Iceland Liechtenstein Norway grants

“Environment, Energy and Climate Change” Programme
EEA Financial Mechanism 2014-2022

NFGI
Norsk forening for grønn infrastruktur

Nature based solutions

Project:

Creation of green and blue infrastructure in the city of Piastów

Gonçalo Liberato

NFGI Vice-chair

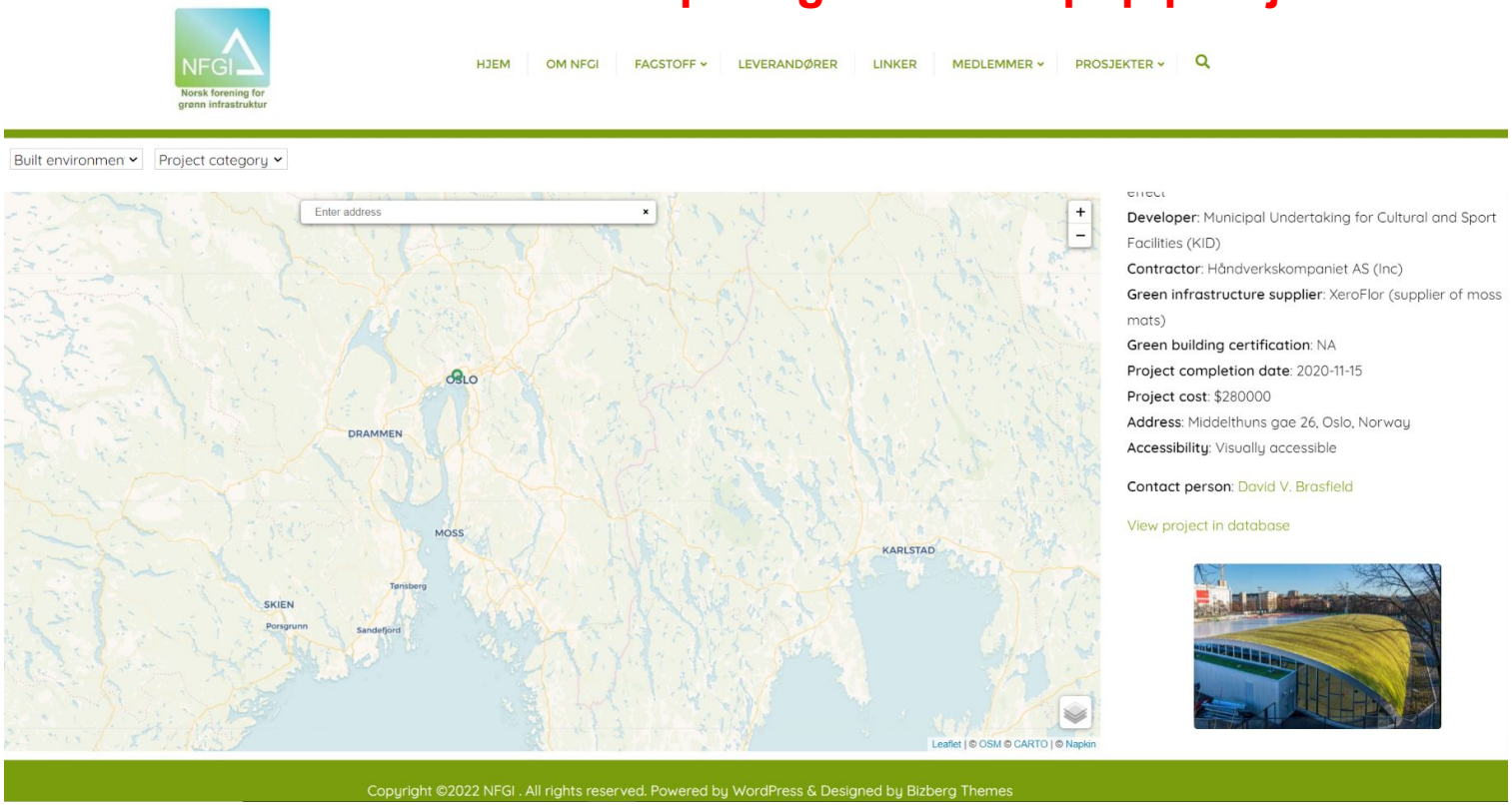
Entrepreneur, Landscape Architect

linkedin.com/in/goncaloliberato

NFGI
Norsk forening for grønn infrastruktur

My current mission in NFGI is to finalize and launch OGID.

http://nfgi.no/index.php/prosjekter



OGID – Open Green Infrastructure Database

The Open Green Infrastructure Database (OGID) is a database of all open green-infrastructure data. We host worldwide data from every major green-infrastructure association and private actors.

Iceland Liechtenstein Norway grants

“Environment, Energy and Climate Change” Programme
EEA Financial Mechanism 2014-2021

NFGI
Norsk forening for grønn infrastruktur

Project:

The implementation of green and blue infrastructure in communities located in Municipalities belonging to the Union of the Wisłoka River Basin Communes

Content:

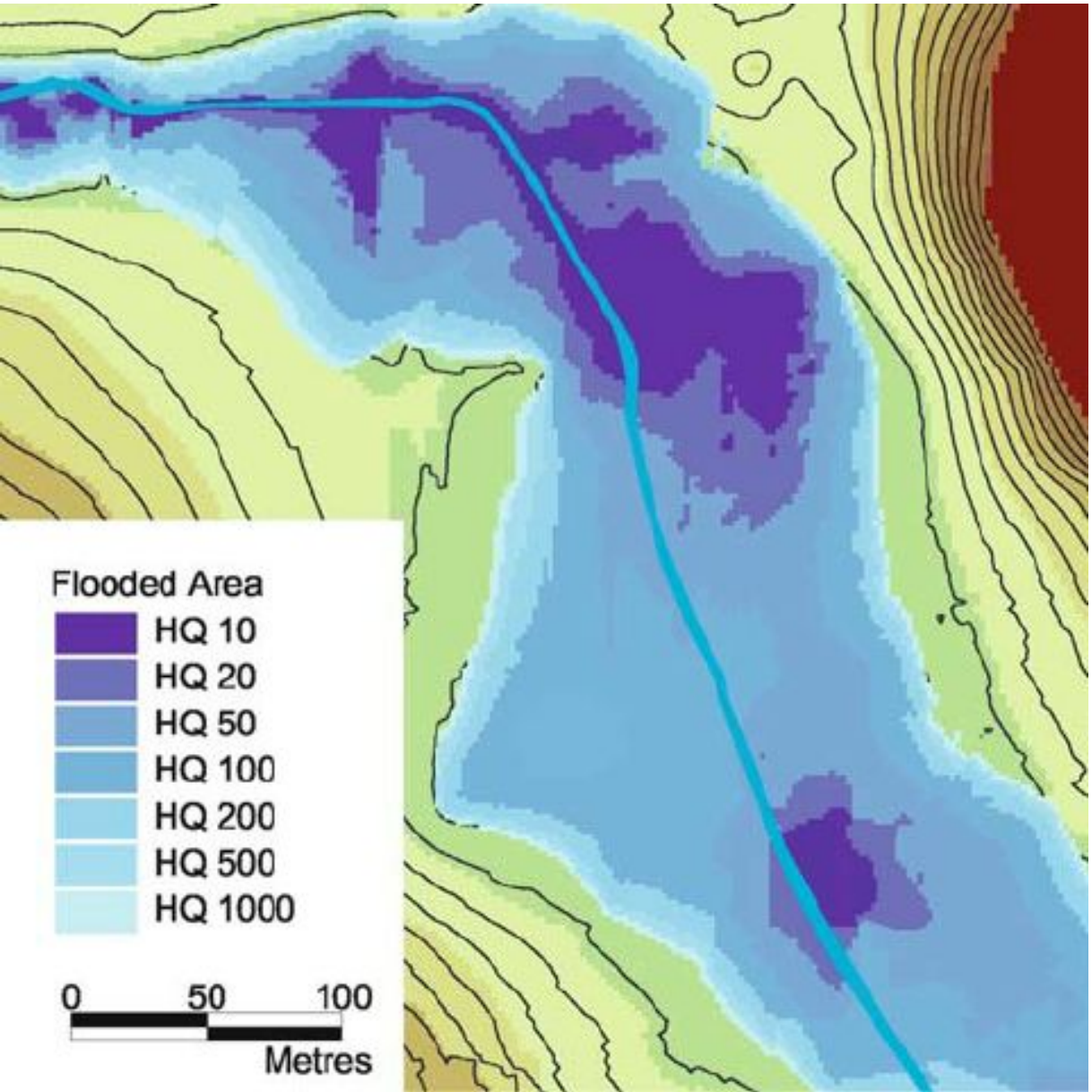
1. A common challenge
2. What is NBS
3. Global NBS standard
4. Norwegian context
5. Norwegian actors
6. Watershed analysis
7. Strategies & solutions

