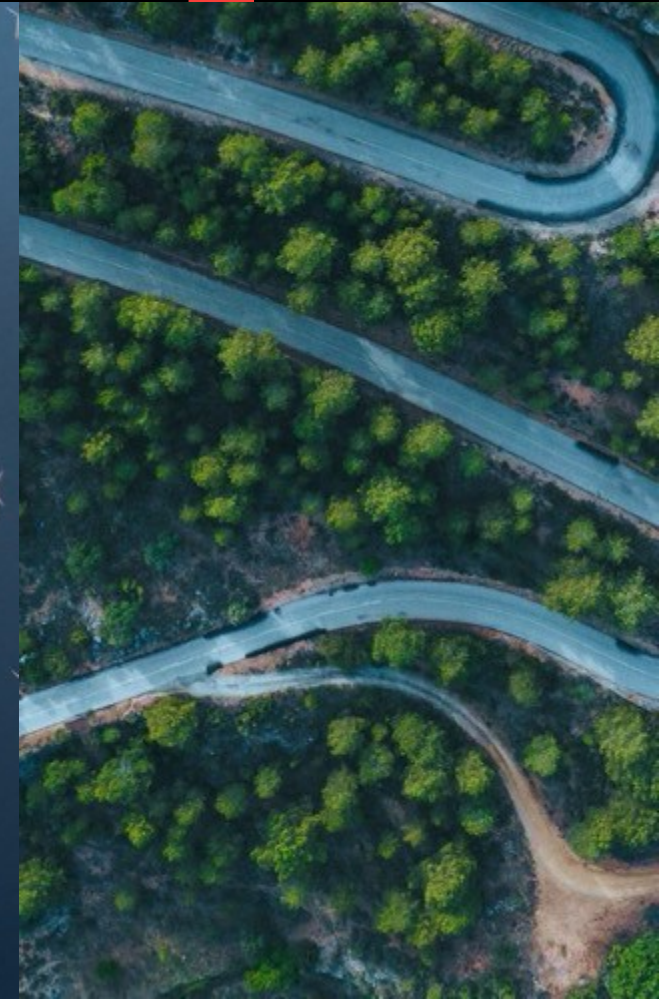


# Temadag om klimatilpasning gennem forsinkelse i oplandet

- Overvejelser når der skal tænkes forsinkelse i oplandet

Montra Hotel Sabro Kro  
5. oktober 2022

Morten Engholm Larsen  
[morten.larsen@wsp.com](mailto:morten.larsen@wsp.com)





# Forsinkelsesbehov

Kapacitetsberegninger af kritiskniveau, evt. VASP, Scalgo, MIKE11, MIKE Flood mm.

Kritisk vandstand -> kritisk vandføring

Basis | Datagrundlag | Beregning | Resultater | QH-kurve

Beregningsmæssig strækning: -9999999,00 - 9999999,00

Beregnet strækning: -706,04 - 5505,27

Regimer

Nr.	Klar. ...	Ber.s...	Navn	StartVSP	Opland	Afstrømning	Mannir
1			Afs=10,00	51,550	Fra Hymer	Fast 10,000	Somme
2			Afs=15,87	51,550	Fra Hymer	Fast 15,874	Somme
3			Afs=25,20	51,550	Fra Hymer	Fast 25,198	Somme
4			Afs=40,00	51,550	Fra Hymer	Fast 40,000	Somme

Byg QH-kurve regimer

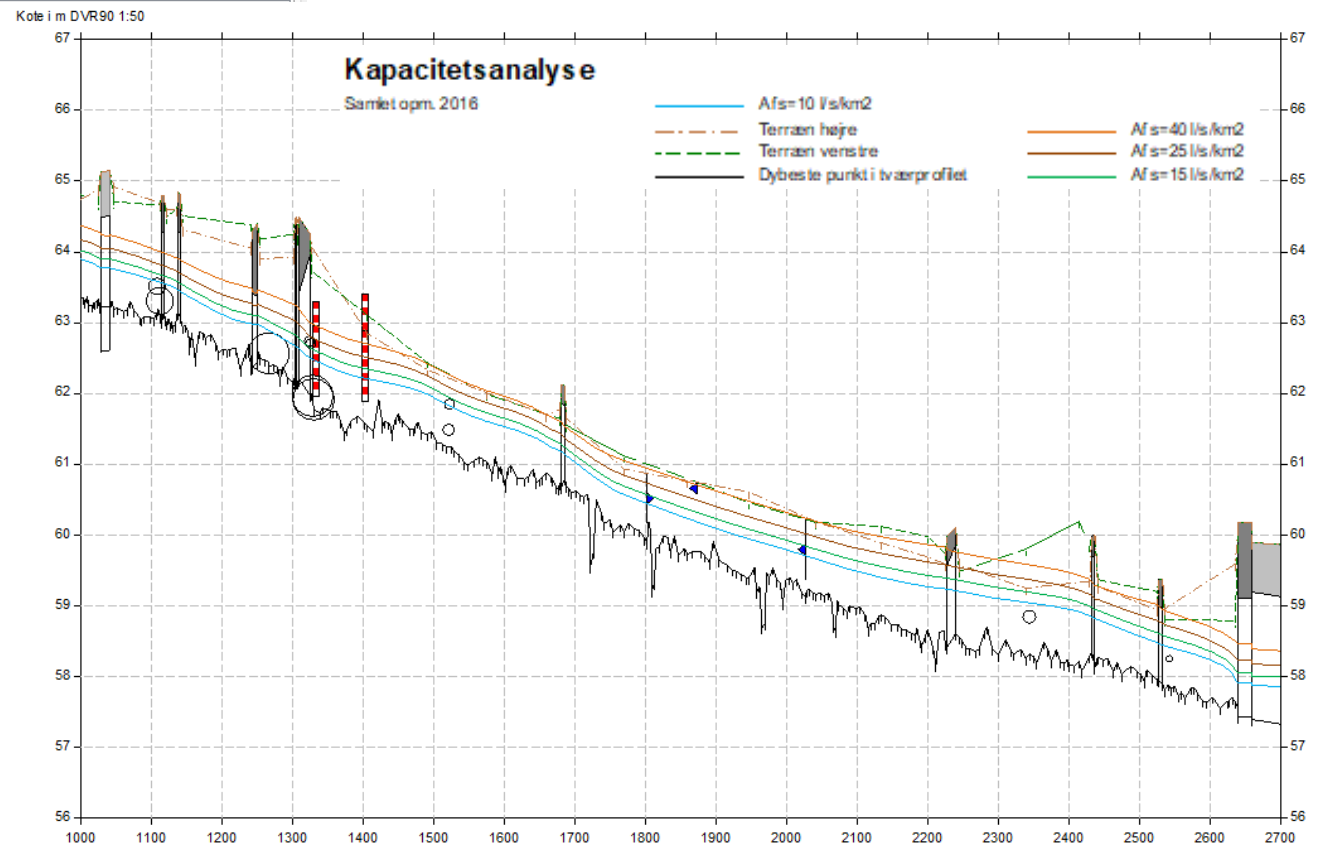
Bygger regimer med fast afstrømning.

Fast afstrømning beregnes med det angivne antal inddelinger. De beregnede afstrømninger er logaritmisk fordelt så den lave del af kurven er tættere besat med punkter.

