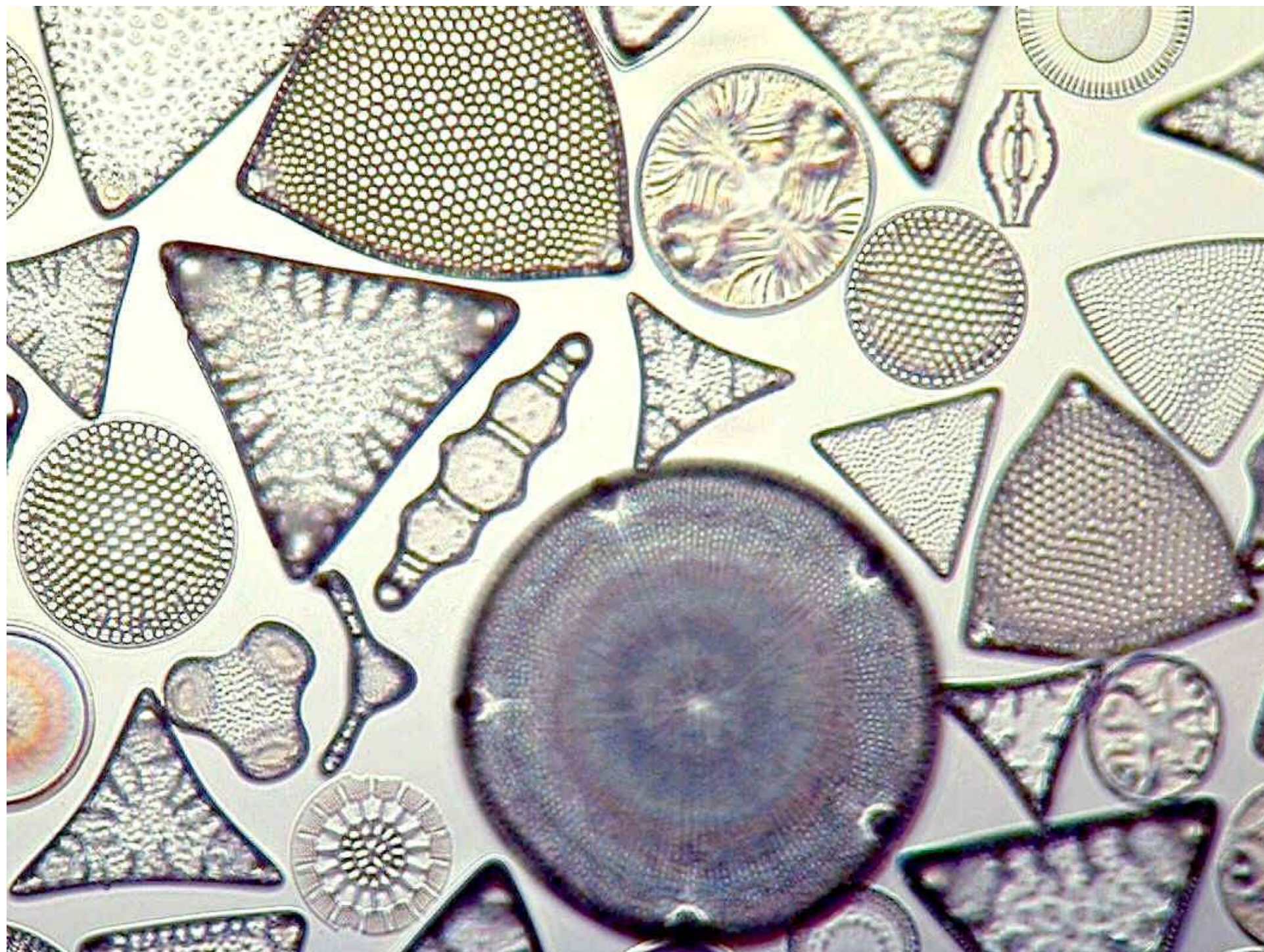




Directorate for Civil Protection

Cathrine Andersen

21. Sept. 2015







Offentlig utvalg som utreder samfunnets sårbarhet og tilpasningsbehov som følge av klimaendringer