A common challenge

Jaslo 27.06.2020

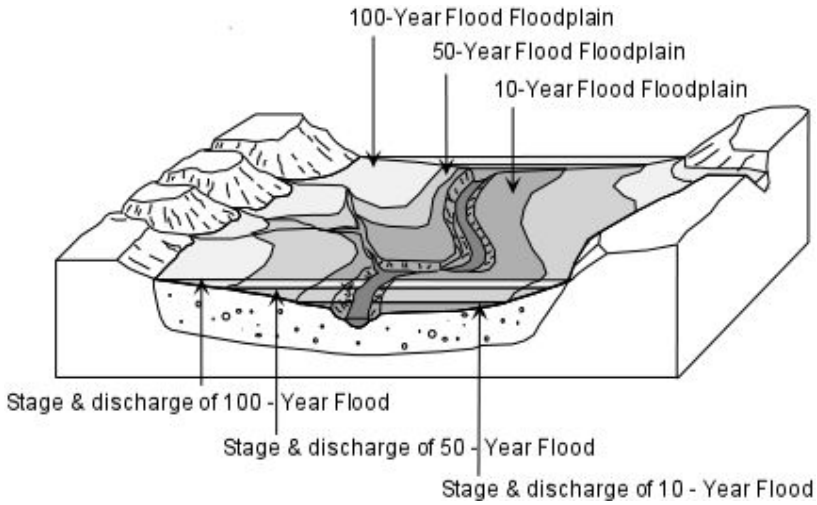
https://www.yr.no/artikkel/de-storste-flommene-i-norge-1.6233304

Is 200 becoming the new 20?



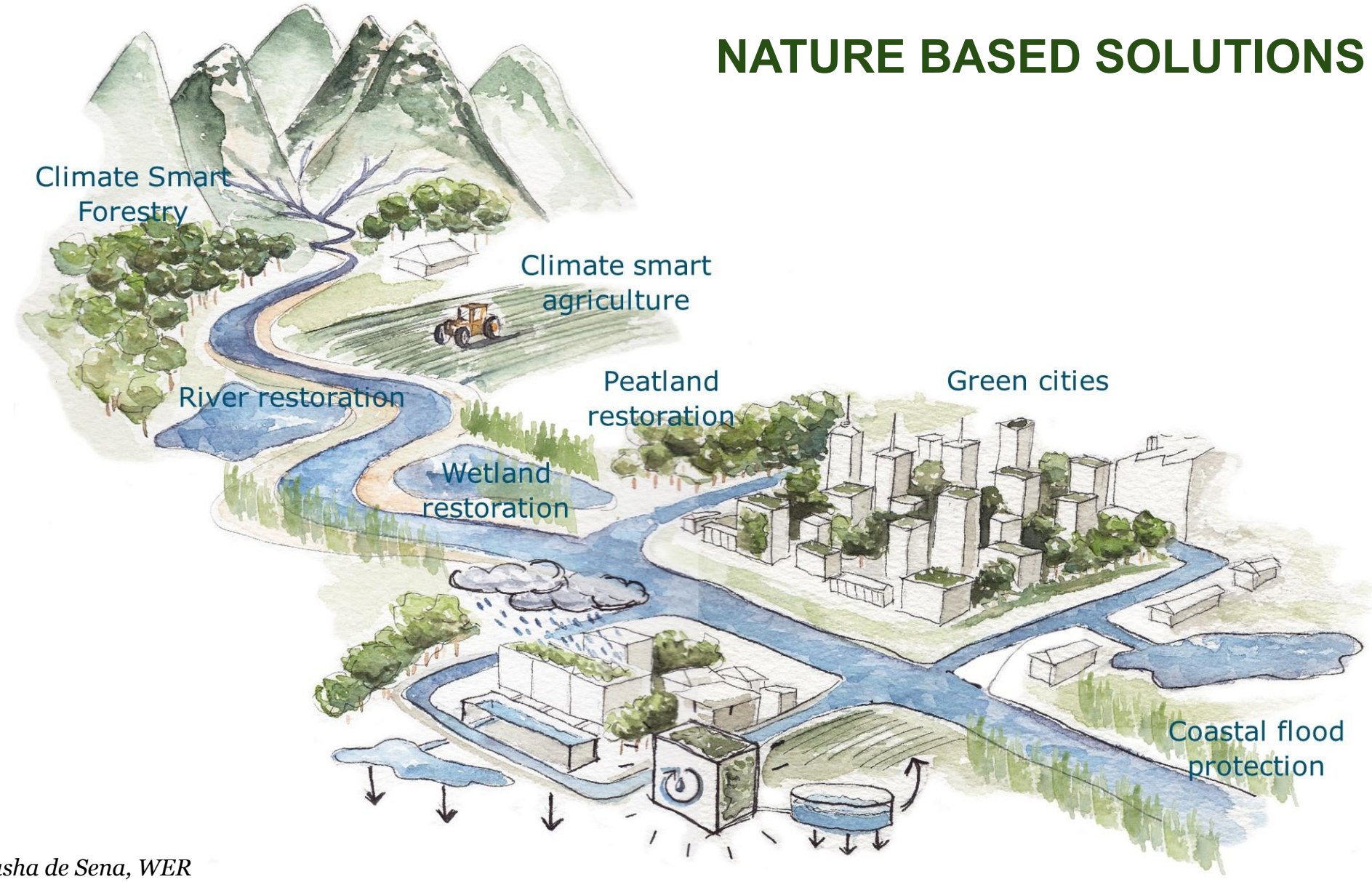
Hendelser gir en ny hverdag og nye prioriteringer…

Frida i Nedre Eiker kommune 6.-7. august 2012
ca 114 mm på 2 timer (28 mm er 200 års regn i Trondheim)



What is NBS?

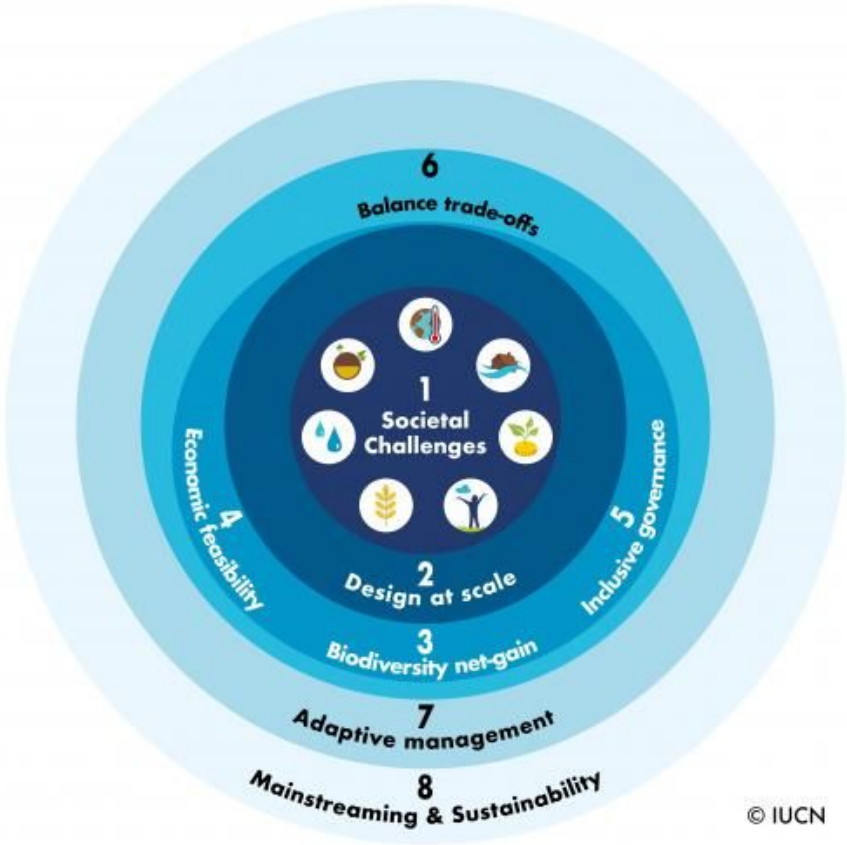
Norsk forening for grønn infrastruktur



Graphic: Natasha de Sena, WER

Global Standard for NbS

International Union for Conservation of Nature (IUCN)