Advarsel: Alle eksisterende regimer slettes

Afstrømning [l/s/km<sup>2</sup>]

Min.  Maks.  Antal inddelinger

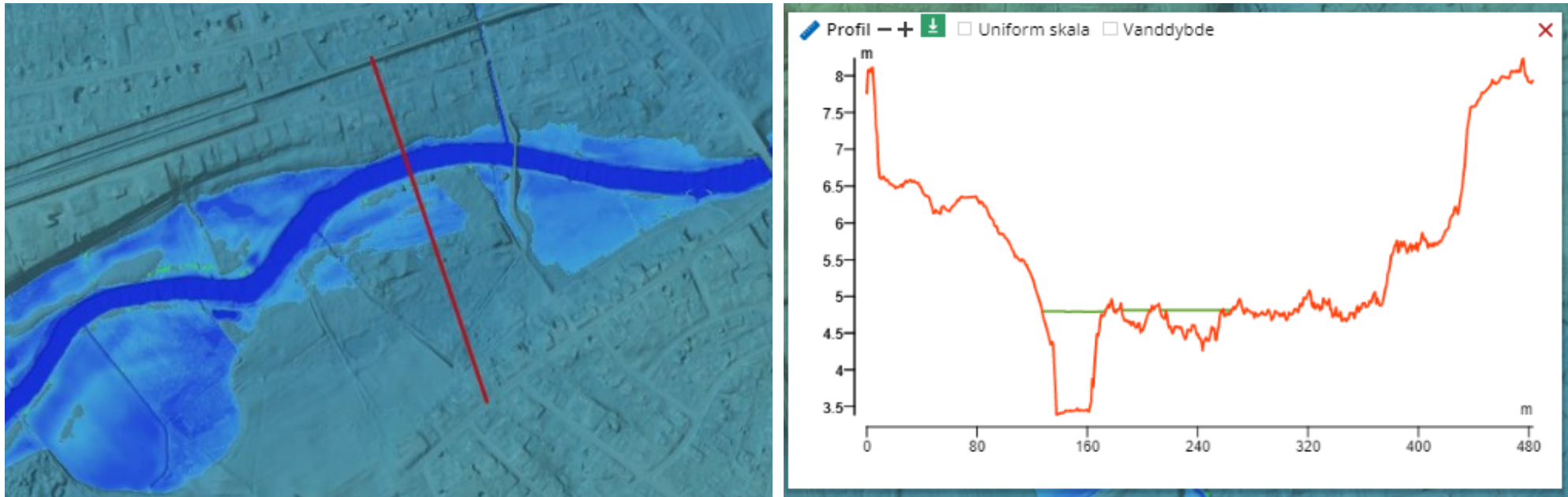




# Forsinkelsesbehov

Kapacitetsberegninger af kritiskniveau, evt. VASP, Scalgo, MIKE11, MIKE Flood mm.

Kritisk vandstand -> kritisk vandføring

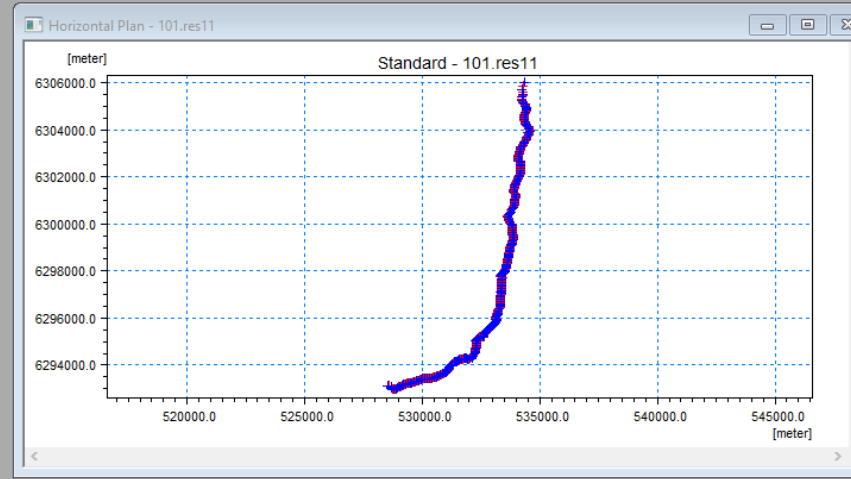
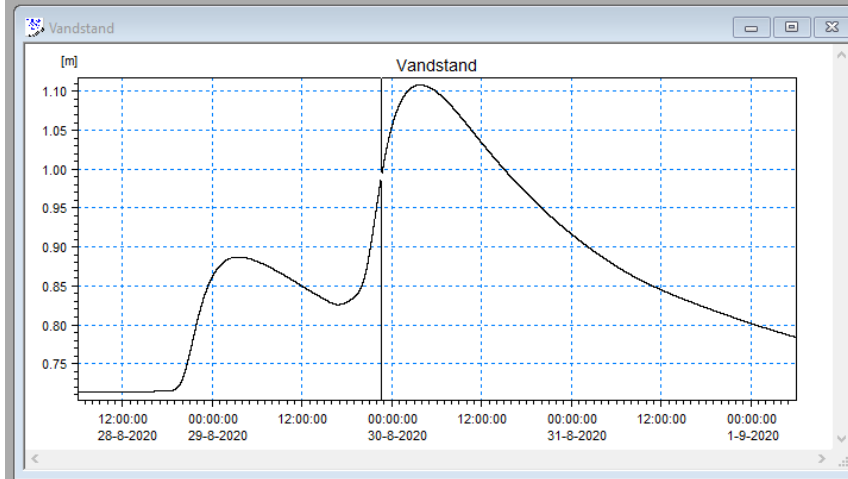
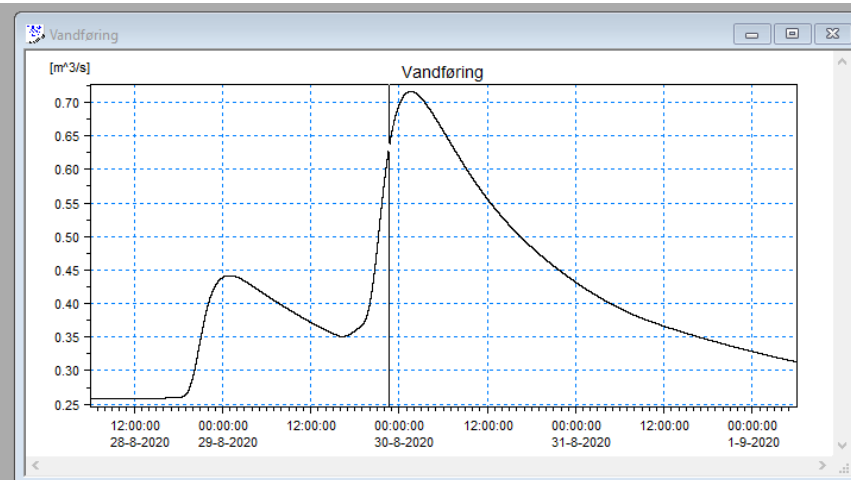
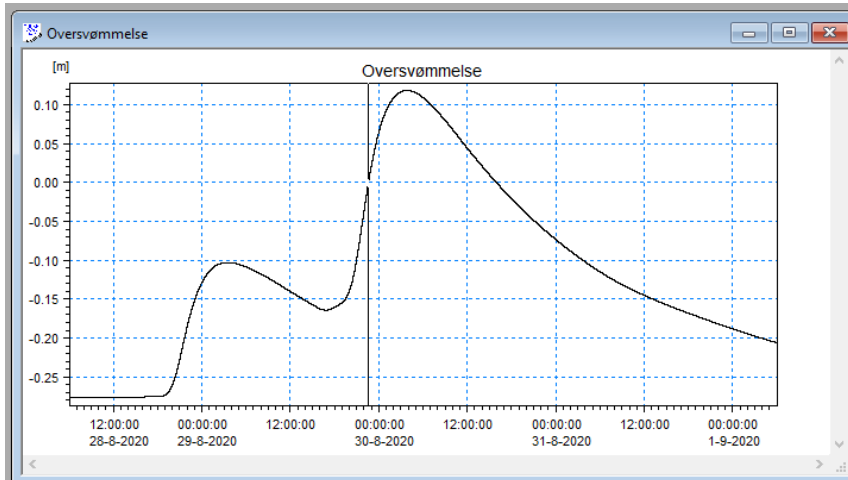




# Forsinkelsesbehov

Kapacitetsberegninger af kritiskniveau, evt. VASP, Scalgo, MIKE11, MIKE Flood mm.

