NORTHUMBRIAN WATER living water

DRAINAGE AND WASTEWATER MANAGEMENT PLAN (DWMP)

NON-TECHNICAL REPORT

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FOREWORD

Thank you for reading our first Draft Drainage and Wastewater Management Plan (DWMP). This is a critical document as we aim to make sure our region's drainage and wastewater system remains reliable and resilient for the years ahead, ready to meet challenges including changes to our climate and population growth. The DWMP represents a step change in our planning for the future and it will form an important part of our business plan submission for the next regulatory periodic review covering 2025-30.

It is being produced at a time of significant change in the public discourse around water quality in our environment. One effect of the Covid-19 pandemic was to renew many people's connection with the natural environment around them. That has contributed to changing expectations on the water industry, and we recognise that meeting the obligations currently placed on us won't be enough in future.

Part of that context is the Government's Storm Overflow Discharge Reduction Plan (SODRP), which is currently being consulted on. We have taken account of that within our draft plan; however, it remains a live consultation and we are keen to hear customer views on the options in this plan.

We are committed to building on our strong environmental performance. In the North East, 32 out of 34 bathing waters are classed as excellent or good; our record on preventing pollution is industry leading over the last two regulatory years, and we have achieved a 4-star performance, the highest possible, in the Environment Agency's latest Environmental Performance Assessment.

Earlier this year, we published **A Vision For Our Coasts And Rivers**, containing nine ambitious pledges to contribute to further improvement of our water environment to benefit local communities. We are only one of many organisations that can influence river water quality, so a collaborative approach will be essential to realise improvements.

Our first DWMP will see us grow our ambition further. This draft plan represents the start of our formal consultation process. I encourage you to please respond to the consultation to let us know your views. Details on how to do so can be found here **www.nwl.co.uk/dwmp**.

This is a vital stage in the process towards producing our final plan, which will be published in March 2023. The comments we receive at this stage will be of great importance as we seek to meet our customers' and stakeholders' expectations – including on how we appropriately balance taking forward these issues with maintaining affordable bills for customers.

Government and regulators will need to take a balanced view on cost and benefits, and how that investment can be managed. As a contribution towards those decisions, we set out a number of options for consideration here.

The water industry cannot solve all these issues alone, however. We recognise that others can often have a greater impact on the issues around the environment and resilience that we are seeking to address. Work towards this plan has therefore been carried out in collaboration with a range of partners to seek multiple benefits for our communities. We would like to thank all those who have participated, especially members of the Strategic Planning Group, and those who attended the many stakeholder and customer workshops we have held in the last three years.

We intend to build on the already successful collaboration partnerships in the region to deliver the interventions that will be identified in the final plan, while ensuring a best value plan for customers and the environment.

We expect that in future years, the DWMP will become embedded in our planning processes. We have learned a lot through the development of this draft plan and we will take this learning into future planning cycles.

Thank you for taking the time to read and engage with our plan, and I look forward to hearing your views.

Richard Warneford

Wastewater Director

EXECUTIVE SUMMARY

The Drainage and Wastewater Management Plan (DWMP) Framework represents a significant step change in how long-term planning for drainage and wastewater infrastructure is undertaken. For the first time, a national Framework has been produced, which outlines the steps that should be taken to produce long-term plans to create sustainable and resilient drainage and wastewater systems.

The DWMP will outline the investment that is required over future decades to ensure that drainage and wastewater systems are able to cope with the coming pressures associated with climate change, population growth and increased impermeable hard standing in urban areas (known as urban creep).

Northumbrian Water's DWMP outlines the level of investment that is required to achieve a number of planning objectives associated with flooding, and the environmental impact of storm overflow discharges and wastewater treatment. Storm overflows are largely operating as designed and permitted. However, it is clear that many stakeholders are starting to find this unacceptable. We share the Government's view that the frequency of discharges from storm overflows has increased over time as a result of climate change and population growth and needs to change, and this draft plan tackles storm overflows as a priority. We are clearly part of the solution and are determined to help. All the options in this plan allow us to meet the targets set out in the Government's proposed Storm Overflow Discharge Reduction Plan (SODRP)[1], which are to reduce discharges and eliminate harm to the environment.

The Government and regulators will need to take a balanced view on costs and benefits, and on where the burden falls for financing the investment required. To assist them with the difficult choices required, we have set out four options in this draft DWMP. We will gather our customers' and stakeholders' views on these in advance of producing our final plan next year.

The four options, which we are testing customer view about through this process, are:

- Least Cost Storm Overflow
    - Following early engagement with our economic regulator, Ofwat, we have produced an option that meets their requirements to deliver the SODRP at the least cost as a comparison for other best value plans.
- Least Cost Storm Overflow + Northumbria Integrated Drainage Partnership (NIDP)
    - As per the least cost storm overflow option, but also including collaborative NIDP schemes linked to the EA's medium-term plan for flooding in the North East.
- Best Value Storm Overflow
    - This takes into account the positive impacts on other planning objectives (such as flooding and pollution) and societal benefits from delivering the SODRP. This option tackles internal sewer flooding risk for 28,000 households by 2045.

[1] Largest overhaul of sewer system to tackle storm sewage discharges - GOV.UK (www.gov.uk)

- Best Value Storm Overflow + NWG Flooding Ambitious Goal
    - In our 2020-25 business plan, we set an ambitious goal to eradicate sewer flooding in the home by 2040. This option delivers the SODRP and sewer flooding ambitious goal together by 2040.

The cost options in the draft DWMP range between £1.2bn and £3.2bn by 2045. We have assessed the likely impact on customer bills that would result from each draft DMWP option. These range between 13% and 38% by 2045. We will seek customers' views on which option they support in the draft DWMP Consultation and through the Water Industry Periodic Review process.

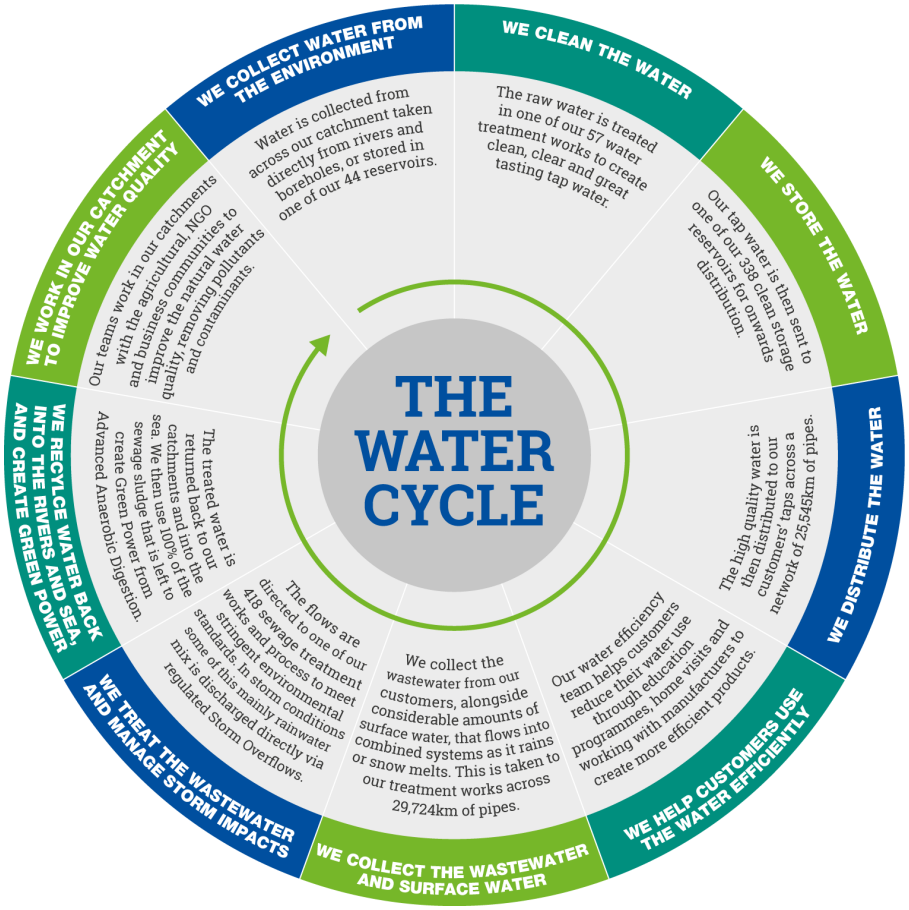
Alongside this consultation, we will also be undertaking additional tasks before we publish our Final DWMP in March 2023 due to changes in legislation and climate change predictions. These are set out later in this report.

BACKGROUND

Northumbrian Water treat around 900 million litres of wastewater every day in serving our 2.7 million customers who live in the major population centres of Tyneside, Wearside, and Teesside, and the large rural areas of Northumberland and County Durham. We collect this wastewater from our domestic and commercial customers properties via our sewerage network and pumping stations. Our wastewater system is complex – we manage more than 30,000km of sewers, over 1,000 sewage pumping stations, 410 sewage treatment works, 1,567 storm overflows, and more than a million manholes across our region.

Our network consists of combined sewers that carry sewage and rainwater in the same pipe, as well as separate surface water and foul (sewage) only sewers. The system has developed over the past 40 years with the construction of large interceptor systems, underground storage tanks and full sewage treatment to bring about significant improvements in river and coastal bathing water quality.