1. Definition of Nature-based Solutions Nature-based Solutions are defined as "**actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits."**

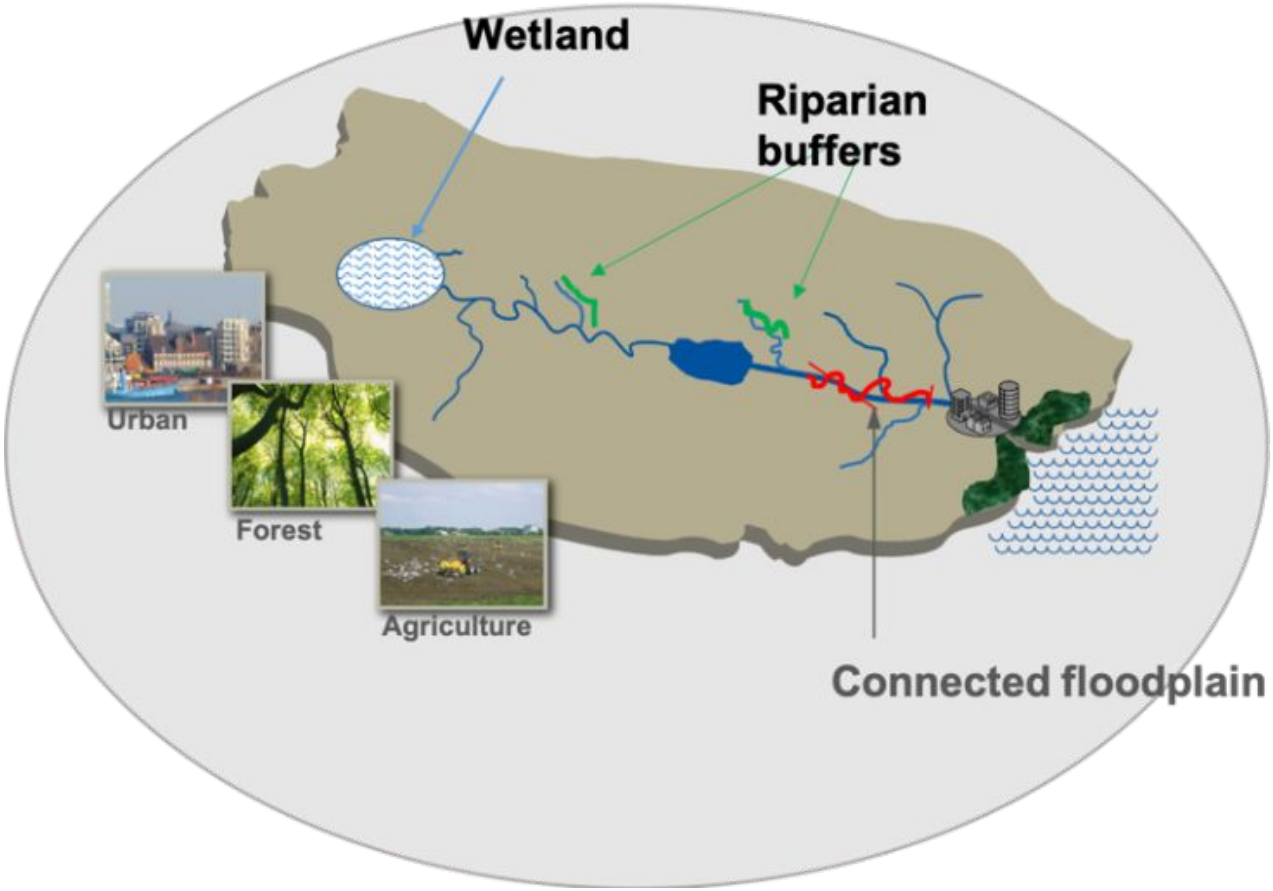
2. Overarching goal of Nature-based Solutions The goal of Nature-based Solutions is "to support the achievement of society's development goals and safeguard human well-being in ways that reflect cultural and societal values and enhance the resilience of ecosystems, their capacity for renewal and the provision of services;

Nature-based Solutions are designed to address major societal challenges, such as:

- ***food security,***
- ***climate change,***
- ***water security,***
- ***human health,***
- ***disaster risk,***
- ***social and economic development".***

https://www.iucn.org/theme/nature-based-solutions/resources/iucn-global-standard-nbs

Norwegian

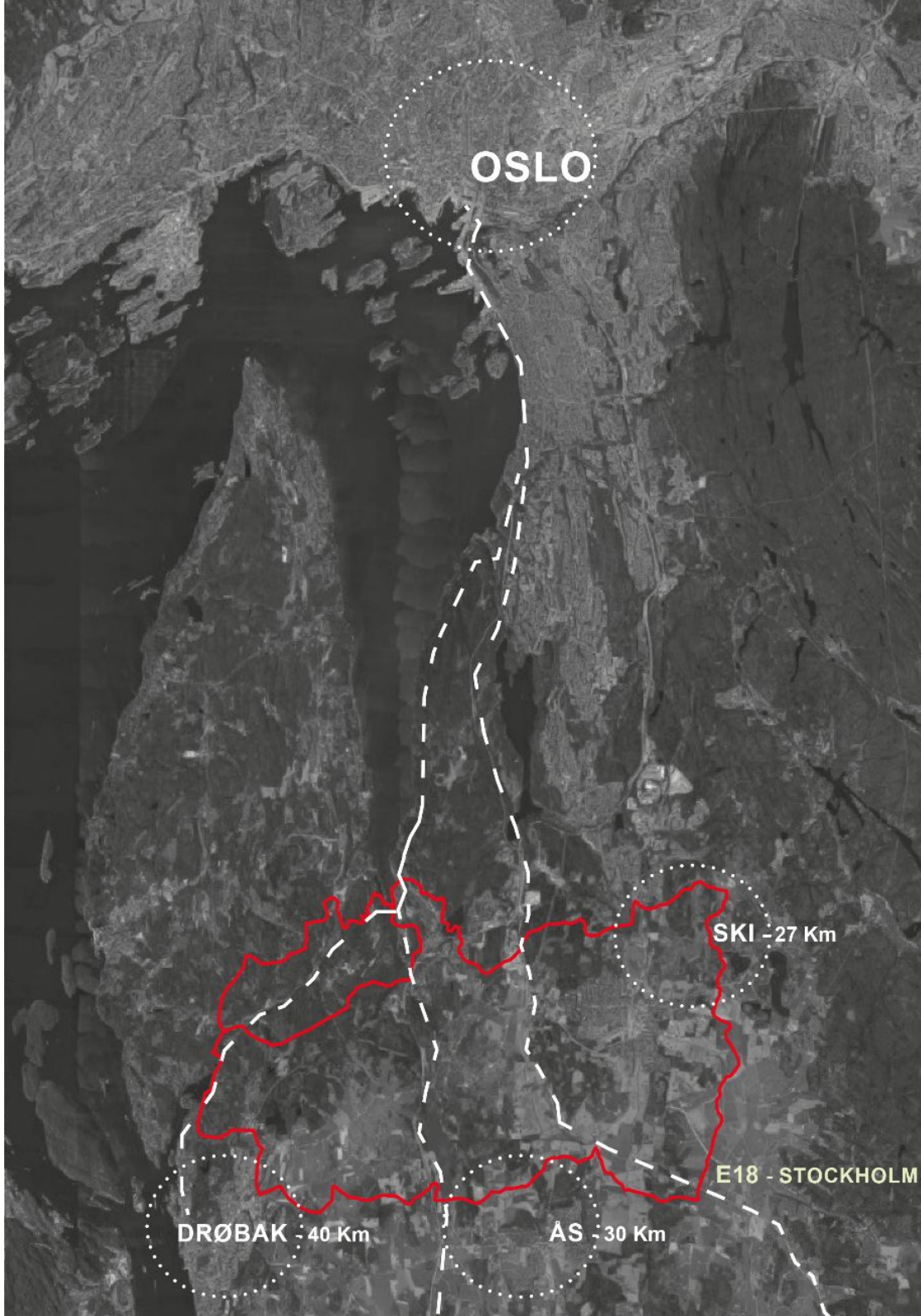


Norwegian Institute for Water Research

The Norwegian Institute for Water Research (NIVA) is Norway's leading institute for fundamental and applied research on marine and freshwaters. Our research comprises a wide array of environmental, climatic and resource-related fields. NIVA's world-class expertise is multidisciplinary with a broad scientific scope. We combine research, monitoring, evaluation, problem-solving and advisory services at international, national and local levels.