Kritisk vandstand -> kritisk vandføring

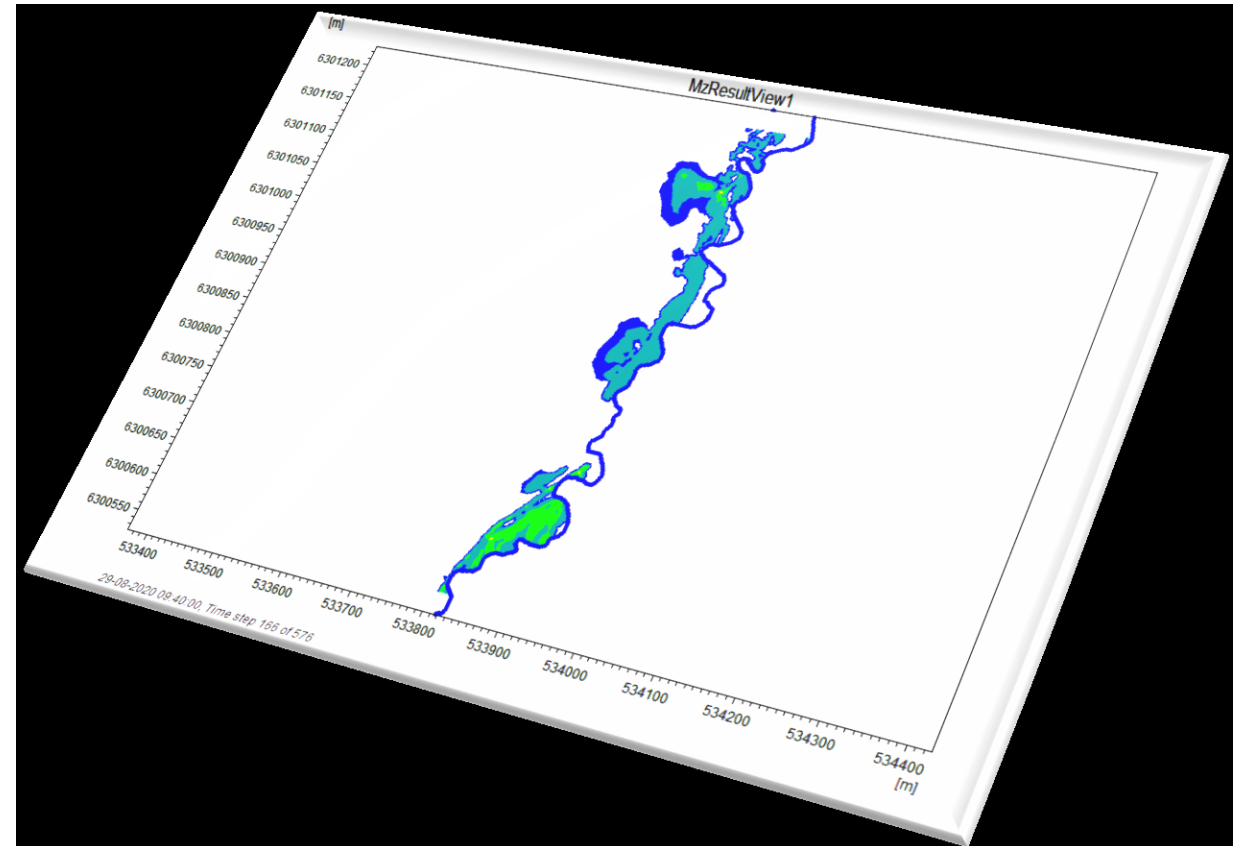
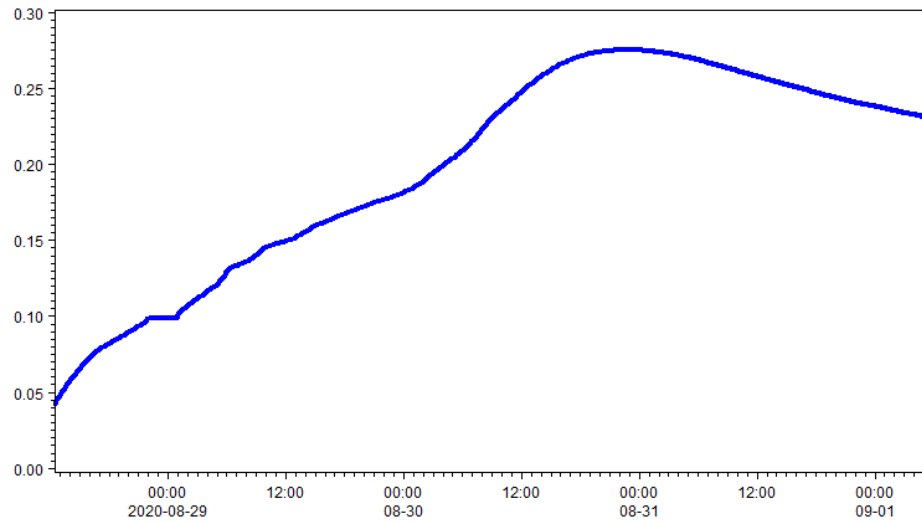




# Forsinkelsesbehov

Kapacitetsberegninger af kritiskniveau, evt. VASP, Scalgo, MIKE11, MIKE Flood mm.

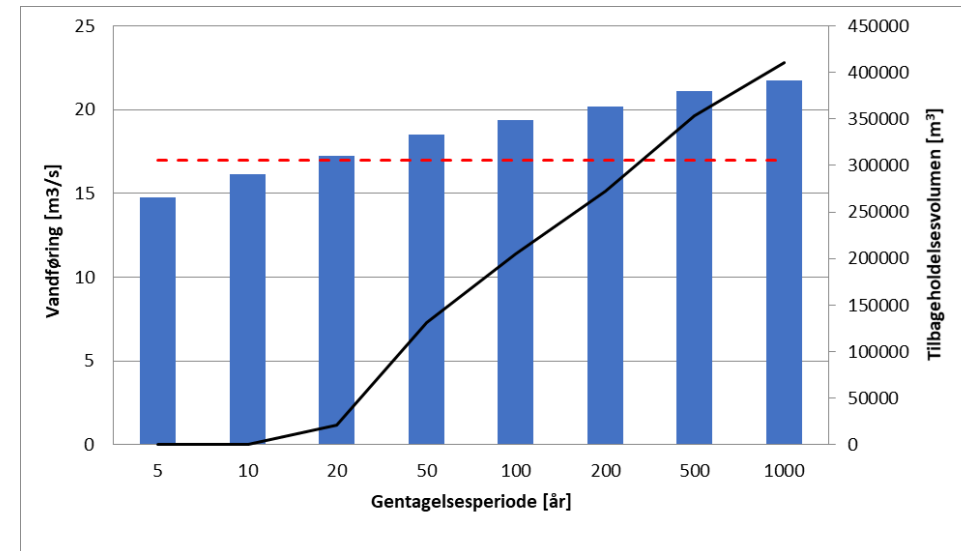
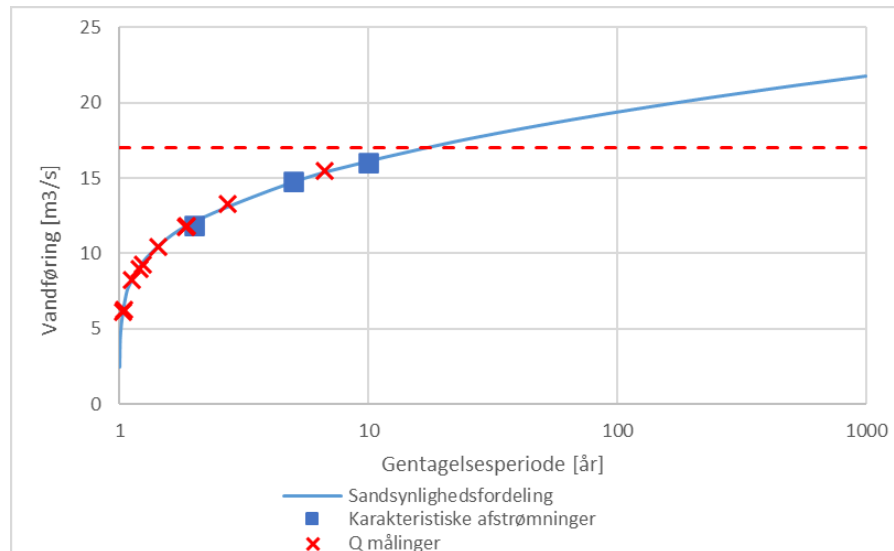
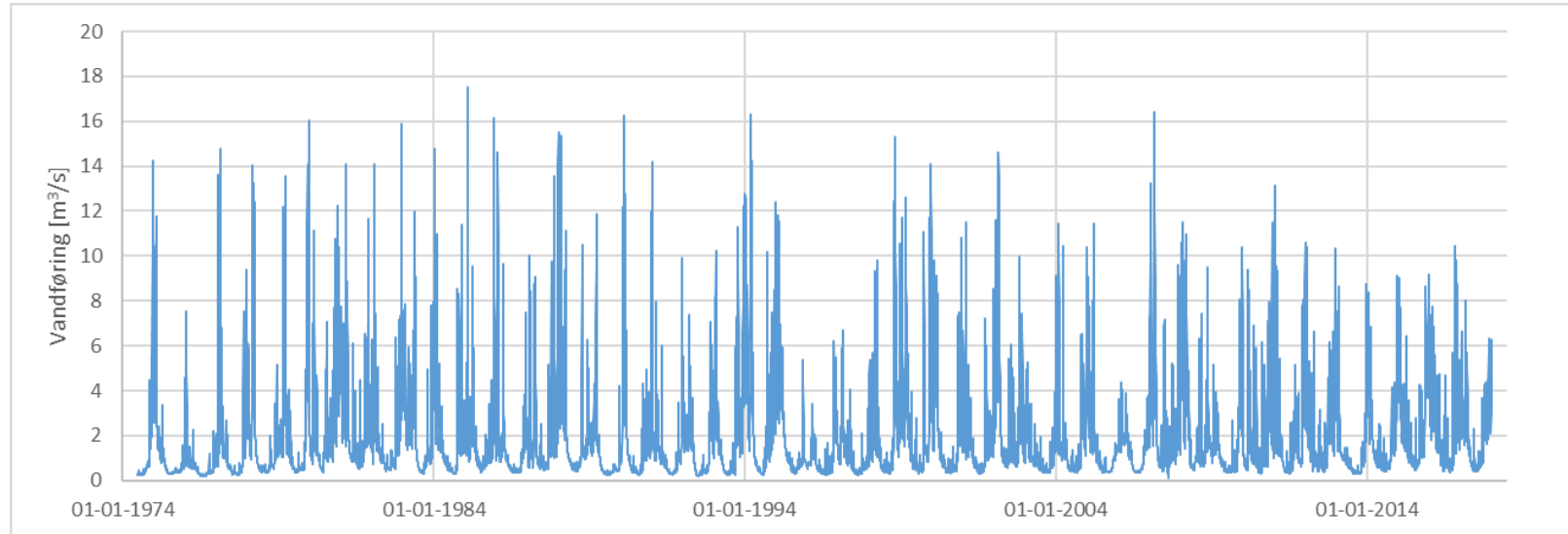
Kritisk vandstand -> kritisk vandføring





