



## DRAINAGE AND WASTEWATER MANAGEMENT PLANS (DWMP)



# LEVEL 2 STRATEGIC PLANNING AREA SUMMARY – TEESDALE







### Contents

Overview	2
Drainage Areas within Teesdale L2 SPA	3
Key Stakeholders	4
Catchment Needs	6
Storm Overflow Discharge Reduction Plan	6
Storm Overflow Screening	6
Wastewater Treatment Works Compliance	14
Long-Term Delivery Strategy for Flooding and Pollution	14
Planning Objective Assessment	15
Planning Objective Risk Scoring	15
Climate Change Sensitivity	20
Option Development	22
Our Plan for the Teesdale L2 SPA	22
Planning Objective Risk Scoring	24
Concluding comments	28
Contacting us	28





### **OVERVIEW**

The Drainage and Wastewater Management Plan (DWMP) covers seven Strategic Planning Areas (SPA). The seven areas align broadly with the river basin catchments within the region and the main urban areas.

This document provides an overview of the DWMP for the **Teesdale Level 2 SPA**.

Within the Teesdale Level 2 SPA, there are:

- 49 Wastewater Treatment Works (WwTW)
- 49 Level 3 Tactical Planning Unit (TPU) areas
- 52 Wastewater Drainage Areas

The total estimated population of the Teesdale Level 2 SPA is 190,000.

### TEESDALE LEVEL 2 STRATEGIC PLANNING AREA







### DRAINAGE AREAS WITHIN TEESDALE L2 SPA

The following table outlines all of the drainage areas within the Teesdale Level 2 SPA. The table also outlines whether the drainage area triggered during the Risk Based Catchment Screening (RBCS) stage of the DWMP for detailed analysis as part of the Baseline Risk and Vulnerability Assessment (BRAVA) stage.

Drainage Area Reference	Drainage Area Name	WwTW Name	Triggered BRAVA?
09-D01	Summerhouse	Summerhouse WwTW	No
09-D02	Killerby	Killerby WwTW	No
09-D03	Caldwell	Caldwell WwTW	No
09-D04	Eppleby & Forcett	Eppleby WwTW	No
09-D05	East Layton	East Layton WwTW	No
09-D06	Barnard Castle	Barnard Castle WwTW	Yes
09-D07	Stainton	Stainton Camp WwTW	No
09-D08	Staindrop	Staindrop WwTW	No
09-D09	Gainford	Gainford WwTW	No
09-D10	Winston	Winston WwTW	No
09-D11	Whorlton	Whorlton WwTW	No
09-D12	Cleatlam	Old Cleatlam WwTW	No
09-D13	Ovington	Ovington WwTW	No
09-D14	Hutton Magna	Hutton Magna WwTW	No
09-D15	Barningham	Barningham WwTW	No
09-D16	Wackerfield	Wackerfield WwTW	No
09-D17	Middleton in Teesdale	Middleton-In-Teesdale WwTW	Yes
09-D18	Eggleston & Hilltop	Egglestone WwTW	No
09-D19	Romaldkirk	Romaldkirk WwTW	No
09-D20	Cotherstone	Cotherstone WwTW	No
09-D21	Mickleton	Mickleton WwTW	No
09-D22	Newbiggin	Newbiggin-In-Teesdale WwTW	No
09-D23	Bowes	Bowes WwTW	Yes
09-D24	Boldron	Boldron WwTW	No
09-D25	South Cleatlam	South Cleatlam WwTW	No
09-D26	Dent Bank	Dent Bank WwTW	No
10-D01	Darlington North	Stressholme WwTW	Yes
10-D02	Darlington South	Stressholme WwTW	Yes
10-D03	Houghton-le-Side	Houghton-Le-Side WwTW	No
10-D04	Denton	Denton WwTW	No
10-D05	Walworth Gate	Walworth Gate WwTW	No
10-D06	Archdeacon Newton	Archdeacon Newton WwTW	No
10-D09	Sadberge	Sadberge WwTW	Yes



Drainage Area Reference	Drainage Area Name	WwTW Name	Triggered BRAVA?
10-D10	Beacon Hill	Beacon Hill WwTW	No
10-D12	Neasham, Hurworth & Hurworth Place	Stressholme WwTW	Yes
10-D13	Aldbrough St.John	Aldbrough WwTW	No
10-D14	Manfield	Manfield WwTW	No
10-D15	Melsonby	Melsonby WwTW	Yes
10-D16	Barton	Barton WwTW	No
10-D17	Eryholme	Eryholme WwTW	No
10-D19	Fishburn	Fishburn WwTW	Yes
10-D20	Trimdon Village	Trimdon Village WwTW	Yes
10-D21	Trimdon Grange	Trimdon Village WwTW	Yes
10-D22	Newton Aycliffe	Aycliffe WwTW	Yes
10-D23	Ferryhill South	Windlestone WwTW	Yes
10-D24	Ferryhill North	Tudhoe Mill WwTW	Yes
10-D25	Chilton Lane	Chilton Lane WwTW	Yes
10-D26	Mordon	Mordon WwTW	No
10-D27	Bishop Middleham	Bishop Middleham WwTW	Yes
10-D28	Brusselton Cottages	Brusselton Cottages WwTW	No
10-D29	Bolam	Bolam WwTW	No
10-D30	Bradbury	Bradbury WwTW	No

### KEY STAKEHOLDERS

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 NWL have been tasked with the delivery of the DWMP, it was critical that the public and 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 Environment Agency (EA), Lead Local Flood Authorities, Local Planning Authorities, housing developers and environmental partners.

