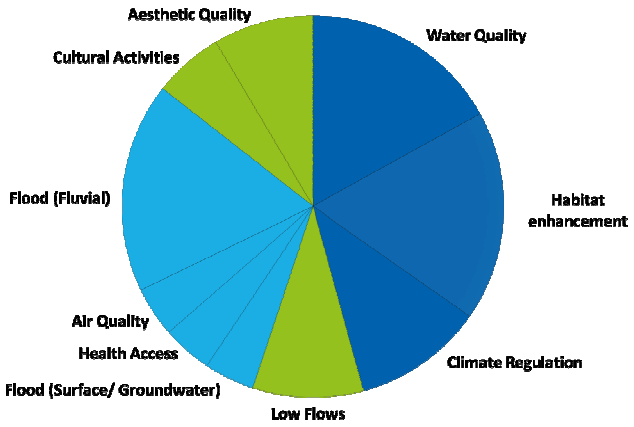
The added benefits of NFM

NFM can provide many additional benefits to solely flood alleviation. Depending on which measures are used, NFM measures can reduce water pollution, boost air quality, increase habitat for wildlife, regulate local climate, make the landscape more attractive and make it easier for



communities to access green space.

Contact Us

To find out more about Thames21's NFM projects feel free to get in touch;

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NATURAL FLOOD MANAGEMENT

Reducing flood risk using natural techniques

As a method to increase the protection of homes, businesses and valuable, productive land, local authorities are turning to the practice of using Natural Flood Management (NFM).

NFM is a subset of Nature Based Solutions (NBS) that falls within the wider discipline as Working with Natural Processes (WwNP). Where WwNP restores and emulates natural processes on a large scale, and NBS addresses societal challenges and provides well-being and biodiversity benefits, NFM is the term mainly given to the range of interventions that are used to reduce flood risk when using natural techniques.

Reducing flood risk is achieved through enhancing the natural landscape's ability to store and slow flood waters. Techniques used have the potential to be effective and inexpensive, and are complementary to traditional

Source: Stephen Haywood

Leaky dam in on an ordinary watercourse in Bentley Priory, Harrow

engineered solutions.

Source: Stephen Haywood, Thames21

Leaky dam created to slow the flow

Woody Debris Dams (Also called Leaky Dams or Leaky Barriers).

Large branches or tree trunks may be secured across watercourses and floodplains. These can form naturally (by falling trees or built by beavers where reintroduced). They reduce flood peaks by slowing the flow of water higher in the catchment.

Tree Trunk Diverters/Deflectors

By laying and pinning tree trunks or other suitable natural materials across the path of overland flows, water will be encouraged to spread and infiltrate across a larger area of ground. They can also be secured in river channels to reduce flow rates.

Source: Stephen Haywood, Thames21

A tree trunk flow diverter in use

Source: Stephen Haywood

A scrape in the Salmons Brook, Enfield

Offline Attenuation Ponds/ Scrapes

These seasonal ponds will provide temporary storage of flood waters allowing it time to infiltrate naturally into the ground. Constructed on flow paths, they reduce soil and nutrient erosion from entering the watercourses.

These can be planted with trees such as species of Willow to

Source: Nottingham.ac.uk

River restoration in Northern Ireland

River and Floodplain Restoration

By adding natural features such as meanders back into waterways and replacing some hard-engineered banks with softer edges, rivers can be reconnected to their floodplains. This natural water storage approach prevents flooding downstream.

Run-off Pathway Management

Simple measures such as ploughing fields parallel to the watercourse will reduce the amount of water running off into nearby streams and increase the amount soaking into the ground; thereby protecting the land from soil and nutrient erosion and local rivers from siltation and pollution.

Source: Stephen Haywood. Thames21

Compacted tracks causing flow paths

Source: Stephen Haywood. Thames21

Soils exposed to erosion during rainfall

Soil and Land Management

By sowing winter crops earlier, reducing the length of time that fields have bare soil, or by aerating the soil, land managers can increase the amount of water the land can absorb and store, whilst reducing soil and nutrient runoff.

Source: Stephen Haywood, Thames21

Newly planted trees, Enfield

Woodland Planting

Increasing the amount of trees within the catchment can reduce flood peaks, flood flows and flood frequency by up to 70%. Woodlands can take up water into the canopy, increase the amount of water stored in the soil and help to filter it. They also provide extra habitats for a range

Riparian Woodland Planting

This specific type of woodland is naturally found adjacent to watercourses. Woodlands can be planted to reduce bankside erosion and slow the rate of overland-flow, increasing sediment deposition on the land. Riparian woodland provides extra habitats for wildlife in and out of the water.

Source: Stephen Haywood, Thames21

Riparian woodland planting in Enfield

Source: Stephen Haywood, Thames21

A wet woodland in Hillingdon

Wet Woodland

These biodiverse woodlands consist of water-tolerating trees such as willow and alder. Poorly draining areas unsuitable for farming are the most appropriate locations, enhancing water storage and sediment deposition. They also provide unique habitats for

Source: Stephen Haywood, Thaems21

Reinstating Historic Ponds

Many forgotten ponds that may have been natural or functioning over long periods of time have been filled in for simplicity to suit modern agricultural practices, but they form an important part of the natural environment and play a key role in flood alleviation.

Hedgerow Planting

Hedgerows can slow overland flows by increasing infiltration, and reducing soil and nutrient runoff. They also provide great habitats for wildlife. In many areas hedgerows have been removed to increase field sizes but reinstating these in areas provides great benefits.

Source: Sussex Flow Initiative

Reinstated hedgerow planting

Source: Stephen Haywood, Thames21

A soil bund holding water higher in the catchment

Soil Bunds

Whether they are located conspicuously across open fields or more prominently in public areas forming wetlands or dry walking/cycling routes, these low level earth banks are designed to hold water back and allow it to naturally infiltrate into the ground.