# Volumen

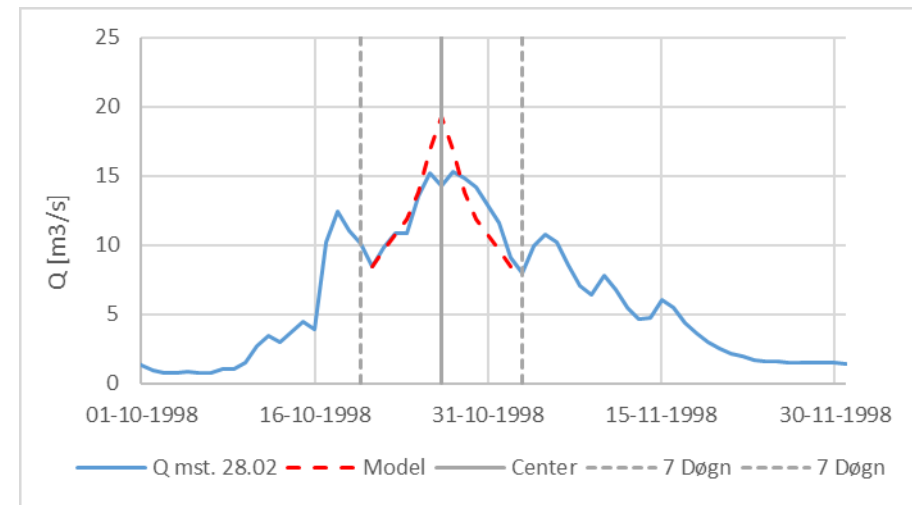
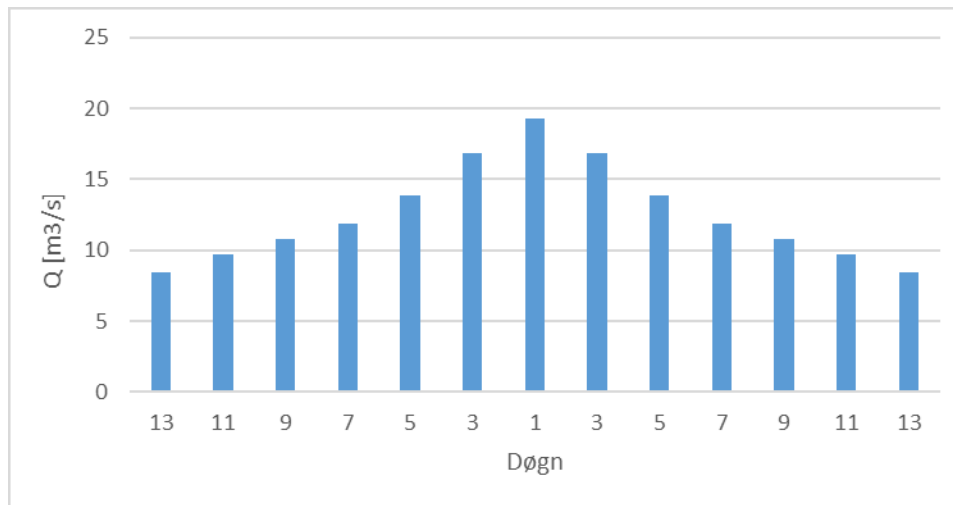
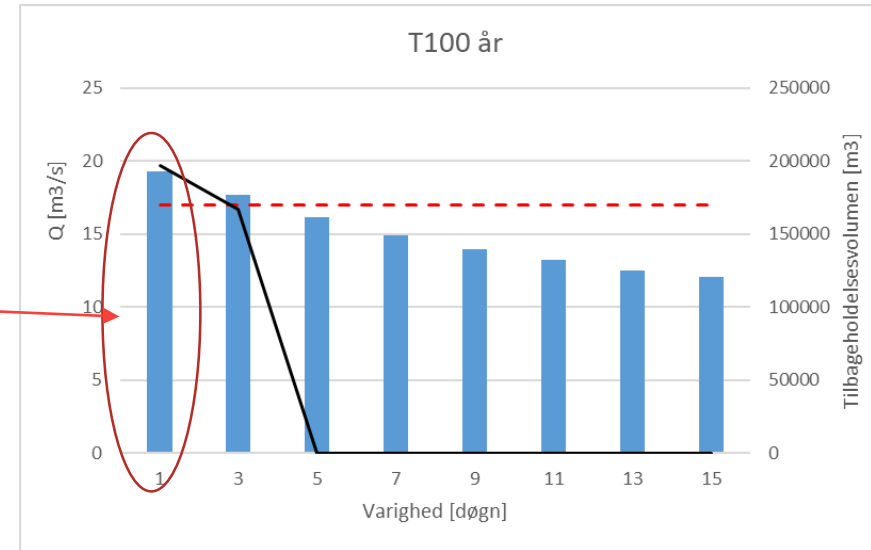
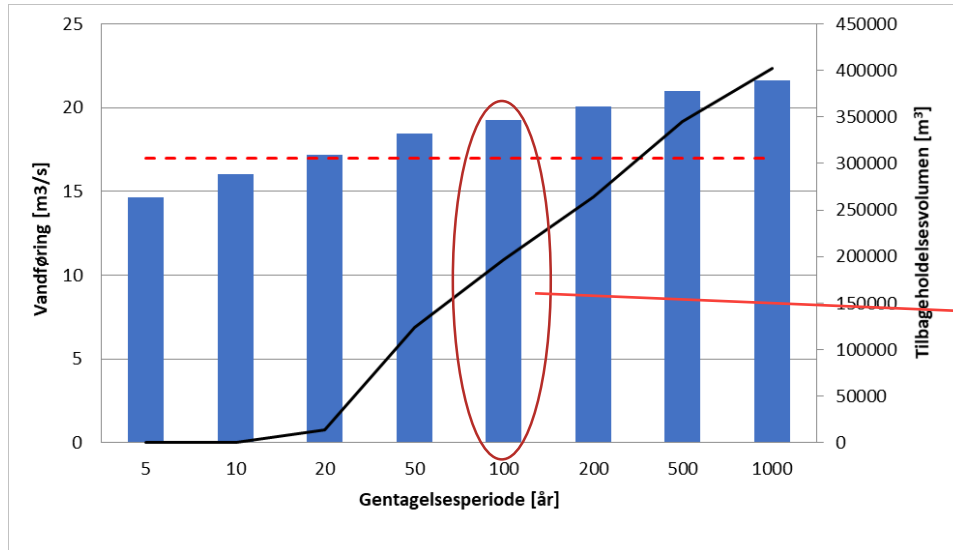
Nødvendigt volumen for at reducere vandføring til kritisk vandføring.





