





**BACKGROUND**  
**WHAT IS A SUSTAINABLE APPROACH?**

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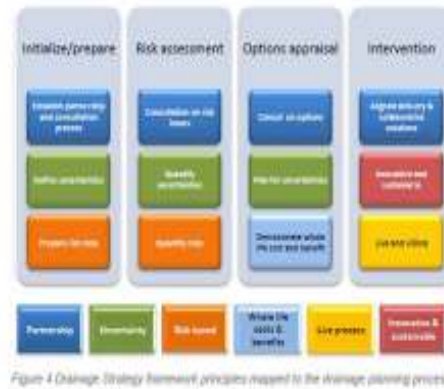
Sustainability

- responsible and proactive decision-making
- innovation that maximises benefits
- maintains balance between Economics, Ecology, Politics and Culture
- ensure a desirable planet for all species now and in the future

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## INTRODUCTION DRAINAGE STRATEGY FRAMEWORK

- Defra “Water for Life” white paper recognised the need for strategic approach to drainage planning
- EA and Ofwat
- Drainage Strategy Framework (DSF)
  - 6 Principles
  - Catchment Scale
- Provide confidence that outcomes can be achieved in the long term



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# PARTNERSHIP

Better together

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**PARTNERSHIP**

*“Water and Sewerage companies cannot develop optimal Drainage Strategies on their own and therefore partnership is key..”*



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**PARTNERSHIP**

No.	Good Practice	Example references
4	<p><b>Be alert to opportunities</b> for joint solutions and/or shared funding by understanding local plans for: new development; re-development; improving street furniture and public open space; improving parks and green infrastructure.</p> <p><b>Understand</b> Lead Local Flood Authority and Environment Agency <b>programmes</b> for the management of flood and pollution risks.</p>	<p>A guide to joint funding of local flood risk management intervention has been published by Defra and provides relevant advice to water and sewerage companies and other partners.</p>
5	<p><b>Consider</b> water and sewerage <b>company funded solutions which deliver third-party non-sewerage assets that result in the long term, least cost delivery of outcomes</b> (e.g. Water and sewerage company funding of household rain barrels and rain gardens to prevent surface water entering sewers).</p>	

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**PARTNERSHIP**  
**BRUNTON PARK**



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# UNCERTAINTY

No Crystal Ball

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**UNCERTAINTY**

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*“Strategies should explain the reliability of data and knowledge about current and future performance of drainage systems. They should explain what steps are planned to improve this understanding and how this will benefit customers.”*

- Drainage Area Studies (DAS)

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**UNCERTAINTY**

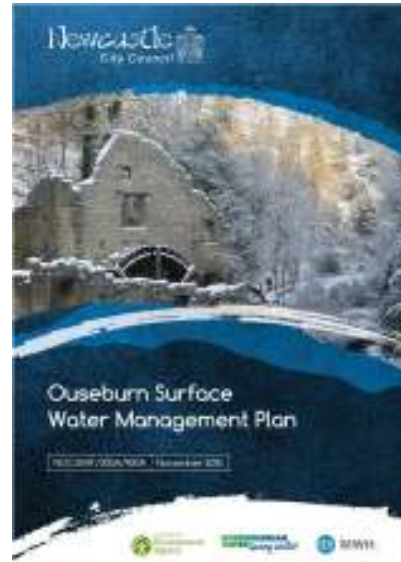
No.	Good Practice	Example reference
6	In the face of significant uncertainties about future demands on the drainage system and their consequences, the Drainage Strategy should <b>identify low-regrets</b> interventions (i.e. ones that are robust no matter what the future holds) and ensure that solutions can be adapted if greater certainty is achieved. For example, through quickening the pace of <b>SuDs retrofit activities</b> or using (previously identified and secured) land to extend underground storage facilities. Strategies which remove surface water from the sewerage networks provide ‘headroom’ for unpredictable increases in demand from <b>population and climate change</b> .	Designing Resilient Cities A guide to good practice DR Lomardi et al, HIS BRE Press.

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## UNCERTAINTY

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- Newcastle City Council  
Surface Water  
Management Plans  
(Ouseburn & Newcastle  
City Centre)



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# RISK BASED

Moving to be proactive

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## RISK BASED

*“Planning, operational and investment activities should be based on consideration of the probability and consequence of inadequate drainage function (risks) as these relate to the achievement of measures that demonstrate delivery of outcomes. A risk based strategy ensures that investment is made where risks are the greatest.”*

## • Community Action Plans (CAPs)

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## RISK BASED COMMUNITY ACTION PLANS

- Hierarchy of solutions
  1. Remove
  2. Retain (property)
  3. Divert
  4. Store

Adopted on all network solutions



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# WHOLE LIFE COSTS & BENEFITS

Not just money, but!!