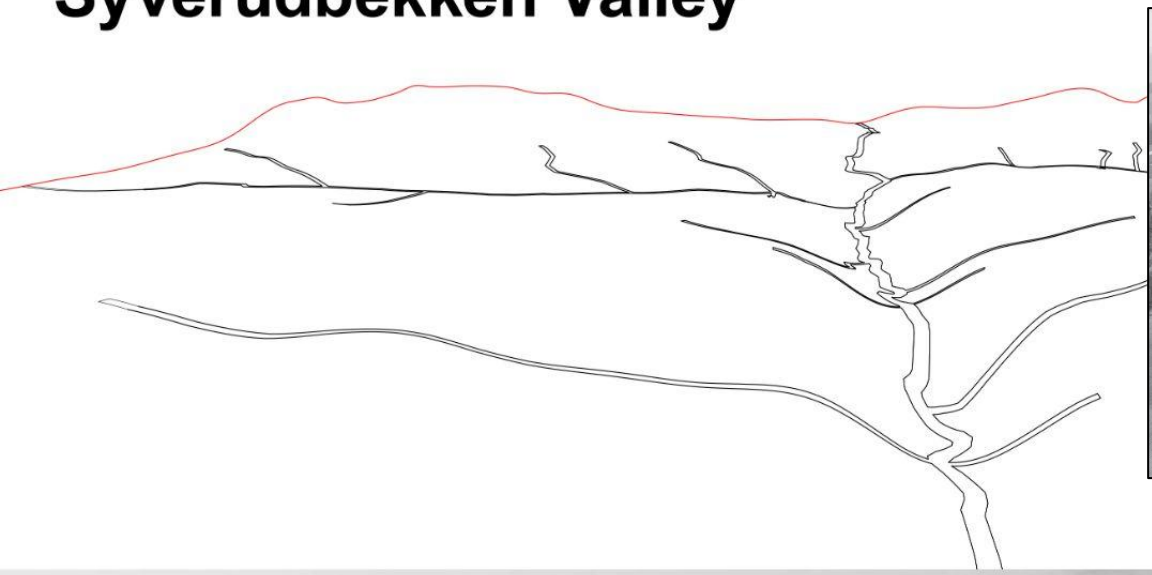
https://www.niva.no/en/research/nature-based-solutions