# Volumen

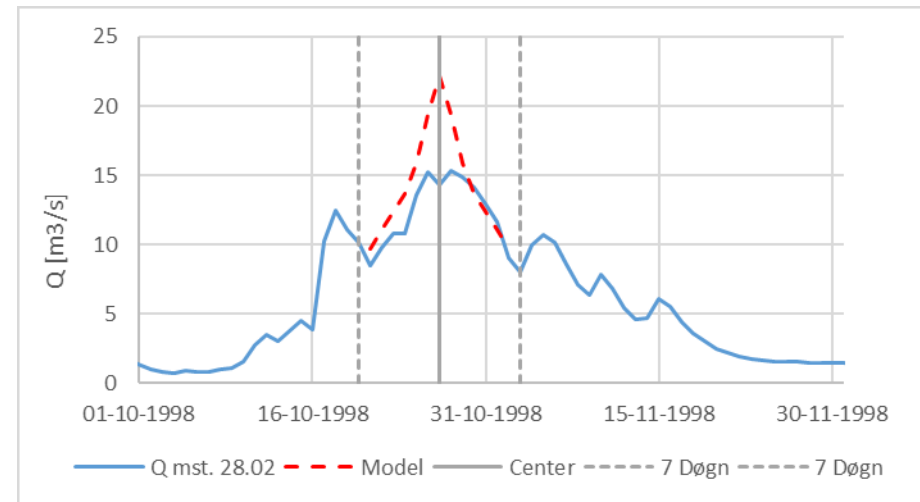
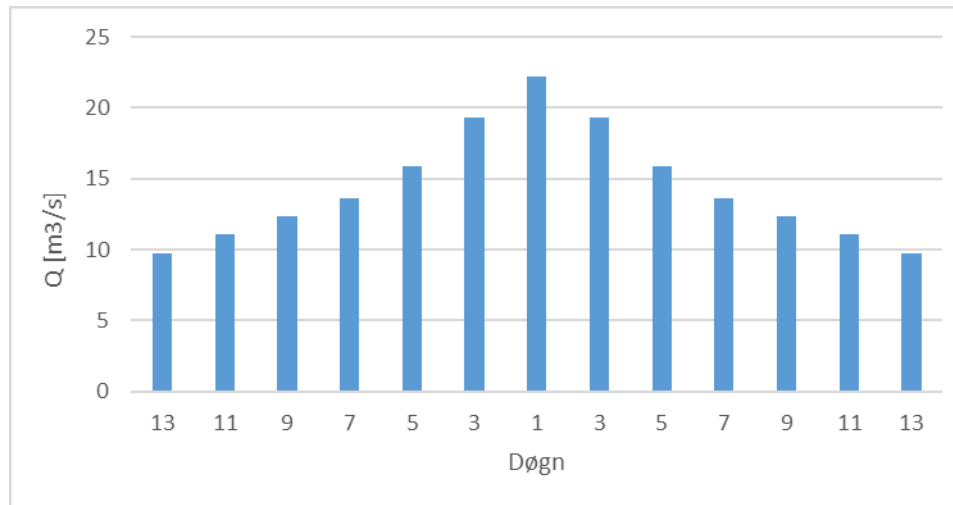
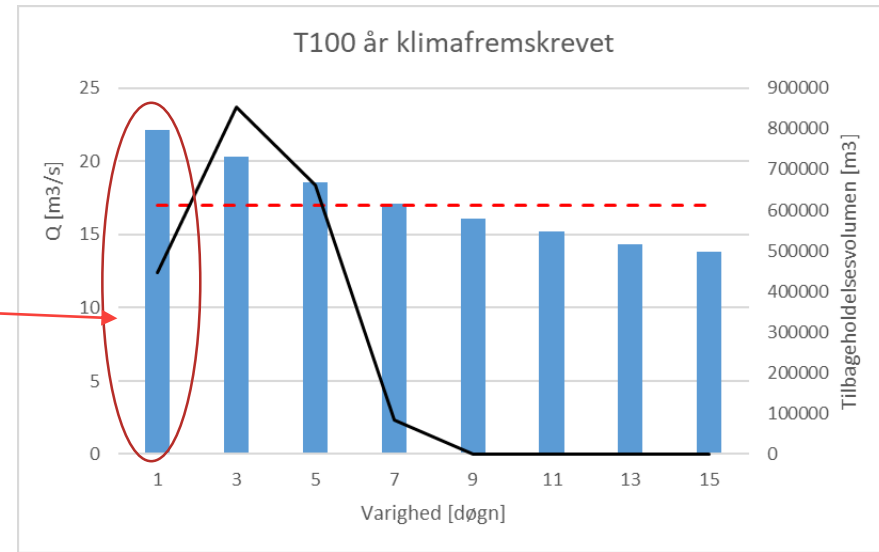
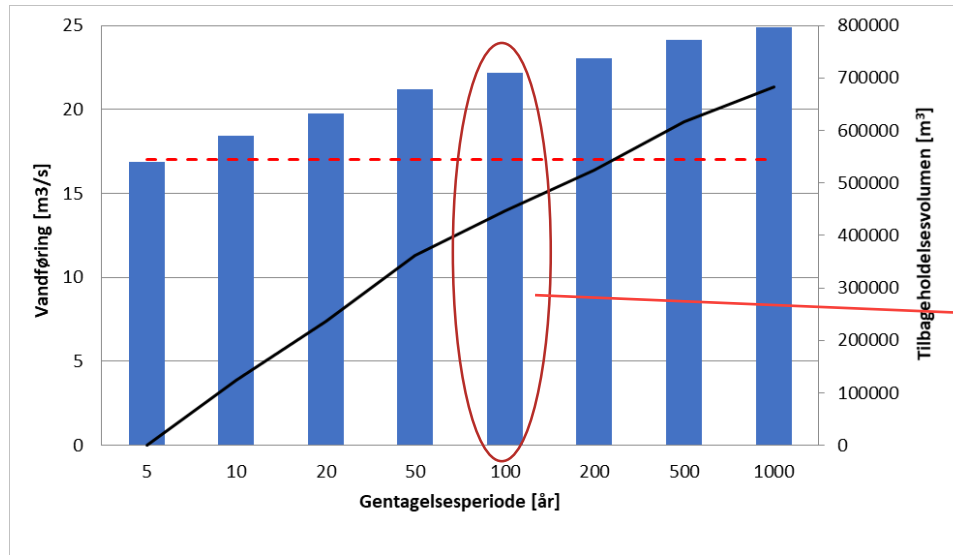
Nødvendigt volumen for at reducere vandføring til kritisk vandføring ved sikringsniveau T100