Through different partnerships and strategies, we play an active role within the region, working collaboratively with stakeholders on several 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 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, and ultimately through to scheme delivery. 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 DWMP, engagement sessions were held in March 2023. During these sessions, all the geographical areas covered by the DWMP were reviewed to identify, record and map ongoing and future opportunities.

### Key Stakeholders

Environment Agency Local Authorities National Farmers Union Rivers Trusts Natural England Developers National Parks

### **Collaborative Working Opportunities**







### Significant Collaborative Working Opportunities

Drainage Area Reference	Organisation	Opportunity Type
10-D02	Darlington Borough Council	North Blackwell Skerne Park Overflow to be addressed in 2030-2035.
10-D02	Northumbria Integrated Drainage Partnership (NIDP)	Environment Programme Pipeline Projects 2023-2028, Northumbria Integrated Drainage Partnership.

#### **CATCHMENT NEEDS**

Through the Baseline Risk and Vulnerability Assessment (BRAVA) and Problem Characterisation stages of the DWMP, the requirements for investment within catchments were identified.

The following summaries provide the detail of the 'Catchment Needs' that have been identified within the Teesdale Level 2 SPA.

### **Storm Overflow Discharge Reduction Plan**

The following table summarises the number of storm overflows within the Teesdale Level 2 SPA and how many have been included in the DWMP for improvement in line with the Storm Overflow Discharge Reduction Plan (SODRP).

Storm Overflow Categorisation	Count	Storm Overflows Requiring Improvement
Inland – High Priority	37	25
Inland – Not High Priority	87	44
Bathing Water	0	0
Coastal / Estuarine (not linked to Bathing Water)	0	0
Total	124	69

### **Storm Overflow Screening**

Under the SODRP, all storm overflows are required to include 6mm screening provision on any discharges that are made.

The following table summarises the number of storm overflows within the Teesdale Level 2 SPA that have been included in the DWMP for the provision of 6mm screening.



Storm Overflow Categorisation	Count	Storm Overflows Requiring Screening
Inland – High Priority	37	22
Inland – Not High Priority	87	49
Bathing Water	0	0
Coastal / Estuarine (not linked to Bathing Water)	0	0
Total	124	71

The full list of storm overflows within the Northumberland Level 2 SPA is included in the following table.

		NORTHUMBRIAN WATER living water	ESSEX& SUFFOLK WATER living water
Storm Overflow Site Name	Drainage Area Code	Drainage Area Name	Storm Overflow Spill Frequency Reduction Scheme - Delivery Period
EPPLEBY SEWAGE DISPOSAL WORKS	09-D04	Eppleby & Forcett	2040 - 2045
EPPLEBY COMBINED SEWER OVERFLOW	09-D04	Eppleby & Forcett	No Improvement Required
DEMESNES MILL CSO	09-D06	Barnard Castle	2035 - 2040
BARNARD CASTLE STW CSO INLET Demesne Mill CSO (East)	09-D06	Barnard Castle	2035 - 2040
GALGATE CSO	09-D06	Barnard Castle	2035 - 2040
THE LENDINGS (STARTFORTH) SPS	09-D06	Barnard Castle	2035 - 2040
STARTFORTH PS	09-D06	Barnard Castle	2035 - 2040
GRAY LANE STORM SEWAGE OVERFLOW	09-D06	Barnard Castle	2035 - 2040
BARNARD CASTLE STW CSO INLET	09-D06	Barnard Castle	No Improvement Required
BARNARD CASTLE STW Storm Tank	09-D06	Barnard Castle	No Improvement Required
REAR OF RABY ROAD STORM SEWAGE OVER	09-D06	Barnard Castle	No Improvement Required
DEMESNES MILL NO 3 CSO	09-D06	Barnard Castle	No Improvement Required
STAINTON CSO	09-D07	Stainton	2045 - 2050
STAINDROP PUMPING STATION	09-D08	Staindrop	2035 - 2040
STAINDROP SEWAGE TREATMENT WORKS	09-D08	Staindrop	No Improvement Required
STAINDROP SSO THE BLACK SWAN	09-D08	Staindrop	No Improvement Required
LANGTON BECK PS	09-D09	Gainford	2040 - 2045
COS TO REAR 12 SPRINGWELL CLOSE	09-D09	Gainford	2040 - 2045
GAINFORD SEWAGE TREATMENT WORKS CSO INLET	09-D09	Gainford	No Improvement Required
GAINFORD SEWAGE TREATMENT WORKS CSO INLET	09-D09	Gainford	No Improvement Required
HEADLAM SPS	09-D09	Gainford	No Improvement Required
NEWHOLME C.S.O.	09-D10	Winston	No Improvement Required
WINSTON STW SSO	09-D10	Winston	No Improvement Required
WHORLTON STW	09-D11	Whorlton	2045 - 2050
OLD CLEATLAM STW	09-D12	Cleatlam	2045 - 2050