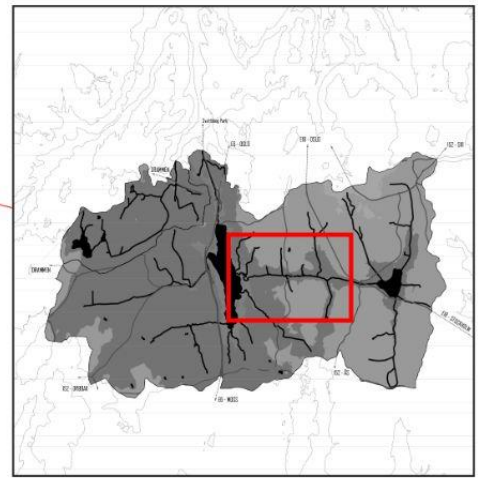
Watershed analysis



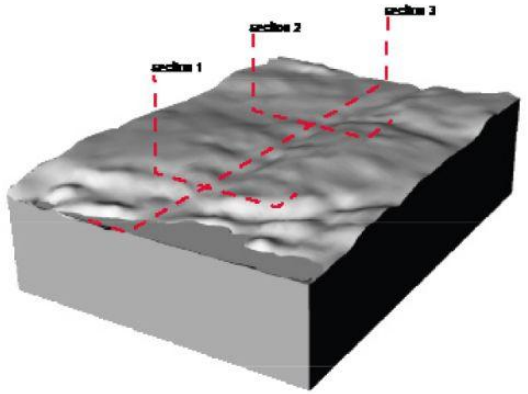
RUNOFF POLLUTION
EUTROPHICATION

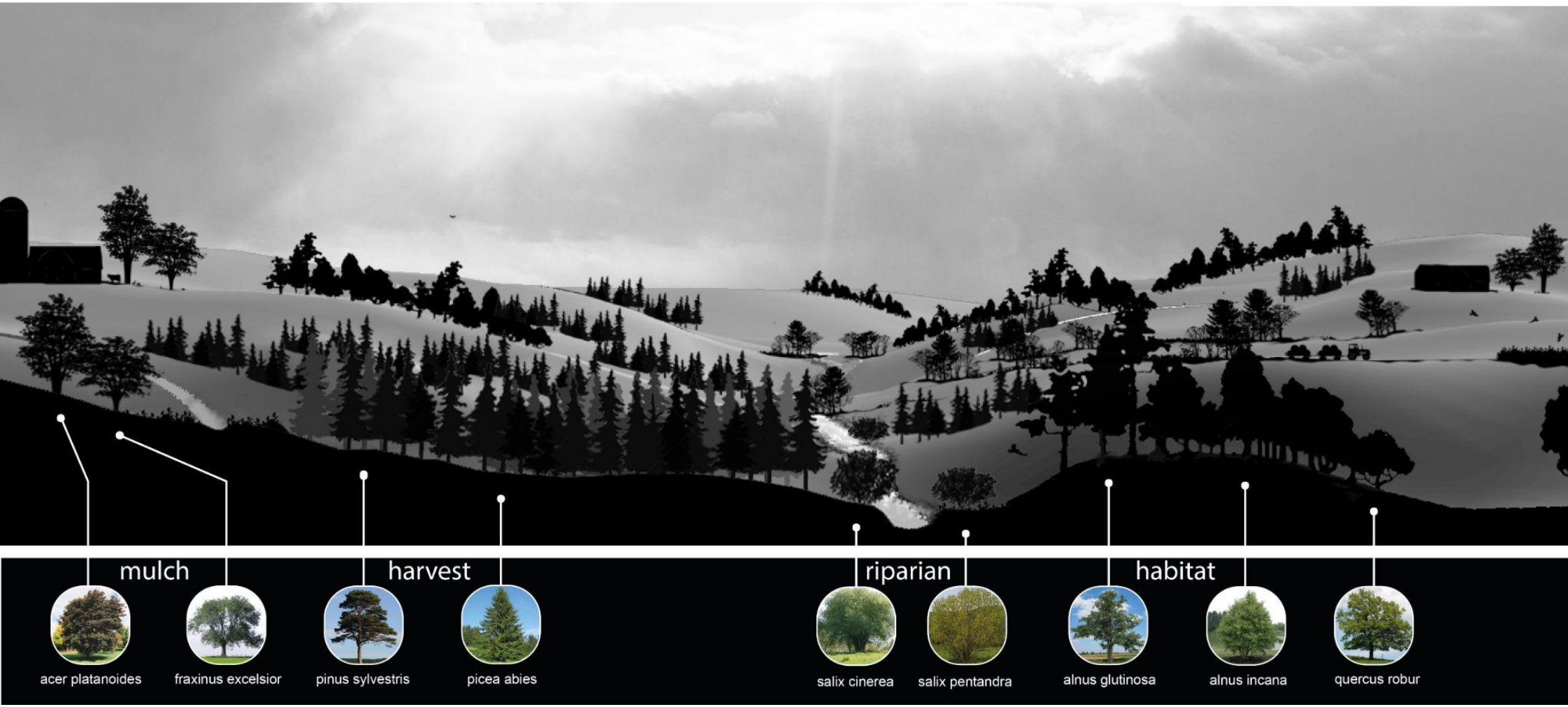
Syverudbekken Valley



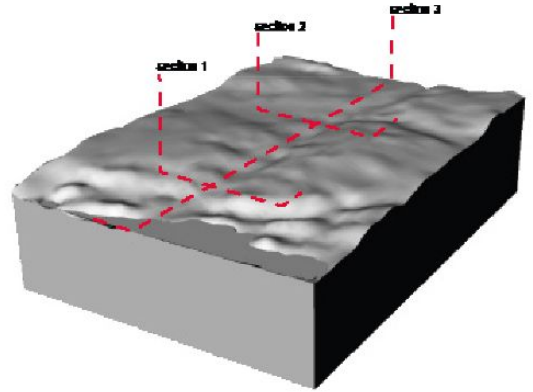


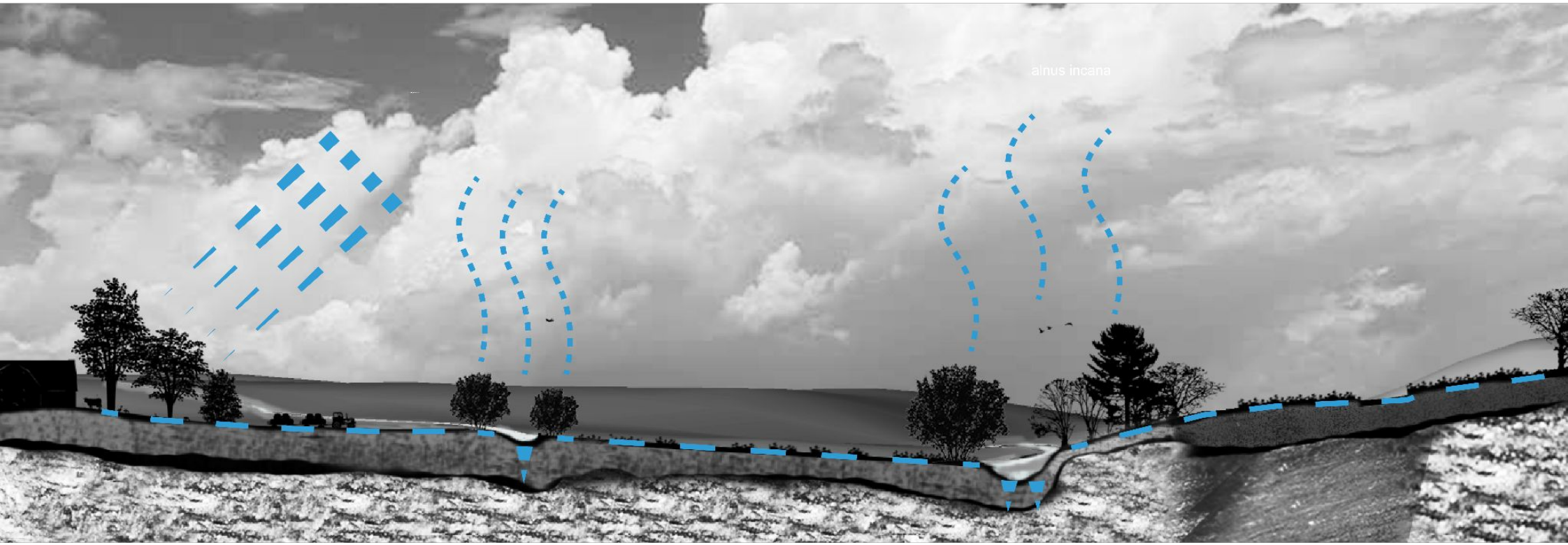
VEGETATION


section 1
section 2
section 3


mulch
harvest
riparian
habitat
acer platanoides
fraxinus excelsior
pinus sylvestris
picea abies
salix cinerea
salix pentandra
alnus glutinosa
alnus incana
quercus robur