# Volumen

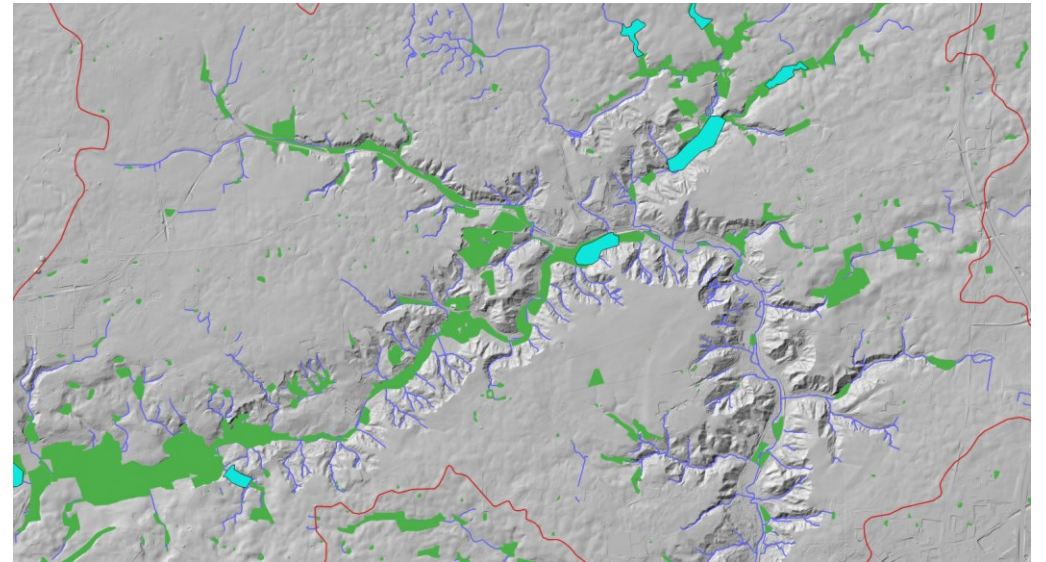
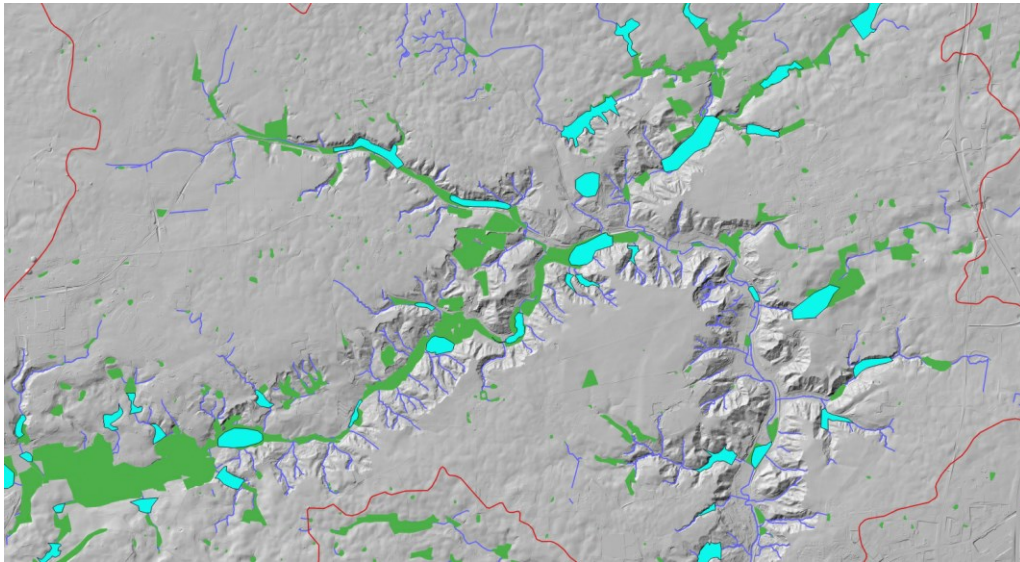
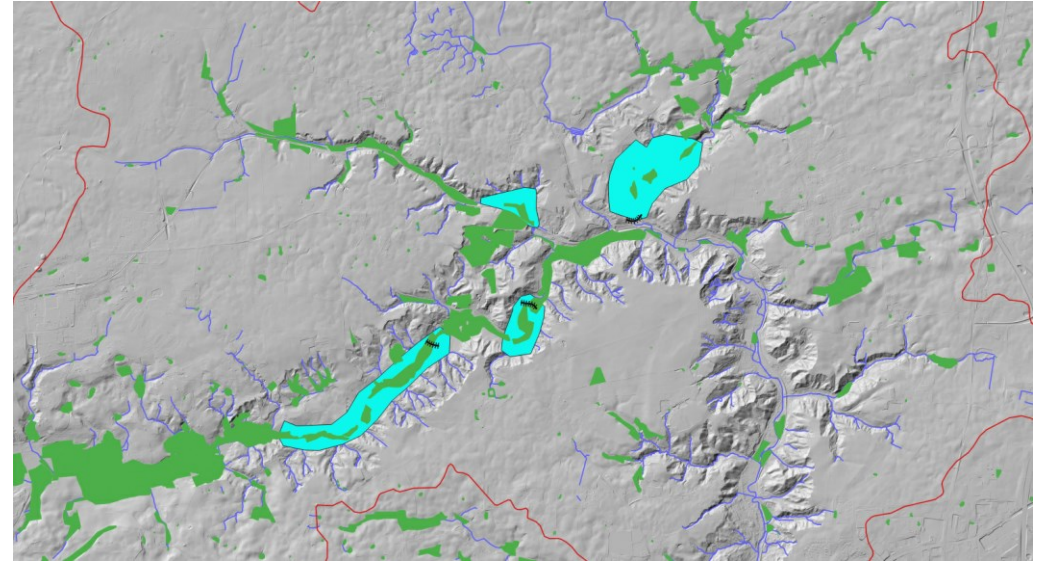
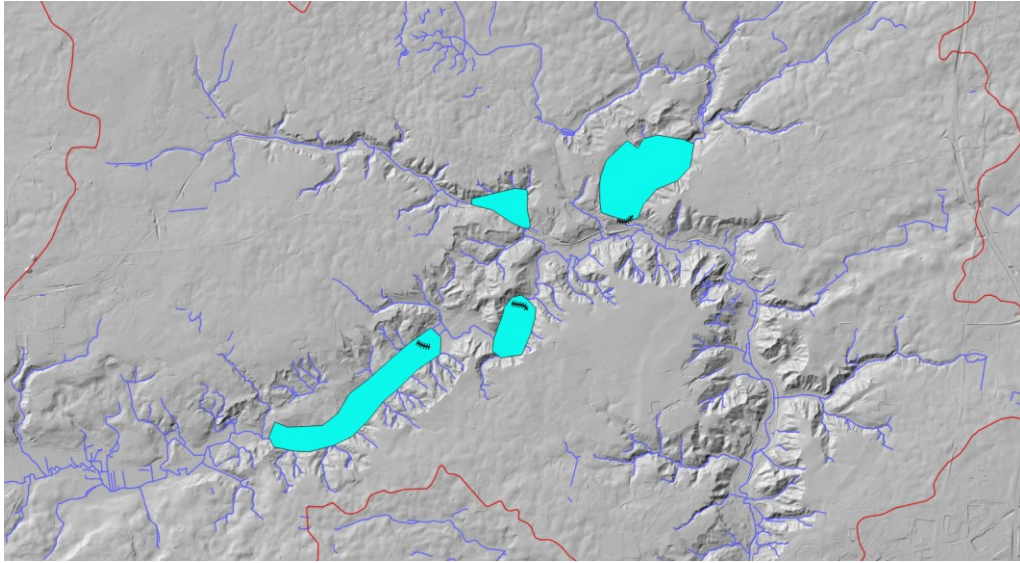
Nødvendigt volumen for at reducere vandføring til kritisk vandføring ved sikringsniveau T100 klimafremskrevet



