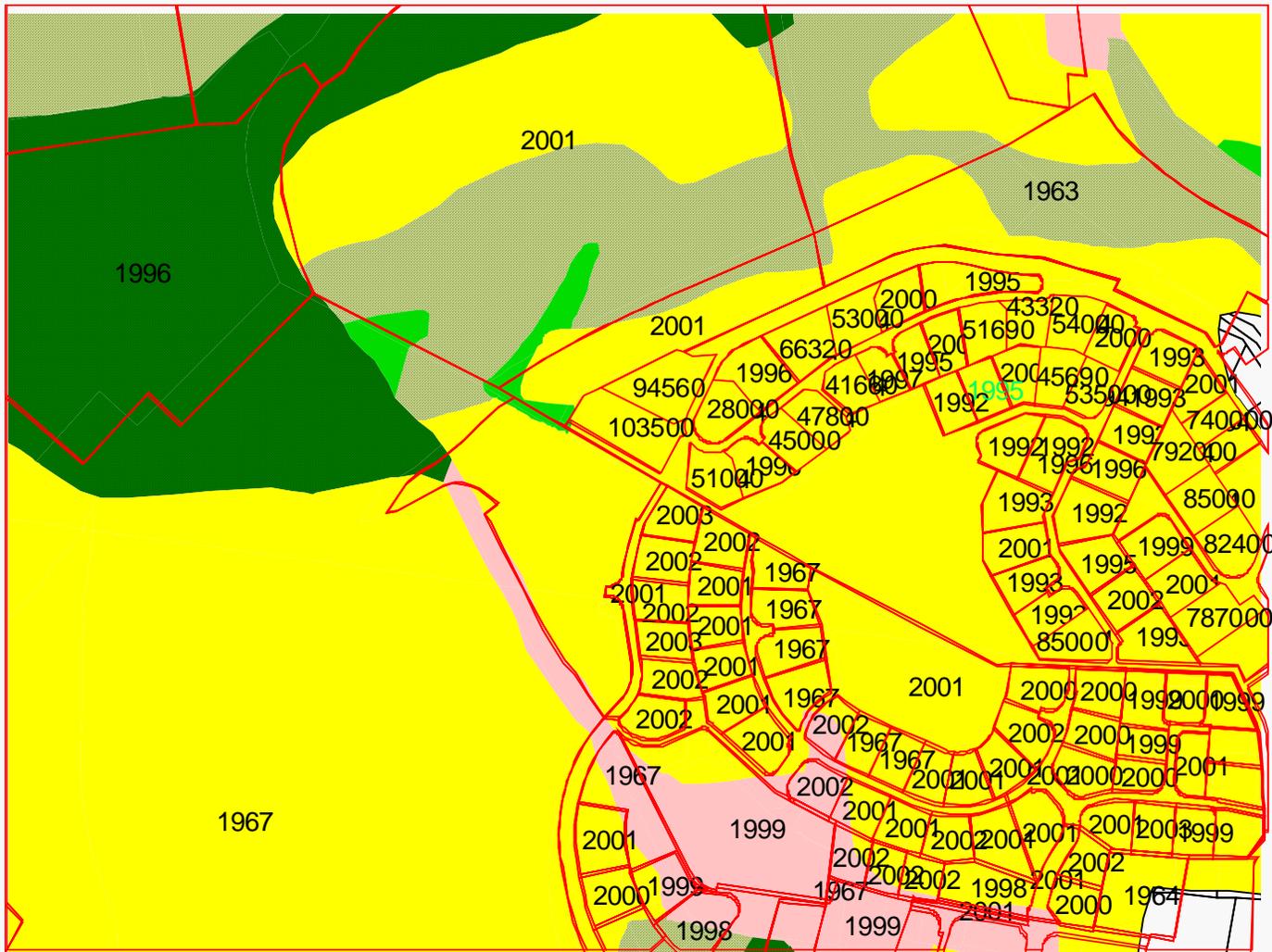
- Land management/planning data (regulations)
- Land cover/land use maps
- Water and sewage networks