THE WATER CYCLE



Our commitment to the water environment runs through the heart of our business. As a water and wastewater operator, we have a significant interaction with rivers and coastal waters. We take water from our environment, then restore it back after a long journey through treatment, working constantly to make sure we protect and enhance the environment, often going beyond regulatory obligations.

We have set out ambitious goals for our operating area to have the best rivers and beaches in the country, and to have zero pollutions as a result of our assets and operations.

We are well on the way to achieving our ambitious goals., with 32 out of 34 bathing waters in our North East region classed as Excellent or Good, while our record on preventing pollution is industry leading with the lowest number of total pollution numbers since 2017. We have achieved a Four-Star performance, the highest possible rating, in the Environment Agency's latest Environmental Performance Assessment. We expect to maintain that standard when the 2021 results are announced this summer, and in the years beyond that.

We have invested significantly in a programme to improve the quality of our wastewater treatment works discharges. We also have plans for further nutrient removal, making sure that water industry investment in our region is an enabler for further ecological status improvements.

We are the first, and remain the only, water company in the UK to use 100% of the sludge from its wastewater treatment to create green power through advanced anaerobic digestion - or as we like to call it, 'power from poo'.

In our recent publication, A Vision For Our Coasts And Rivers, we set out our plans to meet the expectations of our customers and communities, and to enable our region to benefit from the best rivers and beaches in the country. It contains nine ambitious pledges that we believe will contribute to enhancing our unique water environment and make a real difference to our communities:

1. We will work with the Environment Agency, Natural England, The Rivers Trust and Catchment Partnerships to identify, and have plans in place to eliminate, all impediments to our rivers achieving good ecological status caused by our operations.
2. We will invest in monitoring to provide 100% near Realtime Data on all Storm Overflows by 2023.
3. We will introduce final effluent, in-river upstream and downstream monitoring to get a greater understanding of environmental impacts of treated water by 2030.
4. We will implement Water Quality monitoring at the highest priority Storm Overflow locations by 2025.
5. We will reduce spills from storm overflows (SO's) to an average of 20 per year by 2025.
6. We will work closely with The Rivers Trust through our strategic partnership and North East Catchments Hub to focus on river needs for investment through catchment and nature-based solutions, and to identify at least 2 inland bathing water sites where applications for designation can be made at the earliest opportunity. We are proud that already 95% of the NE population lives within an hour's drive from a beach with Good or Excellent bathing waters.
7. We will work with partners to achieve 100% of coastal bathing waters at Good or Excellent by 2030.
8. We will work in partnership to improve 500km of blue spaces (such as river banks and accessible water environments) for the public to enjoy in our regions by 2030.
9. We will double the number of our Water Rangers – our citizen scientist volunteers who are trained to help us monitor environmental conditions around rivers and take action to address wider river issues such as littering, fly tipping or signs of pollution.

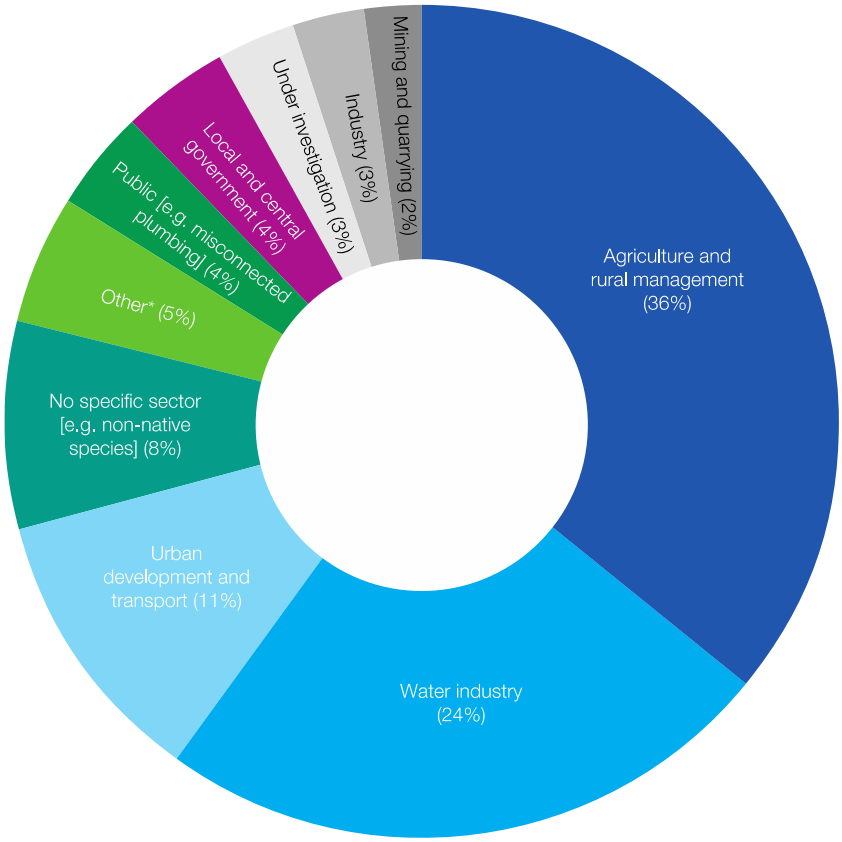
In March 2022, Defra released a consultation on the Government's Storm Overflow Discharge Reduction Plan (SODRP). We are supportive of the overall direction of travel and level of ambition set out in the consultation document. This will build on the environmental ambition contained in our 2020-25 Business Plan, and the pledges highlighted above. However, the

scale of investment required to not just address the harm caused by SOs, but also reduce the number of spills, presents a serious challenge for companies to deliver, and also in relation to affordability and disruption for our customers.

Our customers consider environmental improvements to be a high priority, but in the current context of inflationary pressures and squeezed household budgets it is not yet clear whether that will translate into support for higher bills. In recent research by Ipsos MORI inflation was identified as the most or an important issue for adults in Great Britain today by 32% of interviewees, while pollution, the environment and climate change was fifth, being mentioned by 13%.

It is important to note that there are multiple sources of impact on our water environment. Data gathered from the Environment Agency Catchment Data Explorer shows that agriculture (36%) is the biggest contributor to rivers not being in a good ecological state, with water companies representing less than a quarter (24%). The combined contribution of agriculture, highways, mines and local authorities represents more than half of the reasons behind good ecological status not being achieved.

RIVERS IN ENGLAND: REASONS FOR NOT ACHIEVING GOOD ECOLOGICAL STATUS BY SECTOR AND ACTIVITY



Although the findings of the SODRP consultation have not been released, water companies have been instructed to include the targets in the SODRP within their draft DWMP's. This guidance has led to major changes to the draft plan we were preparing.

Our intention was to follow the guidelines in the framework and publish one plan that was based on the best value intervention for each drainage catchment identified within the DWMP. This would identify the "sweet-spot" of investment for each catchment, delivering multiple benefits including a reduction in overflow spills, reducing the number of properties at risk of flooding, reducing pollution while bringing the societal benefits of more Nature Based Solutions (NBS).

The SODRP targets are based on individual assets. In order to consider how we will meet these, we have produced four options for consideration within the draft plan. We will test customer views on the options we have put forward, seeking their preference for our final plan. The SODRP targets also lead us to produce options that require more traditional storage solutions, utilising concrete tanks with pumping stations, rather than the green solutions our customers told us that they prefer, in research carried out for this plan between September – October 2020.

This document should be read in conjunction with other reports and maps that are located on our DWMP website **www.nwl.co.uk/dwmp**.

OVERVIEW

The Drainage and Wastewater Management Plan (DWMP) Framework was published in September 2018[2] and was a key recommendation of the 21st Century Drainage Programme. The vision of the 21st Century Drainage Programme is to enable the UK water industry, working in partnership with others, to make plans for the future that will ensure the sustainability of our drainage infrastructure and the services it provides to customers and the environment.

The DWMP Framework has built on existing approaches developed by the water industry, local authorities and other stakeholders. It aims to facilitate the development of planning processes that are flexible, transparent and aligned to the requirements of a wider group of stakeholders and the needs of the environment.

Our DWMP will provide a basis for short-, medium- and long-term planning of drainage and wastewater services.

As part of the production of the DWMP, Northumbrian Water has worked with other organisations with an interest or responsibility for providing services related to drainage. For example, the Environment Agency (EA), Local Authorities, Lead Local Flood Authorities, rivers trusts and housing developers.

REQUIREMENT FOR A DWMP

The DWMP will show how Northumbrian Water will:

- Set out our assessment of long-term drainage and wastewater capacity and the drivers, risks and scenarios being planned for.
- Assess where (largely drainage) infrastructure managed by other stakeholders may impose additional risks to drainage and wastewater services.
- Identify those options that offer best value to customers and the environment, ensuring robust, resilient and sustainable drainage and wastewater services in the long-term.

The benefits of our DWMP are:

- To show how our long-term plans support economic growth and resilient communities, and how they protect and enhance the environment, providing greater environmental resilience and long-term sustainability.
- To provide a systematic understanding of service and system risks and vulnerability.
- To demonstrate a structured and auditable approach to identifying and developing options and presenting a robust best value investment plan.
- To facilitate the integration of partnership working and co-creation of solutions to understand the related works of partners and deliver, where possible, integrated solutions that provide multiple benefits to achieve best value to the economy, society and the environment over the long-term.