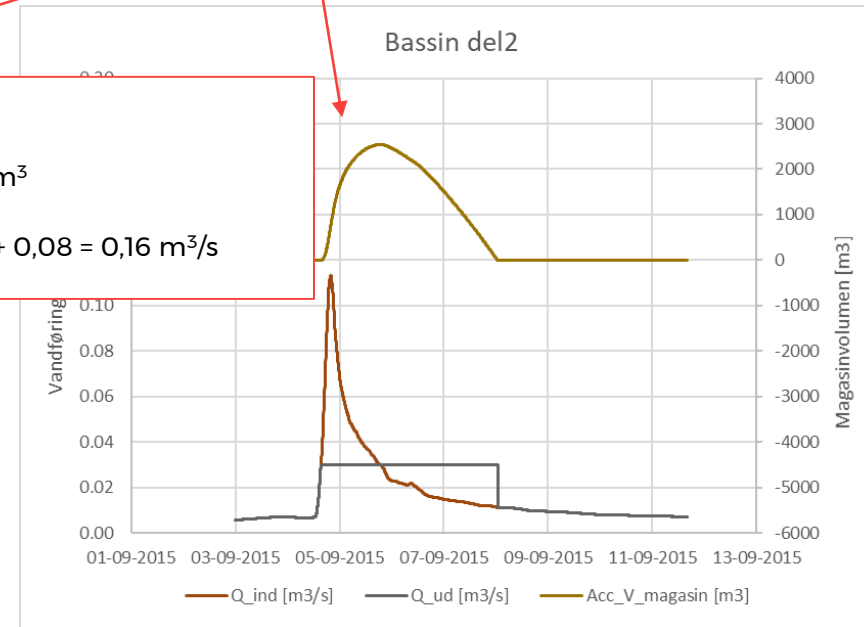
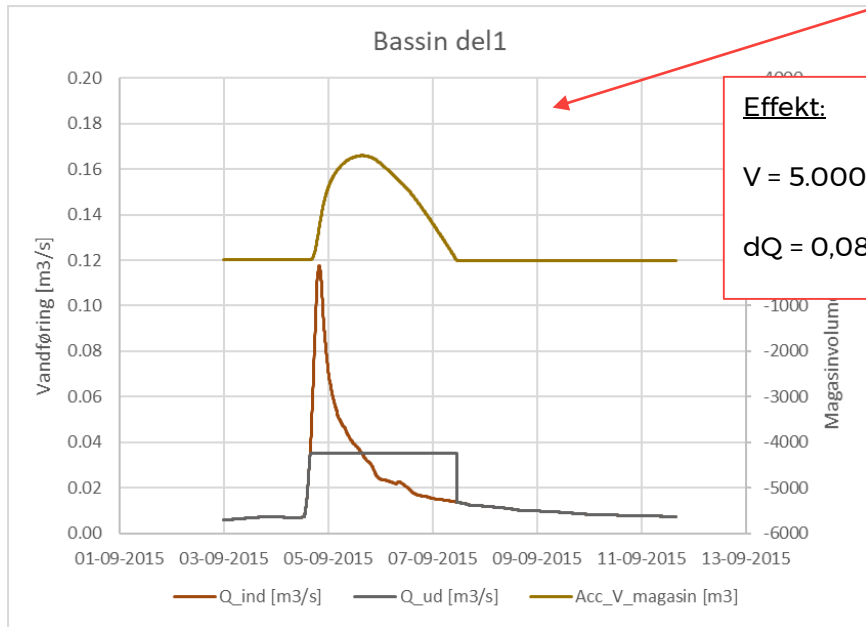
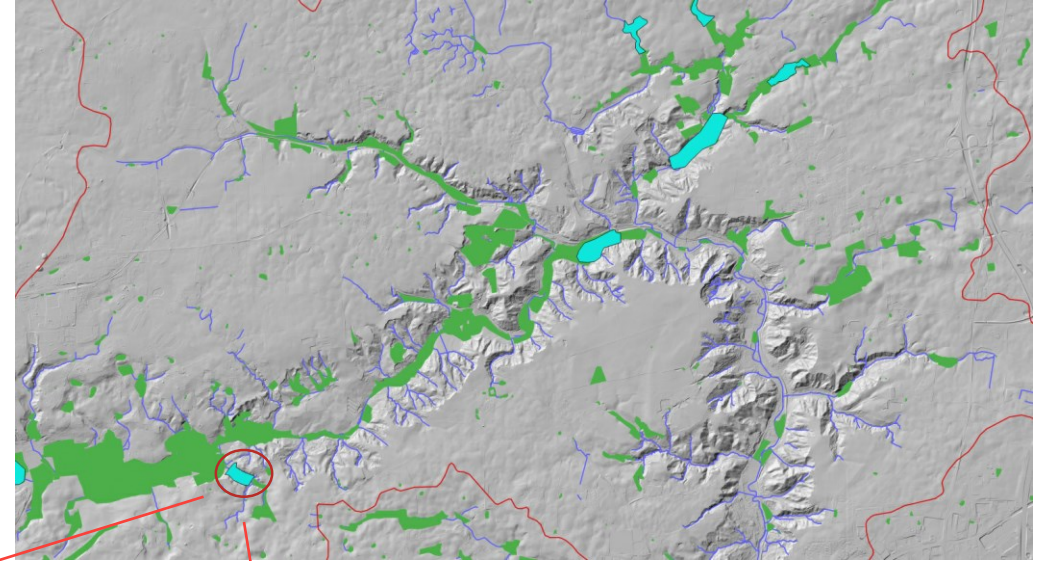
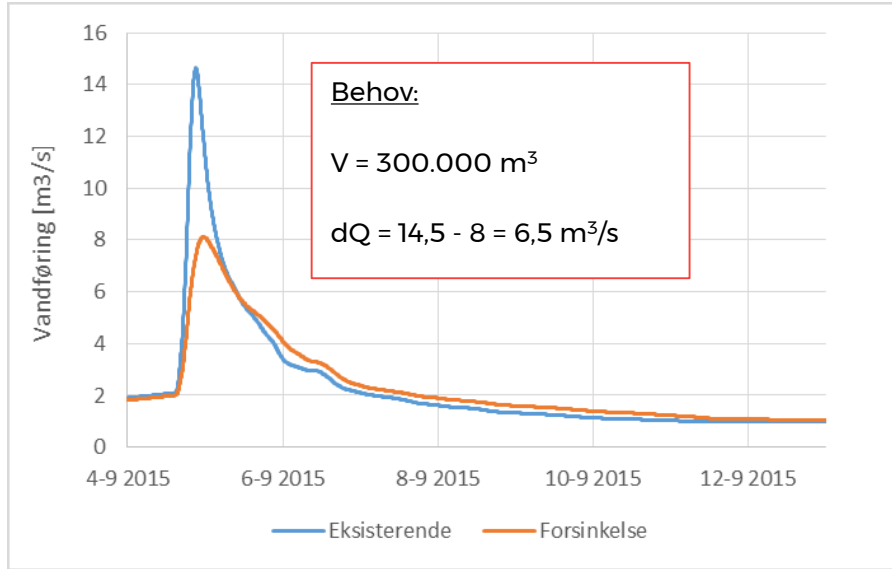