WATER CYCLE AND SOIL





bedrock

glimmergneis amfibolitt

gneis migmatik

soil

thick marine deposit

thin marine deposit

thick sand deposit

water cycle

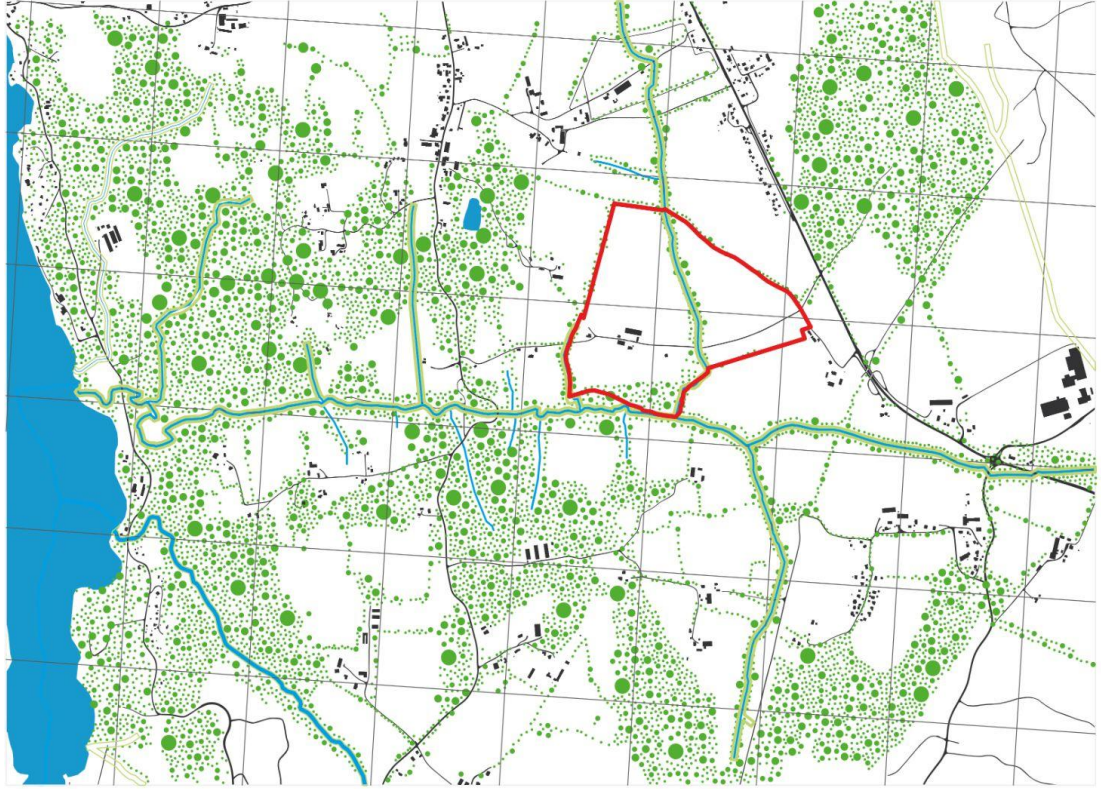
STRATEGIC PLAN

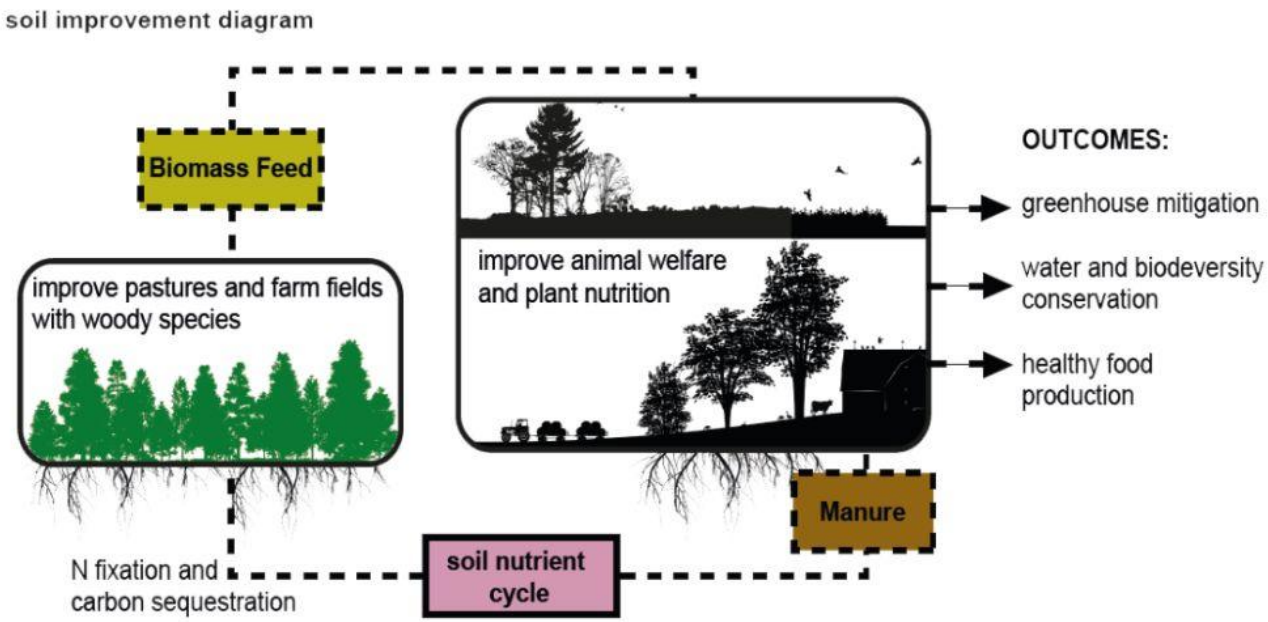
vegetation edges

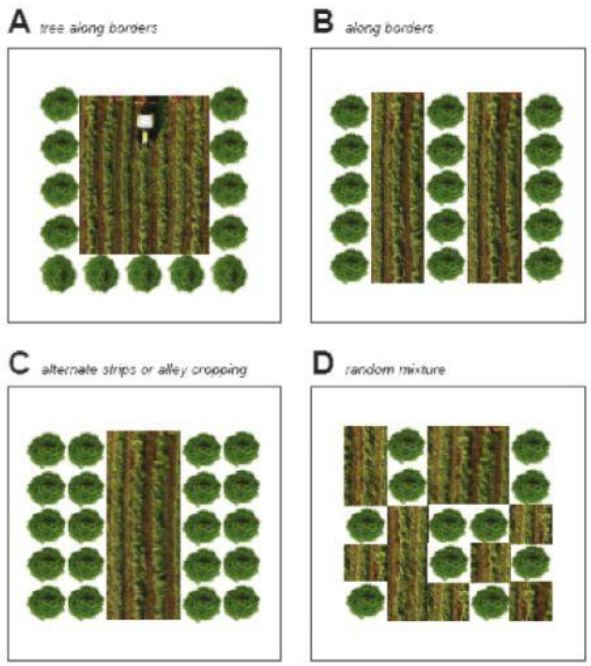
riparian corridors along waterlines

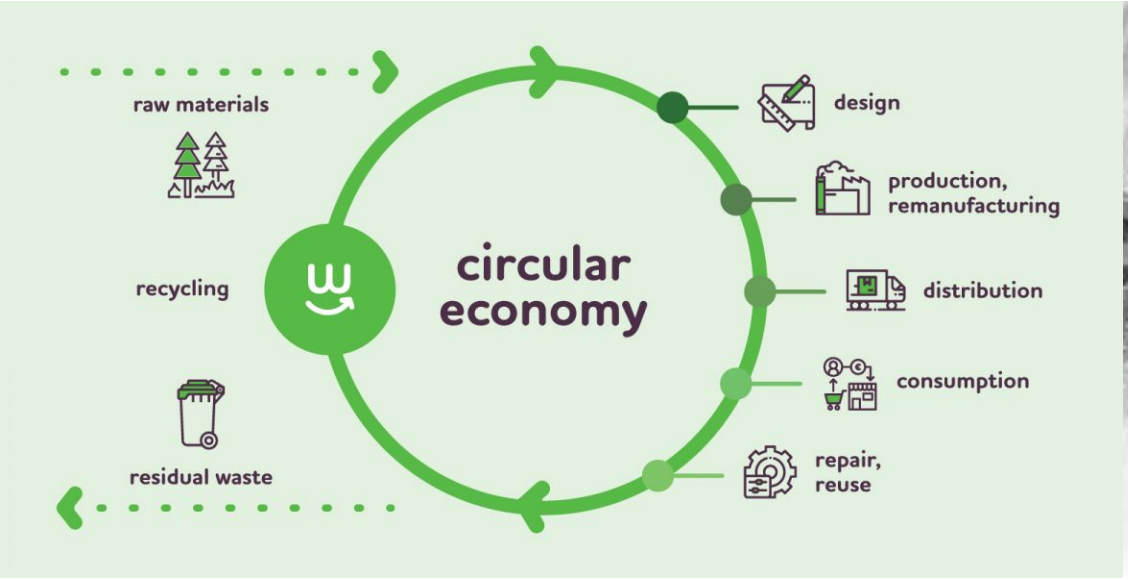
agroforestry methodologies

densification of housing and agro production

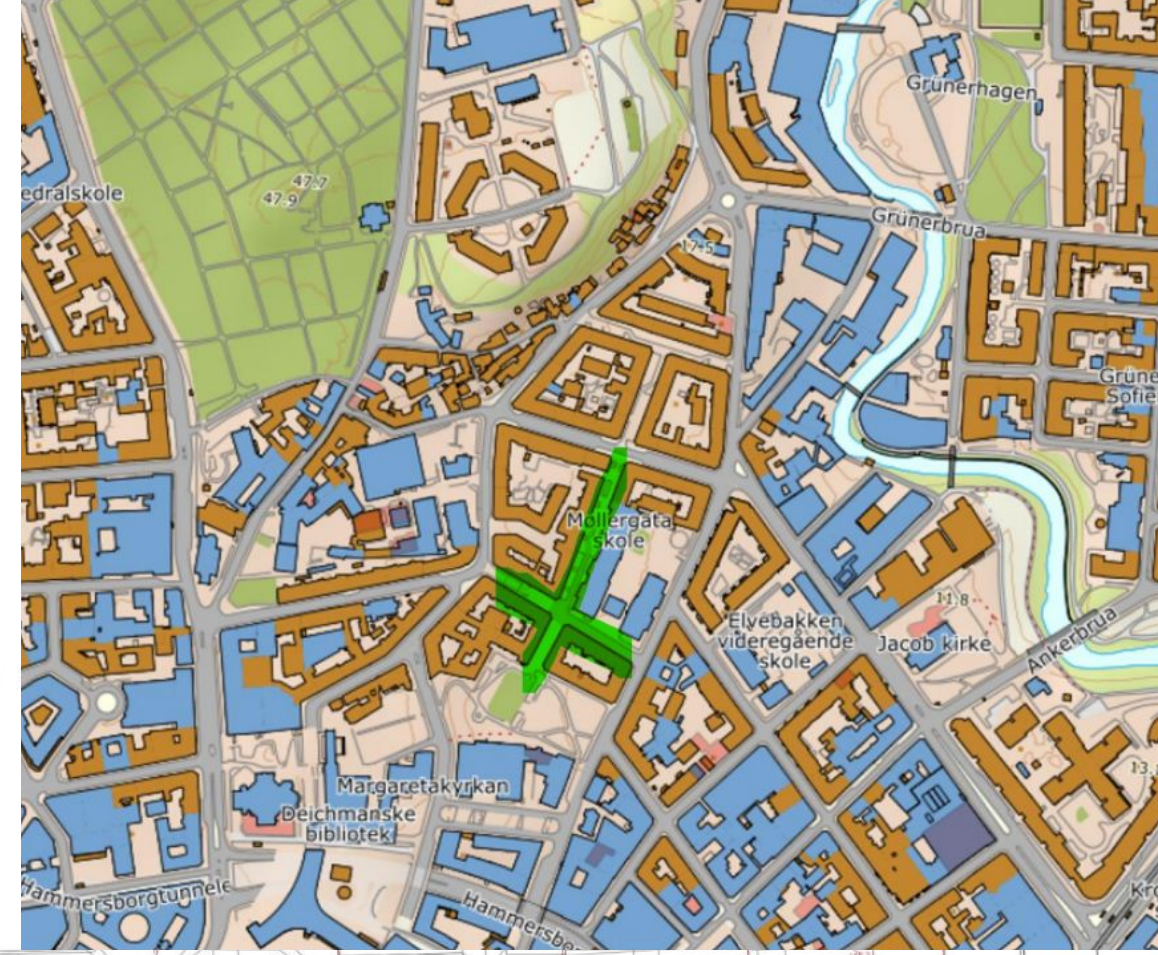


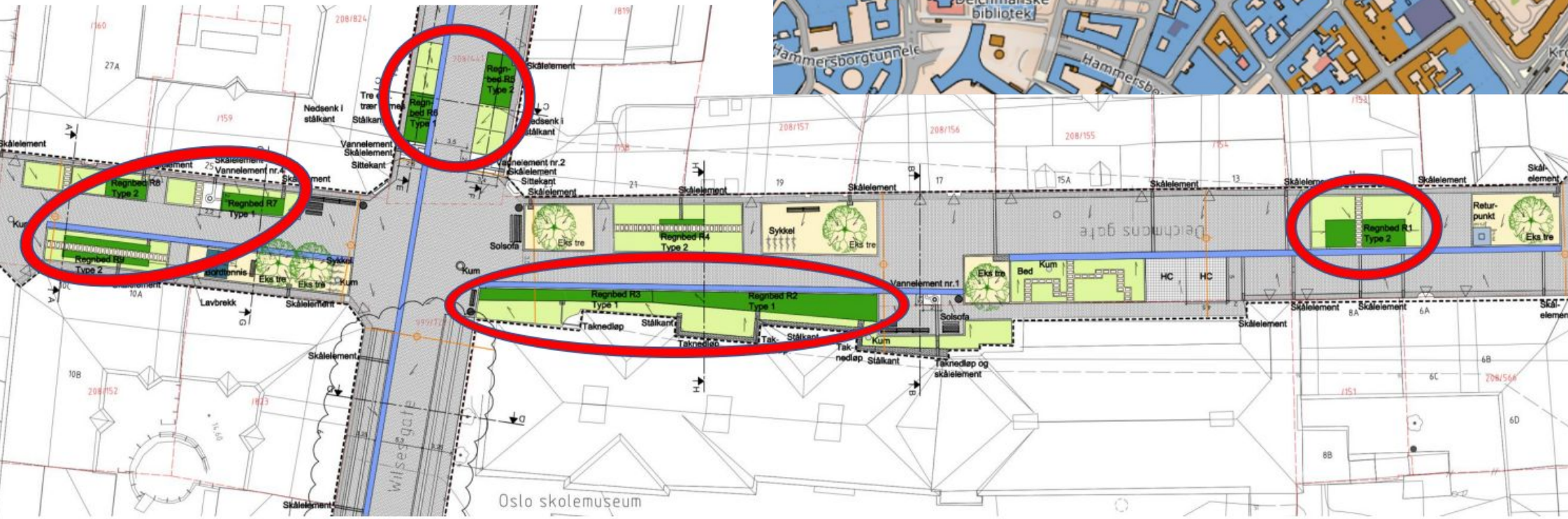




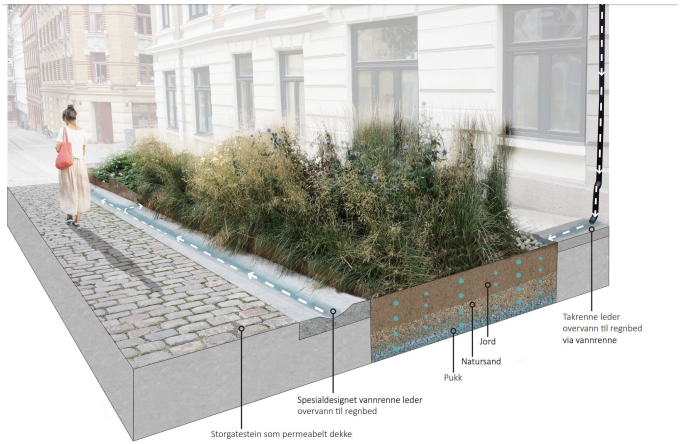

raw materials
recycling
residual waste
circular economy
design
production, remanufacturing
distribution
consumption
repair, reuse

Deichmans gate





(Foto: Bent C. Braskerud, Oslo VAV)



Illustrasjon: Asplan Viak