		WATER living water	WATER living water
Storm Overflow Site Name	Drainage Area Code	Drainage Area Name	Storm Overflow Spill Frequency Reduction Scheme - Delivery Period
OVINGTON STW	09-D13	Ovington	No Improvement Required
BARNINGHAM STW	09-D15	Barningham	2040 - 2045
CSO AT REAR OF 1 RIVER TERRACE	09-D17	Middleton in Teesdale	2045 - 2050
CSO TO REAR NO.48 MARKET PLACE	09-D17	Middleton in Teesdale	2045 - 2050
MIDDLETON-IN-TEESDALE SEWAGE TREATM CSO INLET	09-D17	Middleton in Teesdale	2045 - 2050
CALIFORNIA ROW CSO	09-D17	Middleton in Teesdale	No Improvement Required
MIDDLETON-IN-TEESDALE SEWAGE TREATM Storm Tank	09-D17	Middleton in Teesdale	No Improvement Required
EGGLESTON STW SSO	09-D18	Eggleston & Hilltop	No Improvement Required
ROMALDKIRK SEWAGE DISPOSAL WORKS Storm Tank	09-D19	Romaldkirk	2040 - 2045
ROMALDKIRK SEWAGE DISPOSAL WORKS CSO INLET	09-D19	Romaldkirk	No Improvement Required
THE HAGG CSO	09-D20	Cotherstone	2035 - 2040
COTHERSTONE SEWAGE DISPOSAL WORKS BALDER COTTAGE CSO	09-D20	Cotherstone	No Improvement Required
WINDMILL COTTAGE CSO THE MILL TE066	09-D20	Cotherstone	No Improvement Required
COTHERSTONE SEWAGE TREATMENT WORKS	09-D20	Cotherstone	No Improvement Required
YARKER LANE CSO	09-D21	Mickleton	2045 - 2050
MICKLETON SEWAGE TREATMENT WORKS	09-D21	Mickleton	2045 - 2050
OLD SCHOOL COMBINED SEWER OVERFLOW	09-D21	Mickleton	No Improvement Required
SOUTH VIEW CSO	09-D21	Mickleton	No Improvement Required
BOWES SEWAGE TREATMENT WORKS	09-D23	Bowes	2045 - 2050
BOLDRON STW	09-D24	Boldron	No Improvement Required
SOUTH CLEATLAM CSO	09-D25	South Cleatlam	No Improvement Required
BEAUMONT HILL SSO	10-D01	Darlington North	2045 - 2050
HARROWGATE HILL SEWAGE PS	10-D01	Darlington North	2045 - 2050
SPRING COURT CSO DL006	10-D01	Darlington North	2045 - 2050
ASKRIGG STREET COMBINED SEWER OVERF	10-D01	Darlington North	No Improvement Required

NORTHUMBRIAN ESSEX& SUFFOLK

		WHI ER WING WALL	WAI EK Wing waser
Storm Overflow Site Name	Drainage Area Code	Drainage Area Name	Storm Overflow Spill Frequency Reduction Scheme - Delivery Period
WHESSOE SPS	10-D01	Darlington North	No Improvement Required
GLADSTONE STREET (G1)	10-D01	Darlington North	No Improvement Required
EASSON ROAD/DODDS STREET CSO	10-D01	Darlington North	No Improvement Required
FORSTER STREET/EASSON ROAD CSO	10-D01	Darlington North	No Improvement Required
REAR FORSTER ST/EASSON ROAD CSO	10-D01	Darlington North	No Improvement Required
CSO AT WOODLAND ROAD	10-D01	Darlington North	No Improvement Required
MAYFAIR ROAD CSO	10-D01	Darlington North	No Improvement Required
DENE GROVE CSO Brinkburn Dene	10-D01	Darlington North	No Improvement Required
NEASHAM ROAD CSO (Y5)	10-D02	Darlington South	2025 - 2030
YARM ROAD CSO (Y3)	10-D02	Darlington South	2025 - 2030
DARLINGTON CROWN STREET NO 34 CSO	10-D02	Darlington South	2030 - 2035
DARLINGTON BRUNSWICK STREET CSO	10-D02	Darlington South	2030 - 2035
SOUTH PARK CSO DL035	10-D02	Darlington South	2030 - 2035
VICTORIA EMBANKMENT - POLAM LANE	10-D02	Darlington South	2030 - 2035
CREE BECK CSO	10-D02	Darlington South	2040 - 2045
SOUTH PARK EAST CSO	10-D02	Darlington South	2040 - 2045
STAPLETON SPS	10-D02	Darlington South	2040 - 2045
VICTORIA ROAD CSO	10-D02	Darlington South	No Improvement Required
223 GENEVA ROAD CSO	10-D02	Darlington South	No Improvement Required
GENEVA ROAD CSO	10-D02	Darlington South	No Improvement Required
BLACKWELL Broken SCAR PS	10-D02	Darlington South	No Improvement Required
EDINBURGH DRIVE CSO	10-D02	Darlington South	No Improvement Required
YARM ROAD CSO (Y2)	10-D02	Darlington South	No Improvement Required
CSO YARM ROAD DL18	10-D02	Darlington South	No Improvement Required
NEASHAM ROAD (Y4) CSO	10-D02	Darlington South	No Improvement Required