## Example: Regulation map with double surfaces



**May lose surfaces/polygons when**

- **Converting between file formats**
- **Transforming between coordinate systems**



**Sales price. Norwegian crowns. 1994.**

## Example 2/2 : New statistics with CMD -data

# Pilot project I: 2005 - 2006

## Further work

- Metadata: content, standards and file formats
- Routines for management of data bases
- Technical development
- Organisational development

# Pilot project II: 2007

Part One : Broad possibility study

All municipalities (430)

All topics in Norway Digital (> 40 primary data sets)

Part Two : Technical implementation pilot/scheme

# Broader possibility study

- Easier access to better data

## Norway Digital



# Download page for Norway Digital partners

Norge digitalt WEB nedlasting

Søkekriterier



Hovedgruppe	Datasett	Fylke	Kommune	Tile	Format	Inndeling	Koordinat system
[alle] Administrative grenser	[alle] Fylker Grunnkretser Kommuner [undefinert]	[alle] Akershus (0200) Aust-Agder (0900) Buskerud (0600) Finnmark (2000) Hedmark (0400) Hordaland (1200) Møre og Romsdal (1500)	[alle] [undefinert] (9999)	[alle] [undefinert]	[alle] SOSI Shape	[alle] Fylkesvise filer Landsfiler	[alle] Euref89 UTM lokal sone Euref89 UTM sone 33

Utfør søk    Antall filer: 21 - Antall tegn: 5,1 Mb - (Metadata records: 21)    Sorteringsrekkefølge i søkeresultat    Lagre søk    Les inn søk

Søkeresultat

Legg valgte data til nedlastingsliste    Velg alle    Velg ingen    Åpne alle    Lukk alle