Oslo kommune

BLÅGRØNNE OVERVANNSLØSNINGER

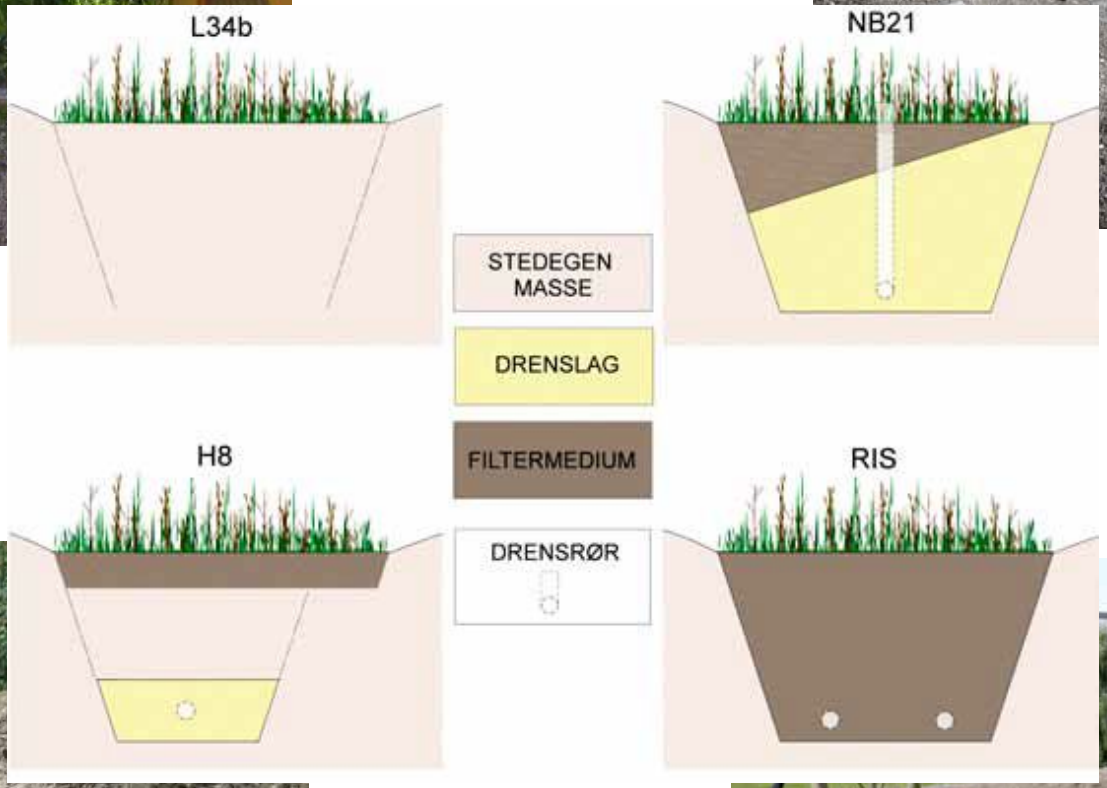
Fortetting av byen og mer styrtregn gjør det nødvendig å håndtere overvann i åpne løsninger. Faktaarkene viser testede, anlagte og mulige tiltak.

TESTEDE TILTAK Januar 2016, versjon 1.1

Regnbed for lokal flomdemping

Forfattere: Bent Braskerud (Vann- og Avløpsetaten), Kim H. Paus (Asplan Viak)

Regnbed er et fleksibelt tiltak for lokal disponering av overvann. Anlegget fremstår som en beplantet forsenking i terrenget der vann lagres på overflaten og infiltrerer til grunnen eller overvannsnettet. Gjennom fordrøyning og reduksjon av avrenningen hindres skadelig oversvømmelse. Dette faktaarket gjennomgår grunnprinsippene for utforming av regnbed basert på internasjonale og norske erfaringer av slike, og mulige fordeler og ulemper.