Klima i Norge 2100

Bakgrunnsmateriale til NOU Klimatilpassing



M-406 | 2015

Klima i Norge 2100

Kunnskapsgrunnlag for klimatilpassing oppdatert i 2015

NCCS report no. 2/2015



Foto: Anne Olsen-Ryum, www.hasvikfoto.no

Redaktører

I. Hanssen-Bauer, E.J. Førland, I. Haddeland, H. Hisdal, S. Mayer, A. Nesje, J.E.Ø. Nilsen, S. Sandven, A.B. Sandø, A. Sorteberg og B. Ådlandsvik



Consequences



Milder and drier
winters



(combined with
heavy wind)

Challenges







Local planning

The image shows a person's hands pointing at a spiral-bound notebook. The notebook is open to a page titled "Konssekvensvurderinger" (Impact Assessments). The page contains a table with columns for "Konssekvenser for" (Impacts for) and "Vurdering av konsekvenser for andre arealbruk" (Assessment of impacts for other land use). The table has rows for "Lokal", "Regional", and "Nasjonal" (Local, Regional, and National) scales. The person's hands are visible, pointing at the table. In the background, there are two white mugs and a laptop.

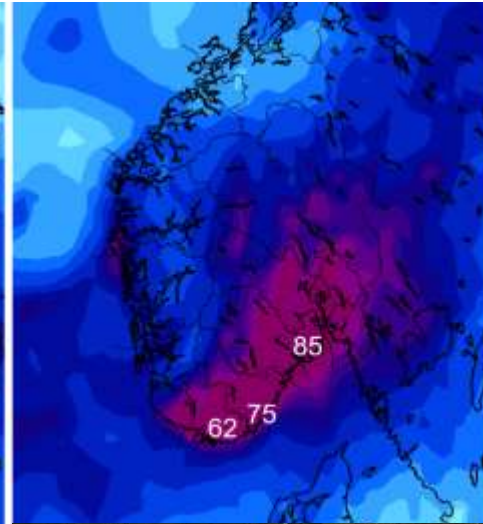
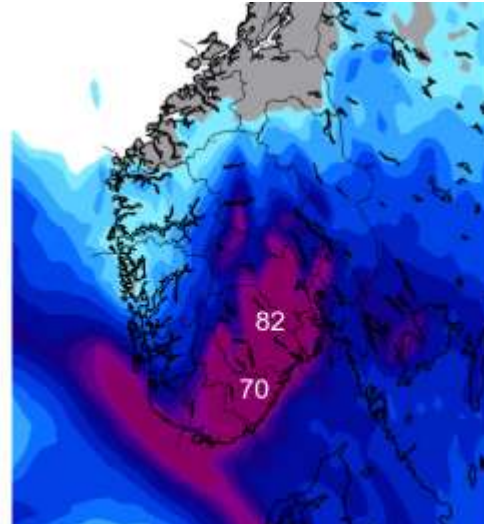
Bad weather or bad planning?



Bad weather or bad planning?

Monday kl.12 – Tuesday kl.12

Thursday kl.00 – Friday kl.00



Cities of the future

FRAMTIDENS BY



Cities of the future

Risks and vulnerability analysis

water

urban flooding

sea level rise

CCA integrated in policy documents

CCA integrated in planning

Good adaptation examples

BGF – blue and green factors

«The cities are growing, and along the way we seem to have forgotten, that the water from above, comes with a one-way-ticket.»

