

The Opportunities and Challenges for partnership delivery of Blue Green Infrastructure

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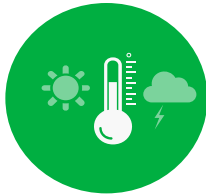
NORTHUMBRIAN WATER'S CORE OBJECTIVES

OUR OUTCOMES - 2020 TO 2025

- Our customers tell us we provide excellent customer service and resolve issues quickly.
- Our customers say that we are a company that they trust
- Our customers say our services are good value for money and we work hard to keep water and wastewater services affordable to all
- We are resilient and provide clean drinking water and effective sewerage services: now and for future generations
- Our sewerage service deals with sewage and heavy rainfall effectively
- We are innovative and efficient company
- We take care to protect and improve the environment in everything we do, leading by example
- We work in partnership with companies and organisations to achieve goals that are most important to our customers



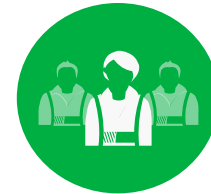
Environment Agency



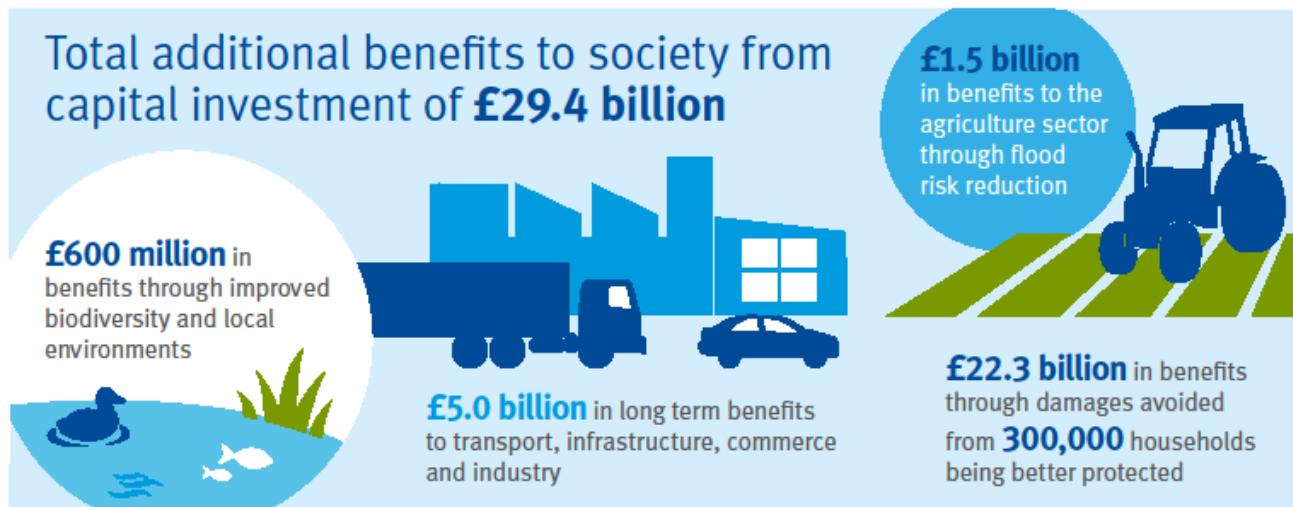
We help people and wildlife adapt to climate change and reduce its impacts.