2 https://www.water.org.uk/policy-topics/managing-sewage-and-drainage/drainage-and-wastewater-management-plans/

- To facilitate innovation (instigated by identifying future challenges that will need new approaches to address them) and the development of affordable, sustainable plans.
- To provide a clear, transparent and consistent planning approach, with sufficient agility and adaptability to respond to long-term drivers for drainage and wastewater services.
- To promote informed debate about acceptability of different levels of risk.
- To provide greater confidence to our customers, regulators and stakeholders in strategies identified, and resultant plans.
- To provide the basis for effective engagement with our customers and stakeholders on levels of service, environmental performance and resilience, now and for the future and on the choices and costs to customers in providing that service.

APPROACH TAKEN

The draft DWMP has been produced following a Risk and Benefits Based Approach, following the guidance provided in the DWMP Framework.

The stages of the DWMP that have been followed are summarised in the following table.

DWMP APPROACH

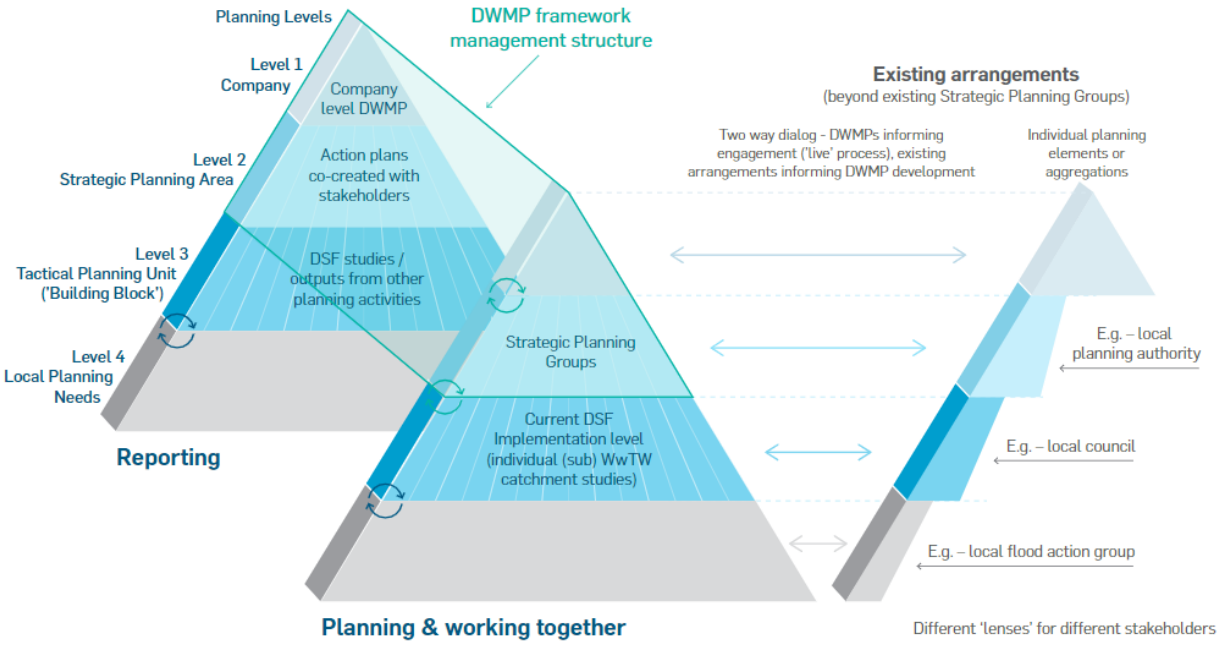
STAGE	DESCRIPTION
Strategic Context	The strategic context document outlines Northumbrian Water's intended approach to producing the DWMP.
Risk Based Catchment Screening	The Risk Based Catchment Screening (RBCS) process assesses catchments against a number of criteria in order to prioritise further investigation within catchments where there are likely to be risks that require options.
Baseline Risk and Vulnerability Assessment	The Baseline Risk and Vulnerability Assessment (BRAVA) uses hydraulic modelling to determine the existing performance of catchments and analyses the potential impacts of future pressures such as urban creep and climate change.
Problem Characterisation	The Problem Characterisation process aims to identify the catchments that have higher levels of risk than others. The level of risk and potential benefit within a catchment will dictate the extent of option development that is required.
Option Development and Appraisal	The Option Development process aims to identify the list of generic options that are available within a catchment to address the problems that have been identified in the Problem Characterisation stage. Options Appraisal then aims to shortlist options based on set criteria to determine the most feasible options.
Programme Appraisal	The Programme Appraisal process aims to identify the options that will be prioritised for delivery, as well as determining the timelines for delivery. The stage will take into account factors such as regulatory drivers and NWG's ambitious goals for performance.

STAGE	DESCRIPTION
Strategic Environmental Assessment (SEA)	SEA provides an opportunity to consider ways by which the plan can contribute to improvements in environmental conditions; as well as a means of identifying and mitigating any potential adverse environmental effects that the plan might otherwise have. It informs the decision-making process through the identification and assessment of significant and cumulative effects a plan or programme may have on the environment. By doing so, it helps make sure that the proposals in the plan are the most appropriate given the reasonable alternatives. The SEA process is conducted at a strategic level and aids consultation on the potential effects of a plan with a wide range of stakeholders.
Draft DWMP	The draft DWMP will be issued at the end of June 2022 and will then undergo a period of consultation and customer research.
Final DWMP	The final DWMP will be produced in Q1 2023 following the consultation period. The final plan will be used to inform Business Plan development as part of PR24.

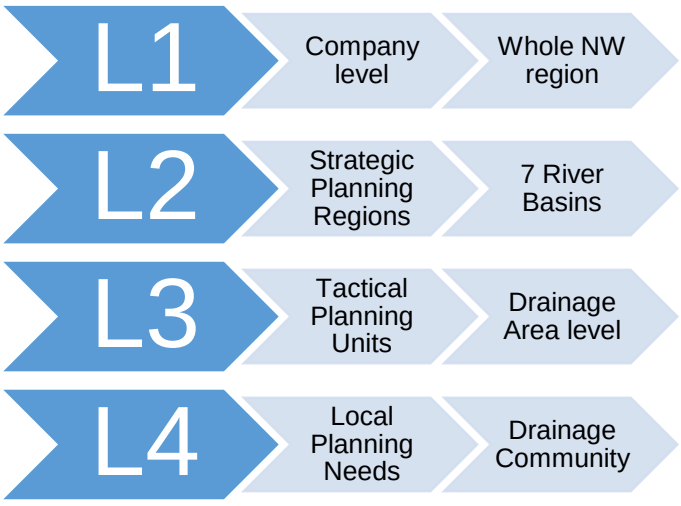
PLANNING AREAS

The draft DWMP has been prepared following the guidance provided in the DWMP Framework documents regarding the definition of planning areas. The approach taken by NWG to define planning areas at the different levels is outlined as follows.

The figure below shows the DWMP framework management structure and the hierarchy of planning levels.



The figure below shows how the management structure applies to Northumbrian Water.



LEVEL 1 DWMP AREA

The Level 1 (L1) DWMP area is defined as our operating area in the North East of England.

LEVEL 2 STRATEGIC PLANNING AREAS

The L2 strategic planning areas (SPA) have been defined through consultation with both internal and external stakeholders.

NWG have defined seven L2 SPAs with boundaries that have an optimum combination of Northumbrian Water planning systems, Lead Local Authority (both Lead Local Flood Authority and Lead Local Planning Authority) boundaries and EA catchment areas, to facilitate engagement. The seven SPAs are shown in the figure below.

LEVEL 3 TACTICAL PLANNING UNITS

The Level 3 (L3) tactical planning units (TPU) have been defined using NWG's drainage areas, of which there are 478 in total.

LEVEL 4 DRAINAGE COMMUNITIES

Level 4 (L4) drainage communities have been defined within each L3 TPU.

The areas have been generated based on hydraulic connectivity of the sewerage network and are typically defined by hydraulic break points such as storm overflows, sewage pumping stations (SPS) or WwTWs.

Maps for the L4 drainage communities can be found in the "In Your Area" on the DWMP website **www.nwl.co.uk/dwmp**.

OVERVIEW OF THE L2 STRATEGIC PLANNING AREAS

STAKEHOLDER ENGAGEMENT

It is widely recognised and acknowledged that drainage systems are complex and have numerous interactions, both known and unknown. It was therefore important that the DWMP was not created solely by Northumbrian Water. While we have been tasked with the delivery of the DWMP, it was critical that relevant stakeholders actively participated and offered support in its creation.

We have worked with a range of relevant stakeholders in the production of the DWMP, including the EA, Lead Local Flood Authorities, Local Planning Authorities, developers and environmental partners.

Through different partnerships and strategies, we play an active role within the region, working collaboratively with stakeholders on a number of projects. The DWMP builds on the strong foundation of the Northumbria Integrated Drainage Partnership (NIDP), which consists of 14 Lead Local Flood Authorities, the EA and Northumbrian Water. One of the key aims of the NIDP is to identify opportunities to deliver surface water management schemes within catchments to reduce the risk and impact of flooding. Catchments are taken from the investigation stages where opportunity areas are identified, through to the outline business case stage to determine funding sources. The award-winning partnership approach, which is based around collaboration to identify priority investment areas where benefits can be delivered for multiple stakeholders, provides an excellent platform for the DWMP.

