South West Water

Drainage and Wastewater Management Plan

Taw-Torridge

May 2023

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Status and update information

Version SWW_DWMP_2021/22_0_2023-05-31

This document provides asset, characteristic and performance data for Strategic Planning Areas (Level 2 catchments). Performance data for the time frame up to April 2023 has been utilised to populate these documents.

Production Statement

These documents are produced using an automated process. The process uses a mixture of standard data holdings such as records of assets within the Taw-Torridge catchment and documents that are produced as part of modelling and analysis undertaken as part of the DWMP. The decision has been made to leave in tables and figures even if no performance or asset data exists for the catchment to serve as confirmation that no records are held for that particular item.

Data Statement

This document contains asset, characteristic and performance data for Strategic Planning Areas (Level 2 catchments) and has been prepared by South West Water Limited for the purposes of providing area specific detail on assets, risks and proposed interventions for our drainage and wastewater plans. Data records shown in the document for various performance and other metrics may not completely align with Regulatory reported data. This is partly due to the catchment based summation of some data and minor differences in time frames over which DWMP data has been collated compared to the Regulatory reporting time frames.

Contact details

If you have any queries or questions, you can email dwmp@southwestwater.co.uk.

South West Water, Peninsula House, Rydon Lane, Exeter, EX2 7HR

www.southwestwater.co.uk

Overview

Area Details

The Taw-Torridge catchment sits within the administrative districts of Cornwall, Mid Devon District, North Devon District, Somerset West and Taunton District, Torridge District and West Devon District (b). It covers the main settlements of Barnstaple, Bideford, Okehampton, Braunton, South Molton, Northam, Great Torrington, Westward Ho!, Appledore, Instow, Fremington, Hartland, North Tawton, Witheridge, Bradworthy, Hatherleigh, Yelland, Landkey, South Zeal, Bow, Bickington, Bishop's Tawton, Lapford, Winkleigh, Weare Giffard, Chulmleigh, West Down, Morchard Bishop, North Molton and Goodleigh.

The population of the Taw-Torridge catchment in 2020 was 126,687 and is projected to grow to 160,503 by 2050, an increase of 26.7 %. The catchment is also impacted by the influx of tourists during the summer, with an increase of 15,532 or 12.3 % over the existing resident population.

The Taw-Torridge catchment contains 73 km of watercourses including 47 km of Main River as designated by the Environment Agency (EA). This includes the Beaford Brook, Bradiford Water, Colam Stream, Common Lake, Coney Gut, Crooked Oak, East Okement River, Flats Pill, Fremington Pill, Hatherleigh Moor Brook, Hollocombe Water, Knighty Brook, Knowl Water, Little Dart River, Mully Brook, River Bray, River Caen, River Dalch, River Lew, River Mole, River Okement, River Taw, River Torridge, River Waldon, River Yeo, Sir Arthur's Pill, The Pill, Tongue Lake, Venn Lake and West Okement River.

Discharges in the Taw-Torridge catchment may impact on the bathing waters of Instow Beach and Westward Ho! Beach and the shellfish waters of Taw/Torridge.

Details about local geology and soil structure can be found on the **British Geological Survey** website.

Wastewater Network

The Taw-Torridge catchment area has approximately 911km of mapped sewers and 59 sewage pumping stations (SPS) to convey wastewater away from homes and businesses to 135 Sewage Treatment Works. It has both separate (foul or surface water) and combined (foul and surface water) networks.

During severe rainfall events, where sewers convey foul and storm water, sewer capacity can be exceeded and to prevent flooding of homes and businesses, storm overflows act as built-in pressure relief valves and allow flows above a certain level to be discharged to rivers and seas. Storm overflows are permitted by the EA.

There are 196 overflows of which 22 are emergency overflows in the Taw-Torridge catchment (which should only operate as a result of other asset failure or power loss). There are 195 Event Duration Monitors (EDM's) installed to monitor spill frequency and spill duration.

A summary of the mapped wastewater network lengths is included in Table 1 below:

***Table 1**: Wastewater network lengths by system type*

Sewer Type	Length (km)
Surface	212.5
Combined	347.6
Foul	350.9

Area Overview

Table 2 summarises the number of critical assets within the Taw-Torridge catchment and a count of intersections with shellfisheries and bathing waters. The Level 3 (treatment works) catchments and neighbouring areas are shown in Figure 1.

***Table 2**: Count of key catchment environments/assets*

Shellfisheries	Bathing Waters	SPS	Storm Overflows	Emergency Overflows	Monitored Storm Overflows
1	2	59	174	22	195

Figure 1: Catchment Overview

Designated Areas

Special Areas of Conservation

Special Areas of Conservation (SACs) are protected areas in the UK designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters)
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Under these regulations, the UK Government and devolved administrations are required to establish a network of important high-quality conservation sites that will make a significant contribution to conserving the habitats and species identified in Annexes I and II, respectively, of European Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the Habitats Directive.

Special Areas of Scientific Interest

Under the Wildlife and Countryside Act 1981 (amended 1985) government has a duty to notify as a Site of Special Scientific Interest (SSSI) any land which in its opinion is of special interest by reason of any of its flora, fauna, geological or physiographical features.

SSSIs are designated by Natural England. An SSSI is not necessarily owned by a conservation organisation or by the Government - in fact, they can be owned by anybody. The designation is primarily to identify those areas worthy of preservation. A SSSI is given certain protection against damaging operations, and any such operations must be authorised by the designating body. The status also affords a certain amount of planning protection, depending on the reasons for designation.

Marine Conservation Zones

A Marine Conservation Zone (MCZ) is a type of marine nature reserve in UK waters. They were established under the Marine and Coastal Access Act (2009) and are areas designated with the aim to protect nationally important, rare or threatened habitats and species.

If any of these designated areas are within the Taw-Torridge catchment they are shown in Figure 2 below.

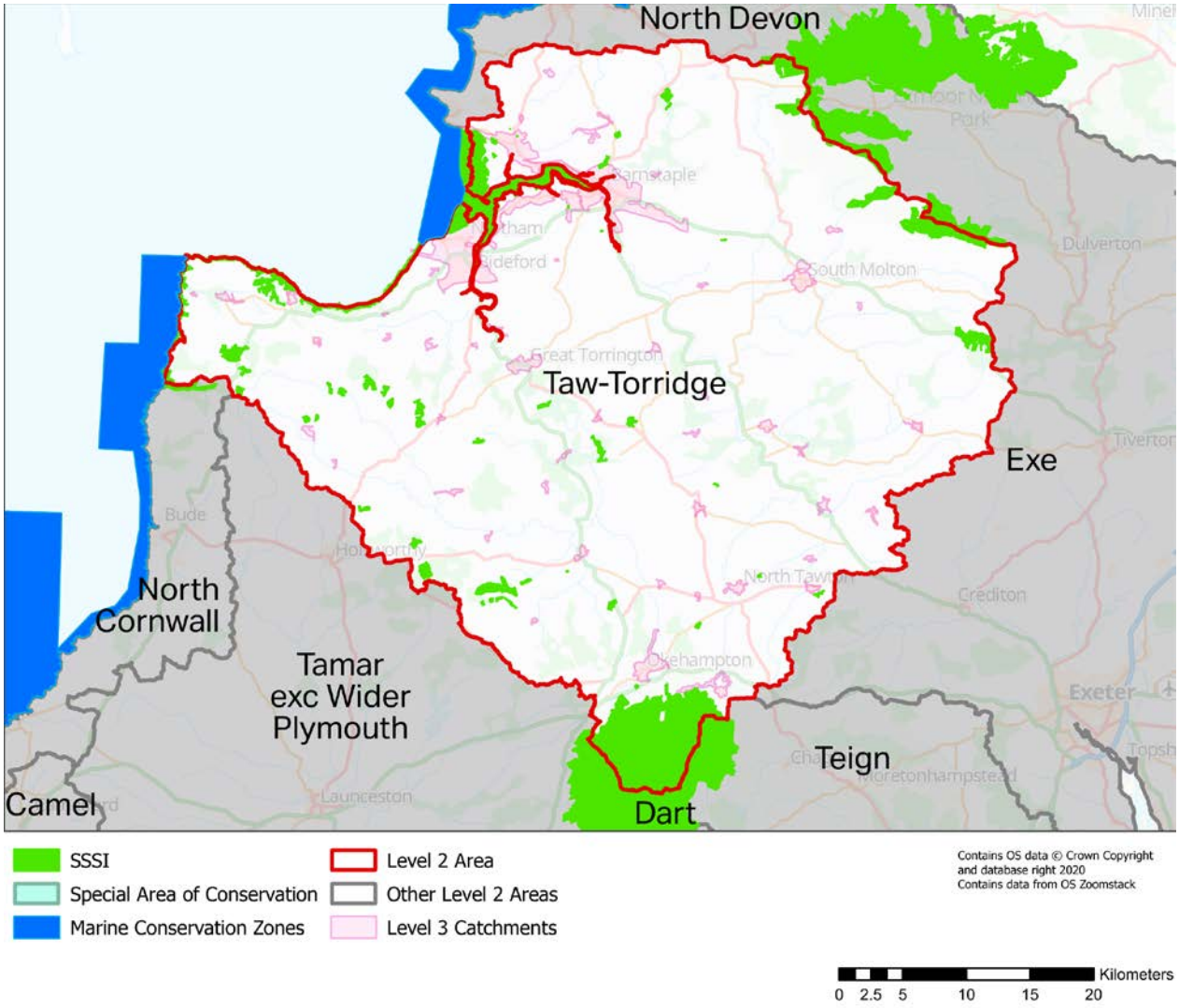

Figure 2: Designated Areas

Flooding Responsibilities

The Flood and Water Management Act, 2010 (FWMA), identified new responsibilities for flood and coastal erosion risk management authorities, of which Water and Sewerage Companies are one, together with a duty on all relevant authorities involved to co-operate and share data.

***Table 3**: FWMA Responsibilities*

Location	Description	Responsibility
Surface runoff/Land drainage	Landowners are responsible for their land drainage and must not cause problems for neighbours	• Lead Local Flood Authorities
		• Landowners
Highways	Highways Surface water on roads, highways and pavements, blocked road drains/gullies and overgrown	• Highways Authorities
		• Highways England/Welsh Government

Location	Description	Responsibility
	verges	• Transport for London
Groundwater	Waterlogged ground when water pools on the surface	• Lead Local Flood Authorities
		• Landowners
Rivers and watercourses	Water draining into rivers and streams from nearby land	• Lead Local Flood Authorities
		• Environment Agency /Natural Resources Wales
		• Riparian Owners
		• Landowners
Coastal/Tidal	Rough seas, high tides or storm inundation on lower land	• Local Authorities
		• Environment Agency
		• Natural Resources Wales
Surface water sewers	Most properties drain rainfall to a public sewer, including flows from gutters/roads that end up in public sewers. Highway drainage is provided for rainfall onto the highway but also includes water from fields/other property that finds its way onto the highway	• Water and wastewater companies
		• Local Authorities
		• Housing Associations
		• Private landowners
		• Highway Authorities
Public sewers	Sewer flooding from manholes and covers	• Water and wastewater companies
Private sewers	Flooding from cesspits/septic tanks, toilets or internal drains	• Homeowners

South West Water needs clear long-term plans in order to engage with other Risk Management Authorities (RMAs) to produce joined-up approaches and deliver the best outcomes for customers and the environment.

Current Performance

For all performance measures, the average number of events in a catchment/ Special Protection Area (SPA), is calculated from performance data and normalised to sewer length, (e.g., floodings/km of sewer). This catchment average is then compared to the average number of events across all SPAs and, using the Jenks Natural Breaks Classification System, catchments are defined as average, above average or below average.

Sewer Flooding

Sewer flooding incidents may occur for a number of reasons, including network misuse, asset deterioration, asset failures (collectively referred to as "other causes") or hydraulic incapacity. Tables 4 and 5 provide a summary of internal and external flooding events respectively. Sewer flooding event locations are shown in Figure 3.

The rate (events/km) of internal sewer flooding in the Taw-Torridge catchment is average when compared to other Level 2 catchments.

***Table 4**: Count of Internal Flooding by location and cause*

Year	Flooding Location	Flooding Cause Category	Count/km
2019	Internal	Other	5
2020	Internal	Other	9
2021	Internal	Hydraulic Overload	2
2021	Internal	Other	3
2022	Internal	Other	2

The rate (events/km) of external sewer flooding in the Taw-Torridge catchment is above average when compared to other Level 2 catchments.