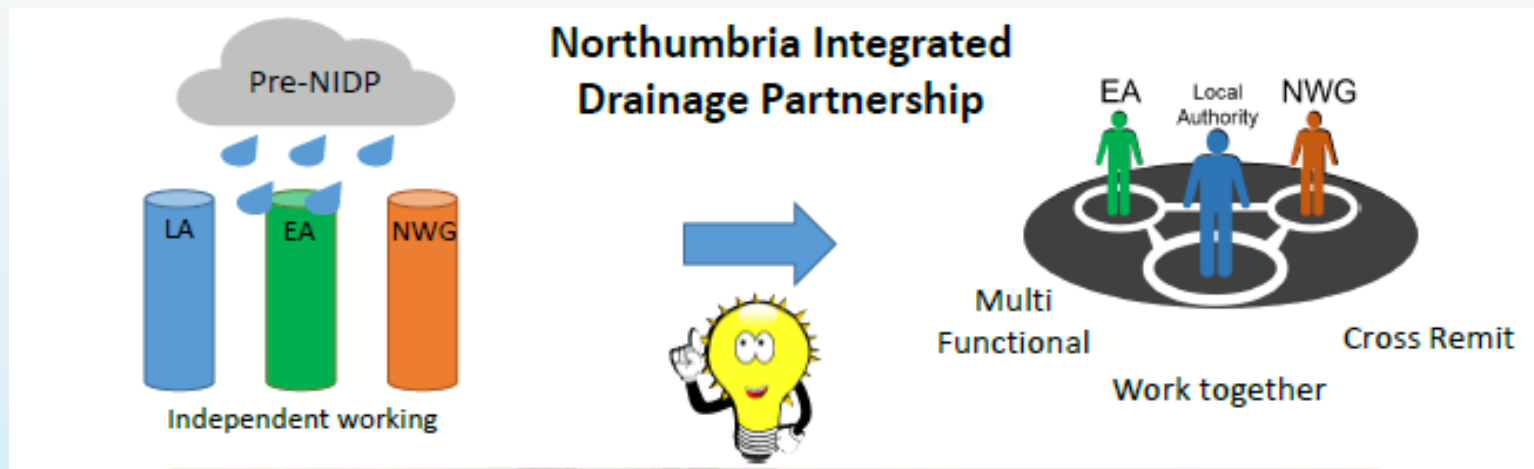


We improve the quality of our water, land and air by tackling pollution.



We work as part of the Defra group to create a better place for people and wildlife.





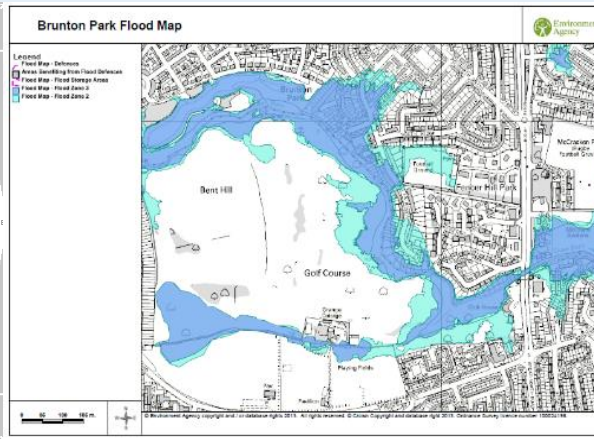
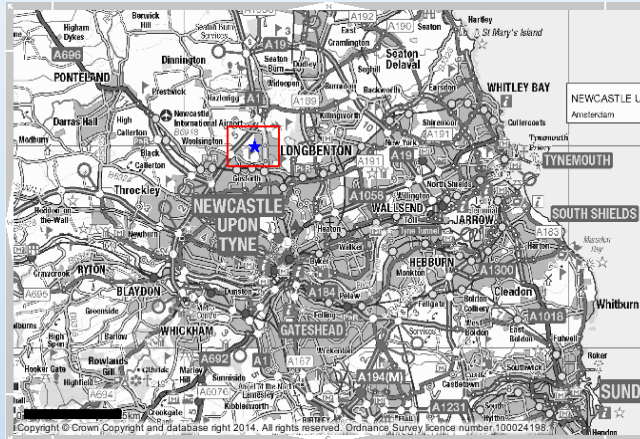
- 13 LLFAs, Environment Agency, Northumbrian Water
- establish a proactive cross organisation process and procedure
- Jointly funded integrated studies
- Prioritise areas for studies
- promote integrated sustainable drainage opportunities including natural flood management techniques
- establish and implement data sharing and communication protocols

*The integrated collaborative approach championed by the NIDP promotes **cost beneficial schemes** and the **use of sustainable drainage techniques** such as natural flood management to **deliver multiple benefits** alongside **flood risk reduction** thereby further benefiting the environment, society and the economy. By working together, we identify the benefits and best fit solution and then work to identify the funding streams available*