		NORTHUMBRIAN WATER living water	ESSEX&SUFFOLK WATER living water
Storm Overflow Site Name	Drainage Area Code	Drainage Area Name	Storm Overflow Spill Frequency Reduction Scheme - Delivery Period
YARM ROAD CSO (Y6)	10-D02	Darlington South	No Improvement Required
SADBERGE SEWAGE TREATMENT WORKS	10-D09	Sadberge	2045 - 2050
SADBERGE SEWAGE PUMPING STATION	10-D09	Sadberge	No Improvement Required
REAR OF WELL HOUSE FARM CSO	10-D09	Sadberge	No Improvement Required
NEASHAM ROAD PUMPING STATION STRAIT LANE STRAWBERRY COTTAGE	10-D12	Neasham, Hurworth & Hurworth Place	2030 - 2035
NEASHAM EJECTOR STATION SSO	10-D12	Neasham, Hurworth & Hurworth Place	2030 - 2035
CROFT PS	10-D12	Neasham, Hurworth & Hurworth Place	2045 - 2050
STRAIT LANE CSO	10-D12	Neasham, Hurworth & Hurworth Place	2045 - 2050
HURWORTH PLACE SPS	10-D12	Neasham, Hurworth & Hurworth Place	No Improvement Required
STRESSHOLME STW	10-D12	Neasham, Hurworth & Hurworth Place	No Improvement Required
ALDBROUGH ST JOHN SEWAGE PUMPING	10-D13	Aldbrough St.John	2035 - 2040
ALDBROUGH SEWAGE TREATMENT WORKS	10-D13	Aldbrough St.John	No Improvement Required
MANFIELD SEWAGE DISPOSAL WORKS Network CSO INLET	10-D14	Manfield	2040 - 2045
MANFIELD SEWAGE DISPOSAL WORKS SSO CSO INLET	10-D14	Manfield	No Improvement Required
MELSONBY SEWAGE TREATMENT WORKS	10-D15	Melsonby	2040 - 2045
BARTON SEWAGE TREATMENT WORKS Storm Tank	10-D16	Barton	2040 - 2045
LONG BRIDGE CSO	10-D16	Barton	No Improvement Required
BARTON SEWAGE TREATMENT WORKS CSO INLET	10-D16	Barton	No Improvement Required
FISHBURN SEWAGE TREATMENT WORKS CSO INLET	10-D19	Fishburn	2030 - 2035
FISHBURN SEWAGE TREATMENT WORKS CSO INLET	10-D19	Fishburn	2030 - 2035
FISHBURN BRIDGE CSO	10-D19	Fishburn	2030 - 2035
FISHBURN TCE SSO	10-D19	Fishburn	No Improvement Required
TRIMDON VILLAGE SEWAGE TREATMENT WO CSO INLET	10-D20	Trimdon Village	2040 - 2045

		NORTHUMBRIAN WATER living water	ESSEX&SUFFOLK WATER living water
Storm Overflow Site Name	Drainage Area Code	Drainage Area Name	Storm Overflow Spill Frequency Reduction Scheme - Delivery Period
LANGLEY BECK CSO	10-D21	Trimdon Grange	2030 - 2035
TRIMDON COLLIERY SPS	10-D21	Trimdon Grange	2030 - 2035
BRAFFERTON CSO - REAR OF HALL GARTH HOTEL	10-D22	Newton Aycliffe	2030 - 2035
AYCLIFFE (STEPHENSON WAY) PS	10-D22	Newton Aycliffe	2030 - 2035
TRAVELLERS GREEN CSO (SE015)	10-D22	Newton Aycliffe	2030 - 2035
WELL BANK CSO	10-D22	Newton Aycliffe	2040 - 2045
AYCLIFFE STW WORKS	10-D22	Newton Aycliffe	2040 - 2045
REDWORTH SEWAGE PUMPING STATION	10-D22	Newton Aycliffe	2040 - 2045
SHILDON CSO WEST ROAD AUCKLAND	10-D22	Newton Aycliffe	2040 - 2045
JUBILEE ROAD CSO	10-D22	Newton Aycliffe	2040 - 2045
HEIGHINGTON CSO	10-D22	Newton Aycliffe	No Improvement Required
CSO AT SHILDON	10-D22	Newton Aycliffe	No Improvement Required
RUSHYFORD SEWAGE PUMPING STATION, A	10-D23	Ferryhill South	2045 - 2050
DEAN ROAD CSO	10-D23	Ferryhill South	2045 - 2050
WINDLESTONE STW	10-D23	Ferryhill South	2045 - 2050
FERRYHILL PS	10-D23	Ferryhill South	2045 - 2050
LYNDHURST ROAD COMBINED SEWER OVERF	10-D23	Ferryhill South	No Improvement Required
FERRYHILL NORTH SPS	10-D24	Ferryhill North	2035 - 2040
DURHAM ROAD CSO	10-D24	Ferryhill North	No Improvement Required
CHILTON LANE PS	10-D25	Chilton Lane	2040 - 2045
ROWLANDSON TERRACE CSO	10-D25	Chilton Lane	2040 - 2045
CHILTON LANE A CSO	10-D25	Chilton Lane	2040 - 2045
CHILTON LANE B SSO	10-D25	Chilton Lane	2040 - 2045
MORDON STW	10-D26	Mordon	2045 - 2050
BISHOP MIDDLEHAM SEWAGE WORKS	10-D27	Bishop Middleham	2040 - 2045