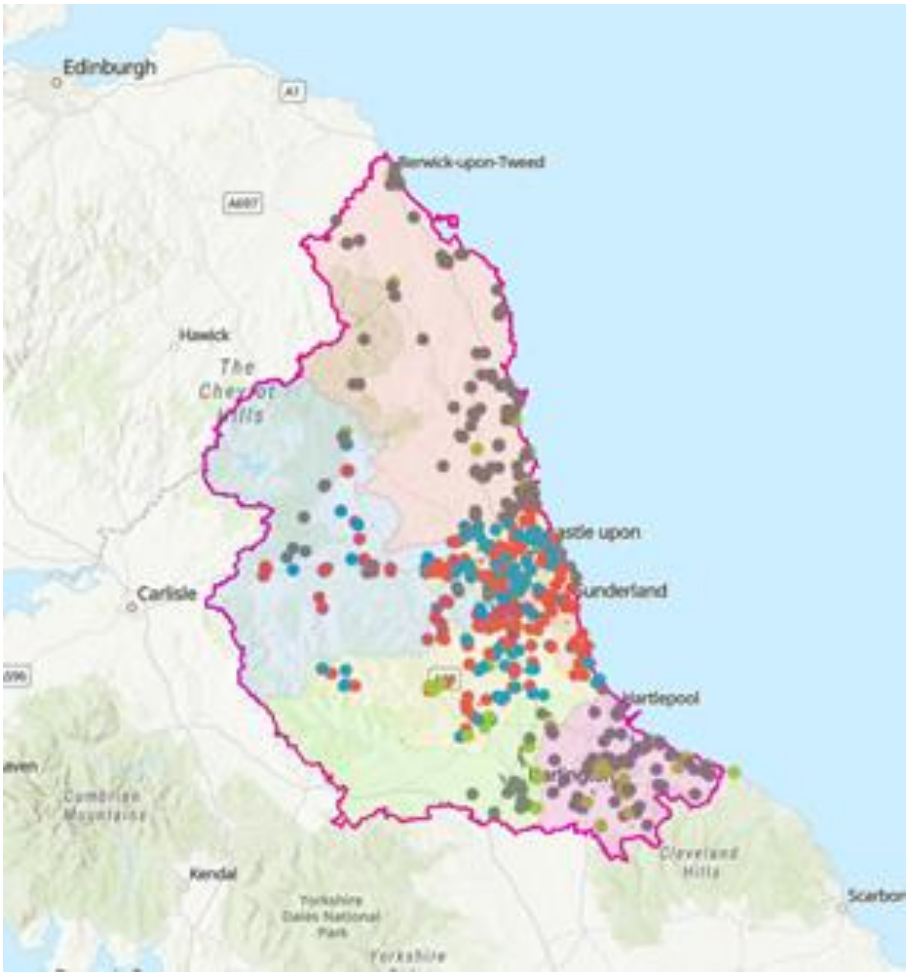
To ensure that existing and future opportunities for working collaboratively with stakeholders were included in the production of the draft DWMP, 18 engagement sessions were held in August and September 2021. During these sessions, all the geographical areas covered by the draft DWMP were reviewed to identify, record and map ongoing and future opportunities. More than 700 opportunities were captured with information on the owner, timescale, and further details. We then categorised these opportunities as ‘Impact’, ‘Inform’ or ‘Record’, depending on how they matched our identified risks. A description of these classifications is below:

CLASSIFICATION	DESCRIPTION
Impact	Opportunity that falls within a known risk area covered in the DWMP
Inform	Opportunity that falls outside of a known risk area but may be included in future cycles of the DWMP
Record	Opportunity falls outside of an area where NW has assets but is useful to record for other third- party stakeholders.

The following image shows the 700+ opportunities that were recorded during these sessions.

Key:

- **Impact**
- **Inform**
- **Record**



STRATEGIC PLANNING GROUP

We created a single stakeholder strategic planning group (SPG) covering the seven SPAs. The decision was taken, in line with the DWMP Framework recommendation, to create a single SPG to drive consistency and also to optimise the engagement process.

The group has met at least quarterly. These meetings have produced recommendations on the approach we have taken in compiling the DWMP, which have helped to shape the plan.

CUSTOMER ENGAGEMENT

From the launch of the DWMP in 2019, we have actively sought customers' views on what the DWMP should include and the types of solutions we should investigate.

This approach has ensured that our DWMP meets customers' expectations and is easy for them to understand and provide feedback on.

We have published quarterly newsletters and these are available on the DWMP webpage.

In Autumn 2020, we engaged with customers through a series of interactive activities in relation to the DWMP. The results from this research have helped shape the plan. The four broad goals that we wanted to achieve through this research were to:

- Understand what customers want the plan to aim for, and which aims are most important to them
- Understand how customers would prefer us to improve wastewater services
- Understand how customers would like us to go about prioritising the DWMP
- Understand how customers think they should be involved in developing the DWMP

The research was conducted online where current and future bill payers passed through two phases:

Phase 1

An introduction and education stage which informed participants about DWMPs and collected their views.

Phase 2

Group discussions where participants came together in small online deliberative workshops. Customers were exposed to competing points of view, allowing their own view to evolve based on the experiences of others. Additionally, in-depth telephone calls were held with some customers. This approach ensured that the opinions of both those living with conditions that make them vulnerable, and those who could not access the internet, could be included in the research.

By the end of the investigation, it was possible to arrive at an understanding of what views our wider customer base hold when they are informed about the DWMP. Overall, the research findings have been used to help develop the options and constraining criteria.

Later in 2020, we carried out further customer focus group sessions to gain views on what our DWMP webpage should look like and include. The results of these sessions form the basis for our DWMP website www.nwl.co.uk/dwmp

In 2022, we had an outline of the likely options available to show customers. We held four customer focus group sessions to identify preferences for the DWMP draft “In Your Area” plans. These proved especially useful in understanding what customers were happy to see presented and how it should look.

STRATEGIC CONTEXT

A Strategic Context Report was produced to set out our approach to the DWMP. This report was consulted on with stakeholders in early 2020. Following consultation, a responses document was issued in May 2020.

The Strategic Context Report and Strategic Context Document Responses report can be found in the "Setting the Context" area on the DWMP website **www.nwl.co.uk/dwmp.**

APPROACH TO RISK BASED CATCHMENT SCREENING (RBCS)

Risk based catchment screening (RBCS) was carried out on all catchments within the Northumbrian Water operating area.

The outcome of the RBCS phase has identified which drainage areas are potentially susceptible to future pressures and where further stress-testing was required as part of the Baseline Risk and Vulnerability Assessment (BRAVA) stage of the DWMP process.

The RBCS process can be found in the "DWMP Methodologies" area of the DWMP website **www.nwl.co.uk/dwmp.**

APPROACH TO BASELINE RISK AND VULNERABILITY ASSESSMENT (BRAVA)

Where an L3 drainage area has been identified as triggering further investigation following the RBCS stage, the current and future performance of the planning area has been assessed as part of the BRAVA stage.

OVERVIEW OF ASSESSMENT

To undertake BRAVA, digital sewer network models of the L3 TPUs were utilised.

The detail of the approach that has been followed for sewer network model updates and variables considered in the simulation can be found in the "DWMP Methodologies" area of the DWMP website.

PLANNING HORIZONS

The BRAVA analysis has been completed for five planning horizons, as outlined in the following table.

BRAVA PLANNING HORIZONS

PLANNING HORIZON	YEAR	OVERVIEW
Baseline	2020	Base year of assessment.
5 year planning time frame	2025	Updated for projected growth, urban creep and infiltration over a five-year time frame.
10 year planning time frame	2030	–Updated for projected growth, urban creep and infiltration over a ten-year time frame.

PLANNING HORIZON	YEAR	OVERVIEW
25 year planning time frame	2045	Updated for projected growth, urban creep and infiltration over a 25-year time frame.
40 year planning time frame	2060	Updated for projected growth (calculated rate of increase), urban creep and infiltration over a 40-year time frame.

PLANNING OBJECTIVES

The DWMP framework recommends the definition of Planning Objectives 'against which catchment constraints are to be assessed and options developed'.

The performance of L3 TPUs across the planning horizons has been assessed using the results from the BRAVA stage against the set of Planning Objectives outlined in the following table.

PLANNING OBJECTIVES

STRATEGIC PLANNING CATEGORY	PLANNING OBJECTIVE	METHOD OF ASSESSMENT
Flooding	PO1 Internal Property Flood Risk *	Assessment of internal property flood risk in a 1 in 20 year return period rainfall event as a result of hydraulic incapacity within the sewer network.
	PO2 External Property Flood Risk	Assessment of external property flood risk in a 1 in 20 year return period rainfall event as a result of hydraulic incapacity within the sewer network.
	PO3 1 in 50 Year Population at Risk *	Assessment of population at risk of flooding in a 1 in 50 year return period rainfall event as a result of hydraulic incapacity within the sewer network.
Environmental	PO4 Bathing Water Quality	Assessment of storm overflow spill frequency at assets linked to a bathing water site
	PO5 River Water Quality *	Assessment of storm overflow spill frequency at inland sites
	PO6 Pollution *	Assessment of pollution risk from manholes close to watercourses that are predicted to flood during a 1 in 5 year return period rainfall event.
Compliance	PO7 SPS Performance	Assessment of SPS operating durations during a typical dry weather day.
	PO8 WwTW DWF Compliance *	Assessment of 80th percentile flows being treated at sewage treatment works compared with the consented values.