L34b
NB21
STEDEGEN MASSE
DRENSLAG
FILTERMEDIUM
DRENSRØR
H8
RIS

Lokaliteter	L34b	NB21	H8	RIS
Etablert	2006	2009	2009	2010
Overflateareal ved fylt regnbed [m²]	5,9	10,3	5,1	40,0
Maksimale vannstand, *hmaks* [cm]	6,5	20	19	16
Dybde på filtermedium [cm]	Stedegen masse	80	100	75
Kh [m/t][a]	0,36	0,37	0,08	0,05
Filtersammensetning	Stedegen masse; morene	Ca 50 % sand, 45 % Oslo kompost ®, 5 % stedegen toppjord	20 cm topplag av sandjord / mellomlag med tilbakefylt stedegen masse	Ca 70 % sand, 25 % løvkompost fra Forseth Grus AS, 5 % stedegen toppjord
Leir	8 %	6 %	1 % / 16 %	3 %
Silt	23 %	17 %	12 % / 62 %	21 %
Sand	69 %	77 %	87 % / 22 %	75 %
Organisk materiale	8 %	8 %	Ikke målt	4 %
Drensrør	Udrenert	100 mm, strupet utløp	100 mm	2 x 100 mm
Overflate på nedbørsfelt	Asfalt, grus og gress	Tak	Tak	Asfalt og gress
Areal nedbørsfelt [m²]	291	139	107	8 300

[a] hydraulisk konduktivitet ble målt med MPD sommeren 2012 (L34b, NB21, RIS) og syntetisk regn-test sommeren 2011 (H8).

10.4.4 Sjekkliste

Punkter som må inkluderes i søknad. Alle ruter merket med □ eller Ja/Nei skal fylles ut for respektivt ramme eller igangsettelse (IG). Tabellen fortsetter på neste side.

Sjekkliste ved søknad om forhåndsuttalelse v 1.0

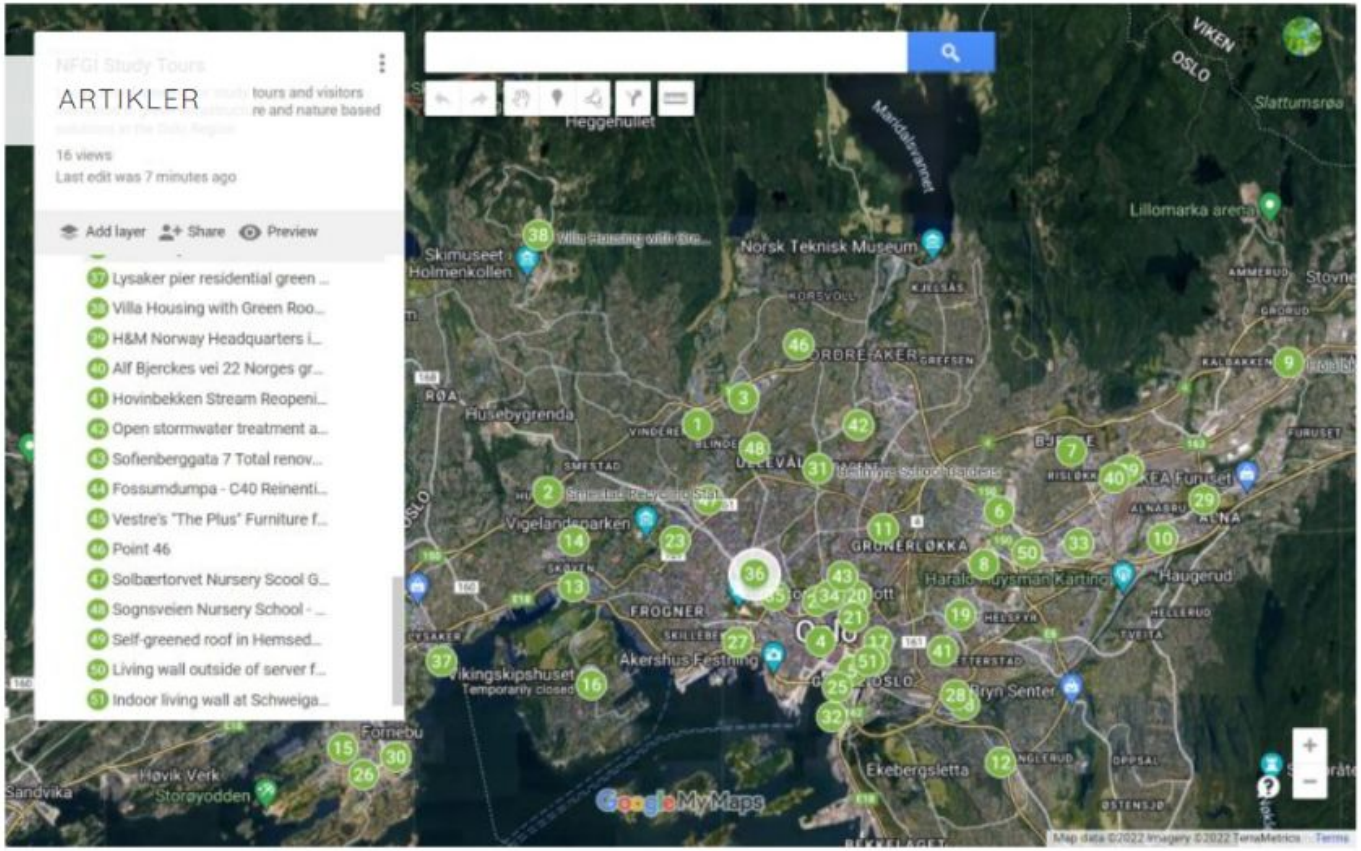
			Kapitel-referanse i veileder	Ramme	IG
1		**Har saken tidligere vært hos VAV for uttalelse av overvannshåndtering i forbindelse med rammetillatelse?**			Ja/Nei
	a	Er det foretatt endringer i forhold til den gitte forhåndsuttalelse?			Ja/Nei
		Hvis ja må alle punktene besvares på nytt, endringene			□
	d	Helling: vannets retning, mulige vannveger fra naboareal		□	□
	e	Er grunnen forurenset/består av alunskifer?		Ja/Nei	Ja/Nei
		(kart)			
	j	Plassering av LOD-tiltak og deres delnedbørfelt (kart)			□
3		**Beregne vannmengder som skal håndteres. Klimafaktor skal brukes**	8	□	□
4		**Valg av tiltak tilpasset 3-trinnsstrategien og tilbakeholding i de respektive tiltakene**	7 og 8.2	□	□
	a	Grønne tak (m^3)	7.1	Ja/Nei	Ja/Nei
	b	Frakoble takrenner (m^3)	3	Ja/Nei	Ja/Nei
	c	Regnbed (m^3)	7.1	Ja/Nei	Ja/Nei
	d	Infiltrasjonsflater (m^3)		Ja/Nei	Ja/Nei
	e	Oversvømmelsesareal (m^3)		Ja/Nei	Ja/Nei
	f	Andre løsninger (m^3)		Ja/Nei	Ja/Nei
	g	Flomvei (beskrivelse og/eller kart)	8.3	Ja/Nei	□
5		**Er tiltaket en del av flere byggetrinn?**		Ja/Nei	Ja/Nei
	a	Hvis ja: Gis det en oversikt over alle byggetrinn?		□	□
	b	Hvis ja: Er en helhetlig plan for overvannshåndtering		□	□

Hvor mye vann faller på tomta?

Hvor mye fixer åpen LOD?

Hvor mye vann til vårt nett?

www.oslo.kommune.no/overvann



2022-03-21

NFGI kart over grønn infrastruktur prosjekter i Oslo

kategorier

Select Category

arkiv

- April 2022 (2)
- March 2022 (2)
- February 2022 (1)
- December 2021 (3)
- November 2021 (2)
- October 2021 (6)
- June 2021 (2)
- February 2021 (1)

Norsk forening for grønn infrastruktur

Dziękuję za wysłuchanie :)

NFGI
Norwegian Association for Green infrastructure
www.nfgi.no
post@nfgi.no

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linkedin.com/in/goncaloliberato