# Placering



# Effekt

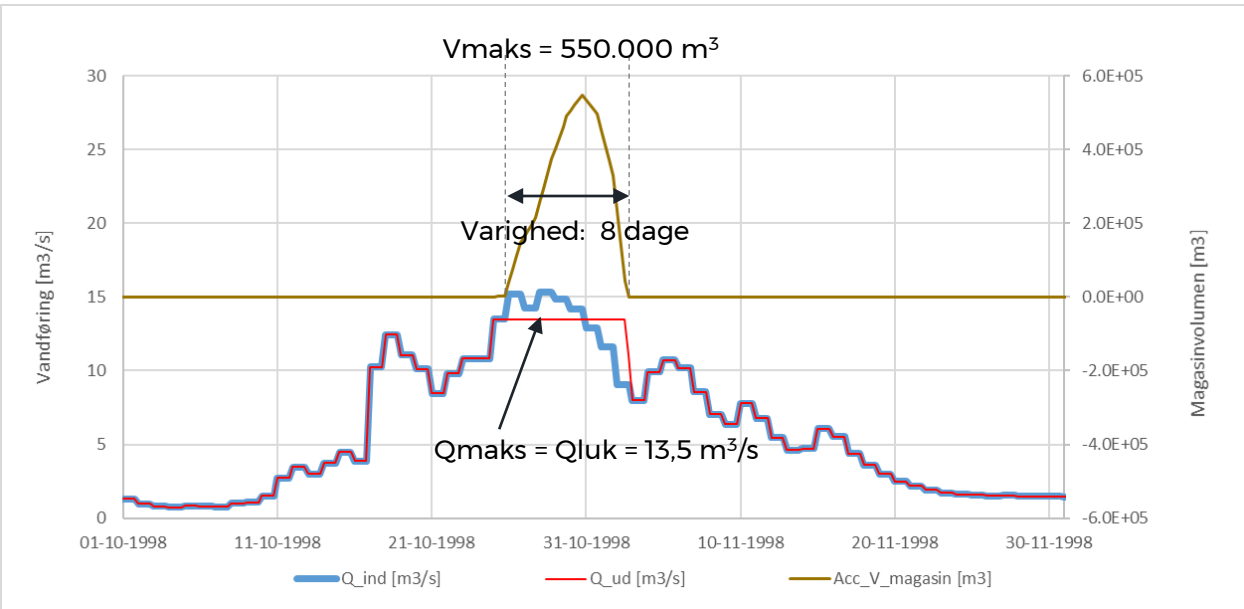
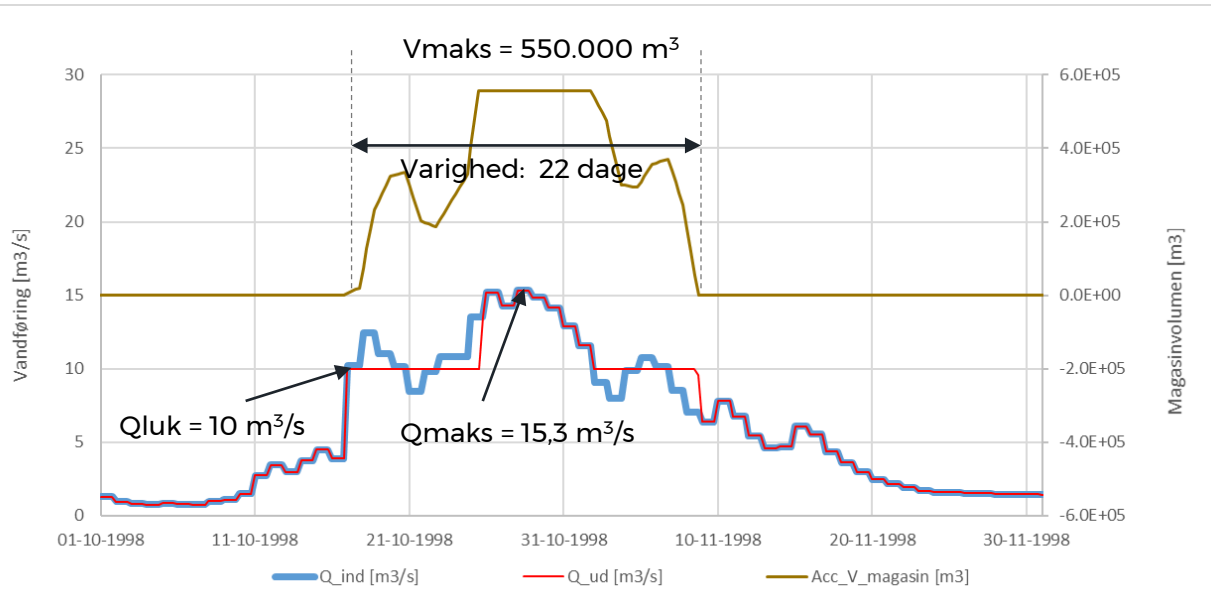


**Effekt:**  
 $V = 5.000 \text{ m}^3$   
 $dQ = 0,08 + 0,08 = 0,16 \text{ m}^3/\text{s}$



# Timing

Behov for varsling og styring?

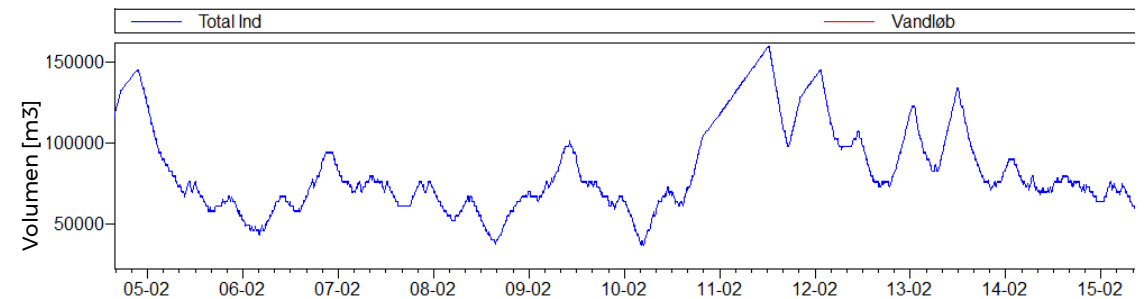
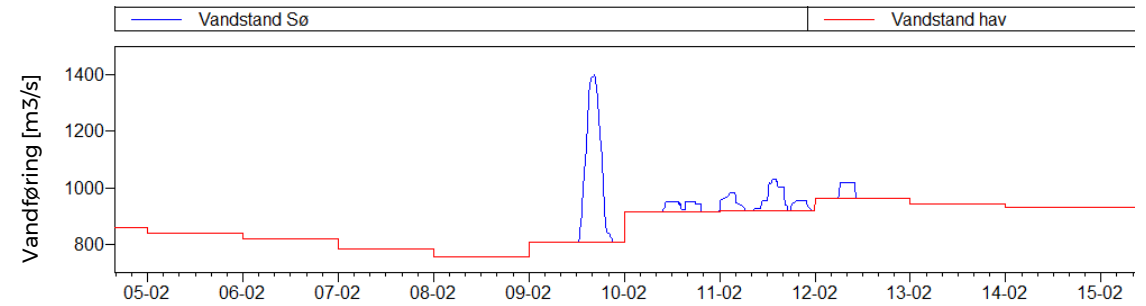
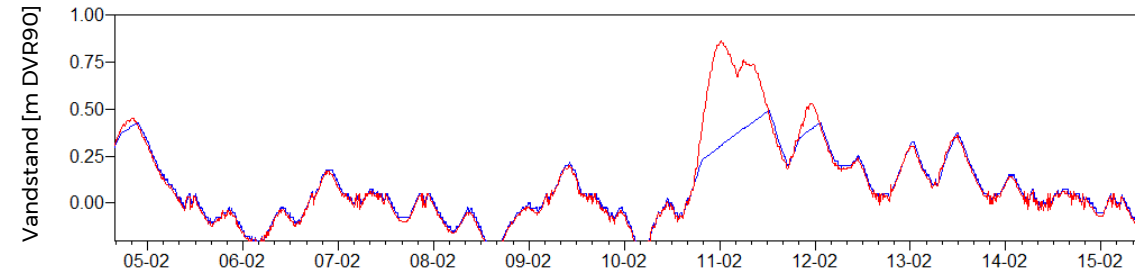
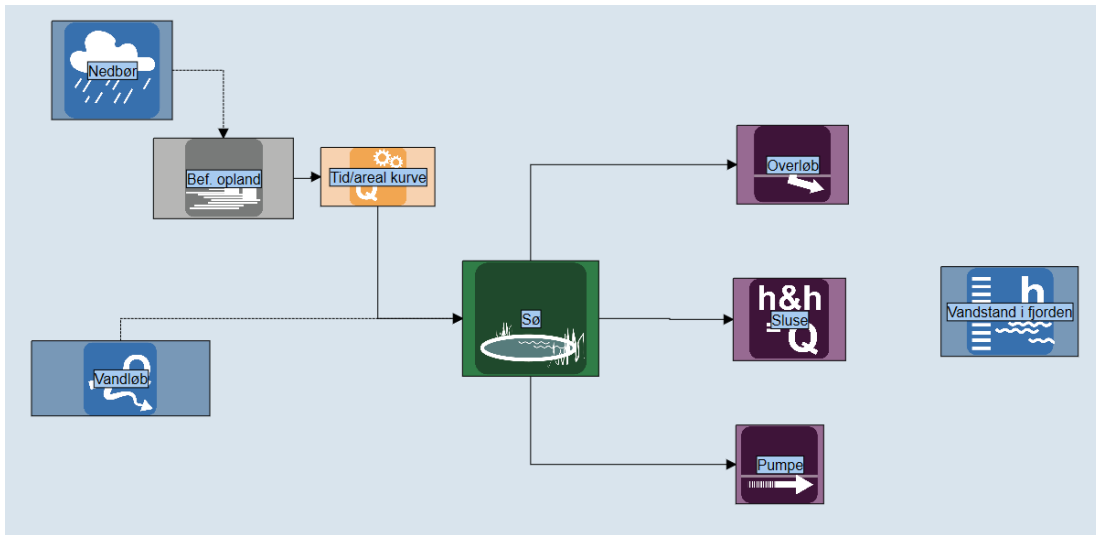




# Timing

Behov for styring?

Samtidig med havvandstand - SUMBA





Behov – Placering – Timing

Thank you



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