* Denotes Common Planning Objectives for all companies

Further detail regarding the methodologies followed to assess each of the Planning Objectives using the outputs from the sewer network models can be found in the BRAVA Methodology located in the "DWMP Methodologies" area of the DWMP website **www.nwl.co.uk/dwmp**.

APPROACH TO PROBLEM CHARACTERISATION

The Problem Characterisation approach developed for our DWMP prioritises catchments where options for intervention are required.

Defra's Consultation on the Government's Storm Overflows Discharge Reduction Plan[3] (SODRP) was published on 31 March 2022. The consultation period took place until 12 May 2022, with the final document expected to be laid before Parliament on 1 September 2022. In response to this, the Problem Characterisation of storm overflows was completed in a way that allowed us to determine the scale of the investment potentially required to achieve the targets outlined in the consultation.

The SODRP has resulted in us moving away from the DWMP Framework as it requires interventions to take place at individual assets and not at a L3 catchment level.

We have produced four options in our draft DWMP, which allow consultees to consider the scale of costs and impact on customer bills from each. These options are described in detail later in this report.

Further detail regarding the technical methodologies followed to assess the Problem Characterisation for each of the Planning Objectives using the outputs from the sewer network models can be found in the Problem Characterisation Methodology located in the "DWMP Methodologies" area of the DWMP website **www.nwl.co.uk/dwmp**.

3 https://consult.defra.gov.uk/water-industry/storm-overflows-discharge-reduction-plan/supporting_documents/Final%20Consultation%20Document%20PDF.pdf

DEVELOPMENT OF THE PLAN

To identify the options for inclusion within the plan, an option development and appraisal (ODA) stage was completed using the information that was developed as part of the BRAVA and Problem Characterisation stages. For all of the L3 TPUs that had a BRAVA and Problem Characterisation exercise completed, it was possible to determine:

- The scale of the problem against each of the Planning Objectives
- The timing of the problems
- Whether an option was required to manage and improve levels of performance
- The cost and direct/associated benefits of options required to manage and improve levels of performance

OPTION DEVELOPMENT AND APPRAISAL

Short-term (up to 2030) and long-term (up to 2060) options have been identified for each L4 drainage community with estimated costs and benefits calculated for all.

A list of generic catchment-based options have been developed and scrutinised with a series of screening questions to determine the suitability of the option for the catchment/issue.

Options have been prioritised for delivery based on achieving the following performance targets for:

- Flooding - Reduce internal property flood risk to zero properties by 2040, in line with NWG's Ambitious Goal for Flooding
- Storm Overflows - As per the Government's SODRP.
- WwTW DWF Compliance - Ensure all WwTWs are compliant with their current consented DWF to treatment values

The process can be found in the Option Development and Appraisal Methodology located in the "DWMP Methodologies" area of the DWMP website **www.nwl.co.uk/dwmp**.

Complementing our DWMP, and running in parallel to the assessments we have undertaken, are a number of Business as Usual (BAU) tools and procedures that we use to help manage and optimise our wastewater systems to help deliver our existing performance commitments. These include customer campaigns, service delivery strategies and tactical plans, and sewer network information and performance reporting.

PROGRAMME APPRAISAL

Defra's Consultation on the Government's Storm Overflows Discharge Reduction Plan was published on 31 March 2022. The Programme Appraisal for the DWMP has been developed to reflect the anticipated targets (including the timeline) for the achievement of reduction of spills from storm overflows as described in the storm overflow consultation document.

Options that have been developed as part of the ODA stage of the DWMP have been promoted for inclusion in the DWMP based on their contribution to achieving the performance targets under the umbrella of providing a 'Best Value' plan. Alternative scenarios, including 'Least Cost', have also been prepared. The four options that have been developed are explained later in this document.

Other Considerations

The prioritisation of options within drainage communities is intended to be driven by achieving the storm overflow spill frequency reduction targets and NWG Ambitious flooding goal in the time periods outlined. However, other influences, such as stakeholders' plans, have been taken into account during programme appraisal to ensure that opportunities are maximised and options that may have a negative impact on an L3 catchment are not promoted.

Development of the Prioritised L2 Plans

Four options have been produced for consultation with customers and stakeholders. These will help inform the final DWMP submission in 2023.

THE DRAFT PLAN OPTIONS

L1 PLAN OPTIONS

PLAN REFERENCE	DESCRIPTION
Option 1: Least Cost Storm Overflow	Options included within the plan that achieve the targets outlined in the SODRP. The cheapest option for a storm overflow is selected, irrespective of the BCR. No options included to specifically reduce internal property flood risk. Typically, the least cost option will be storage, which is not expected to provide significant flood risk benefit. WwTW DWF compliance options are included. The impact on WwTW capacity of additional storage in a catchment has not been assessed but will be included in the tasks to be carried out between draft and final reports.
Option 2: Least Cost Storm Overflow plus NIDP	Options included within the plan that achieve the targets. The cheapest option for a storm overflow is selected, irrespective of the BCR. Further options are included to specifically reduce internal property flood risk within catchments that have been prioritised for investment as part of the NIDP programme. WwTW DWF compliance options are included. The impact on WwTW capacity of additional storage in a catchment has not been assessed but will be included in the tasks to be carried out between draft and final reports.
Option 3: Best Value Storm Overflow	Options included within the plan that achieve the targets outlined in the SODRP. The best value option for a storm overflow is selected taking into account the BCR. More surface water management options will be included, that will also reduce internal property flood risk, but do not achieve the Flooding Ambitious Goal of zero internal property flooding by 2040. WwTW DWF compliance options are included. The impact on WwTW capacity of additional storage in a catchment has not been assessed but will be included in the tasks to be carried out between draft and final reports.
Option 4: Best Value Storm Overflow plus Flooding Ambitious Goal	Options included within the plan that achieve the targets and the Flooding Ambitious Goal of zero internal property flooding by 2040. The best value option for a storm overflow and/or drainage community is selected, taking into account the BCR. WwTW DWF compliance options are included. The impact on WwTW capacity of additional storage in a catchment has not been assessed but will be included in the tasks to be carried out between draft and final reports.

Option 1 – Least Cost Storm Overflow

The Least Cost Storm Overflow option only looks at the minimum cost to achieve the spill frequency targets outlined in the SODRP requirement.

Interventions are prioritised for storm overflows that have been identified by the Environment Agency as a Reason for Not Achieving Good Status (RNAGS) – in other words they are considered to have a negative effect on the ecological status of a waterbody.

High Priority sites include Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), eutrophic sensitive areas, chalk streams and waters currently failing our ecological standards due to storm overflows. This matches prioritisation in the SODRP.

Discharges to bathing beaches are restricted to 1 per year and not the 2 or 3 per bathing season as per the SODRP. This discharge rate was chosen as it was the nearest modelled output already undertaken as part of the DWMP at the time the SODRP was published. The late publication of the SODRP Consultation resulted in insufficient time to run new scenarios through hydraulic models to obtain results for 2 or 3 spills per bathing water (depending on desired classification of bathing water).

No other benefits are achieved by the individual options chosen for each location. This includes little flood risk reduction benefit to properties.

No collaborative opportunities have been identified for each intervention.

Interventions are targeted at individual storm overflow locations, with interventions at the lowest possible cost. Interventions are mostly storage of spilled volumes with pumped return to the wastewater system. The impact on WwTWs of the additional stored flows has not been assessed due to time constraints. This activity will occur in summer 2022 and be included in the final DWMP published in March 2023.

Based on current information, we estimate this option will increase bills by 13% by 2045. This means that the average bill will be £49 more expensive in 2045. This increase does not consider inflation between now and 2045.

A Strategic Environmental Assessment (SEA) has not been carried out for this option.

WwTW DWF compliance options are included in this option.

Option 2 – Least Cost Storm Overflow + Northumbria Integrated Drainage Partnership (NIDP)

As option 1, the Least Cost Storm Overflow option only looks at the minimum cost to achieve the spill frequency targets outlined in the SODRP requirement.

Interventions are prioritised for storm overflows that have been identified by the Environment Agency as a Reason for Not Achieving Good Status (RNAGs) – in other words they are considered to have a negative effect on the ecological status of a waterbody. High Priority sites include Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), eutrophic sensitive areas, chalk streams and waters currently failing our ecological standards due to storm overflows. This matches prioritisation in the SODRP.

Discharges to bathing beaches are restricted to 1 per year and not the 2 or 3 per bathing season as per the SODRP. This discharge rate was chosen as it was the nearest modelled output already undertaken as part of the DWMP at the time the SODRP was published. The late publication of the SODRP Consultation resulted in insufficient time to run new scenarios through hydraulic models to obtain results for 2 or 3 spills per bathing water (depending on desired classification of bathing water).