		NORTHUMBRIAN WATER living water	ESSEX& SUFFOLK WATER living water
Storm Overflow Site Name	Drainage Area Code	Drainage Area Name	Storm Overflow Spill Frequency Reduction Scheme - Delivery Period
BRADBURY STW	10-D30	Bradbury	2035 - 2040





### **Wastewater Treatment Works Compliance**

Analyses have been completed to determine the interventions that are likely to be required to ensure all wastewater treatment works (WwTW) are operating in compliance with the permits for dry weather flow (DWF) treatment and treated effluent discharge quality.

The following table summarises the number of WwTWs within the Teesdale Level 2 SPA that have been included in the DWMP for DWF permit compliance and treated effluent discharge quality permit compliance (phosphorous (P), biological oxygen demand (BOD) and ammonia (Amm) indicators).

WwTW Name	Intervention(s) Required
Stainton WwTW	Stainton WwTW has been identified as requiring an investigation for discharge quality compliance has been identified for Phosphorous between 2025 and 2030 and Ammonia between 2055 and 2060.
Staindrop WwTW	Staindrop WwTW has been identified as requiring an investigation for discharge quality compliance has been identified for Phosphorous between 2025 and 2030.
Stressholme WwTW	Stressholme WwTW has been identified as requiring a dry weather flow compliance upgrade between 2030 and 2040. An investigation for discharge quality compliance has been identified for Phosphorous between 2025 and 2030.
Aldbrough WwTW	Aldbrough WwTW has been identified as requiring an investigation for discharge quality compliance has been identified for Phosphorous between 2025 and 2030.
Melsonby WwTW	Melsonby WwTW has been identified as requiring an investigation for discharge quality compliance has been identified for Ammonia between 2025 and 2030.
Barton WwTW	Barton WwTW has been identified as requiring an investigation for discharge quality compliance has been identified for Phosphorous between 2025 and 2030.
Aycliffe WwTW	Aycliffe WwTW has been identified as requiring an investigation for discharge quality compliance has been identified for Phosphorous between 2025 and 2030, Biological Oxygen Demand and Ammonia between 2030 and 2040.
Windlestone WwTW	Windlestone WwTW has been identified as requiring an investigation for discharge quality compliance has been identified for Phosphorous and Biological Oxygen Demand between 2025 and 2030.
Chilton Lane WwTW	Chilton Lane WwTW has been identified as requiring a dry weather flow compliance upgrade between 2055 and 2060. An investigation for discharge quality compliance has been identified for Phosphorous between 2025 and 2030 and Biological Oxygen Demand between 2050 and 2055.

### Long-Term Delivery Strategy for Flooding and Pollution

The National Infrastructure Comission's report 'Reducing the risk of surface water flooding'<sup>1</sup> highlighted the importance of a national approach to tackle flooding, and the costs and challenges of eliminating sewer flooding. Given this, and the greater insight we have gained from developing the DWMP, the ambition for flooding and pollution risk has been adjusted to what is considered a stretching but achievable level that would be economically beneficial to deliver.

<sup>&</sup>lt;sup>1</sup> <u>https://nic.org.uk/studies-reports/reducing-the-risks-of-surface-water-flooding/surface-water-flooding-final-report/</u>



Our Long-Term Delivery Strategy identifies a target of reducing sewer flooding by 60% from our 2025 position. To achieve this, we will plan to reduce hydraulic flood risk regionally in the period between 2030 and 2050 by a total of:

- 17,999 internal flood risk properties
- 216,074 external flood risk properties

This approach deals with the impact of climate change, growth and urban creep.

The following table summarises the level of risk within the Teesdale L2 SPA against the flooding and pollution planning objectives.