Filer til nedlasting

Path filnavn	Størrelse
Antall filer 0	
0,0 MB	

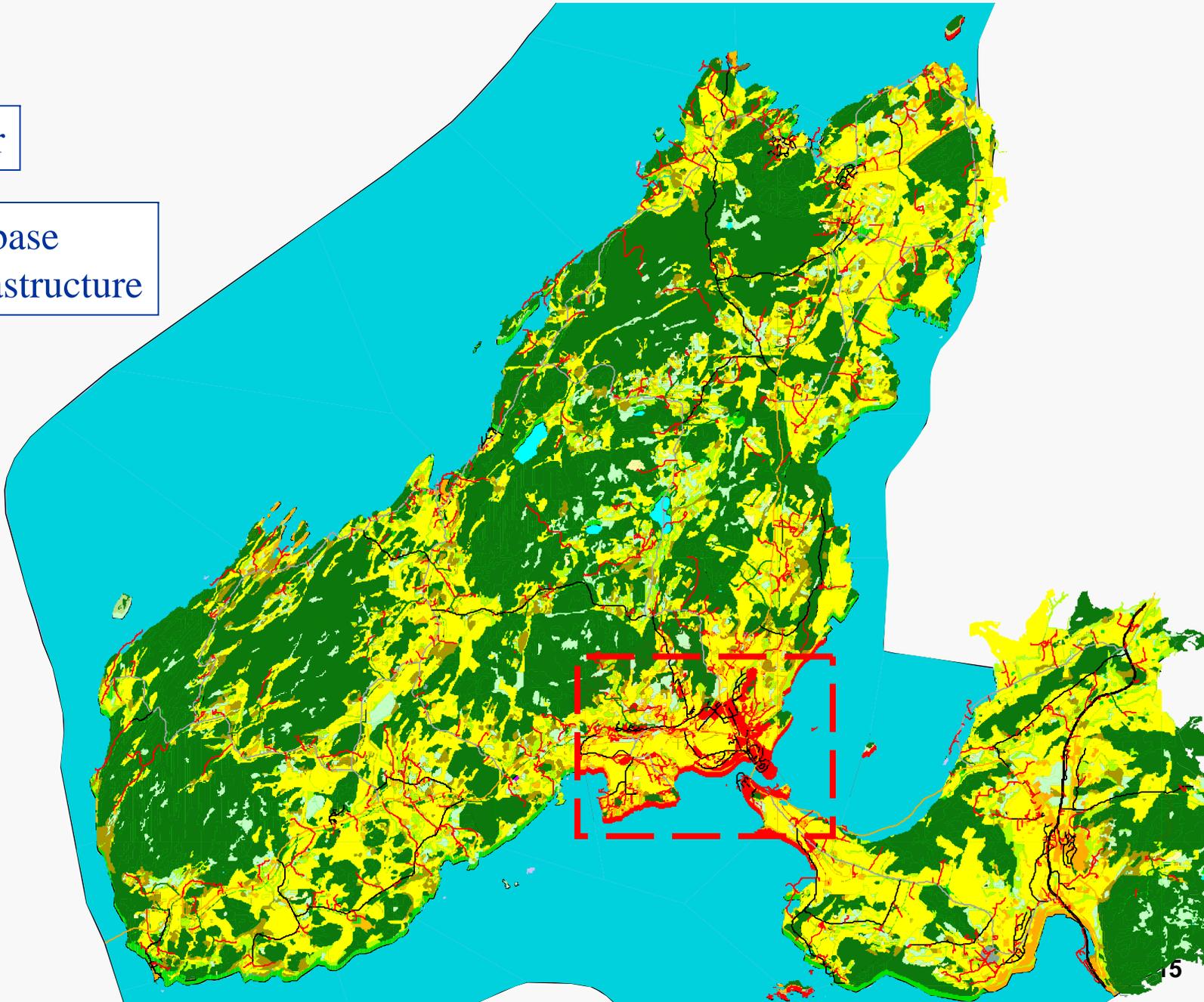
Logisk filbane  
 Faktisk filbane

Water

Land cover

Road database

Other infrastructure



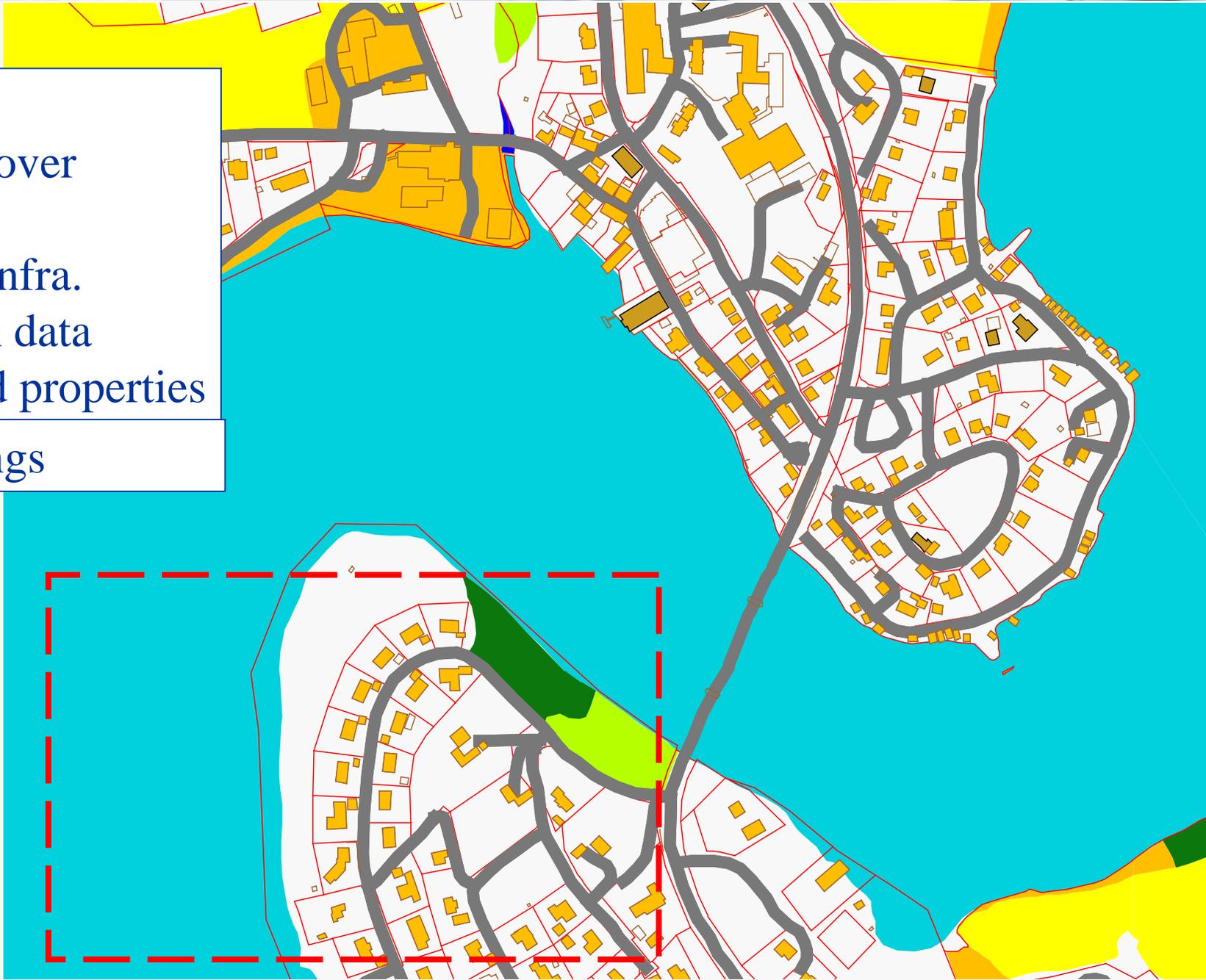


Water  
Land cover  
Road data  
Other infras.

Terrain data

Ground properties

Water  
Land cover  
Roads  
Other infra.  
Terrain data  
Ground properties  
Buildings



- Water
  - Land cover
  - Roads
  - Other infra.
  - Terrain data
  - Ground properties
  - Buildings
  - Road situation
- 
- Water network
  - Sewage network
  - Electrical network
  - Cultural places



# Pilot project II: 2007 Part One

## Four main questions

1) Which of today's questions may be replaced by using map data?  
(-> ~14)

2) Which questions should be changed to be replaceable?  
(-> a few more)