Interventions are targeted at individual storm overflow locations, with interventions at the lowest possible cost. Interventions are mostly storage of spilled volumes with pumped return to the wastewater system. The impact on WwTWs of the additional stored flows has not been assessed due to time constraints. This activity will occur in summer 2022 and be included in the final DWMP published in March 2023.

This option includes the planned expenditure for collaborative Northumbria Integrated Drainage Partnership (NIDP) projects. NIDP schemes are linked to the Environment Agency (EA) medium-term plan for flooding in the North East. Costs shown for 2030-2045 have been estimated based on current levels of investment proposed for 2025-2030. Due to the efficiency of collaborative delivery, NIDP schemes also deliver flood risk reduction from EA assets and local authority surface water overland flows.

As part of this option, 2464 properties will receive a reduction in internal flood risk to a minimum of 1 in 20 (5% per annum) for the period 2025-30. Although the exact number of properties receiving a reduction in flood risk for each five-year period after 2030 cannot be accurately predicted at this stage, it is expected to be between 2200 and 2500.

The location of NIDP projects and the status of the project have been recorded in our DWMP. Where a catchment is subject to an NIDP investigation, there is a greater likelihood of partnership opportunities to deliver flooding schemes; therefore, options in these areas are to be prioritised for delivery earlier. The NIDP is to be utilised as the mechanism for the delivery of collaborative schemes within catchments. There are plans to review the NIDP approach to ensure that it can be used to deliver benefits beyond flood management.

Based on current information, we estimate this option will increase bills by 17% by 2045. This means that the average bill will be £64 more expensive in 2045. This increase does not consider inflation between now and 2045.

A Strategic Environmental Assessment (SEA) has not been carried out for this option.

WwTW DWF compliance options are included in this option.

Option 3 – Best Value Storm Overflow

The Best Value Storm Overflow option looks at how spending in each drainage community to achieve the targets in the SODRP can also be linked to other measures such as flood protection to achieve more for customers and the environment. Interventions are prioritised for storm overflows that have been identified by the Environment Agency as a Reason for Not Achieving Good Status (RNAGs) – in other words they are considered to have a negative effect on the ecological status of a waterbody. High Priority sites include Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), eutrophic sensitive areas, chalk streams and waters currently failing our ecological standards due to storm overflows. This matches prioritisation in the SODRP.

Discharges to bathing beaches are restricted to 1 per year and not the 2 or 3 per bathing season as per the SODRP. This discharge rate was chosen as it was the nearest modelled output already undertaken as part of the DWMP at the time the SODRP was published. The late publication of the SODRP Consultation resulted in insufficient time to run new scenarios through hydraulic models to obtain results for 2 or 3 spills per bathing water (depending on desired classification of bathing water).

Benefits are achieved by the individual options chosen for each location including societal benefits from nature-based solutions.

Collaborative opportunities are available for some interventions.

Interventions are a mixture of surface water separation and the storage of spilled volumes within the drainage system. The impact of the additional stored flows has not been assessed due to time constraints. This activity will occur in summer 2022 and be included in the final DWMP published in March 2023.

The number of properties that will receive a reduction in internal flood risk to a minimum of 1 in 20 (5% per annum) per 5 year period is:

- 2025-30 - 6,620
- 2030-35 - 6,029
- 2035-40 - 9,884
- 2040-45 - 7,745

Based on current information, we estimate this option will increase bills by 34% by 2045. This means that the average bill will be £123 more expensive in 2045. This increase does not consider inflation between now and 2045.

A Strategic Environmental Assessment (SEA) has not been carried out for this option.

WwTW DWF compliance options are included in this option.

Option 4 – Best Value Storm Overflow + Flooding Ambitious Goal

The Best Value Storm Overflow option looks at how spending in each drainage community to achieve the targets in the SODRP can also be linked to other measures such as flood protection to achieve more for customers and the environment, and also looks at how to achieve the Northumbrian Water Flooding Ambitious Goal of zero internal property flooding by 2040.

Due to the nature of best value interventions and the different timescales for achieving targets, the programme follows the timeline of Northumbrian Water's Flooding Ambitious Goal, resulting in a faster delivery of SO outputs than outlined in the SODRP.

Interventions are prioritised for storm overflows that have been identified by the Environment Agency as a Reason for Not Achieving Good Status (RNAGs) – in other words they are considered to have a negative effect on the ecological status of a waterbody. High Priority sites include Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), eutrophic sensitive areas, chalk streams and waters currently failing our ecological standards due to storm overflows. This matches prioritisation in the SODRP.

Discharges to bathing beaches are restricted to 1 per year and not the 2 or 3 per bathing season as per the SODRP. This discharge rate was chosen as it was the nearest modelled output already undertaken as part of the DWMP at the time the SODRP was published. The late publication of the SODRP Consultation resulted in insufficient time to run new scenarios through hydraulic models to obtain results for 2 or 3 spills per bathing water (depending on desired classification of bathing water).

Benefits are achieved by the individual options chosen for each location including societal benefits from nature-based solutions, such as public amenity.

Collaborative opportunities are available for some interventions.

Interventions are a mixture of surface water separation and the storage of spilled volumes within the drainage system. The impact of the additional stored flows has not been assessed due to time constraints. This activity will occur in summer 2022 and be included in the final DWMP published in March 2023.

The number of properties that will receive a reduction in internal flood risk to a minimum of 1 in 20 (5% per annum) per 5-year period is:

- 2025-30 - 11,527
- 2030-35 - 10,786
- 2035-40 - 11,285

Long term interventions will be required to maintain performance beyond 2040, taking account of the impact of climate change.

Based on current information, we estimate this option will increase bills by 38% by 2045. This means that the average bill will be £138 more expensive in 2045. This increase does not consider inflation between now and 2045.

A Strategic Environmental Assessment (SEA) has been carried out for this option and shows the option to be slightly positive. WwTW DWF compliance options are included in this option.

The Impact on a Drainage Community for each option.

We have given an impression of one local area as an example of what each of the four options could look like in an individual drainage community. The maps below show the scale of intervention, costs and benefits that could be delivered there under each of the four options in our draft plan.

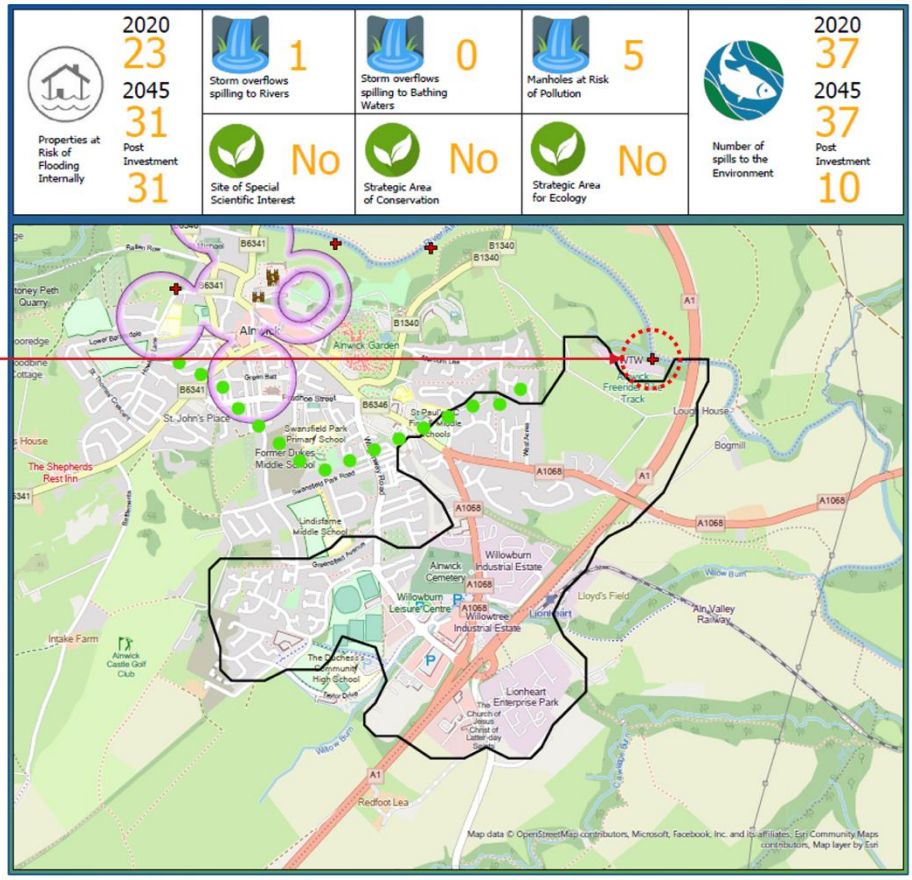
Option 1 – Least Cost Storm Overflow

Option 1 aims to achieve the spill frequency targets outlined in the SODRP at the minimum cost.

- Interventions are prioritised for storm overflows that have been identified by the Environment Agency as a Reason for Not Achieving Good Status (RNAGs) – in other words they are considered to have a negative effect on the ecological status of a waterbody.
- No other benefits are achieved by the options chosen for this location. There is no flood risk reduction benefit in this drainage community.
- No collaborative opportunities have been identified.
- The impact of the additional stored flows has not been assessed on the WwTW for this drainage community due to time constraints.
- WwTW DWF compliance options are included in this option.