Anita Verpe Dyrrdal (Norwegian meteorologist)



Measures in different sizes:

S



< 20 mm
infiltration

M

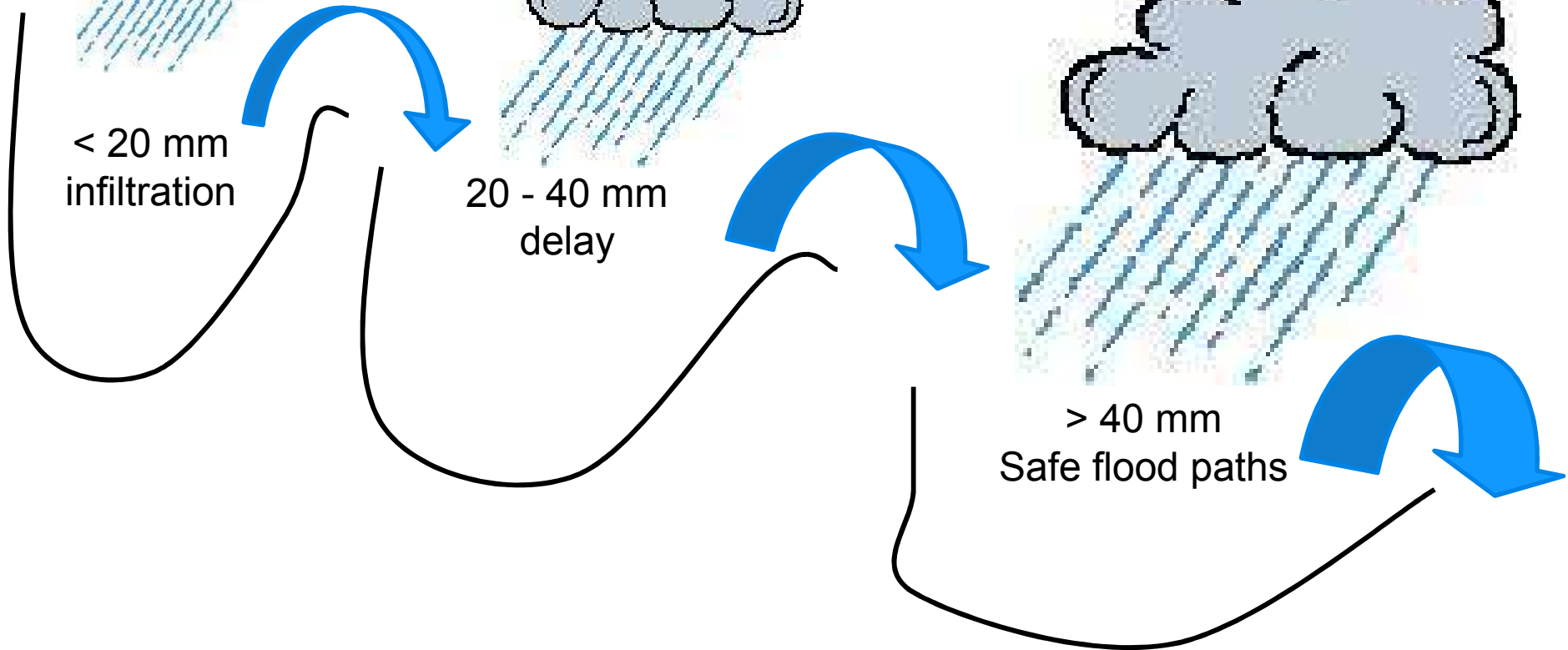


20 - 40 mm
delay

L



> 40 mm
Safe flood paths



Small



Photo: Arvid Ekle

Small