Blue Green Schemes delivered in partnership

• Brunton Park, Gosforth, Newcastle upon Tyne



Scale of Flood Problem

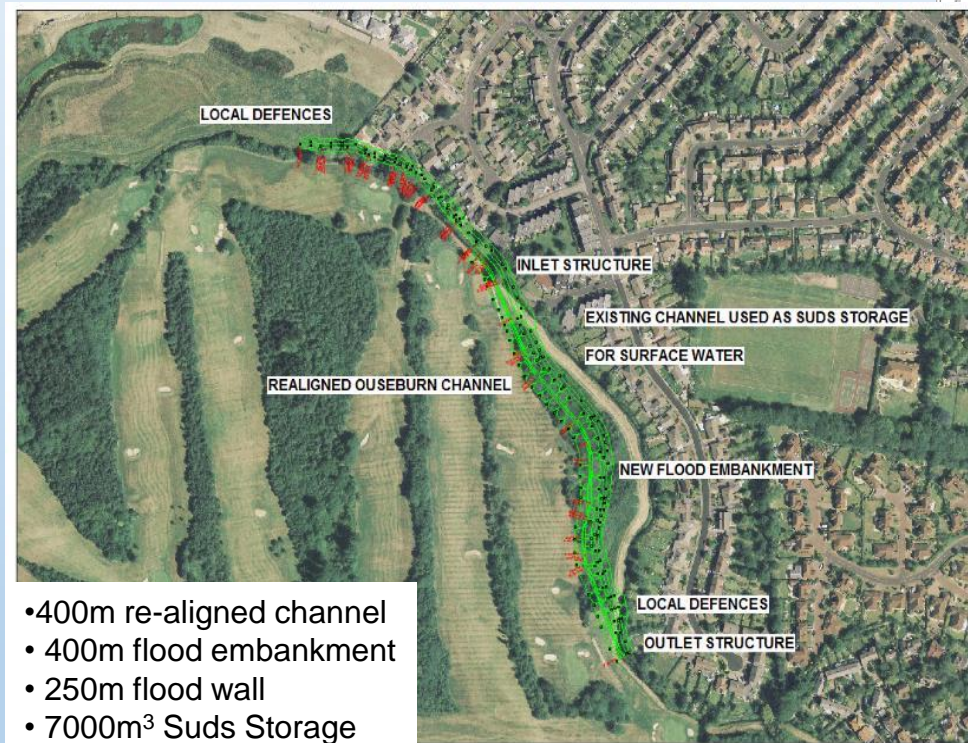
- 89 Properties in Flood Zone 3 (1 in 100)
- 179 Properties within fluvial Flood Zone 2 (1 in 1000)
- Ouseburn Level critical to operation of the SW system.
- 56 properties on internal sewer flooding register.

Recent Flood History

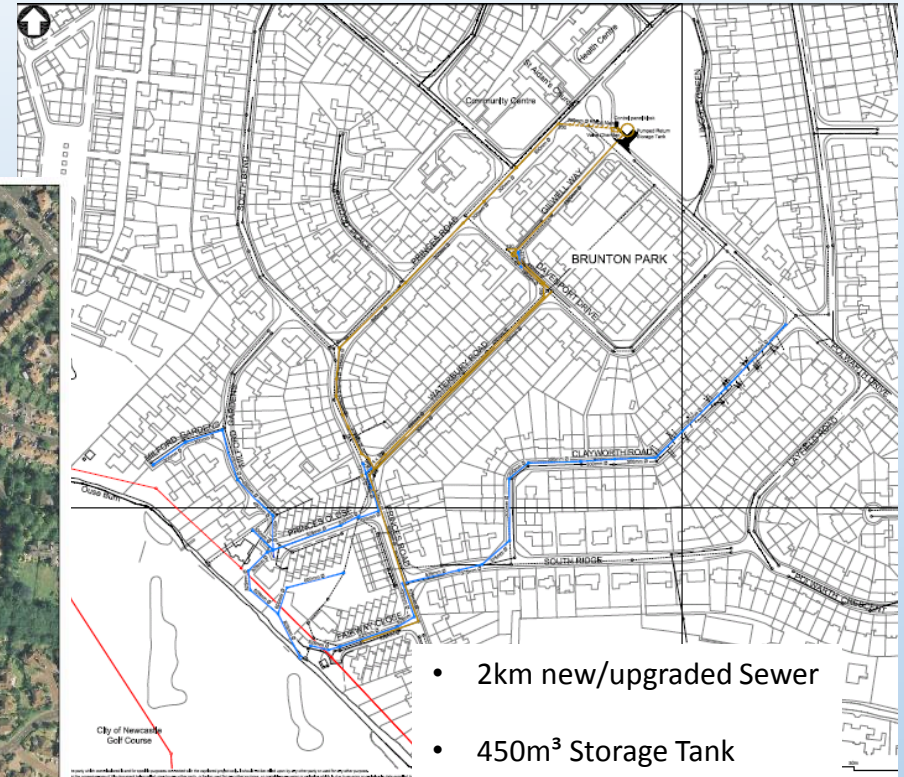
- 2008 – 58 Properties
- 2009 – 9 Properties
- 2011 – 20 Properties
- 2012 – 85 Properties