***Table 5**: Count of External Flooding by location and cause*

Year	Flooding Location	Flooding Cause Category	Count/km
2019	External	Hydraulic Overload	6
2019	External	Other	134
2020	External	Hydraulic Overload	18
2020	External	Other	131
2021	External	Hydraulic Overload	33
2021	External	Other	95
2022	External	Hydraulic Overload	3

Year	Flooding Location	Flooding Cause Category	Count/km
2022	External	Other	69
2023	External	Hydraulic Overload	9
2023	External	Other	124

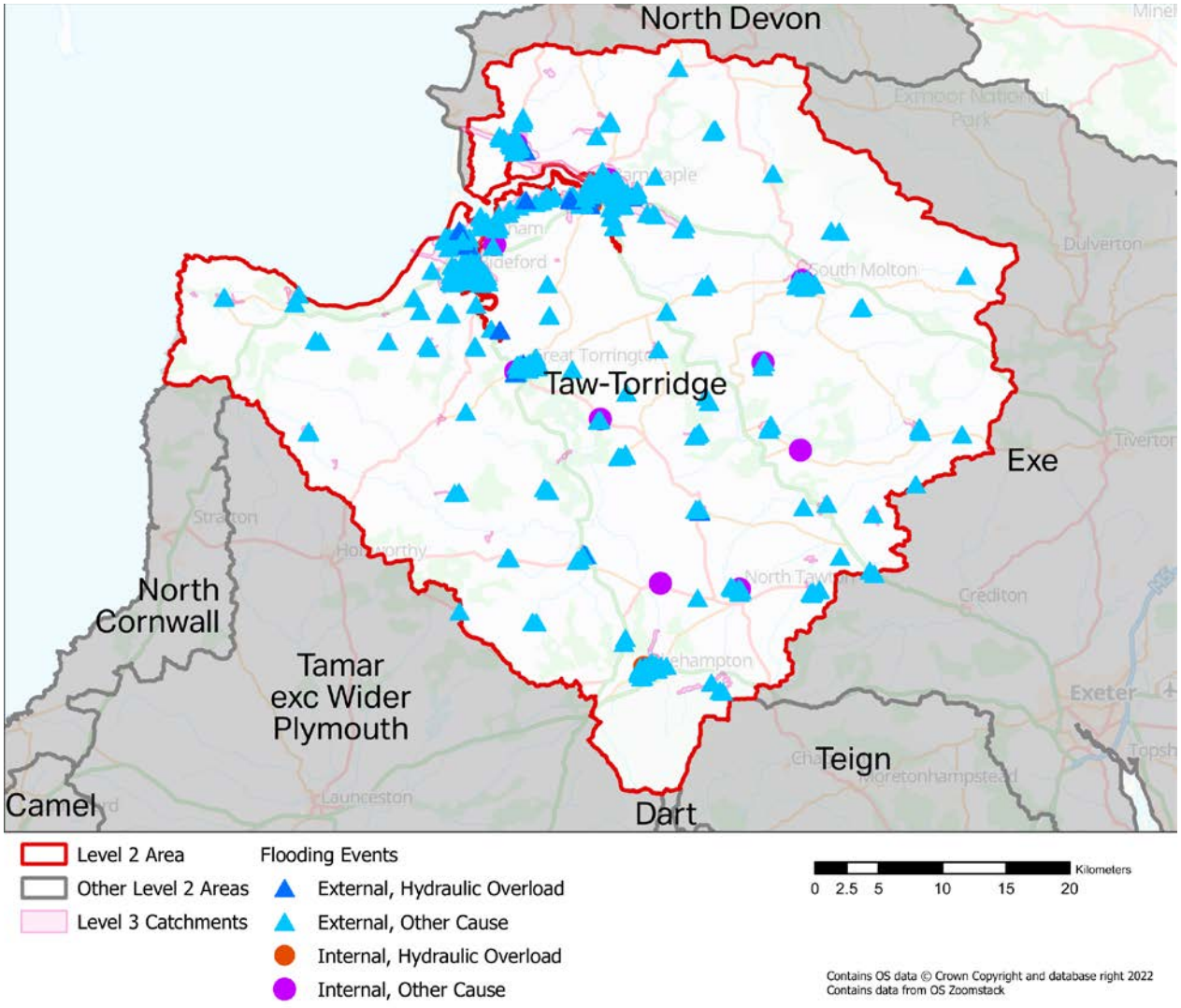

Figure 3: Sewer Flooding by location and cause

An assessment of future flooding risk has been carried out; the modelling approach is summarised further through this document in Table 22 (Future Flood Risk column).

Storm Overflows

Hydraulic overload is when the network cannot convey the runoff from heavy rainfall and can lead to sewer flooding and spills from overflows. It can be exacerbated by groundwater and surface water entering the sewerage system.

Figure 4 shows the approximate locations of all overflows. South West Water has a programme to monitor the current use and performance of storm overflows and 100% of the overflows are currently monitored. Table 6 below provides a summary of any available performance data for storm overflows in the catchment.

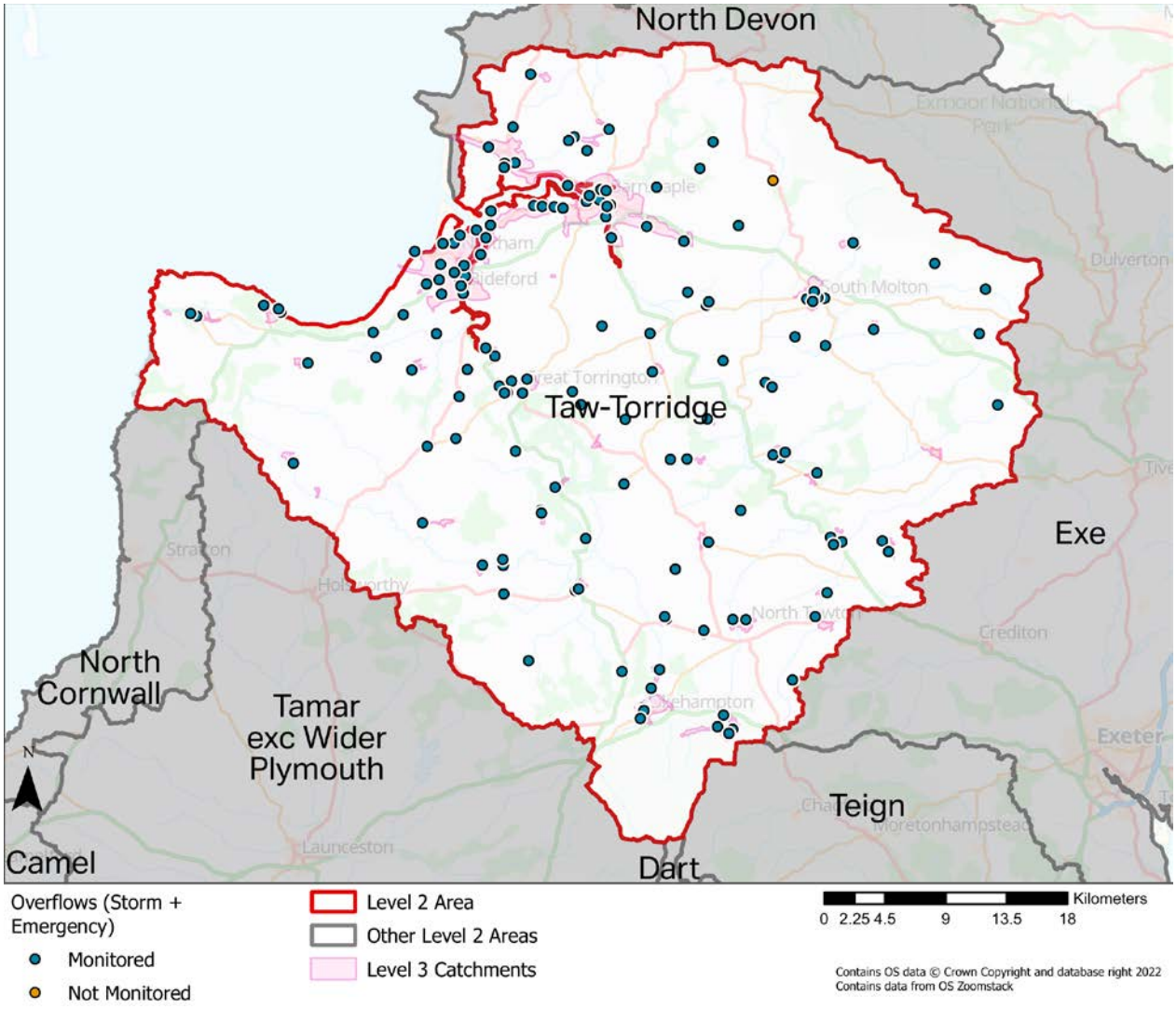

Figure 4: Overflow locations by monitoring status

***Table 6**: Storm Overflow Performance Summary*

Year	2019	2020	2021
No. Monitored	92	94	94
No. Spills	3034	4576	3705

Blockages

Blockages are caused by a variety of items, materials, substances and vegetation entering the network. In the case of vegetation, this may be root ingress from trees/shrubs that enter through damaged areas and joints. In other cases, silt and debris may be washed in

through the surface water network and items such as wet wipes, fat or grease may be flushed into the network directly from homes and businesses.

Misuse of the network continues to be a significant issue across the region. Network misuse is defined as flushing anything other than the three Ps (Pee, Poo and toilet Paper) down toilets. Wet wipes, nappies and sanitary products should not be flushed regardless of their labelling. Fats, oils and grease should not be poured down sinks in the kitchen as these can congeal in and eventually block the sewer (known as a 'Fatberg'). Sewer misuse can lead to blockages which can cause sewer flooding and pollution.

South West Water has a number of community based education programmes including **Love your Loo** and **Think Sink!** that aim to prevent sewer misuse and reduce associated sewer flooding problems.

The rate of blockages in the Taw-Torridge catchment is average when compared to other catchments in South West Water area. Blockages since the 2018/19 reporting year are shown below in Table 7 (split by the blockage cause code) and the locations indicated by the heat map in Figure 5. Please contact us if you require additional information on blockages in the Taw-Torridge catchment.

***Table 7**: Count of blockages by year and cause*

Year	Debris	Fat	Paper/Rag	Roots	Silt	Third Party Damage
2019	66	73	379	50	4	1
2020	68	42	367	41	3	
2021	54	41	393	32	6	
2022	84	36	363	35	8	
2023	80	23	449	47	1	

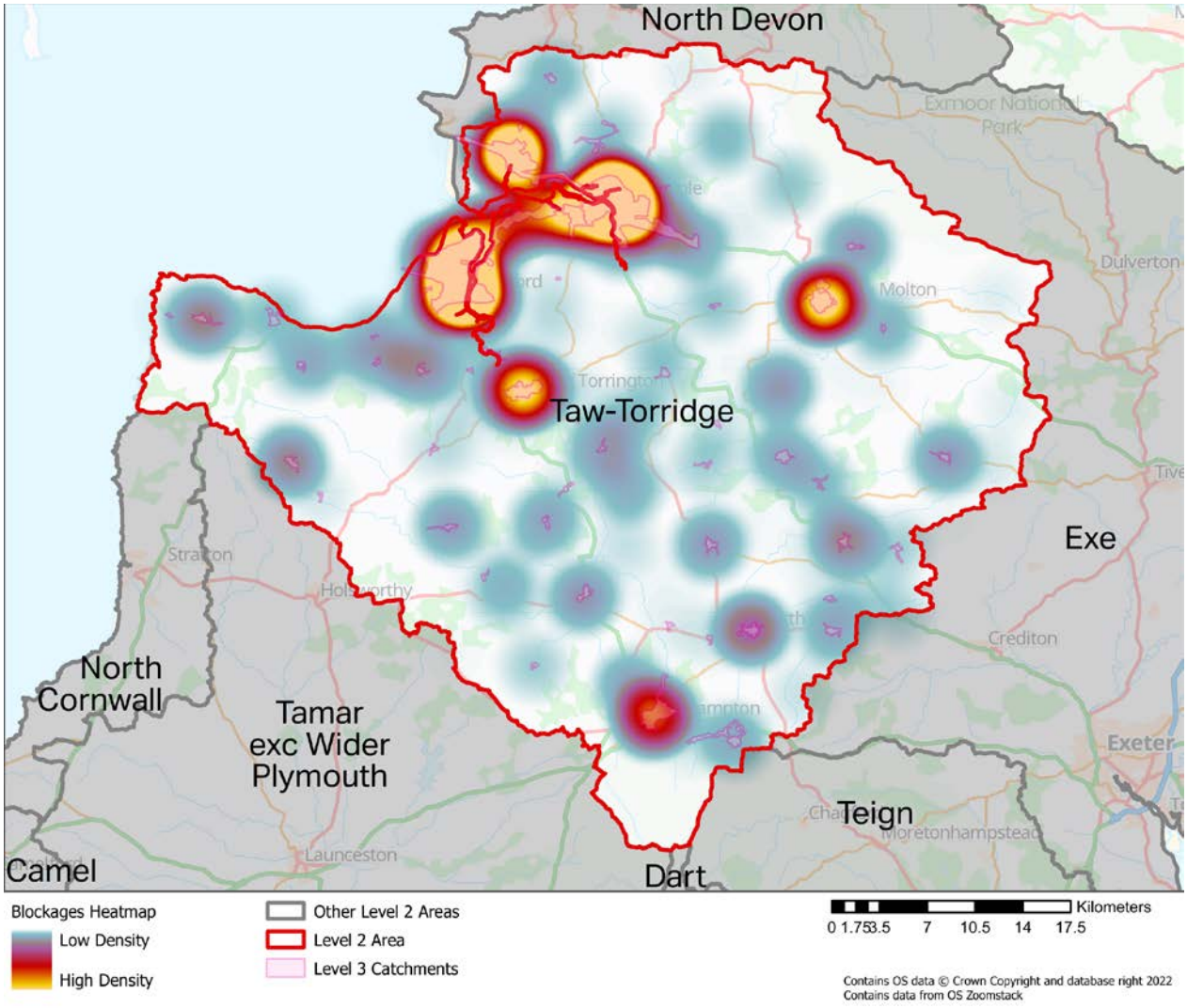

Figure 5: Blockage Event Heatmap

Asset Condition

Gravity Network

A programme of CCTV inspections is undertaken to determine the structural condition of sewers. A risk-based approach is applied, considering frequency of failure and consequence of failure. The sewers in most need of attention due to their condition are prioritised for more frequent inspection or rehabilitation.