Photo: David V. Brasfield, Oslo kommune

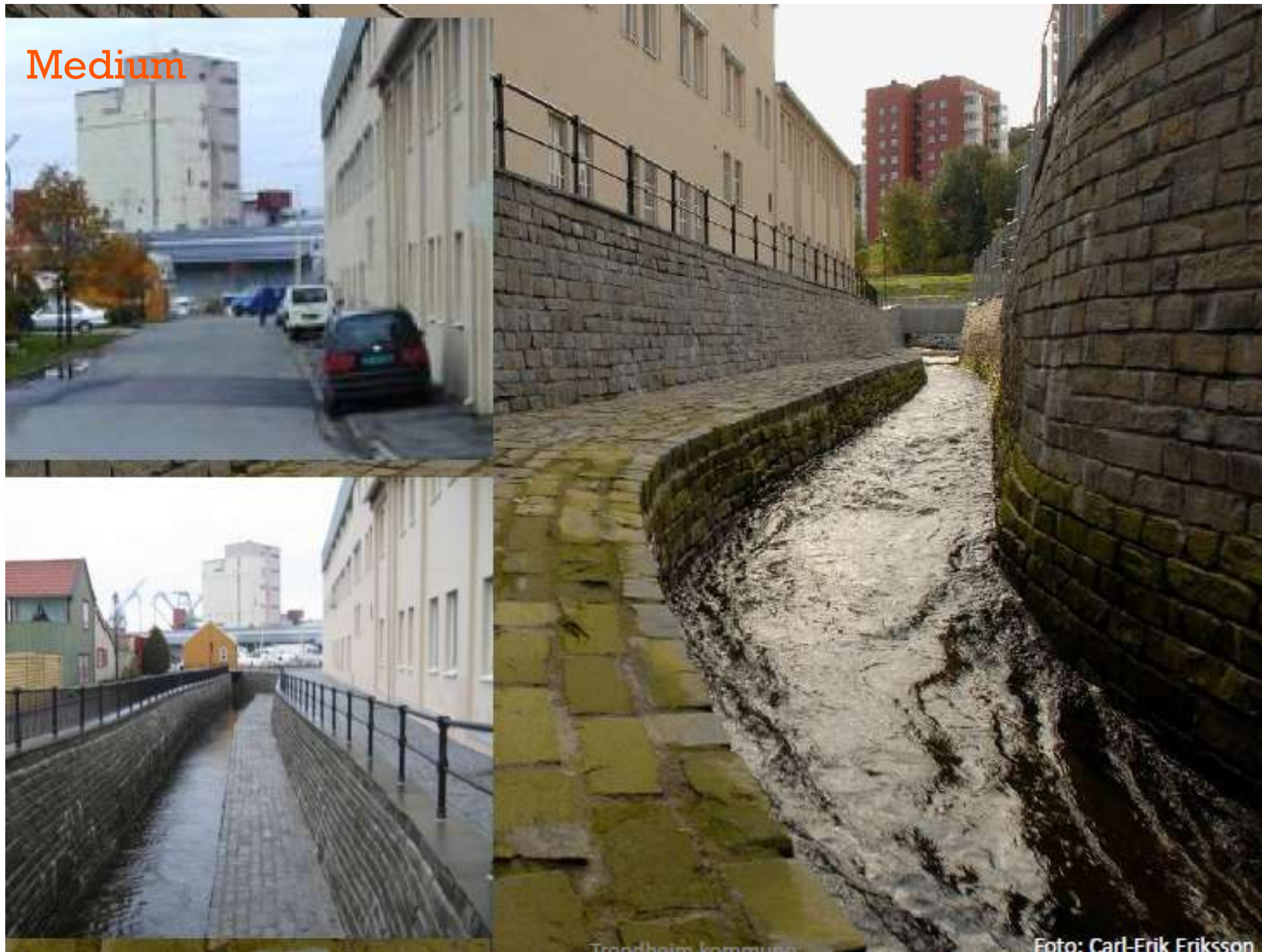


Medium



Photo: David V. Brasfield, Oslo kommune

Medium



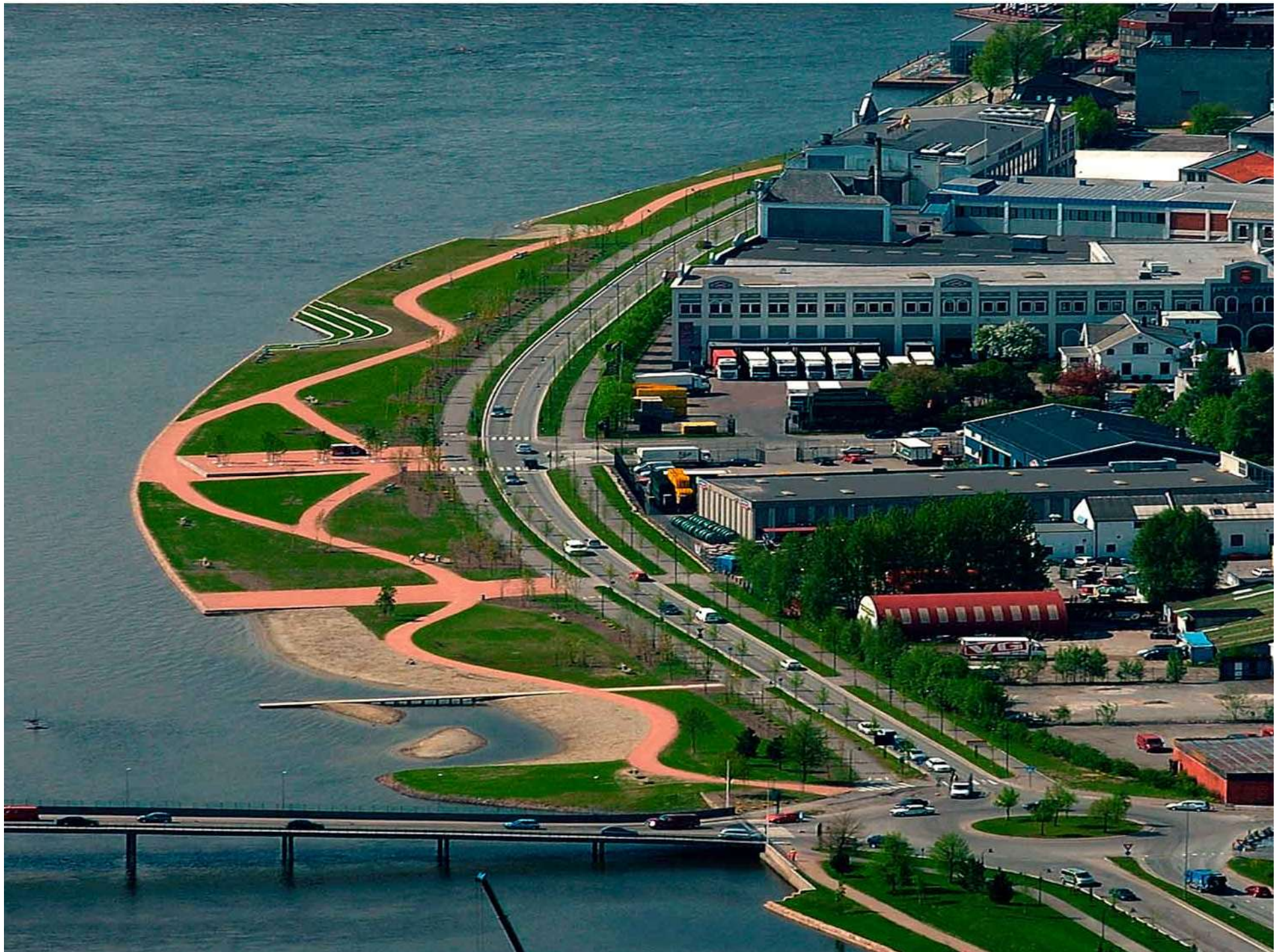
Large

Skiens viktigste flomvei er Torggata
midt i sentrum



Boliggater kan være greie flomveier. Den viktigste flomveien i Skien er Kvernålgata og Torggata som går gjennom sentrum, forteller virksomhetsleder for vannforsyning og avløp i Skien, Gunnar Mosevoll. Foto: Ole Bjørn Ushnes