Developing the integrated solutions



- 400m re-aligned channel
- 400m flood embankment
- 250m flood wall
- 7000m³ Suds Storage

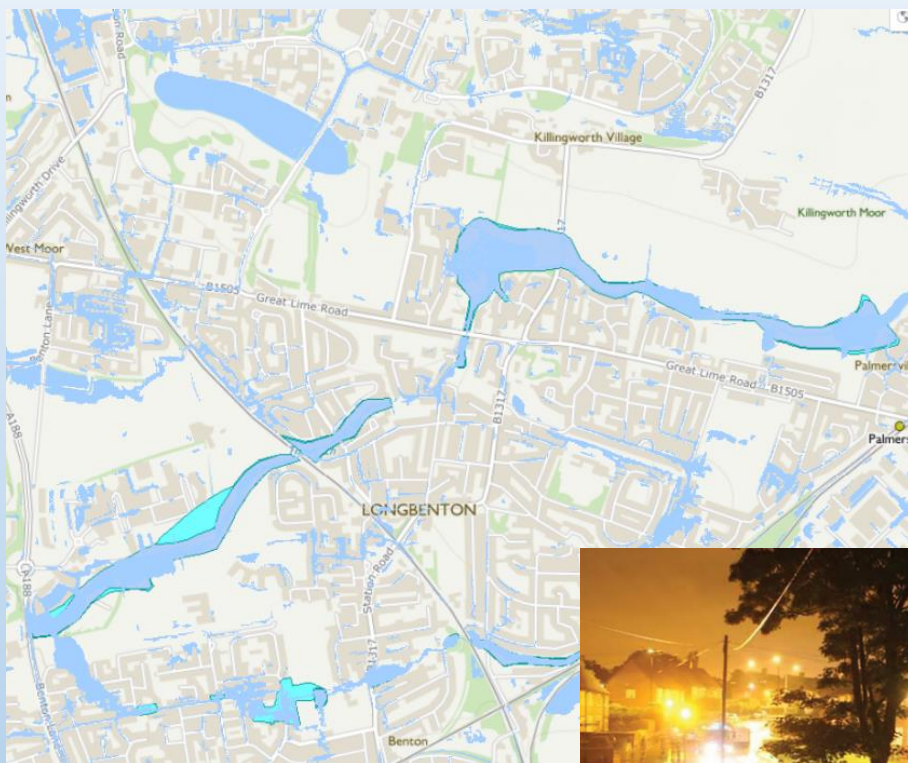


Overcoming Challenges Delivers Benefits



- Initial stand-alone solutions were either not cost beneficial or impractical
- Collaborative project providing flood risk reduction to over 100 properties
- Creation of ½ ha of water dependent habitat
- Original channel to be used to store surface water in the natural environment
- Create the space to provide a cost effective fluvial flood defence and extended SuDs detention basin
- Gains include provision to attract kingfishers, variation of bank and bed profile to maximise ecological diversity and designed to encourage otters.