The rate of collapses in the Taw-Torridge catchment is average when compared to other catchments in the region. A heatmap of sewer collapses since the 2018/19 reporting year is shown in Figure 6 below. Table 8 provides a count of collapse and partial collapse events since the 2018/19 reporting year.

***Table 8**: Count of sewer collapse by year*

Year	Collapse	Partial Collapse
2019	6	12
2020	13	10
2021	4	4
2022	4	5
2023	0	1

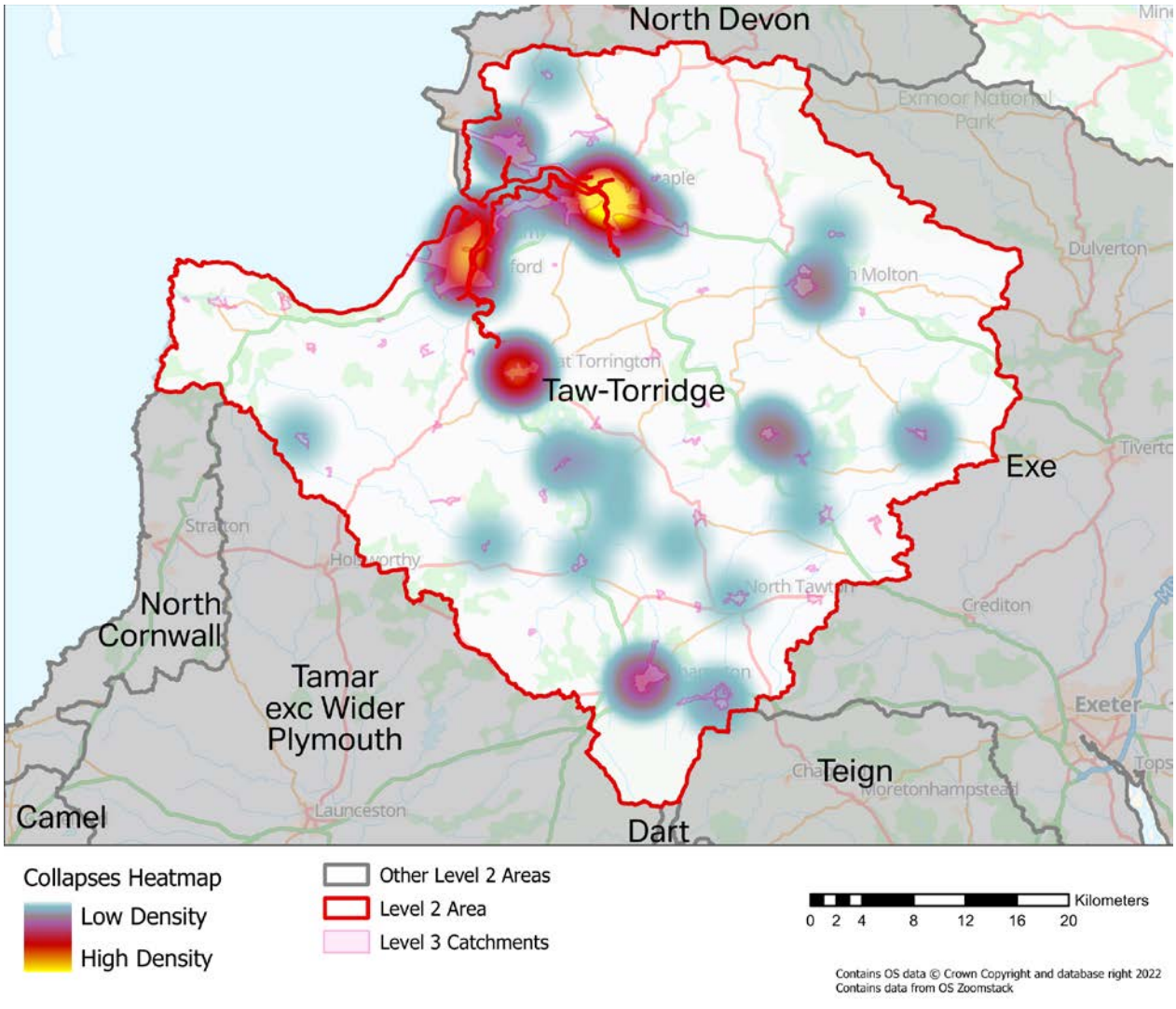

Figure 6: Sewer Collapse Heatmap

Pumped Network (Rising Mains)

South West Water continuously invests in sewage pumping stations (SPS) and rising mains. Rising main failures are repaired promptly by reactive teams, and if repeat failures are experienced or immediate works are identified, they are prioritised for replacement.

Table 9 provides a count of flooding events caused as a result of issues at pumping stations and Table 10 provides a count of rising main bursts since the 2018/19 reporting year. Flooding and burst locations are shown in Figure 7.

***Table 9**: Count of SPS flooding by year/cause*

Year	Feedback Cause	Count
2019	Pump Station Breakdown	1
2020	Hydraulic Overload Pumping Station	1
2020	Pump Station Breakdown	10
2022	Pump Station Breakdown	1

***Table 10**: Count of Rising Main bursts by year/cause*

Year	Feedback Cause	Count
2020	Collapse/Burst	2
2021	Collapse/Burst	3
2022	Collapse/Burst	3
2023	Collapse/Burst	1

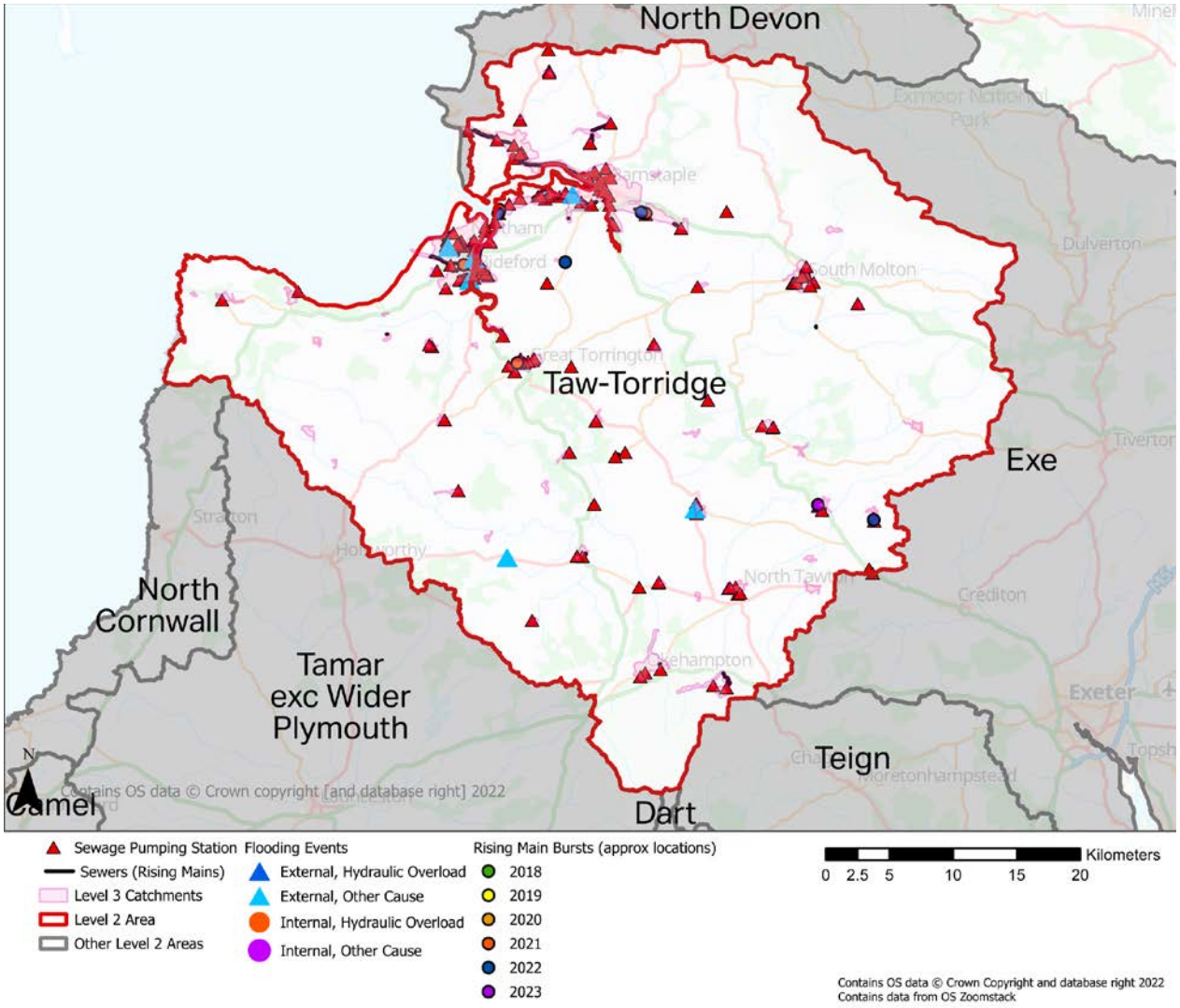

Figure 7: SPS/Rising Main flooding and burst events

Environmental Performance

Surface Water Flooding

South West Water is only responsible for sewer flooding. Areas prone to surface water flooding (due to rainfall and pooling at low points in the landscape) can be seen on the EA website. The responsibilities for other types of drainage and flooding are summarised in Table 3 earlier in this document.

Pollution

South West Water is continuing to strive to eliminate harmful pollution to the environment. This includes there being no Category 1 and 2 (the most harmful) pollution incidents. South West Water's vision for Environmental performance can be found on the website here.

There have been 40 category 3 (minor) pollution incidents in the Taw-Torridge catchment since the 2018/19 reporting year.

Table 11 provides a summary of pollution events by year and the category of environmental impact. The map in Figure 8 shows the location of pollution events. Clusters of pollution events are identified for further investigations and activities to reduce and/or remove the future risk of pollution events occurring.

***Table 11**: Count of pollution events by year and impact level*

Year	Water Env Category Level	Count
2019	3	17
2020	3	3
2021	3	15
2022	3	5

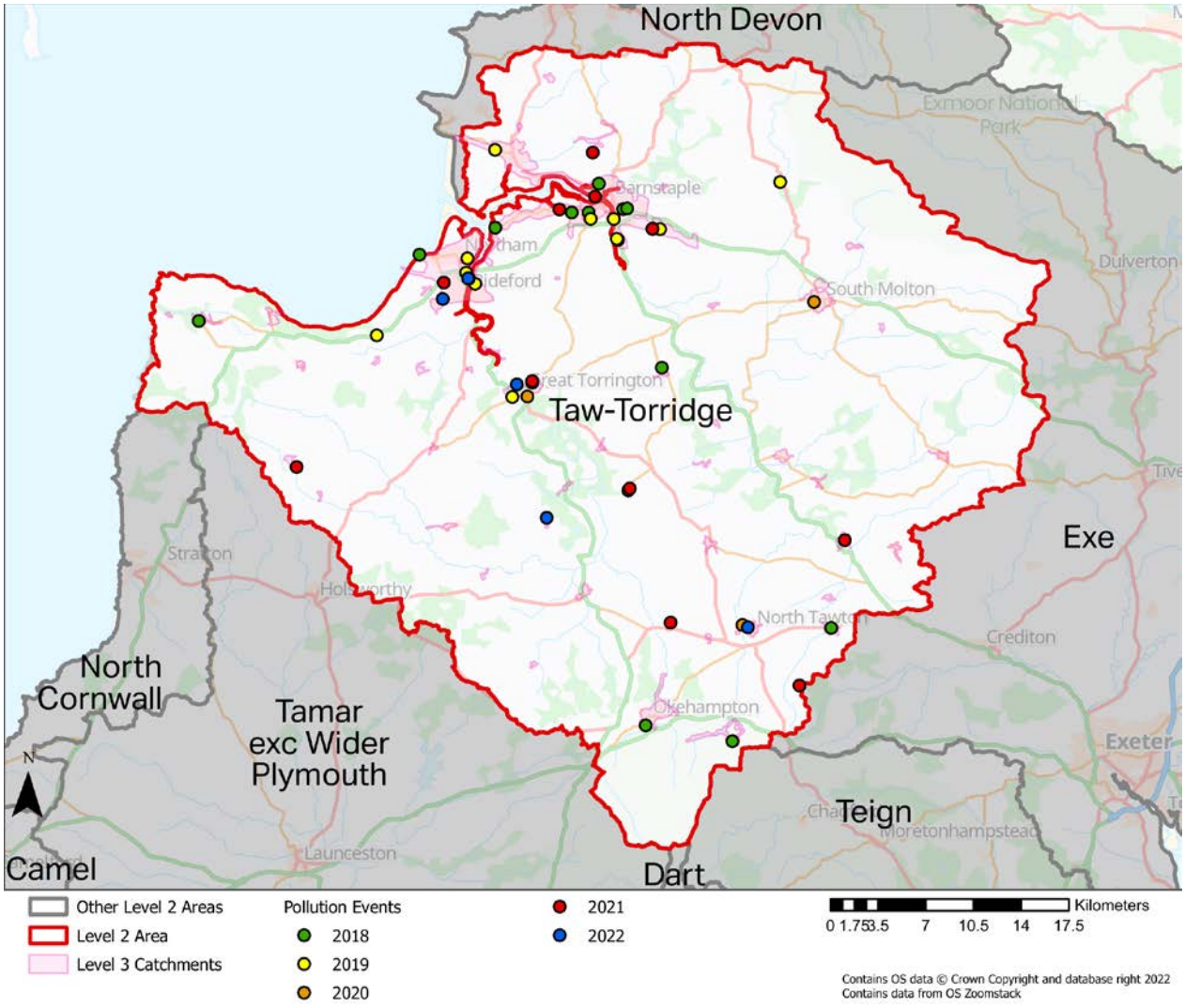

Figure 8: Pollution Events

Critical Drainage Areas

A Critical Drainage Area (CDA) is an area with critical drainage problems, which has been formally notified to the Local Authority by the Environment Agency. Within CDAs, proposed development may present risks of flooding on-site and/or off-site if the surface water runoff is not effectively managed.