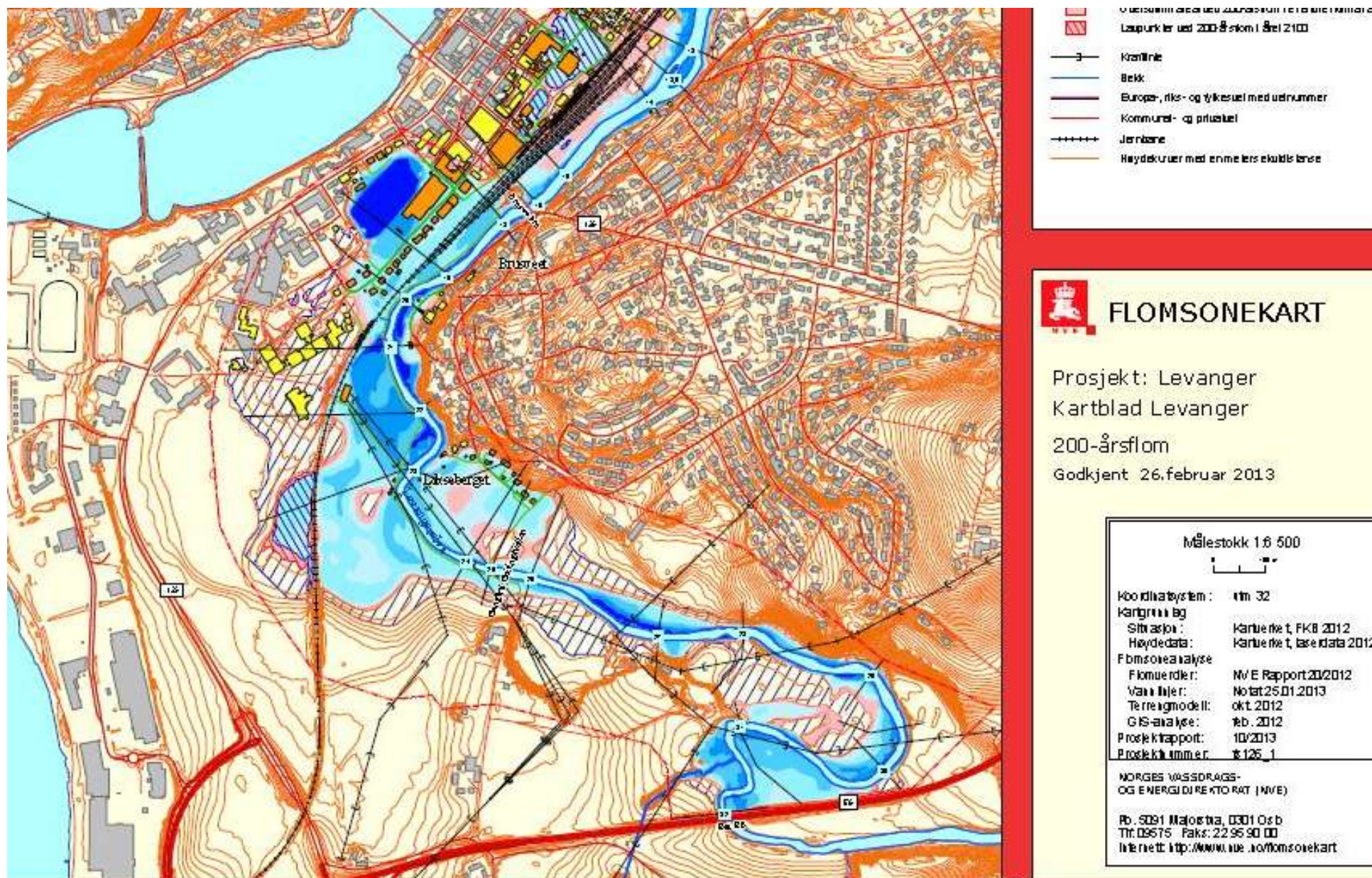








Success factors



Success factors



Photo: DSB

NEED:
ELECTRICITY

NEED:
MORE
WINE

NEED:
CUTE
FIREMAN