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## WHOLE LIFE COSTS & BENEFITS

*“Strategies should promote a series of interventions which in view of the quantified uncertainties are most likely to result in performing indicators which demonstrate the achievement of outcomes at the lowest cost to customers and the community more widely. Costs relate to capital and operational expenditure and the monetised impacts of drainage failures such as flooding and pollution. Benefits relate to the reduction in risks from drainage failures such as flooding and pollution but should also include wider societal benefits such as those calculated using a ‘Payments for Ecosystems Services’ approach.”*

- Killingworth



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## WHOLE LIFE COSTS & BENEFITS ALIGNMENT WITH OTHER STRATEGIES / PLANS

### Surface Water Management Plan



- Identifies Killingworth, Longbenton, and West Moor as Critical Drainage Areas
- Recommends downstream receptors of Future Development are considered
- Recommendation for a Surface Water Communication and Engagement Plan



### Biodiversity Action Plan

- Identifies a target of improving habitats along watercourses
- Recommends SuDS to minimise high flows and pollution from surface water
- Identifies targets to create new ponds, reedbeds and native woodlands

### Green Infrastructure Strategy



- Encourages incorporating green space within new development to slow runoff and attenuate flows
- Recommends tree streets, green roofs, and tighter policies on sealing surfaces in residential areas



### Climate Change & Carbon Management Strategies

- Highlights the link to more intense rainfall events and increased flood risk
- Encourage water saving at home
- Integrated approach to land development through partnership
- Coordinate and share flood defence investment

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## WHOLE LIFE COSTS & BENEFITS RE-ASSESSMENT

Benefit	Reduces Flooding	Improves Water Quality	Reduces Wastewater Treatment Needs	Facilitates Growth	Reduces Transport Disruption	Increases Recreational Opportunities	Enhances Habitat	Enhances Amenity	Cultivates Public Education Opportunities
Killingworth Lake Disconnection from Sewer System & Attenuation									

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# INNOVATIVE & SUSTAINABLE

In everything that we do....

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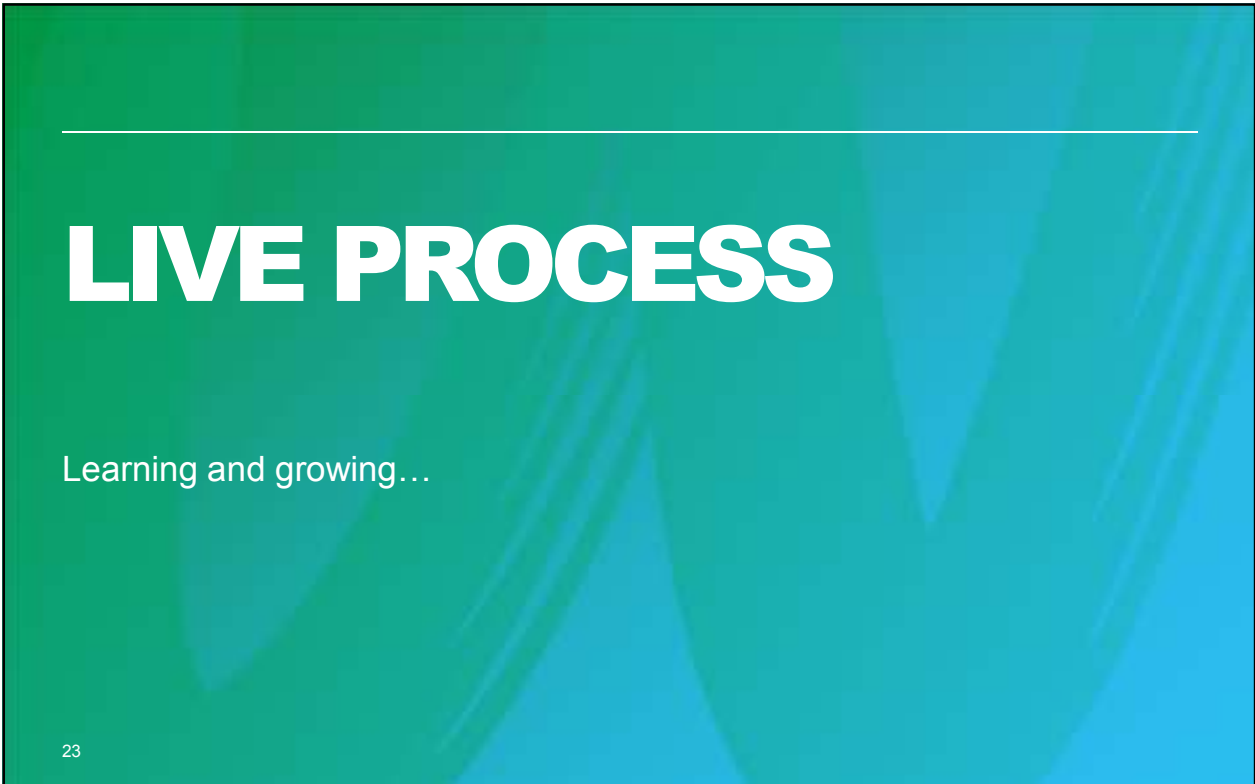
## INNOVATIVE AND SUSTAINABLE

*“The DSF promotes the full evaluation of alternatives to traditionally engineered sewerage solutions to test whether these offer lower whole life cost options of better responses to uncertainty. This may include real time control, storm retrofit techniques, education to enable customers to change behaviour.....”*

- Suds for schools
- Education sessions
- Free water butts



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# THANK YOU



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