The purpose of creating the CDA allocation is to reduce downstream flooding by controlling the accumulative impact of surface water runoff from multiple development sites in sensitive catchment areas. This means that any site discharging surface water to a watercourse or public sewer must attenuate the flow to mimic the green field runoff for a 1:10 year rain fall event. Where the surface water can be managed within the site for the "1:100+40%" condition (i.e., an allowance of 40% over and above the 1:100 event), there is no change to the standard surface water drainage requirement.

The Development Management Procedure Order requires that the EA is consulted on developments within Areas with Critical Drainage Problems (ACDPs). The map in Figure 9 shows the geographical coverage of ACDPs in the Taw-Torridge catchment.

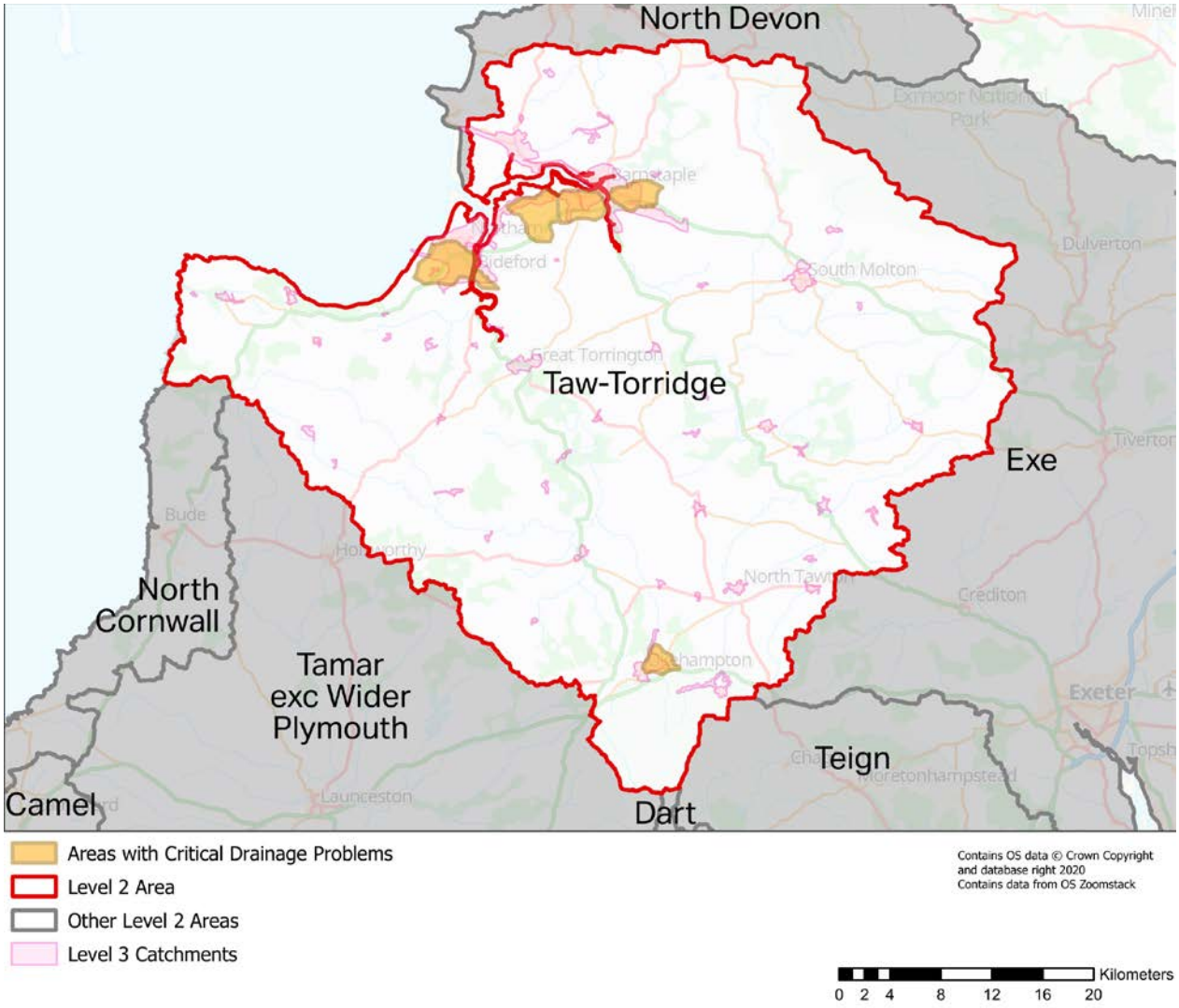

Figure 9: Critical Drainage Areas

Wastewater Treatment Compliance

Each Wastewater Treatment Works has a permit, as agreed with the EA, for the quantity and quality of the water that is discharged to the environment.

The Taw-Torridge catchment has not failed any quality compliance metrics since the 2018/19 reporting year. Table 12 illustrates that there are no compliance failures.

***Table 12**: Wastewater Treatment compliance failures*

Asset Name	Year	Q90 (m3/d)	Permitted DWF (m3/d)

Table 13 shows the Dry weather flow (DWF) performance of the treatment works in the Taw-Torridge catchment.

***Table 13**: Dry weather flow results and permits from 2018-2020*

Asset Name	Permitted (m3/d)	Comments
ABBOTSHAM_STW_ABBOTSHAM	55	Spare capacity available
ASHFORD_STW_BARNSTAPLE	15,231	Spare capacity available
BEAFORD_STW_BEAFORD	81	Spare capacity available
BELSTONE & SOUTH TAWTON_STW_SOUTH TAWTON	404	Approaching design capacity
BISHOPS NYMPTON_STW_BISHOPS NYMPTON	162	Spare capacity available
BLACK TORRINGTON_STW_BLACK TORRINGTON	72	Spare capacity available
BOW_STW_BOW	273	Spare capacity available
BRADWORTHY_STW_BRADWORTHY	112	Spare capacity available
BRATTON FLEMING_STW_BRATTON FLEMING	243	Spare capacity available
BUCKLAND BREWER_STW_BUCKLAND BREWER	131	Spare capacity available
CHAWLEIGH_STW_CHAWLEIGH	103	Spare capacity available
CHITTLEHAMPTON_STW_CHITTLEHAMPTON	110	Spare capacity available
CHULMLEIGH_STW_CHULMLEIGH	341	Spare capacity available
CORNBOROUGH_STW_BIDEFORD	10,717	Spare capacity available
DOLTON_STW_DOLTON	165	Spare capacity available
EXBOURNE_STW_OKEHAMPTON	60	Spare capacity available

Asset Name	Permitted (m3/d)	Comments
GOODLEIGH_STW_GOODLEIGH	61	Spare capacity available
HARTLAND_STW_HARTLAND	167	Spare capacity available
HATHERLEIGH_STW_HATHERLEIGH	278	Spare capacity available
HIGH BICKINGTON_STW_HIGH BICKINGTON	151	Spare capacity available
HILL BARTON_STW_OKEHAMPTON	2,246	Spare capacity available
KNOWLE_STW_BRAUNTON	53	Spare capacity available
LAPFORD_STW_LAPFORD	176	Spare capacity available
LOWER CLOVELLY_STW_CLOVELLY	156	Spare capacity available
MIDDLE MARWOOD_STW_MARWOOD	283	Spare capacity available
MORCHARD BISHOP_STW_MORCHARD BISHOP	144	Spare capacity available
NORTH MOLTON_STW_NORTH MOLTON	132	Spare capacity available
NORTH TAWTON_STW_NORTH TAWTON	417	Spare capacity available
NORTHLEW_STW_HATHERLEIGH	70	Spare capacity available
PARKHAM_STW_PARKHAM	88	Spare capacity available
PETROCKSTOWE_STW_PETROCKSTOW	70	Spare capacity available
SAMPFORD COURTENAY_STW_SAMPFORD COURTENY	95	Spare capacity available
SHEBBEAR_STW_SHEBBEAR	107	Approaching design capacity
SOUTH MOLTON_STW_SOUTH MOLTON	1,300	Spare capacity available
TORRINGTON_STW_TORRINGTON	1,885	Spare capacity available

Asset Name	Permitted (m3/d)	Comments
WESTDOWN_STW_WEST DOWN	88	Spare capacity available
WINKLEIGH_STW_WINKLEIGH	247	Spare capacity available
WITHERIDGE_STW_WITHERIDGE	245	Spare capacity available
WOOLSERY_STW_WOOLFARDIS WORTHY	250	Spare capacity available
ZEAL MONACHORUM_STW_ZEAL MONACHORUM	63	Spare capacity available

Water Quality

When untreated/partially treated wastewater is discharged to a watercourse it may have potential to affect the downstream environment including river and coastal areas. This will be dependent on the duration of any discharge and the dilution offered by the receiving watercourse. This discharge could be from blockages in the sewerage network, wastewater spills or leaks, from misconnections (when wastewater from households is incorrectly connected to the surface water sewer) or from storm overflows. The EA has overall responsibility for water quality in water courses, although South West Water work in partnership to reduce and remove possible sources of pollution.

Our dedicated Upstream Thinking (UST) team engages with farmers and landowners to make changes in how land is managed, ensuring our drinking water sources are protected from diffuse pollution. Starting on the high moorlands and focusing on the land next to rivers, we collaborate to make water management plans that protect streams and rivers while keeping farms productive.

The EA assesses why waterbodies do not achieve a “good” status. Table 14 below provides a summary of the significant water management issues and the associated activities identified as part of the analysis for the Taw-Torridge catchment.

***Table 14**: Reasons for not achieving ‘Good’ water quality status*

Significant water management issue (SWMI)	Activity	Count
Changes to the natural flow and levels of water	Land drainage - operational management	4
	Regulating Reservoir Flow Regime	1
	Surface water abstraction	2
Non-native invasive species	Fish stocking	1
Physical modifications	Barriers - ecological discontinuity	5

Significant water management issue (SWMI)	Activity	Count
	Flood protection - other operational management	2
	Flood protection - structures	1
	Other (not in list, must add details in comments)	3
	Reservoir / Impoundment - non flow related	3
Pollution from abandoned mines	Abandoned mine	2
	Active mine	1
	Quarry	2
Pollution from rural areas	Farm/site infrastructure	10
	Poor Livestock Management	50
	Poor nutrient management	89
	Poor soil management	24
	Riparian/in-river activities (inc bankside erosion)	1
Pollution from towns, cities and transport	Other (not in list, must add details in comments)	6
	Septic Tanks	1
	Trade/Industry discharge	11
	Urbanisation - urban development	3
Pollution from wastewater	Discharge	98
	Discharge (intermittent)	5
	Drought	3
	Internal nutrient load (lakes only)	2
	Low Flow (not drought)	3
	Natural conditions - other	2
	Natural mineralisation	1
	Not applicable	7
	Other (not in list, must add details in comments)	1
	Unknown (pending investigation)	1

Future challenges in the catchment

Growth

New developments can cause an increase in the volume of wastewater requiring conveyance and treatment. Improvements to the foul sewerage system to support new development will be assessed by South West Water's New Developments Team and infrastructure charges paid by new developments will fund required upgrades to ensure sewer flooding risk is not increased. There are multiple sources of growth information for the region.

To understand where development and specific areas of growth can be expected, the local plans as published by the Local Planning Authority (LPA) are a reasonable source of information.

The LPA polygons showing areas earmarked for development can be found in Figure 10 at the end of this section.

Climate Change and Urban Creep

Climate change is likely to increase the intensity of rainfall leading to higher risk of flooding in the future; however, the magnitude and timing of this change is highly uncertain.