Planning Objective	Measure			Count		
		2020	2025	2030	2045	2060
PO1 – Internal Flood Risk	Count of properties at risk of flooding internally during a 1 in 20 year return period rainfall event	2,090	2,066	2,067	2,753	2,991
PO2 – External Flood Risk	Count of properties at risk of flooding externally during a 1 in 20 year return period rainfall event	21,614	21,468	21,652	26,184	27,293
PO3 – 1 in 50 Year Population at Risk	Population at risk of flooding during a 1 in 50 year return period rainfall event	35,560	35,715	35,892	45,934	48,359
PO6 – Pollution	Count of manholes near watercourses at risk of flooding during a 1 in 5 year return period rainfall event	144	146	146	189	197

### PLANNING OBJECTIVE ASSESSMENT

### Planning Objective Risk Scoring

The DWMP planning objectives have been assessed in line with the common scoring approach followed by all water companies.

Risk scores have been calculated at drainage area level, following the approach outlined below. Further detail on how the scores have been calculated for each of the planning objectives is within the Problem Characterisation methodology.





Risk Score	Description
0	<b>Low Risk</b> – Levels of planning objective risk within the drainage area are in the bottom quartile and/or there are no assets identified as higher priority requiring interventions throughout the planning periods.
1	<b>Medium Risk</b> – Levels of planning objective risk within the drainage area are in the middle two quartiles and/or there are assets identified as lower priority requiring interventions throughout the planning periods.
2	<b>High Risk</b> – Levels of planning objective risk within the drainage area are in the top quartile and/or there are assets identified as higher priority requiring interventions throughout the planning periods.





D	rainage Area	PO <sup>r</sup> Fi	1 – Inter lood Ris	rnal sk	PO2 Fl	2 – Exte ood Ris	ernal sk	PC Year	)3 – 1 in r Popula at Risk	tion	PO	4 – Batl Water	ning	P	05 – Riv Water	/er	PO6	6 - Pollu	ition	PO DWF	8 – Ww <sup>.</sup> Compli	TW ance
		2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	206 0
09-D01	Summerhouse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D02	Killerby	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D03	Caldwell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D04	Eppleby & Forcett	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0
09-D05	East Layton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D06	Barnard Castle	2	2	2	2	2	2	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0
09-D07	Stainton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D08	Staindrop	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0
09-D09	Gainford	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
09-D10	Winston	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D11	Whorlton	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
09-D12	Cleatlam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D13	Ovington	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D14	Hutton Magna	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D15	Barningham	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0
09-D16	Wackerfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D17	Middleton in Teesdale	2	2	2	2	2	2	2	2	2	0	0	0	1	1	1	2	2	2	0	0	0
09-D18	Eggleston & Hilltop	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D19	Romaldkirk	1	1	1	1	2	2	2	2	2	0	0	0	2	2	2	0	0	0	0	0	0
09-D20	Cotherstone	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0
09-D21	Mickleton	2	2	2	2	2	2	2	2	2	0	0	0	1	1	1	0	0	0	0	0	0
09-D22	Newbiggin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D23	Bowes	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
09-D24	Boldron	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NORTH	UMBR	IAN,
WATER	living	water

### ESSEX&SUFFOLK WATER living water

Di	rainage Area	PO <sup>.</sup> Fi	1 – Inter lood Ris	rnal sk	PO2 Fl	2 – Exte ood Ris	ernal sk	PO Year	3 – 1 in Popula at Risk	50 ation	PO	4 – Batl Water	ning	P	05 – Riv Water	/er	PO6	6 - Pollu	ition	PO DWF	8 – Ww <sup>.</sup> Compli	TW iance
		2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	206 0
09-D25	South Cleatlam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D26	Dent Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D01	Darlington North	1	2	2	1	1	1	1	1	2	0	0	0	1	1	1	1	1	1	0	2	2
10-D02	Darlington South	1	1	1	0	1	1	1	1	1	0	0	0	2	2	2	1	1	1	0	2	2
10-D03	Houghton-le-Side	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D04	Denton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D05	Walworth Gate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D06	Archdeacon Newton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D09	Sadberge	0	0	0	1	1	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0
10-D10	Beacon Hill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D12	Neasham, Hurworth & Hurworth Place	1	2	2	1	1	1	2	2	2	0	0	0	2	2	2	1	1	1	0	2	2
10-D13	Aldbrough St.John	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D14	Manfield	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0
10-D15	Melsonby	1	1	1	1	1	1	1	2	2	0	0	0	0	0	0	2	2	2	0	0	0
10-D16	Barton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D17	Eryholme	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D19	Fishbum	1	1	2	2	2	2	2	2	2	0	0	0	2	2	2	0	0	0	0	0	0
10-D20	Trimdon Village	0	1	1	2	2	2	1	2	2	0	0	0	2	2	2	0	0	0	0	0	0
10-D21	Trimdon Grange	0	0	0	0	0	0	2	2	2	0	0	0	2	2	2	1	1	1	0	0	0
10-D22	Newton Aycliffe	1	1	1	1	1	1	1	1	1	0	0	0	2	2	2	1	1	1	0	0	0
10-D23	Ferryhill South	2	2	2	2	2	2	1	1	1	0	0	0	1	1	1	0	0	0	0	0	0
10-D24	Ferryhill North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D25	Chilton Lane	2	2	2	2	2	2	1	2	2	0	0	0	1	1	1	0	0	0	0	0	2
10-D26	Mordon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D27	Bishop Middleham	1	1	2	1	2	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0



																					-	
Di	rainage Area	PO Fi	1 – Intei Iood Ris	rnal sk	PO2 Fi	PO2 – External Flood Risk PO3 – 1 in 50 Year Population at Risk PO4 – Bathing Water						P	05 – Riv Water	/er	PO6	6 - Pollu	tion	PO8 – WwTW DWF Compliance				
		2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	206 0
10-D28	Brusselton Cottages	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D29	Bolam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D30	Bradbury	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



### **Climate Change Sensitivity**

As outlined in the BRAVA methodology, two additional climate scenarios were analysed to evaluate the impact on the planning objectives of Lower Emissions and Higher Emissions climate scenarios.