Killingworth and Longbenton



CONSIDERING BLUE GREEN ASPECTS FROM THE START OF THE STUDY



Manage flood risk

Manages local flood risk and protects the natural water cycle and workplaces



Improve water quality

Manages the quality of surface water runoff to reduce pollution



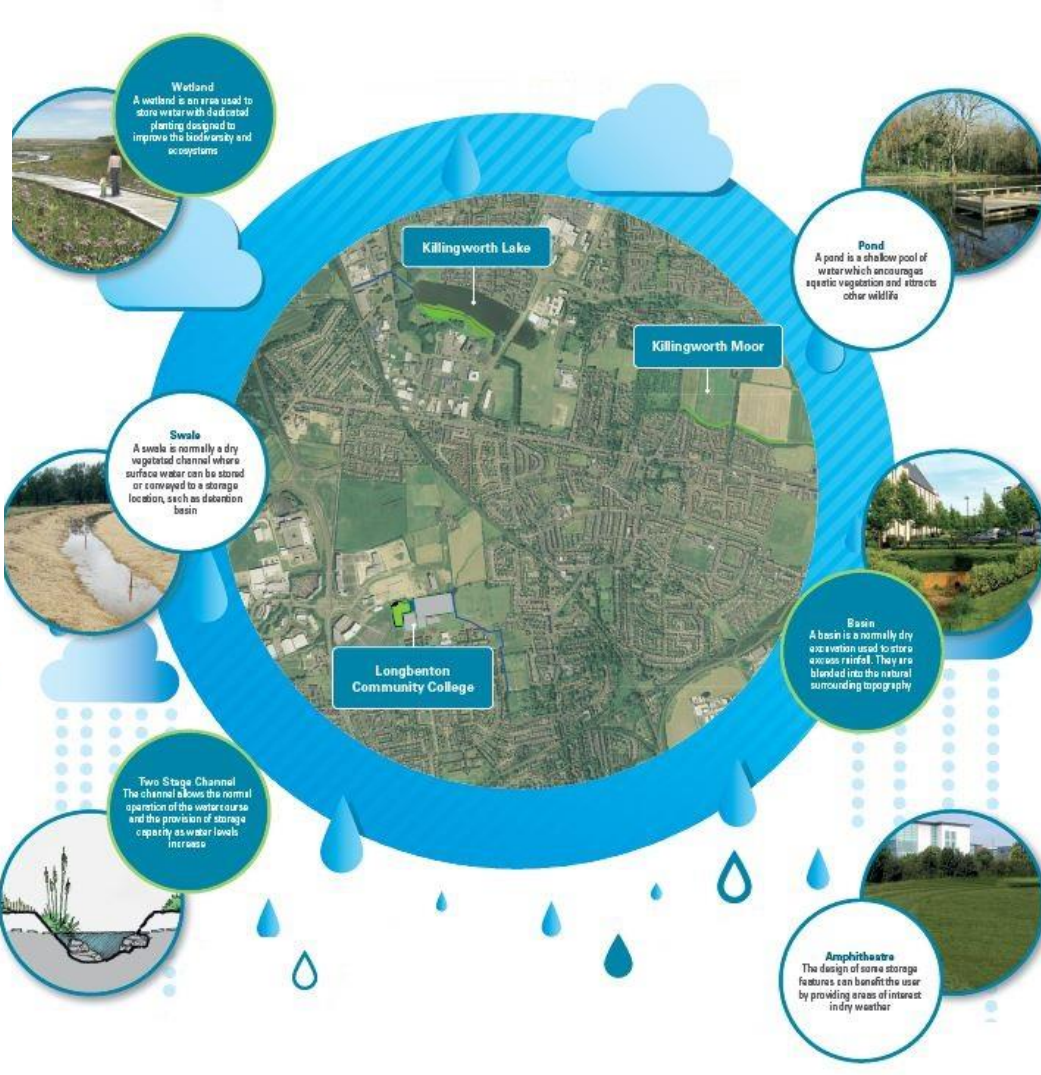
Cost effective

SuDs are able to reduce development costs and help to deliver housing and workplaces



Mimic nature

SuDs mimic nature and manage rainfall close to where it falls



Biodiverse

SuDs can be biodiverse landscape features that deliver many benefits



Resilience

SuDs provide greater resilience to the challenges of climate change and population growth



Enable sustainable development

Reduces the need for additional and expensive underground sewerage infrastructure



Create habitats

Creates better places for nature

NORTHUMBRIAN
WATER *living water*

Environment
Agency

Reducing flooding using the environment



Some of the Challenges!

- Funding alignment
- VAT!
- Approval processes
- Different design standards
- Procurement.

Opportunities with Blue Green Partnership Approach

- Unlocking schemes as reduced costs per partner – making things more cost beneficial to partners
- Solutions considered are wider in scope producing “better schemes”
- Creating better places
- Reputation “enhancement”
- Better working partnerships
- One scheme delivery to resolve many issues
- Can deliver educational / amenity / environmental benefits along with flood reduction