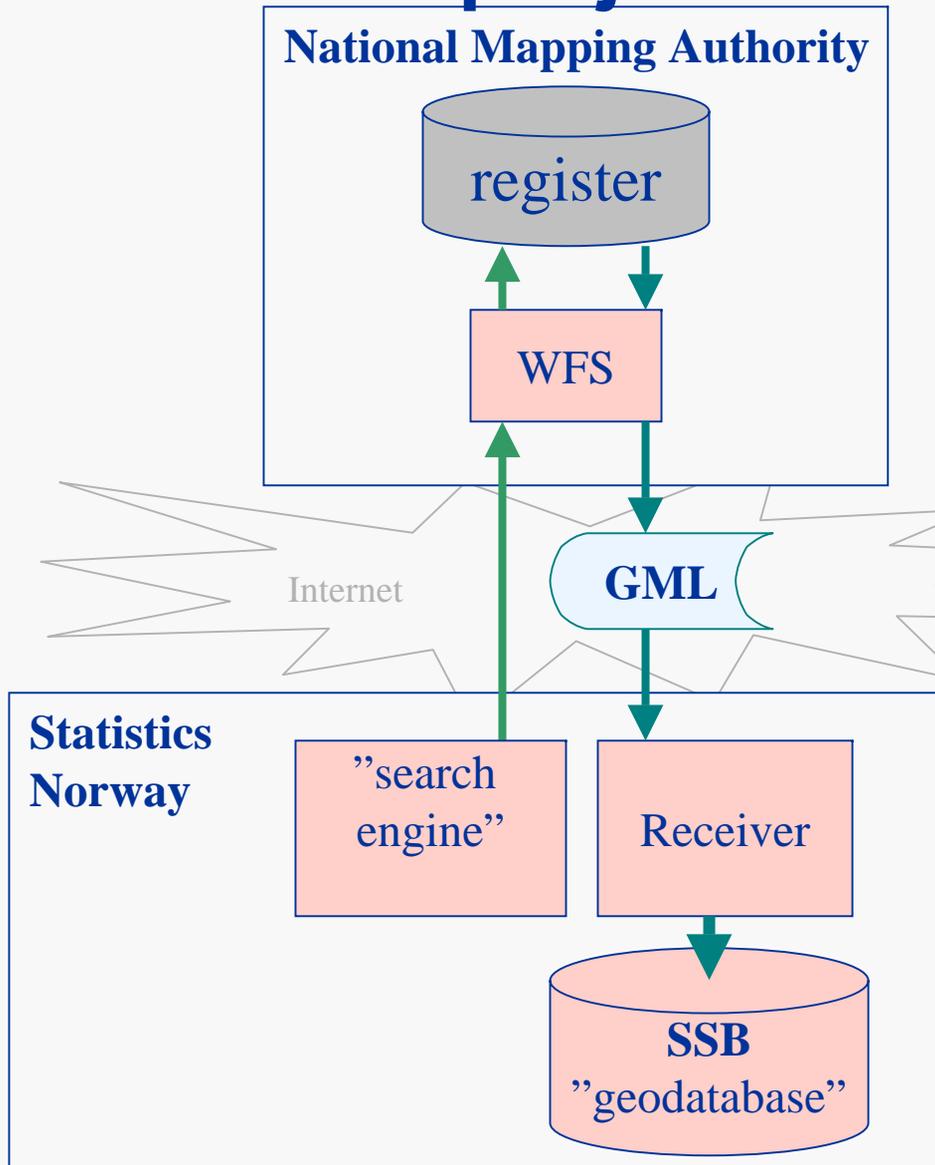
3) Which map data are *defined* so that they might replace questions?  
(-> even some more)

4) Which adjustments has to be done with maps to replace questions?  
(-> a system change)

+ ) possibilities for a lot of new statistics not covered by KOSTRA

# Pilot project II: 2007 Part Two

## Architecturescheme (pilot)



- NMA transfers knowledge (WFS, GML, UML, SOSI)
- Need testing in minor scale
- Need develop/define searches