The following graphics outline the impact on the planning objective risk numbers for the flooding and pollution planning objectives within the Teesdale Level 2 SPA in the different climate scenarios that have been modelled.



### PO1 – Internal Flood Risk – Teesdale L2 SPA













### PO6 – Pollution – Teesdale L2 SPA



Our business plan is based on adaptive planning principles. We begin to use this more and more to think about an uncertain future. This long-term strategy is being developed alongside the long-term planning frameworks – in particular, the well-established Water Resources Management Plan process and the new Drainage and Wastewater Management Plan process.





### **OPTION DEVELOPMENT**

### Our Plan for the Teesdale L2 SPA

#### What Are We Doing?

The DWMP has been prepared taking the Best Value options within catchments and also including sustainable options that were not identified as Best Value but did reduce the volume of below-ground storage required within a catchment.

A summary of the interventions that have been included within the DWMP within the Teesdale L2 SPA are included within the following tables.

Intervention Type	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045	2045 to 2050
Storm Overflows addressed by Spill Frequency Reduction Schemes	2	15	11	22	20
Storm Overflows requiring Screening Provision Schemes	2	7	8	29	25

### Storm Overflow Discharge Reduction Plan

### Wastewater Treatment Works Compliance

Intervention Type	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045	2045 to 2050	2050 to 2055	2055 to 2060
WwTW DWF Compliance –	-	-	1	-	-	-	1
Investigations / Schemes							
WwTW Quality	8 - (P)	- (P)	- (P)	- (P)	- (P)	- (P)	- (P)
Compliance –	1 (BOD)	- (BOD)	1 (BOD)	- (BOD)	- (BOD)	1 (BOD)	- (BOD)
Investigations	1 (Amm)	- (Amm)	1 (Amm)	- (Amm)	- (Amm)	- (Amm)	1 (Amm)
	7 (P)	1 - (P)	- (P)	- (P)	- (P)	- (P)	- (P)
Compliance Schemes	- (BOD)	1 (BOD)	- (BOD)	1 (BOD)	- (BOD)	- (BOD)	1 (BOD)
Compliance - Schemes	- (Amm)	1 (Amm)	- (Amm)	1 (Amm)	- (Amm)	- (Amm)	- (Amm)

### Long-Term Delivery Strategy – Flooding and Pollution

The Government's 25 Year Environment Plan (25YEP) requires us to invest to:

- Reduce nitrogen and phosphorus pollution, through catchment and nature-based solutions where possible.
- Improve drainage and environmental water quality, and reduce surface water flooding risk, through our Drainage and Wastewater Management Plan (DWMP).





Our long term delivery strategy sets out our ambition to continue to reduce sewer flooding over the next 25 years. Our plan sets out how we will match the 25YEP by reducing internal and external sewer flooding by 60% by 2050.

### How Much Does Our Plan Cost?

The following table summarises the costs that are included within the DWMP for the delivery of the identified interventions. The costs shown in the table are £million.

Intervention Type	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045	2045 to 2050	2050 to 2055	2055 to 2060
Storm Overflow Spill Frequency Reduction Schemes	5.58	33.50	10.25	46.45	17.46	-	-
Screening Provision Schemes	1.21	4.17	1.80	6.23	4.13	-	-

### Long-Term Delivery Strategy for Flooding

It is anticipated that we will achieve our flood risk reduction targets in a number of ways. For example,

- Working in partnership with others in the Northumbria Integrated Drainage Partnership
- Working with customers and communities for the widescale disconnection of roof drainage from the combined sewer network
- Implementing source control via sustainable drainage measures (SuDS) including wetland creation
- Implementing SMART networks throughout the region
- Disconnecting highway runoff from the combined sewer network
- Working with others to implement permeable pathing and roadways schemes.

We have estimated that the cost of achieving our ambitious targets will be £1 billion between 2030 and 2050. We will seek customer support for investment to achieve these targets.

The following table summarises the level of risk within the Wear L2 SPA for the flooding planning objectives following the implementation of the Long-Term Delivery Strategy for flooding.





Planning Objective	Measure			Count		
		2020	2025	2030	2045	2060
PO1 – Internal Flood Risk	Count of properties at risk of flooding internally during a 1 in 20 year return period rainfall event	2,090	2,066	2,067	929	578
PO2 – External Flood Risk	Count of properties at risk of flooding externally during a 1 in 20 year return period rainfall event	21,614	21,468	21,652	6,680	3,199

### Planning Objective Risk Scoring

The planning objective risk scores have been evaluated with the proposed DWMP interventions delivered.