The potential increase in rainfall intensity could inundate the combined sewer networks and cause surface water and sewer flooding. Changing patterns of summer storms could affect the frequency and volume of spills from storm overflows and consequently impact on the river and bathing water quality downstream.

Urban creep can also pose a challenge for managing South West Water's drainage and wastewater networks. Urban creep occurs when minor extensions to homes are built or when existing permeable areas e.g., gardens are paved over to provide patios or for car parking. The result is an overall increase in impermeable area contributing directly to fast runoff to the urban drainage system and consequent increase in the risk of flooding

Future Challenges

239 potential development locations are recorded for this catchment. Table 15 summarises the different types of development planned in the catchment and Figure 10 shows the location and extent of land proposed for development that have been identified in local development plans at the time of writing. Please refer to the local authorities Local Plan for the most current information.

***Table 15**: Summary of Proposed Developments*

Development Type	Number in Catchment
Care Home / Assisted Living	1
Employment	20

Development Type	Number in Catchment
Housing Development	225
Mixed Use Development	13
Regeneration Sites	6
Town Centre Core Area	5
Town Centre Expansion	2

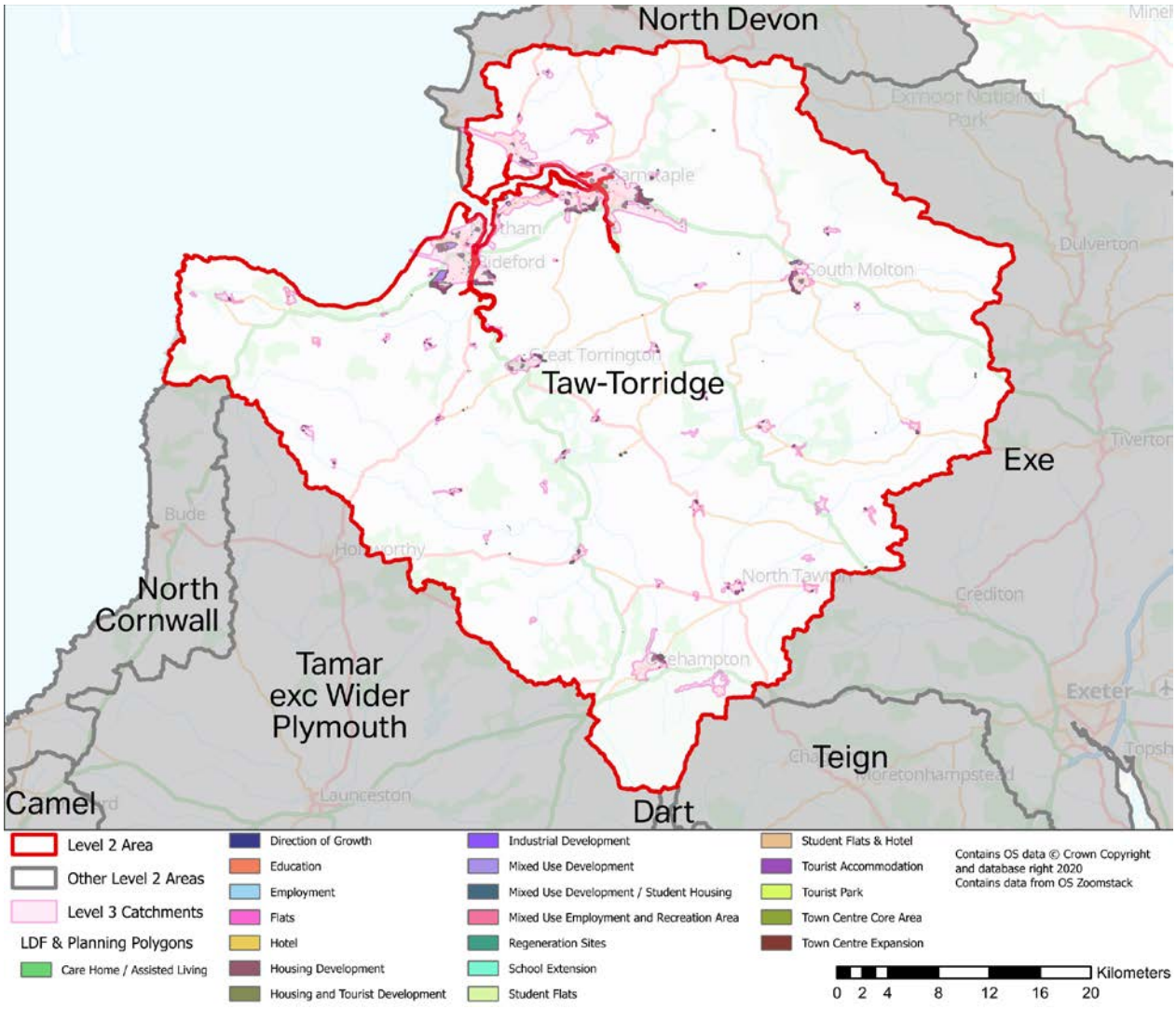

Figure 10: Local Development Framework Areas

Catchment Strategy

Partnership Working

South West Water is working in partnership with multiple organisations including the EA, local authorities and other stakeholders such as landowners, local residents and community groups. The purpose of this work is to understand the causes of drainage and wastewater issues and to progress joint projects to resolve them where appropriate. For example, partnership working opportunities may exist where properties are located within recognised flood zones (FZ2, FZ3 and/or Surface Water) which can be found here.

Investment Routes

Reactive Investment

Reactive investment needs are identified via investigations following reactive response to operational/customer issues and planned surveys that are targeted to detect and resolve problems before they have an impact on customers and the environment.

The investment needs are prioritised based on the risk to properties and the identification of repeat events. These needs then form a programme of targeted investments for delivery over the next 12 months. Details for any needs recorded for the Taw-Torridge catchment are summarised in Table 16.

Ninety-Five investment needs are recorded for this catchment. Locations are shown in Figure 11.

***Table 16**: Summary of Reactive Investment Opportunities*

	Capital Maintenance	Health & Safety	Total
Completed	23		23
Confirm Scope	50	2	52
Contractor Scoping	5		5
Programmed	4		4
Review Scope	8		8
Total	90	2	92

WINEP Investment

The Water Industry National Environment Programme (WINEP) is the programme of work where water companies work collaboratively with Environmental regulators and other stakeholders to investigate, identify and agree investment needs to deliver specific environmental improvements. Water companies in England then undertake to deliver this to meet their obligations from environmental legislation and UK government policy. The tables below indicate the WINEP investigation and implementation schemes for the Taw-Torridge catchment if present, with locations are shown in Figure 11.

There are currently 42 investigations planned in this catchment, as shown in Table 17.

***Table 17**: WINEP Investigations*

WINEP ID	Name of Waterbody	Waterbody Type	Driver Code	Planned Completion Date	Investigations Scope	Additional Comments
DCS00012	Kenwith Stream	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00079	Woolleigh Brook	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00087	Taw (Source to Bullow Brook)	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00106	Crooked Oak	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor

WINEP ID	Name of Waterbody	Waterbody Type	Driver Code	Planned Completion Date	Investigations Scope	Additional Comments
						to measure PFF.
DCS00116	Torridge (Combe Lake to Lew)	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00140	Upper River Yeo (Lapford)	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00148	Waldon	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00190	Duntz	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00248	Lower Little River Dart	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00262	Hawkridge Brook	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor

WINEP ID	Name of Waterbody	Waterbody Type	Driver Code	Planned Completion Date	Investigations Scope	Additional Comments
						to measure PFF.
DCS00282	Lower Little River Dart	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00367	Dolton Stream	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00422	Hole Brook	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00481	Coney Gut	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00499	Torridge (Lew to Estuary)	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00538	Lower River Lew (Torridge)	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor

WINEP ID	Name of Waterbody	Waterbody Type	Driver Code	Planned Completion Date	Investigations Scope	Additional Comments
						to measure PFF.
DCS00568	Langham Lake	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00636	Lower Caen	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00766	Knowl Water	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00784	knighty brook	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00829	Mole (Source to Burcombe Stream)	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00844	Northlew Stream	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor

WINEP ID	Name of Waterbody	Waterbody Type	Driver Code	Planned Completion Date	Investigations Scope	Additional Comments
						to measure PFF.
DCS00857	Middle River Okement	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00885	Upper River Yeo (Bideford)	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS00903	Little Mere River	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS01008	Hole Brook	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS01024	Torridge (Combe Lake to Lew)	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS01283	Bradwell Stream	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor

WINEP ID	Name of Waterbody	Waterbody Type	Driver Code	Planned Completion Date	Investigations Scope	Additional Comments
						to measure PFF.
DCS01318	Dipple Water	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
DCS01332	Upper River Yeo (Lapford)	River	U_INV2	2022-03-31	n/a	U_INV2 Investigation required as to suitability of existing inlet or outlet monitor to measure PFF.
CHM00202	n/a	n/a	WFD_INV_CHEM6	2021-09-30	Investigation to be carried out in accordance with the requirements detailed in the current UKWIR CIP3 Technical Specification and Guidance	n/a
EDM00529	Lower River Okement	River	U_INV	2022-03-31	Undertake full investigation following the Storm Overflow Assessment Framework to Stage 4 (Decision), including Environmental Impact Assessment and Cost Benefit Assessment of Options to determine an agreed (between WaSC and Environment Agency) outcome (Need for spill reduction scheme and detail of that scheme).	n/a
EDM00531	Hawkridge Brook	River	U_INV	2022-03-31	Undertake full investigation following the Storm Overflow Assessment Framework to Stage 4 (Decision), including Environmental Impact Assessment and Cost Benefit Assessment of Options to determine an agreed (between WaSC and Environment Agency) outcome (Need for spill reduction scheme and detail of that scheme).	n/a
EDM00536	Lower River	River	U_INV	2022-03-31	Undertake full investigation following the Storm Overflow Assessment Framework to Stage 4	n/a

WINEP ID	Name of Waterbody	Waterbody Type	Driver Code	Planned Completion Date	Investigations Scope	Additional Comments
	Lew (Torridge)				(Decision), including Environmental Impact Assessment and Cost Benefit Assessment of Options to determine an agreed (between WaSC and Environment Agency) outcome (Need for spill reduction scheme and detail of that scheme).	
EDM00540	Mole (Source to Burcombe Stream)	River	U_INV	2022-03-31	Undertake full investigation following the Storm Overflow Assessment Framework to Stage 4 (Decision), including Environmental Impact Assessment and Cost Benefit Assessment of Options to determine an agreed (between WaSC and Environment Agency) outcome (Need for spill reduction scheme and detail of that scheme).	n/a
EDM00543	Exe	Transitional	U_INV	2022-03-31	Undertake full investigation following the Storm Overflow Assessment Framework to Stage 4 (Decision), including Environmental Impact Assessment and Cost Benefit Assessment of Options to determine an agreed (between WaSC and Environment Agency) outcome (Need for spill reduction scheme and detail of that scheme).	n/a
EDM00546	Mole (Source to Burcombe Stream)	River	U_INV	2022-03-31	Undertake full investigation following the Storm Overflow Assessment Framework to Stage 4 (Decision), including Environmental Impact Assessment and Cost Benefit Assessment of Options to determine an agreed (between WaSC and Environment Agency) outcome (Need for spill reduction scheme and detail of that scheme).	n/a
EDM00548	Barnstaple Bay	Coastal	U_INV	2022-03-31	Undertake full investigation following the Storm Overflow Assessment Framework to Stage 4 (Decision), including Environmental Impact Assessment and Cost Benefit Assessment of Options to determine an agreed (between WaSC and Environment Agency) outcome (Need for spill	n/a

WINEP ID	Name of Waterbody	Waterbody Type	Driver Code	Planned Completion Date	Investigations Scope	Additional Comments
					reduction scheme and detail of that scheme).	
EDM00551	Taw (Bullow Brook to River Yeo)	River	U_INV	2024-03-31	Undertake full investigation following the Storm Overflow Assessment Framework to Stage 4 (Decision), including Environmental Impact Assessment and Cost Benefit Assessment of Options to determine an agreed (between WaSC and Environment Agency) outcome (Need for spill reduction scheme and detail of that scheme).	n/a
EDM00561	n/a	n/a	U_INV	2022-03-31	Undertake full investigation following the Storm Overflow Assessment Framework to Stage 4 (Decision), including Environmental Impact Assessment and Cost Benefit Assessment of Options to determine an agreed (between WaSC and Environment Agency) outcome (Need for spill reduction scheme and detail of that scheme).	n/a
CHM00431	River Taw and North Devon Streams	Groundwater	WFD_INV_CHEM1	2021-09-30	Investigation to be carried out in accordance with the requirements detailed in the current UKWIR CIP3 Technical Specification and Guidance	As confirmed with local area groundwater CIP lead, 52724 site is not suitable for sampling for the CIP3 investigation and so has been replaced by 52724.
CHM00433	Taw (Bullow Brook to River Yeo)	River	WFD_INV_CHEM11	2021-09-30	Investigation to be carried out in accordance with the requirements detailed in the current UKWIR CIP3 Technical Specification and Guidance	Substituted for Launceston (Scheme ID 7SW300013)

There are currently 21 implementations planned in this catchment, as shown in Table 18.