# Pilot project II: 2007 Part Two

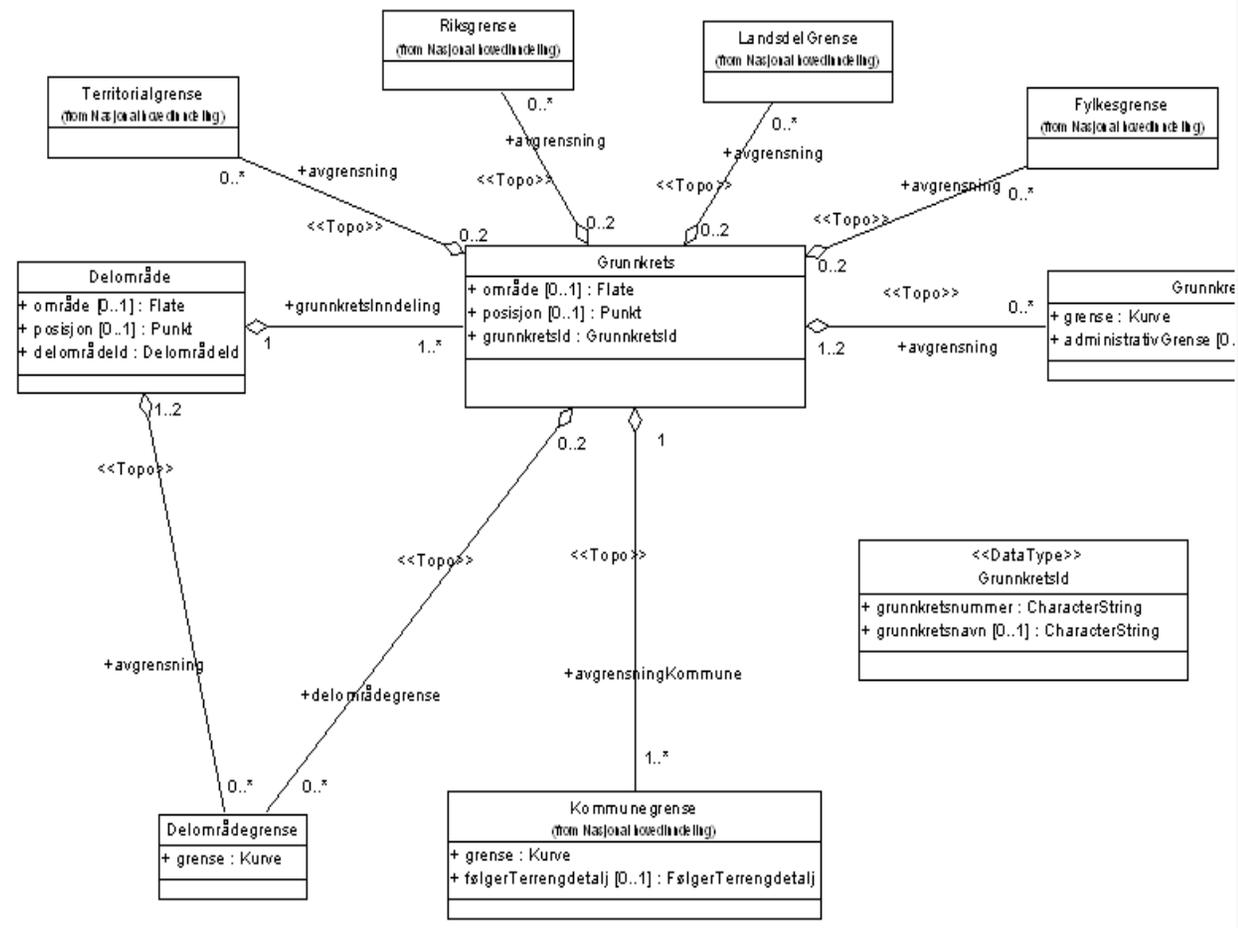
## Example : UML modell for adm. boundaries

✓ Display documentation  
 Logical View  
 SOSI Generell objektkatalog  
 <<Application Schema>> AdministrativOgStatistiskemnn  
 Administrativ/statistisk underinndeling  
 Bydel  
 Datatype  
 Delområde  
**Grunnkrets**  
 Kodelister  
 Samlemodell  
 Sentrumssone  
 Skolekrets  
 Tettsted  
 Valgkrets  
 Bydel  
 BydelGrense  
 <<DataType>> BydelId  
 Delområde  
 Delområdegrense  
 <<datatype>> Delområdelid  
 Grunnkrets  
 Grunnkretsgrense  
 <<DataType>> GrunnkretsId  
 Sentrumssone  
 Sentrumssonegrense  
 <<DataType>> Sentrumssoneld

No documentation available

Home

Class Diagram: Administrativ/statistisk underinndeling / Grunnkrets



# Further work

- More knowledge building
  - revision of datacatchment model ?  
(GIT, geostandards)
- Cooperation with NMA through Norway Digital projects  
(GeoPortal)
- Change in management of map databases