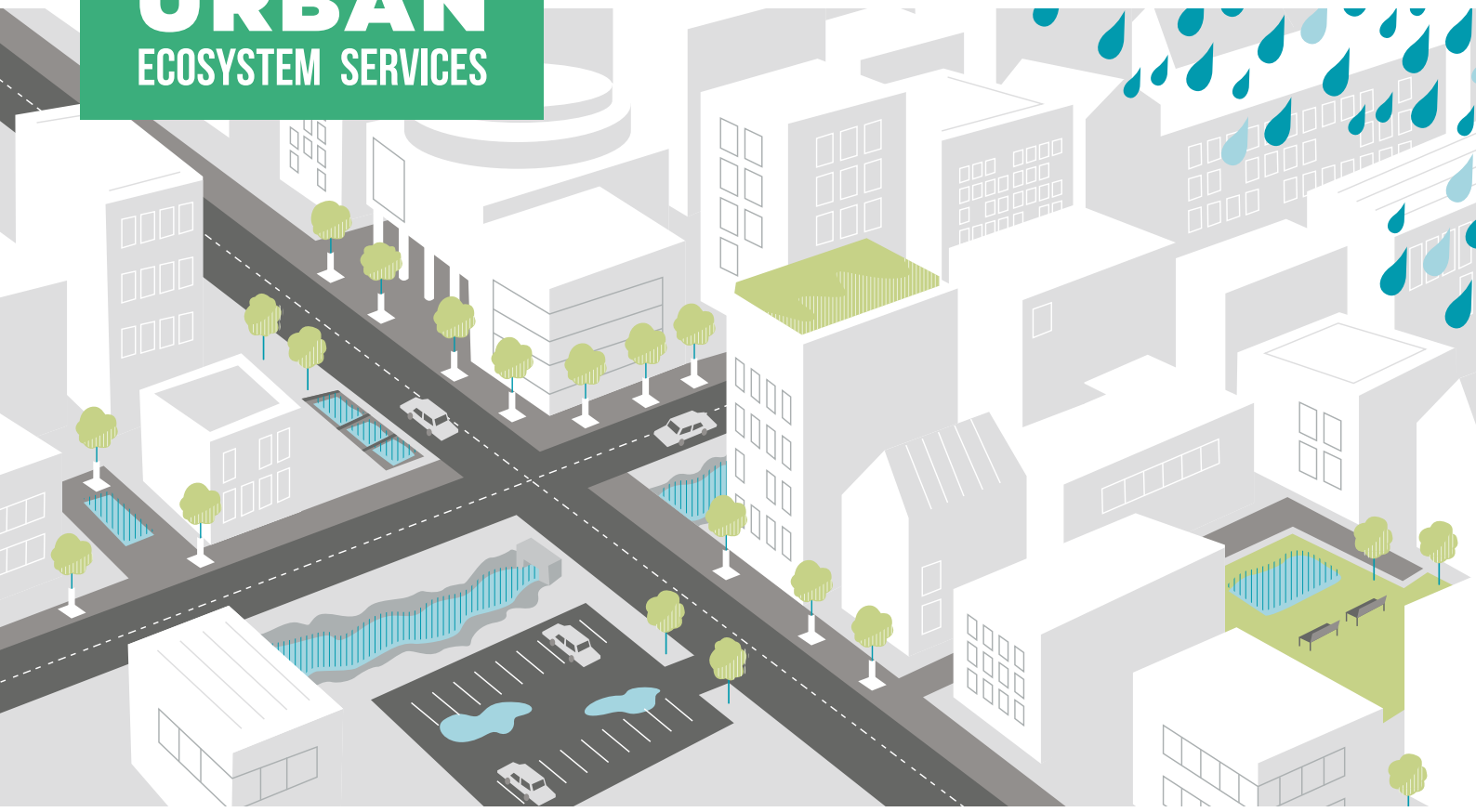
URBAN ECOSYSTEM SERVICES



ENSJØ CITY DISTRICT

BLUE-GREEN STORMWATER MANAGEMENT

Ensjø is a new residential district under development in Oslo, which includes a large degree of local stormwater management. This will create a more blue-green structure in the district and also reduce flood damage during extreme rainfalls.

THE SITUATION

Ensjø is a district in eastern Oslo that is undergoing a transformation from a district dominated by the automobile industry to an urban residential area. Plans call for the district to have 5–7000 residences by 2020, in addition to commercial and office buildings. The planned stormwater management system using blue-green structures draws on, and contributes to, a number of ecosystem services. This includes regulating ecosystem services such as water management, flood mitigation and water purification, as well as local noise reduction and climate regulation. A blue-green system also provides aesthetic experiences, which contribute to well-being and learning through understanding natural cycles and relationships. The green zones that filter road runoff water will help to clearly delineate the streets, producing a clear structure and helping to create the district's Identity and sence of place.

THE CHALLENGE

Future climate change will create big challenges in terms of stormwater, and increased strain on sewer systems and other pipeline systems. There is therefore a need for both alternative solutions and add-on solutions.

THE SOLUTION

The planned stormwater system will take rainwater and lead it to green infiltration areas or the reopened Hovin Stream. This will provide more of a blue-green structure, less pollution in the water system and reduce the strain on the piping system.

ESTIMATED VALUE OF BLUE-GREEN STORM-WATER MANAGEMENT

INVESTMENT COSTS COST FOR A PIPE SOLUTION*

NOK **17.4 MILLION**
for runoff water from 6,650 metres of road

INVESTMENT COST FOR A BLUE-GREEN SOLUTION*

NOK **14.4 MILLION**
for runoff water from 6,650 metres of road

THE RESULT

NOK **3 MILLION**
investment savings

NOK **600,000**
per year in cost savings for insurance claims

THE METHOD

Alternative cost

*Maintenance costs as equal

Oslo kommune

FRAMTIDENS BYER

Openness

VISTA ANALYSE

NINA

** Figures are based on Vista Analyses report "The value of urban ecosystem services: Four examples from Oslo", report no. 2014/46.*

WHAT ARE URBAN ECOSYSTEM SERVICES?

> ECOSYSTEM SERVICES ARE THE SERVICES AND BENEFITS PRODUCED BY NATURE THAT ARE ESSENTIAL FOR HUMAN LIFE

In an urban environment, ecosystems will be composed of a mosaic of green parks, lush backyards, allotment gardens, urban forests, wetlands, streams, rivers, lakes and old trees – all of which will improve the quality of life for city residents. In addition, urban ecosystems are important habitats for the rich biodiversity we find in the city. The Oslo area has the greatest number of different species in the country: 12,009 species have been found, of which 1,230 are considered threatened.

IMPORTANT SERVICES

Ecosystems provide us with a range of vital services that we call ecosystem services. These include provisioning services such as food, water and wood; regulating services such as flood control, water, soil and air purification; cultural services like recreation and learning; as well as supporting services such as primary production and a habitat for biodiversity. Well-functioning ecosystems are thus essential for peoples physical and mental health. Vegetation improves air quality by capturing pollutants. Green areas provide opportunities for rest and recreation in a bustling urban environment, while also promoting physical activity. Many scientific studies have linked access to green areas to stress reduction and improved mental health.

MAJOR CONSEQUENCES

Any loss of urban ecosystems and biodiversity could result in significant costs in terms of reduced quality of life and poorer health for residents. In addition, the city will become less attractive for business and tourism. Natural ecosystem services, such as the purification of water, air and soil, as well as rainwater retention, can be complex and costly to replace, and in some cases it is absolutely impossible.