***Table 18**: WINEP Implementations*

WINEP ID	Name of Waterbody	Waterbody Type	Driver Code	Planned Completion Date	Implementation Scope	Additional Comments
DCS00662	Dalch	River	WFD_IMPg	2021-12-22	n/a	WFD2G Scheme as identified in PR14/AMP6.
DCS00085	Taw (Source to Bullow Brook)	River	WFD_IMPg	2024-12-22	n/a	n/a
DCS00088	Taw (Source to Bullow Brook)	River	U_IMP6	2023-03-31	n/a	n/a
DCS00138	Upper River Yeo (Lapford)	River	WFD_IMPg	2024-12-22	n/a	n/a
DCS00145	Waldon	River	WFD_IMPg	2024-12-22	n/a	n/a
DCS00149	Waldon	River	U_IMP5	2023-03-31	n/a	n/a
DCS00191	Duntz	River	U_IMP6	2023-03-31	n/a	n/a
DCS00249	Lower Little River Dart	River	U_IMP6	2023-03-31	n/a	n/a
DCS00264	Hawkridge Brook	River	U_IMP6	2023-03-31	n/a	n/a
DCS00279	Lower Little River Dart	River	WFD_IMPg	2024-12-22	n/a	n/a
DCS00284	Lower Little River Dart	River	U_IMP6	2023-03-31	n/a	n/a
DCS00540	Lower River	River	U_IMP6	2024-03-31	n/a	n/a

WINEP ID	Name of Waterbody	Waterbody Type	Driver Code	Planned Completion Date	Implementation Scope	Additional Comments
	Lew (Torridge)					
DCS00637	Lower Caen	River	U_IMP6	2024-03-31	n/a	n/a
DCS00830	Mole (Source to Burcombe Stream)	River	U_IMP6	2024-03-31	n/a	n/a
DCS01025	Torridge (Combe Lake to Lew)	River	U_IMP6	2025-03-31	n/a	n/a
DCS01048	Mole (Yeo to Burcombe Stream)	River	WFD_IMPg	2024-12-22	n/a	n/a
DCS01296	Bullow Brook	River	WFD_IMPg	2024-12-22	n/a	n/a
DCS01301	Bullow Brook	River	U_IMP5	2025-03-31	n/a	n/a
DCS01308	Lower Little River Dart	River	WFD_IMPg	2024-12-22	n/a	n/a
DCS01319	Dipple Water	River	U_IMP6	2025-03-31	n/a	n/a
DCS01333	Upper River Yeo (Lapford)	River	U_IMP6	2025-03-31	n/a	n/a

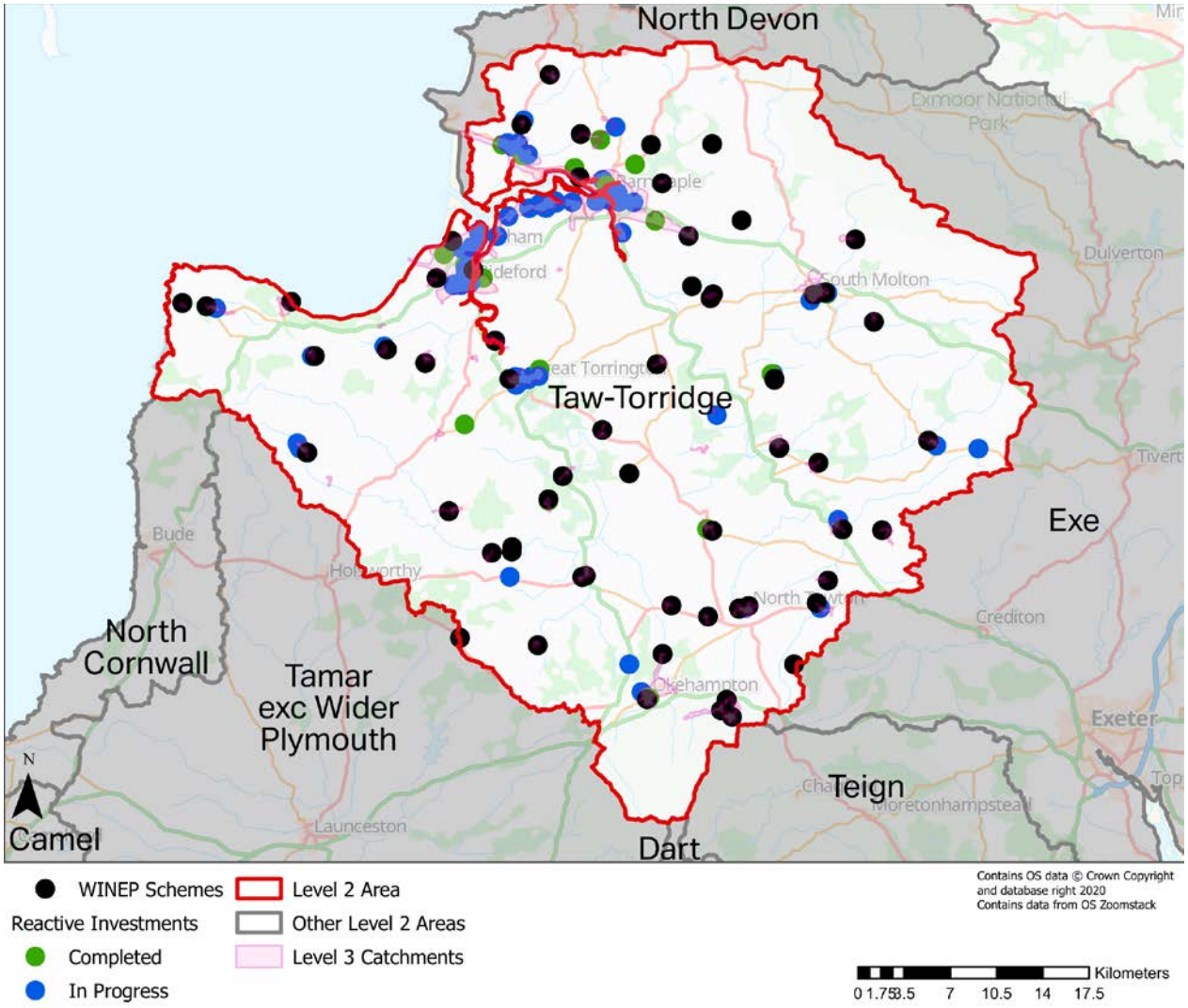

Figure 11: Reactive and WINEP Investment locations

Medium and Long-Term Plans

Overview

The following sections of this document outline South West Water's current analysis and medium to long-term proposals. In particular, they present the option developments and appraisals that will be used during the next price review and planning for future Asset Management Planning cycles (AMPs).

Outputs from the following DWMP process stages are summarised in the following sections and form the primary content for consultation:

- Risk-based catchment screening
- Baseline risk and vulnerability assessment
- Bespoke planning objectives
- Resilience scoring
- Problem characterisation
- Options appraisal

The DWMP will inform South West Water's future business plans based on the best available knowledge today. There is uncertainty in the future linked to finance, regulation/legislation, environmental and climate changes. This is a long-term, iterative process, so the plans may change in the future to reflect the future needs of the Taw-Torridge catchment.

Risk Based Catchment Screening

The Risk based Catchment Screening exercise (RBCS) was carried out across all of South West Water's 653 Level 3 Tactical Planning Units (TPUs), screening each one in order that the effort could be best focused where it was most appropriately needed. From this assessment exercise it was determined that 373 catchments were identified as being potentially 'at risk' of environmental or community impact deteriorating in the future and were to proceed to the Baseline Risk & Vulnerability Assessment (BRAVA) stage for assessment under those criteria. Each catchment was assessed against a range of indicators shown in Table 19, to identify the catchments that require a more detailed investigation. The information and data required for the assessment is readily available from company reporting systems and from stakeholders. Indicators have been classified into two tiers, which enables us to prioritise the indicators when assessing if further assessment is required. Only two indicators are Tier 2:

- Catchment characterisation
- Continuous or intermittent discharges impact upon sensitive receiving waters

All other indicators are Tier 1 indicators.

When a catchment or TPU is identified as needing further assessment, this is described as an "indicator breach" in the RBCS process. This is not a performance breach but rather a trigger to further evaluate or assess certain indicator/indicators in the next stage of the DWMP process.

The results for the Level 3 catchments within the Taw-Torridge catchment are in the RBCS Summary (Table 19) below.

***Table 19**: RBCS Summary Table*

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
52616	Initial	499.3	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	YES	NO	YES	NO	NO	NO	3	NO	YES
52624	Initial	51,147.7	YES	YES	NO	NO	YES	NO	YES	NO	YES	NO	NO	YES	NO	YES	NO	YES	YES	7	NO	YES
52626	Initial	1,335.0	NO	NO	NO	NO	YES	NO	NO	NO	YES	NO	YES	YES	NO	NO	NO	NO	YES	4	NO	YES
52632	Initial	246.0	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	2	NO	YES
52645	Initial	392.0	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	1	YES	YES
52662	Initial	6,850.9	YES	YES	NO	NO	YES	NO	NO	YES	YES	NO	NO	NO	NO	YES	NO	YES	YES	6	NO	YES
52668	Initial	1,617.2	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	1	YES	YES
52685	Initial	397.2	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	1	YES	YES
52697	Initial	500.8	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	2	NO	YES
52706	Initial	1,951.7	NO	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	YES	NO	NO	NO	NO	YES	3	NO	YES
52710	Initial	9,168.6	YES	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	YES	YES	4	NO	YES
52722	Initial	528.2	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO	YES	NO	NO	YES	3	NO	YES

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
52723	Initial	236.6	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	1	YES	YES
52725	Initial	5,966.1	YES	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	YES	YES	4	NO	YES
52733	Initial	240.4	YES	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	4	NO	YES
10138286	Initial	45,814.9	NO	YES	NO	NO	YES	NO	NO	YES	YES	NO	NO	NO	NO	YES	NO	YES	YES	5	NO	YES
10431574	Initial	208.1	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	1	YES	YES
52744	Initial	687.0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52715	Initial	212.0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52738	Initial	0.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
53826	Initial	67.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52644	Initial	122.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52698	Initial	26.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52704	Initial	160.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
10365404	Initial	20.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
52652	Initial	31.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52635	Initial	146.8	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	1	YES	YES
52684	Initial	85.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52658	Initial	84.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52735	Initial	59.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52664	Initial	210.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52678	Initial	68.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52621	Initial	70.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52727	Initial	181.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52721	Initial	167.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52695	Initial	298.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	1	YES	YES
52672	Initial	211.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	1	YES	YES
52741	Initial	1,235.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
52718	Initial	29.7	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52194	Initial	862.7	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
54261	Initial	12.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52701	Initial	63.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52641	Initial	16.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52655	Initial	265.7	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
53923	Initial	18.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52681	Initial	15.0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52661	Initial	227.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52687	Initial	29.0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52618	Initial	4.7	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52675	Initial	33.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52724	Initial	35.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
52719	Initial	61.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52696	Initial	79.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
53761	Initial	154.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52690	Initial	96.0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52656	Initial	193.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52750	Initial	6.0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52650	Initial	5.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52682	Initial	133.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52639	Initial	53.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52633	Initial	1,179.9	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	YES	1	YES	YES
53938	Initial	1,120.1	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	YES	2	NO	YES
52513	Initial	694.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	1	YES	YES
52713	Initial	3.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
10490751	Initial	156.7	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52619	Initial	12.7	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
53603	Initial	181.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	1	YES	YES
54050	Initial	80.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52676	Initial	112.2	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	YES	2	NO	YES
52527	Initial	212.0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	1	YES	YES
52647	Initial	92.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52670	Initial	40.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52716	Initial	43.7	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
54305	Initial	55.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52653	Initial	44.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52699	Initial	14.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52659	Initial	5.0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
52730	Initial	12.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
53824	Initial	53.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52736	Initial	267.2	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52630	Initial	397.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52667	Initial	2.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52679	Initial	106.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52673	Initial	102.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52671	Initial	62.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52694	Initial	105.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52717	Initial	122.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52642	Initial	3.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52654	Initial	33.0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52731	Initial	0.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
52705	Initial	784.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52688	Initial	168.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52711	Initial	324.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	1	YES	YES
52631	Initial	97.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52625	Initial	352.7	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	NO	NO	YES	2	NO	YES
52737	Initial	364.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52691	Initial	221.2	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52651	Initial	791.5	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	YES	1	YES	YES
52751	Initial	16.2	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52708	Initial	338.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52634	Initial	22.9	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52665	Initial	4.7	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52714	Initial	288.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
53604	Initial	689.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52728	Initial	233.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52622	Initial	203.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52740	Initial	1,211.8	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO	YES	2	NO	YES
54266	Initial	5.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52692	Initial	71.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52746	Initial	363.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52646	Initial	1,174.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	1	YES	YES
52700	Initial	25.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52660	Initial	123.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52729	Initial	96.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52709	Initial	34.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52637	Initial	643.7	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	NO	NO	YES	2	NO	YES

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
52686	Initial	45.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
11442172	Initial	6.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52666	Initial	0.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52617	Initial	22.6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52623	Initial	174.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52743	Initial	171.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52720	Initial	27.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52689	Initial	961.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52703	Initial	10.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52643	Initial	412.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52649	Initial	47.8	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52683	Initial	151.4	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52732	Initial	27.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO

Level 3 Equipment Number	C21st Pipe Metric	Total Population Equivalent	Catchment Characterisation	Bathing or shellfish waters	Discharge to Sensitive Waters (Part A)	Discharge to Sensitive Receiving (Part B)	SOAF	CAF	Internal Sewer Flooding	External Sewer Flooding	Pollution Incidents	WwTW Q Compliance	WwTW DWF Compliance	Storm Overflows	Other RMA Systems	Planned Residential Development	WINEP	Sewer Collapses	Sewer Blockages	Number of Indicators Breached (Excl	Single Indicator Breach is Tier 1	Proceed to BRAVA?
52663	Initial	0.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52657	Initial	173.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0	NO	NO
52640	Initial	198.3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	1	YES	YES
52677	Initial	13.5	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52726	Initial	275.1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	0	NO	NO
52669	Initial	696.9	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	YES	2	NO	YES

Score/Colour	Definition
No	No breach
Yes - Tier 1	Tier 1 breach
Yes - Tier 2	Tier 2 breach

Figure 12: RBCS scoring legend

Baseline Risk & Vulnerability Assessment (BRAVA)

For those catchments that were captured by the RBCS as being 'at risk' South West Water then progressed them through to the BRAVA process.