Draii	nage Area	PO Fl	1 – Intei lood Ris	rnal sk	PO2 F	2 – Exte lood Ris	rnal sk	PO3 - Popu	- 1 in 50 lation a	) Year t Risk	PO	4 – Batł Water	ning	PO5 -	- River \	Nater	PO6	- Pollu	tion	– PO8 Co	WwTW	DWF ce
Drui	luge Alea	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060
09-D01	Summerhou se	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D02	Killerby	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D03	Caldwell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D04	Eppleby & Forcett	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
09-D05	East Layton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D06	Barnard Castle	2	0	1	2	0	0	1	0	0	0	0	0	1	0	0	1	1	1	0	0	0
09-D07	Stainton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D08	Staindrop	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
09-D09	Gainford	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
09-D10	Winston	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D11	Whorlton	2	0	0	2	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0
09-D12	Cleatlam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D13	Ovington	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D14	Hutton Magna	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D15	Barningham	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
09-D16	Wackerfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D17	Middleton in Teesdale	2	0	0	2	0	0	2	1	1	0	0	0	1	1	0	2	2	2	0	0	0
09-D18	Eggleston & Hilltop	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D19	Romaldkirk	1	0	0	1	1	1	2	2	2	0	0	0	2	0	0	0	0	0	0	0	0
09-D20	Cotherstone	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
09-D21	Mickleton	2	0	0	2	0	0	2	1	1	0	0	0	1	1	0	0	0	0	0	0	0
09-D22	Newbiggin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D23	Bowes	2	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NORTHUMBRIAN	I
WATER (ining water	
	l

### ESSEX&SUFFOLK WATER living water

Drainage Area		PO1 – Internal Flood Risk			PO2 – External Flood Risk			PO3 – 1 in 50 Year Population at Risk			PO4 – Bathing Water			PO5 – River Water			PO6 - Pollution			PO8 – WwTW DWF Compliance		
Brail	iuge Aleu	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060
09-D24	09-D24 Boldron		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D25	South Cleatlam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09-D26	Dent Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D01	Darlington North	1	0	0	1	0	0	1	1	1	0	0	0	1	1	0	1	1	1	0	0	0
10-D02	Darlington South	1	0	0	0	0	0	1	1	1	0	0	0	2	0	0	1	1	1	0	0	0
10-D03	Houghton- le-Side	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D04	Denton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D05	Walworth Gate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D06	Archdeacon Newton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D09	Sadberge	0	0	0	1	1	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0
10-D10	Beacon Hill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D12	Neasham, Hurworth & Hurworth Place	1	0	1	1	0	0	2	1	1	0	0	0	2	1	0	1	1	1	0	0	0
10-D13	Aldbrough St.John	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D14	Manfield	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
10-D15	Melsonby	1	0	0	1	0	0	1	1	2	0	0	0	0	0	0	2	2	2	0	0	0
10-D16	Barton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D17	Eryholme	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D19	Fishburn	1	0	1	2	1	1	2	2	2	0	0	0	2	0	0	0	0	0	0	0	0
10-D20	Trimdon Village	0	0	0	2	2	2	1	2	2	0	0	0	2	0	0	0	0	0	0	0	0
10-D21	Trimdon Grange	0	0	0	0	0	0	2	2	2	0	0	0	2	0	0	1	1	1	0	0	0
10-D22	Newton Aycliffe	1	0	0	1	0	0	1	1	1	0	0	0	2	0	0	1	1	1	0	0	0
10-D23	Ferryhill South	2	0	1	2	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0



Drainage Area		PO1 – Internal Flood Risk			PO2 – External Flood Risk			PO3 – 1 in 50 Year Population at Risk			PO4 – Bathing Water			PO5 – River Water			PO6 - Pollution			PO8 – WwTW DWF Compliance		
		2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060	2020	2045	2060
10-D24	Ferryhill North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D25	Chilton Lane	2	0	0	2	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
10-D26	Mordon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D27	Bishop Middleham	1	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
10-D28	Brusselton Cottages	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D29	Bolam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-D30	Bradbury	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



#### **CONCLUDING COMMENTS**

Our DWMP forms 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 allows 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 as and when we update our DWMP and at subsequent price reviews, which take place every five years. At each point we update our DWMP, we will look further into the future to maintain a 40-year outlook on these issues.

Our PR24 business plan, covering 2025-30, will include projects to drive better, more efficient, and nature-based solutions to tackling drainage and storm overflows in the future.

#### **CONTACTING US**

To view our DWMP, please go to our website at: www.nwl.co.uk/dwmp.

To contact us:

Go to the Contact Us page at: Contact us (nwl.co.uk)

Or you can call our Head Office switchboard on 0345 604 7468.

Our phone lines are open from 8:00am to 5:00pm, Monday to Friday.

Feel free to write to us at: Northumbrian Water Limited Northumbria House Abbey Road Pity Me Durham

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