- The overall impact of Option 1 for the whole North East region will increase bills by 13% by 2045. This means that the average bill will be £49 more expensive in 2045. This increase does not consider inflation between now and 2045.

- A Strategic Environmental Assessment (SEA) has not been carried out for Option 1.



Example Drainage Community

- Least Cost Option: Storage
- Cost: £ 855,000
- Additional Benefit: Storage at storm overflow; therefore, no flood risk reduction

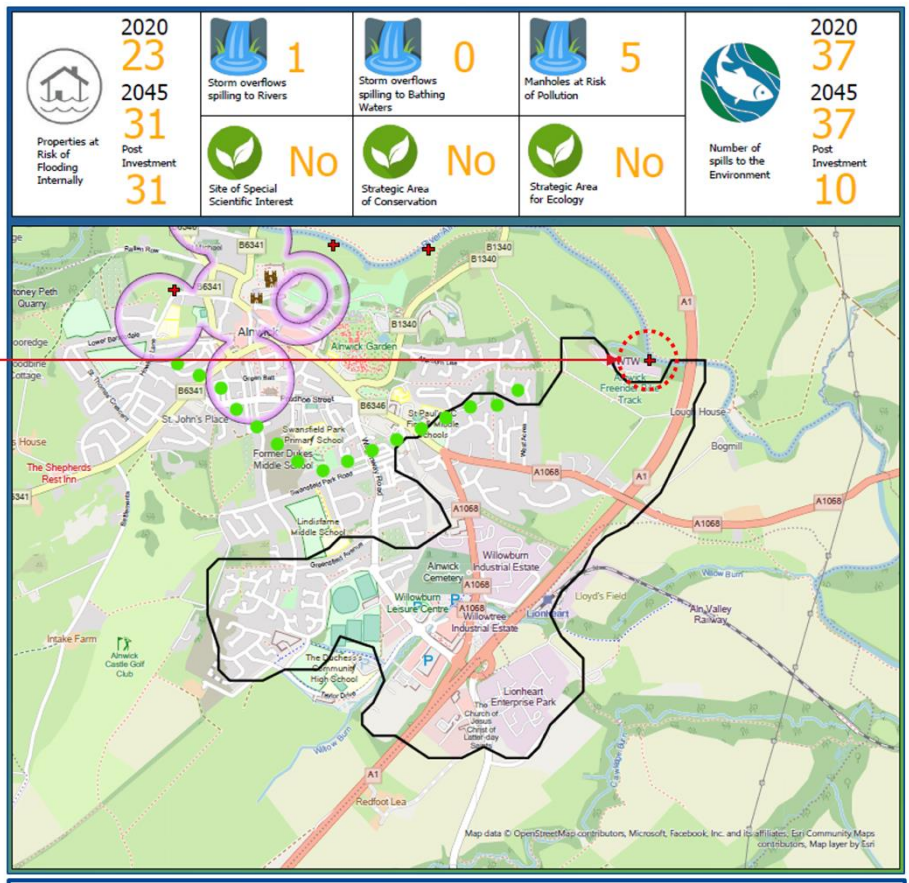
Option 2 – Least Cost Storm Overflow plus Northumbria Integrated Drainage Partnership (NIDP)

As per Option 1, Option 2 looks to achieve the spill frequency targets outlined in the SODRP requirement at the minimum cost.

- Although this option includes the planned expenditure for the collaborative Northumbria Integrated Drainage Partnership (NIDP) projects, no NIDP opportunities have been identified in this drainage community.
- No other benefits are achieved by the options chosen for this location. There is no flood risk reduction benefit in this drainage community.
- No collaborative opportunities have been identified.
- The impact of the additional stored flows has not been assessed on the WwTW for this drainage community due to time constraints.
- WwTW DWF compliance options are included in this option.

- The overall impact of Option 2 for the whole North East region is option will increase bills by 17% by 2045. This means that the average bill will be £64 more expensive in 2045. This increase does not consider inflation between now and 2045.

- A Strategic Environmental Assessment (SEA) has not been carried out for this option.



Example Drainage Community

- Least Cost Option: Storage
- Cost: £ 855,000
- Additional Benefit: Storage at storm overflow; therefore, no flood risk reduction
- Alnwick is **not** an NIDP catchment

Although Option 1 and 2 are the same for the community outlined above, there is a greater increase on bills for Option 2 as they will include funding for NIDP projects where applicable.

Option 3 – Best Value Storm Overflow

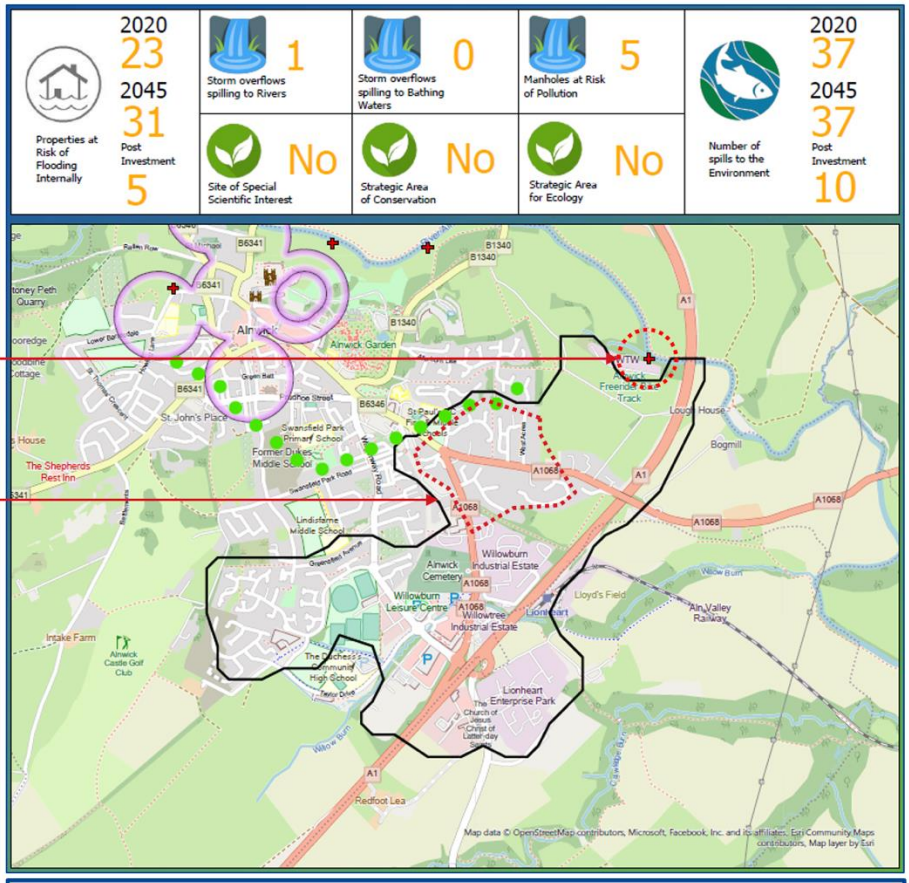
The Best Value Storm Overflow option looks at how spending in each drainage community to achieve the targets in the SODRP can also be linked to other measures such as flood protection to achieve more for customers and the environment.

- Prioritisation of interventions is as per Option 1 and 2.

- Benefits are achieved by the individual options chosen for each location, including societal benefits from nature-based solutions in this drainage community.
- Collaborative opportunities are available for the interventions in this drainage community.
- Interventions are a mixture of surface water separation and the storage of spilled volumes within the drainage system.
- A number of properties receive a reduction in internal flood risk in this drainage community.
- WwTW DWF compliance options are included in this option.

- This option will increase bills by 34% by 2045. This means that the average bill will be £123 more expensive in 2045. This increase does not consider inflation between now and 2045.

- A Strategic Environmental Assessment (SEA) has not been carried out for this option.



Example Drainage Community

- Best Value Option: Storage at overflow and in catchment
- Cost: £ 2,300,000
- Additional Benefit: 26 properties with internal flood risk reduction and 5 pollution manholes with reduced risk