Through the BRAVA process South West Water's understanding of the risks facing the catchments, and at what scale and complexity, has been improved. This included an assessment into how external changes in the future may impact upon South West Water's catchment vulnerabilities and how they may be impacted by risks such as Climate Change and Urban Creep. The outputs from this process are summarised below in Table 20. The planning objectives used for this exercise were:

- Internal Sewer Flooding Risk
- Pollution Risk
- Sewer Collapse Risk
- Risk of Sewer Flooding in a 1 in 50-year storm
- Storm Overflow performance
- Risk of WwTW Compliance Failure

***Table 20**: BRAVA output summary table*

Group	Description	Value
	L2_Area	Taw-Torridge
Physical Characteristics	Total Population Equivalent	144001
	Baseline sewer length (km)	1450
Baseline Score 2020	Planning Objective - Internal Sewer Flooding Risk	0
		2
	Planning Objective - Sewer Collapse Risk	0
		2
	Planning Objective - Storm Overflow performance...8	1
	Planning Objective - Risk of WwTW Compliance Failure...9	1
		2
	Planning Objective - Storm	1

Group	Description	Value
	Overflow performance...11	
	Planning Objective - Risk of WwTW Compliance Failure...12	1

Score/Colour	Definition
0	No signficance
1	Moderately Significant
2	Very Significant

Figure 13: BRAVA scoring legend

BRAVA Risks were categorised from 0-2, with 0 being no significant risk identified, 1 for no immediate risk identified (although future risks may exist) and 2 showing that short- to medium-term risks of a significant nature having been recognised through the data analysis.

Bespoke Planning Objectives

In addition to the six common planning objectives identified within the DWMP Framework, South West Water has included three bespoke planning objectives that are tailored to the South West Region.

Problem Characterisation

Building on the outputs of the BRAVA process, South West Water examined the nature and complexity of the problems arising, how these relate to one another and what interventions could be put in place to mitigate them. The Problem Characterisation stage took the results from BRAVA and developed it further, providing insight into the risks around:

- Internal Sewer Flooding
- Pollution, dividing these between category 1 or category 2 & 3
- Sewer Collapse
- Sewer Flooding in a 1 in 50-year storm
- Sewer Flooding in a 1 in 10-year storm
- Storm Overflow performance
- WwTW Compliance Failure, including Dry Weather Flow scenarios

These ratings (shown in Table 21) were augmented with commentary (in Table 22) around how these risks have impacted the Taw-Torridge catchment previously, with Flooding Heat Maps providing visual indicators of the scale of some of the potential problems within each catchment.

***Table 21**: Problem Characterisation*

TPU2	F1: Internal sewer flooding	F2: Risk of sewer flooding in a 1 in 10 year event	F3: Risk of sewer flooding in a 1 in 50 year event	P1: Pollution incidents (CAT 1-3)	P2: Severe Pollutions (Cat 1-2)	P3: Storm overflow performance	P4: WwTW (NUMERIC) compliance failure	P5: WwTW (DWF) compliance failure	A1: Sewer collapse
DOLTON_STW_DOLTON	A	F	F	A	A	A	F	A	F
WOOLSERY_STW_WOOLFARDISWORTHY	A	F	F	A	A	A	A	A	A
TORRINGTON_STW_TORRINGTON	F	F	B	G	A	F	A	A	A
ASHFORD_STW_BARNSTAPLE	A	G	G	G	A	F	G	A	A
SOUTH MOLTON_STW_SOUTH MOLTON	F	G	G	A	A	F	B	A	F
CORNBOROUGH_STW_BIDEFORD	A	G	G	G	A	F	A	A	A
HILL BARTON_STW_OKEHAMPTON	A	F	F	G	A	F	A	A	A
WEARE GIFFARD_STW_WEARE GIFFARD	A	F	F	A	A	G	F	F	A

TPU2	F1: Internal sewer flooding	F2: Risk of sewer flooding in a 1 in 10 year event	F3: Risk of sewer flooding in a 1 in 50 year event	P1: Pollution incidents (CAT 1-3)	P2: Severe Pollutions (Cat 1-2)	P3: Storm overflow performance	P4: WwTW (NUMERIC) compliance failure	P5: WwTW (DWF) compliance failure	A1: Sewer collapse
WINKLEIGH_STW_WINKLEIGH	A	G	G	A	A	A	C	A	A
CHULMLEIGH_STW_CHULMLEIGH	A	F	F	A	A	A	A	A	G
MIDDLE MARWOOD_STW_MARWOOD	A	F	F	A	A	G	A	A	A
BELSTONE & SOUTH TAWTON_STW_SOUTH TAWTON	A	F	F	G	A	F	A	A	A
NORTH TAWTON_STW_NORTH TAWTON	F	A	A	A	A	G	B	A	F
ABBOTSHAM_STW_ABBOTSHAM	A	F	F	A	A	G	C	A	A
BLACK TORRINGTON_STW_BLACK TORRINGTON	A	F	F	A	A	G	A	A	A
BRADWORTHY_STW_BRADWORTHY	A	F	F	A	A	A	G	A	A

TPU2	F1: Internal sewer flooding	F2: Risk of sewer flooding in a 1 in 10 year event	F3: Risk of sewer flooding in a 1 in 50 year event	P1: Pollution incidents (CAT 1-3)	P2: Severe Pollutions (Cat 1-2)	P3: Storm overflow performance	P4: WwTW (NUMERIC) compliance failure	P5: WwTW (DWF) compliance failure	A1: Sewer collapse
CHITTLEHAMPTON_STW_CHITTLEHAMPTON	A	F	F	A	A	G	A	A	A
SUTCOMBE MILL_STW_SUTCOMBE	A	F	F	A	A	A	C	A	A
ASHREIGNEY_STW_ASHREIGNEY	A	A	A	A	A	A	A	A	A
BEAFORD_STW_BEAFORD	A	C	C	A	A	A	B	B	A
BISHOPS NYMPTON_STW_BISHOPS NYMPTON	A	B	B	A	A	A	B	A	A
BOW_STW_BOW	A	A	A	A	A	A	F	A	A
BUCKLAND BREWER_STW_BUCKLAND BREWER	A	C	C	A	A	A	F	A	A
BURRINGTON_STW_BURRINGTON	A	C	C	A	A	A	C	A	A
CHAWLEIGH_STW_C	G	B	B	A	A	A	A	A	G

TPU2	F1: Internal sewer flooding	F2: Risk of sewer flooding in a 1 in 10 year event	F3: Risk of sewer flooding in a 1 in 50 year event	P1: Pollution incidents (CAT 1-3)	P2: Severe Pollutions (Cat 1-2)	P3: Storm overflow performance	P4: WwTW (NUMERIC) compliance failure	P5: WwTW (DWF) compliance failure	A1: Sewer collapse
HAWLEIGH									
EXBOURNE_STW_OKEHAMPTON	A	B	B	A	A	A	G	A	A
GOODLEIGH_STW_GOODLEIGH	A	C	C	A	A	A	C	A	A
HARTLAND_STW_HARTLAND	A	B	B	A	A	A	C	A	A
HATHERLEIGH_STW_HATHERLEIGH	A	C	C	G	A	F	G	A	A
HIGH BICKINGTON_STW_HIGH BICKINGTON	A	C	C	A	A	A	A	A	A
HIGHER CLOVELLY_STW_CLOVELLY CROSS	A	C	C	A	A	A	C	A	A
HORNS CROSS_STW_HORNS CROSS	A	A	A	A	A	A	A	A	A
KNOWLE_STW_BRAUNTON	A	A	A	A	A	G	A	A	A

TPU2	F1: Internal sewer flooding	F2: Risk of sewer flooding in a 1 in 10 year event	F3: Risk of sewer flooding in a 1 in 50 year event	P1: Pollution incidents (CAT 1-3)	P2: Severe Pollutions (Cat 1-2)	P3: Storm overflow performance	P4: WwTW (NUMERIC) compliance failure	P5: WwTW (DWF) compliance failure	A1: Sewer collapse
LAPFORD_STW_LAPFORD	A	A	A	A	A	A	A	A	A
LOVACOTT_STW_LOVACOTT	A	B	B	A	A	A	A	A	A
LOWER CLOVELLY_STW_CLOVELLY	A	A	A	A	A	F	A	A	A
MERTON_STW_MERTON	A	C	C	A	A	A	G	A	G
MONKLEIGH_STW_MONKLEIGH	A	B	B	A	A	A	B	A	A
MORCHARD BISHOP_STW_MORCHARD BISHOP	A	A	A	A	A	A	B	A	A
NORTH MOLTON_STW_NORTH MOLTON	A	C	C	A	A	A	F	A	G
NORTHLEW_STW_HATHERLEIGH	A	A	A	A	A	A	A	A	A
PARKHAM_STW_PAR	A	C	C	A	A	A	G	A	A

TPU2	F1: Internal sewer flooding	F2: Risk of sewer flooding in a 1 in 10 year event	F3: Risk of sewer flooding in a 1 in 50 year event	P1: Pollution incidents (CAT 1-3)	P2: Severe Pollutions (Cat 1-2)	P3: Storm overflow performance	P4: WwTW (NUMERIC) compliance failure	P5: WwTW (DWF) compliance failure	A1: Sewer collapse
KHAM									
PETROCKSTOWE_STW_PETROCKSTOW	A	A	A	A	A	A	B	A	A
SAMPFORD COURTENAY_STW_SAMPFORD COURTENY	A	A	A	A	A	A	A	A	A
SHEBBEAR_STW_SHEBBEAR	A	C	C	A	A	A	G	F	A
STIBB CROSS_STW_TORRINGTON	A	C	C	A	A	A	G	A	A
STOKE_STW_HARTLAND	A	A	A	A	A	A	G	A	A
WESTDOWN_STW_WEST DOWN	A	A	A	A	A	A	F	A	G
WITHERIDGE_STW_WITHERIDGE	A	A	A	A	A	A	F	A	G
ZEAL MONACHORUM_STW_ZEAL	A	A	A	A	A	A	F	A	A

TPU2	F1: Internal sewer flooding	F2: Risk of sewer flooding in a 1 in 10 year event	F3: Risk of sewer flooding in a 1 in 50 year event	P1: Pollution incidents (CAT 1-3)	P2: Severe Pollutions (Cat 1-2)	P3: Storm overflow performance	P4: WwTW (NUMERIC) compliance failure	P5: WwTW (DWF) compliance failure	A1: Sewer collapse
MONACHORUM									

RISK PATTERN	Assessment
A	No risks – system is resilient
B	Long term moderate risk
C	Long term high risk
D	Medium term moderate risk
E	Medium term high risk
F	Immediate moderate risk
G	Immediate high risk