Option 4 – Best Value Storm Overflow plus Flooding Ambitious Goal

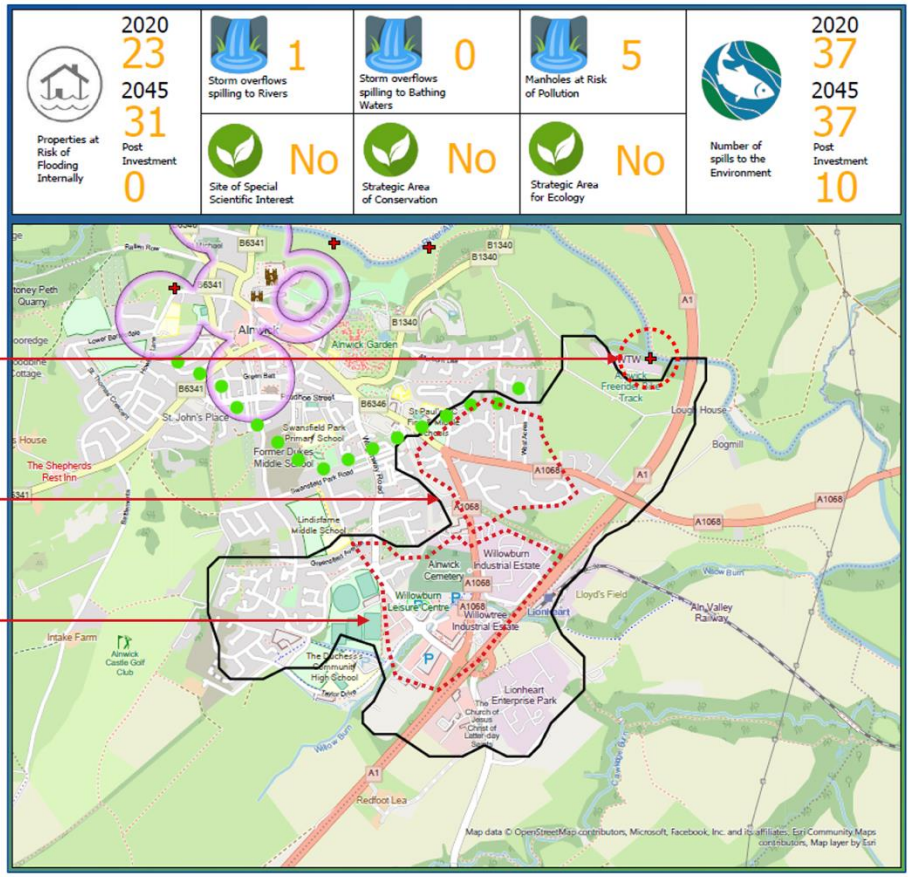
The Best Value Storm Overflow plus Flooding Ambitious Goal is similar to Option 3, but options are also included or increased in scope to achieve our ambitious goal of zero internal property flooding by 2040.

- Prioritisation of interventions is as per Option 1 and 2.

- Benefits are achieved by the individual options chosen for each location, including societal benefits from nature-based solutions in this drainage community.
- Collaborative opportunities are available for the interventions in this drainage community.
- Interventions are a mixture of surface water separation and the storage of spilled volumes within the drainage system.
- All properties identified as being at risk of internal property flooding receive a reduction in internal flood risk in this drainage community.
- WwTW DWF compliance options are included in this option.

- This option will increase bills by 38% by 2045. This means that the average bill will be £138 more expensive in 2045. This increase does not consider inflation between now and 2045.

- A Strategic Environmental Assessment (SEA) has been carried out for this option.



Example Drainage Community

- Best Value Option: Storage at overflow and in catchment
- Cost: £ 3,100,000
- Additional Benefit: 31 properties with internal flood risk reduction and 5 pollution manholes with reduced risk

STRATEGIC ENVIRONMENTAL ASSESSMENT

Although not a regulatory requirement for this cycle of DWMPs, we have completed a Strategic Environmental Assessment (SEA) on the Best Value Storm Overflow + Flooding Ambitious Goal.

The Strategic Environmental Assessment Report can be found on the DWMP web page **www.nwl.co.uk/dwmp**.

PLAN OPTIONS OVERVIEW

The following table summarises the costs and flooding benefits associated with each of the options included within the draft DWMP.

OPTION	OPTION 1 LEAST COST STORM OVERFLOW		OPTION 2 LEAST COST STORM OVERFLOW + NIDP		OPTION 3 BEST VALUE STORM OVERFLOW		OPTION 4 BEST VALUE STORM OVERFLOW + FLOODING AMBITIOUS GOAL	
Period	**Cost (£m)**	**Internal Flooding Properties Benefitting**	**Cost (£m)**	**Internal Flooding Properties Benefitting**	**Cost (£m)**	**Internal Flooding Properties Benefitting**	**Cost (£m)**	**Internal Flooding Properties Benefitting**
2025-30	200	77	274	2,464	417	6,620	786	12,516
2030-35	318	714	392	unknown*	572	6,029	1,074	11,507
2035-40	303	40	377	unknown*	751	9,884	1,095	14,770
2040-45	243	3	317	unknown*	760	7,745	Maintain cost	n/a
Total to 2045	**1,064**	**834**	**1,360**	**unknown***	**2,500**	**30,278**	**2,956**	**38,793**
Bill Impact by 2045 %	**13**		**17**		**34**		**38**	
Bill Impact by 2045 (£)	**49**		**64**		**123**		**138**	

* The NIDP is a rolling plan that presently goes up to 2030

Costs are based on Quarter 1 2019 price base.

In addition to the costs in the above table, investment is required to maintain performance on WwTW DWF compliance at 26 WwTWs in AMP8 at an estimated cost of £186m. This will also have an impact on bills between 2025-30.

TAKING FORWARD OUR DWMP

We will continue to adapt and refine our DWMP between the draft and final publication in March 2023, taking into account stakeholder and customer feedback and through further technical assessment required following changes in legislation and climate change forecasts. This technical assessment will include the following:

- Storm Overflow Discharge Reduction Plan
    - Assess Storm Overflows that are not included in the draft DWMP following SODRP.
    - Changes following consultation on the Government's final Storm Overflow Discharge Reduction Plan.
    - Carry out a review of storm overflow monitored spills against modelled outputs.
- Assess the impact on wastewater treatment works of additional storage from options in the draft DWMP.
- Assessment of interventions on Planning Objectives for percentage properties at risk in a 50-year storm and pollution.
- Review benefits assessment if NWG Value Framework or CIRIA B£ST model change.
- Link final DWMP to latest EA Medium Term Plan, AMP8 WINEP programme and Lead Local Flood Authority plans.
- Review against latest Climate Change scenarios (UKCP18).
- Run Water Quality Modelling against Water Framework Directive to determine communitive impact of growth on WwTW compliance.
- Identify strategic options following any changes to the draft DWMP.
- Revisit Strategic Environmental Assessment following any changes to the draft DWMP.

The timeline for development of our DWMP is set out below:

- June 2022 – Draft DWMP published
- July 2022 – Consultation opens
- Sept 2022 – Consultation closes
- Oct 2022-March 2023 - Adaptation of DWMP and further stakeholder engagement
- March 2023 - Final DWMP published
- October 2023 - Submission of business plan for 2025-30 to Ofwat
- December 2024 - Ofwat final determination on our price controls for 2025-30
- April 2025 - Implementation begins

Within that time there are challenges to address in relation to implementation of the options in this plan.

The first is around affordability. As noted in the sections detailing each of the options, they would require significant increases in bills if the costs were to be met through this mechanism, summarised below:

OPTION	BILL IMPACT BY 2045 (REAL TERMS %)
Option 1: Least Cost Storm Overflow	13
Option 2: Least Cost Storm Overflow + NIDP	17
Option 3: Best Value Storm Overflow	34
Option 4: Best Value Storm Overflow + Flooding Ambitious Goal	38

For context, our wastewater bills have increased by 9 per cent between 2002 and 2022, in real terms.

We do not have sufficient evidence that customers would support this level of increased bills, and we would therefore be uncomfortable about simply including increases of this scale in our upcoming PR24 business plan as it stands. The responses to this consultation will be an important part of our ongoing customer research to understand their priorities for our plan.

We are also concerned about the scale of investment that is required, and how this might be delivered. Like other utilities, we manage a large and complex programme of investments in our assets and regions to ensure that we can deliver the levels of service that our customers demand. In delivering that investment programme we work with a large supply chain of partners through contracting frameworks. We need to ensure that we have sufficient capacity and capability in those frameworks to be able to deliver those plans.

Our plan for tackling storm overflows is much larger than our entire wastewater enhancement programme at previous price reviews. For example, at PR19 Ofwat set our wastewater enhancement allowance for 2020-25 at £183m; compared to £417m in 2025-30 for this alone under the “Best Value” option.

In order to deliver this, we would therefore need to consider what can be accommodated within our existing frameworks and any changes that may be needed to accommodate the agreed plan. We expect other wastewater companies to have similar investment programmes if the same approach is taken across the sector, and this will mean further pressures on the existing construction supply chain. To deliver the first part of this in 2025-30, we would need to have early certainty on the options we would implement, in order to enable the scaling up of our capacity and the supply chain.

Moreover, much of the work we expect to take forward from the DWMP represents a material shift away from traditional hard-engineering solutions and replacing these with more nature-based and partnership schemes. This might also require different capabilities for both ourselves and our supply chain partners.

Our DWMP will form part of our long-term delivery strategy. As we go about this, we will need to review our progress and adapt our future plans to take into account changing circumstances. These include how customer views about priorities and affordability evolve; new technologies that emerge; how supply chain capacity develops; changes in weather patterns; and customer behaviour changes.

Setting a long-term delivery strategy at PR24 will allow us to seek early certainty on the investment we do not expect to change, while acknowledging these factors could mean choosing different pathways in future. We will consider those choices when we update our DWMP and at subsequent price reviews. Our PR24 business plan will include projects to drive better, more efficient, and nature-based solutions to tackling drainage and storm overflows in the future.

Our next steps will be:

1. To test customer views on the range of options we have put forward from our draft DWMP, seeking their preferences for inclusion in our final DWMP; and
2. In advance of publishing our final DWMP, we will refine our cost estimates, take into account customer research and, based on the feedback we receive, consider alternatives that may deliver a solution our customers support.

VIEW AND COMMENT ON OUR DRAFT DWMP

To view our draft DWMP and have your say, please go to our website at: **www.nwl.co.uk/dwmp**

Follow the link to the Draft DWMP and then select “Have your Say” to complete the online consultation.