Figure 14: Problem Characterisation legend

***Table 22**: Problem Characterisation Description*

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
ABBOTSHAM_STW_ABBOTSHAM	This catchment requires additional investment to make it resilient for the future.	There were no substantial flooding hotspots in the cacthment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Unsatisfactory - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.
ASHFORD_STW_BARNSTAPLE	This catchment requires additional investment to make it resilient for the future.	There are 6 pollution hotspots in the catchment, located near; Bishop Tawton Rising Main (Id:47), Landkey SPS (Id:48), Newport Outfall (Id:5), Old Torrington Rd (Id:124), Saunton Rd SPS (Id:230) & Swimbridge SPS (Id:226). There are 3 external flooding hotspots attributed to other causes in the catchment, located near;	11.0% of the total number of properties within the catchment are predicted to be at risk of sewer flooding. There are 4 predicted future flooding hotspots in the catchment, located near; Braunton, Central Barnstaple, Anchorwood / Roundswell Village SPS, and Newport / Rock Park SPS.	There are a total of 17 overflows in the catchment. They have been classified as follows: Satisfactory - 24%; Sub-standard (Medium) - 41%; Sub-standard (High) - 35%. Overflows in this catchment impact on the following bathing beaches/shell fish waters; INSTOW BEACH, TAW/TORRIDGE.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
		Braunton, Central Barnstaple and Anchorwood / Roundswell Village SPS.			
ASHREIGNEY_STW_ASHREIGNEY	This catchment is performing well and is resilient for the future.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
BEAFORD_STW_BEAFORD	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.
BELSTONE & SOUTH TAWTON_STW_SOUTH TAWTON	This catchment requires additional investment to make it resilient for the future.	There is 1 pollution hotspot in the catchment, located near; Little Down, South Zeal (Id:87). There are 2 external flooding hotspots	A non modelled approach was used to determine future flood risk.	There are a total of 5 overflows in the catchment. They have been classified as follows: Sub-standard (Medium) - 20%; Sub-standard	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
		attributed to other causes in the catchment, located near; Hillfield and St Mary's Church.		(High) - 20%; Not Classified - 60%.	now and 2050.
BISHOPS NYMPTON_STW_BISHOPS NYMPTON	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.
BLACK TORRINGTON_STW_BLACK TORRINGTON	This catchment is changing & requires a long-term strategy.	There were no substantial flooding hotspots in the cacthment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Sub-standard (High) - 100%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
BOW_STW_BOW	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
					strategy.
BRADWORTHY_STW_BRADWORTHY	This catchment is changing & requires a long-term strategy.	There were no substantial flooding hotspots in the cacthment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
BUCKLAND BREWER_STW_BUCKLAND BREWER	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
BURRINGTON_STW_BURRINGTON	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.
CHAWLEIGH_STW_C	This catchment is changing & requires	There were no substantial flooding	A non modelled approach was used	There is a total of 1 overflow in the	We are monitoring performance at the

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
HAWLEIGH	a long-term strategy.	or pollution hotspots in the catchment.	to determine future flood risk.	catchment. It has been classified as follows: Not classified - 100%.	treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
CHITTLEHAMPTON_STW_CHITTLEHAMPTON	This catchment requires additional investment to make it resilient for the future.	There were no substantial flooding hotspots in the cacthment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Unsatisfactory - 50%; Not Classified - 50%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
CHULMLEIGH_STW_CHULMLEIGH	This catchment is changing & requires a long-term strategy.	There is 1 external flooding hotspot attributed to other causes in the catchment, located near; Beacon Rise.	A non modelled approach was used to determine future flood risk.	There are a total of 5 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
CORNBOROUGH_STW_BIDEFORD	This catchment requires additional investment to make it resilient for the future.	There is 1 external flooding hotspot attributed to hydraulic overload in the catchment, located near; Atlantic	9.0% of the total number of properties within the catchment are predicted to be at risk of sewer flooding. There are 4	There are a total of 24 overflows in the catchment. They have been classified as follows: Satisfactory - 25%;	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
		Way. There are 4 external flooding hotspots attributed to other causes in the catchment, located near; Fremington, South West Bideford / Moreton Park, Orchard Hill and Instow.	predicted future flooding hotspots in the catchment, located near; West Bideford / Moreton Park, Appledore, Northam and Westward Ho!.	Sub-standard (Medium) - 54%; Sub-standard (High) - 8%; Not classified - 13%. Overflows in this catchment impact on the following bathing beaches/shell fish waters; WESTWARD HO! BEACH, INSTOW BEACH, TAW/TORRIDGE.	capacity between now and 2050.
DOLTON_STW_DOLTON	This catchment is changing & requires a long-term strategy.	There are 2 external flooding hotspots attributed to other causes in the catchment, located near; West Lane and Barlands Close.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
EXBOURNE_STW_OKEHAMPTON	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
					strategy.
GOODLEIGH_STW_GOODLEIGH	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Sub-standard (Medium) - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.
HARTLAND_STW_HARTLAND	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.
HATHERLEIGH_STW_HATHERLEIGH	This catchment requires additional investment to make it resilient for the future.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 8 overflows in the catchment. They have been classified as follows: Sub-standard (Medium) - 63%; Sub-standard (High) - 13%; Unsatisfactory - 13%; Not Classified - 13%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
HIGH BICKINGTON_STW_HIGH BICKINGTON	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
HIGHER CLOVELLY_STW_CLOVELLY CROSS	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.
HILL BARTON_STW_OKEHAMPTON	This catchment requires additional investment to make it resilient for the future.	There is 1 external flooding hotspot attributed to hydraulic overload in the catchment, located near; Station Road. There is 1 external flooding hotspot attributed to other causes in the catchment, located near; Station Road.	A non modelled approach was used to determine future flood risk.	There are a total of 10 overflows in the catchment. They have been classified as follows: Sub-standard (Medium) - 60%; Unsatisfactory - 20%; Not Classified - 20%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
HORNS CROSS_STW_HORNS CROSS	This catchment is performing well and is resilient for the future.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
KNOWLE_STW_BRAUNTON	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Sub-standard (High) - 100%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
LAPFORD_STW_LAPFORD	This catchment is performing well and is resilient for the future.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 4 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
LOVACOTT_STW_LOVACOTT	This catchment is performing well and is resilient for the	There were no substantial flooding or pollution hotspots	A non modelled approach was used to determine future	There are no overflows in this catchment.	We are monitoring performance at the treatment works and

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
	future.	in the catchment.	flood risk.		we are not expecting any compliance issues due to lack of capacity between now and 2050.
LOWER CLOVELLY_STW_CLOVELLY	This catchment requires additional investment to make it resilient for the future.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Sub-standard (Medium) - 50%; Unsatsfactory - 50%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
MERTON_STW_MERTON	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
MIDDLE MARWOOD_STW_MARWOOD	This catchment is changing & requires a long-term strategy.	There is 1 external flooding hotspot attributed to other causes in the catchment, located near; Kingsheanton.	A non modelled approach was used to determine future flood risk.	There are a total of 4 overflows in the catchment. They have been classified as follows: Sub-standard (Medium) - 25%; Sub-standard	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
				(High) - 75%.	now and 2050.
MONKLEIGH_STW_MONKLEIGH	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Sub-standard (Medium) - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.
MORCHARD BISHOP_STW_MORCHARD BISHOP	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.
NORTH MOLTON_STW_NORTH MOLTON	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
NORTH TAWTON_STW_NOR	This catchment is changing & requires	There is 1 total internal flooding	A non modelled approach was used	There are a total of 2 overflows in the	We are monitoring performance at the

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
TH TAWTON	a long-term strategy.	incidents in the catchment; this is 0.11% of the total number of properties within the catchment.	to determine future flood risk.	catchment. They have been classified as follows: Unsatisfactory - 50%; Not Classified - 50%.	treatment works and there may be a need to increase capacity as part of a medium/long term strategy.
NORTHLEW_STW_HATHERLEIGH	This catchment is performing well and is resilient for the future.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
PARKHAM_STW_PARKHAM	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
PETROCKSTOWE_STW_PETROCKSTOW	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Not	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
				Classified - 100%.	medium/long term strategy.
SAMPFORD COURTENAY_STW_SAMPFORD COURTENY	This catchment is performing well and is resilient for the future.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
SHEBBEAR_STW_SHEBBEAR	This catchment requires additional investment to make it resilient for the future.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Sub-standard (High) - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
SOUTH MOLTON_STW_SOUTH MOLTON	This catchment requires additional investment to make it resilient for the future.	There are 6 total internal flooding incidents in the catchment; this is 0.19% of the total number of properties within the catchment. There is 1 external flooding hotspot attributed to	8.5% of the total number of properties within the catchment are predicted to be at risk of sewer flooding. There are 3 predicted future flooding hotspots in the catchment, located near; East	There are a total of 8 overflows in the catchment. They have been classified as follows: Sub-standard (Medium) - 25%; Unsatisfactory - 25%; Not Classified - 50%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
		other causes in the catchment, located near; Thornes Terrace.	Street, North Street / West Street and Whitehall Close.		
STIBB CROSS_STW_TORRINGTON	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
STOKE_STW_HARTLAND	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are no overflows in this catchment.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
SUTCOMBE MILL_STW_SUTCOMBE	This catchment is changing & requires a long-term strategy.	There were no substantial flooding hotspots in the cacthment.	A non modelled approach was used to determine future flood risk.	There are no overflows in this catchment.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
					strategy.
TORRINGTON_STW_TORRINGTON	This catchment requires additional investment to make it resilient for the future.	There are 3 pollution hotspots in the catchment, located near; Lower Burwood Rd (Id:139), Rolle Rd (Id:50) & Taddiport SPS (Id:37). There is 1 total internal flooding incidents in the catchment; this is 0.04% of the total number of properties within the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 11 overflows in the catchment. They have been classified as follows: Satisfactory - 18%; Sub-standard (Medium) - 27%; Sub-standard (High) - 45%; Not Classified - 9%. Overflows in this catchment impact on the following bathing beaches/shell fish waters; INSTOW BEACH, TAW/TORRIDGE.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
WEARE GIFFARD_STW_WEARE GIFFARD	This catchment requires additional investment to make it resilient for the future.	There is 1 external flooding hotspot attributed to hydraulic overload in the catchment, located near; Main Road through village . There are 2 external flooding hotspots attributed to other	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Unsatisfactory - 100%. Overflows in this catchment impact on the following bathing	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
		causes in the catchment, located near; Main Road through village and Weare Giffard Village Hall.		beaches/shell fish waters; INSTOW BEACH, TAW/TORRIDGE.	
WESTDOWN_STW_ WEST DOWN	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are a total of 2 overflows in the catchment. They have been classified as follows: Not Classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
WINKLEIGH_STW_WINKLEIGH	This catchment requires additional investment to make it resilient for the future.	There is 1 external flooding hotspot attributed to hydraulic overload in the catchment, located near; Westcots Drive . There are 2 external flooding hotspots attributed to other causes in the catchment, located near; Old Barn Close SPS and	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a medium/long term strategy.

TPU	Conclusion Narrative	Historical Pollution and Flooding	Future Flood Risk	Overflows	WwTW
		Southernhay.			
WITHERIDGE_STW_WITHERIDGE	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There are no overflows in this catchment.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.
WOOLSERY_STW_WOOLFARDISWORTHY	This catchment is performing well and is resilient for the future.	There are 2 external flooding hotspots attributed to other causes in the catchment, located near; East Park and Lower Town.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and we are not expecting any compliance issues due to lack of capacity between now and 2050.
ZEAL MONACHORUM_STW_ZEAL MONACHORUM	This catchment is changing & requires a long-term strategy.	There were no substantial flooding or pollution hotspots in the catchment.	A non modelled approach was used to determine future flood risk.	There is a total of 1 overflow in the catchment. It has been classified as follows: Not classified - 100%.	We are monitoring performance at the treatment works and there may be a need to increase capacity as part of a short/medium term strategy.

Resilience Assessment

Resilience is a statutory duty for Ofwat under the 2014 Water Industry Act, but more importantly for us it is the philosophy that allows us to consider how we best manage our services to customers in a changing and sometime challenging environment. Such challenges encompass a wide range of factors such as extreme weather conditions; drought and flooding; land use and catchment pressures; power supply and communications reliability; skills and organisational capacity; supply chain capability; as well as changing environmental and public health challenges to meet the needs of consumers now as well as in the longer term. The details below form part of the Operational Resilience assessment within the DWMP. Namely:

- Coastal Flood Inundation
- Coastal Erosion
- Fluvial Flooding (Response and Recovery Plans)
- Power Outage
- Operational Telemetry (OT)

Coastal flooding and Erosion

UK coastal flood and erosion risk is expected to increase over the 21st century due to the impact in sea level rise and climate change. Which means that we can expect to see both an increase in the frequency and magnitude of extreme water levels and weather events around the UK coastline. This is particularly significant for the SW region due to the extensive coastline and numerous coastal communities who rely on the safe and constant provision of clean and wastewater services. The South West's tourism economy is also dependent, to a large extent, on the extensive coastline, acknowledged by EA through improvements to coastal waters over decades of investment under the Bathing Water drivers. As a consequence, an assessment of the risks associated with present day and future projected coastal flood and erosion risk was undertaken utilising the latest available science.

Coastal Flooding

Coastal flood risk was modelled for three climate scenarios, the first representing present-day risk in 2022 and second, the future climate change scenarios (RCP2.5 and RCP8.6) representing the projected risk in 2035 and 2050. To fully assess future risk for each of the above climate change scenarios four return events were evaluated, these were:

- Highest Astronomical Tide (HAT) event - represents the maximum observed tide under average atmospheric conditions
- 1 in 5-year storm return period event - a high probability event with a 20% chance of happening in any one year
- 1 in 50-year storm return period event – a moderate probability event with a 2% chance of occurring in any one year
- 1 in 200-year storm return period event – a low probability event with a 0.5% chance of occurring in any one year The EA Coastal Flood Boundary data for the assessment of extreme sea level rise was also used

A total of 653[1] Sewage Treatment Works (STW), 1235 Sewage Pumping Stations (SPS) plus the associated wastewater infrastructure were assessed for coastal flood risk. Sites have been assessed based upon a number of different storm and flood scenarios considering the risks to the site, the defence of the site and wider EA flood defence work. The 1 in 200-year flood extent for the three time periods is indicated in Figure 15 below.

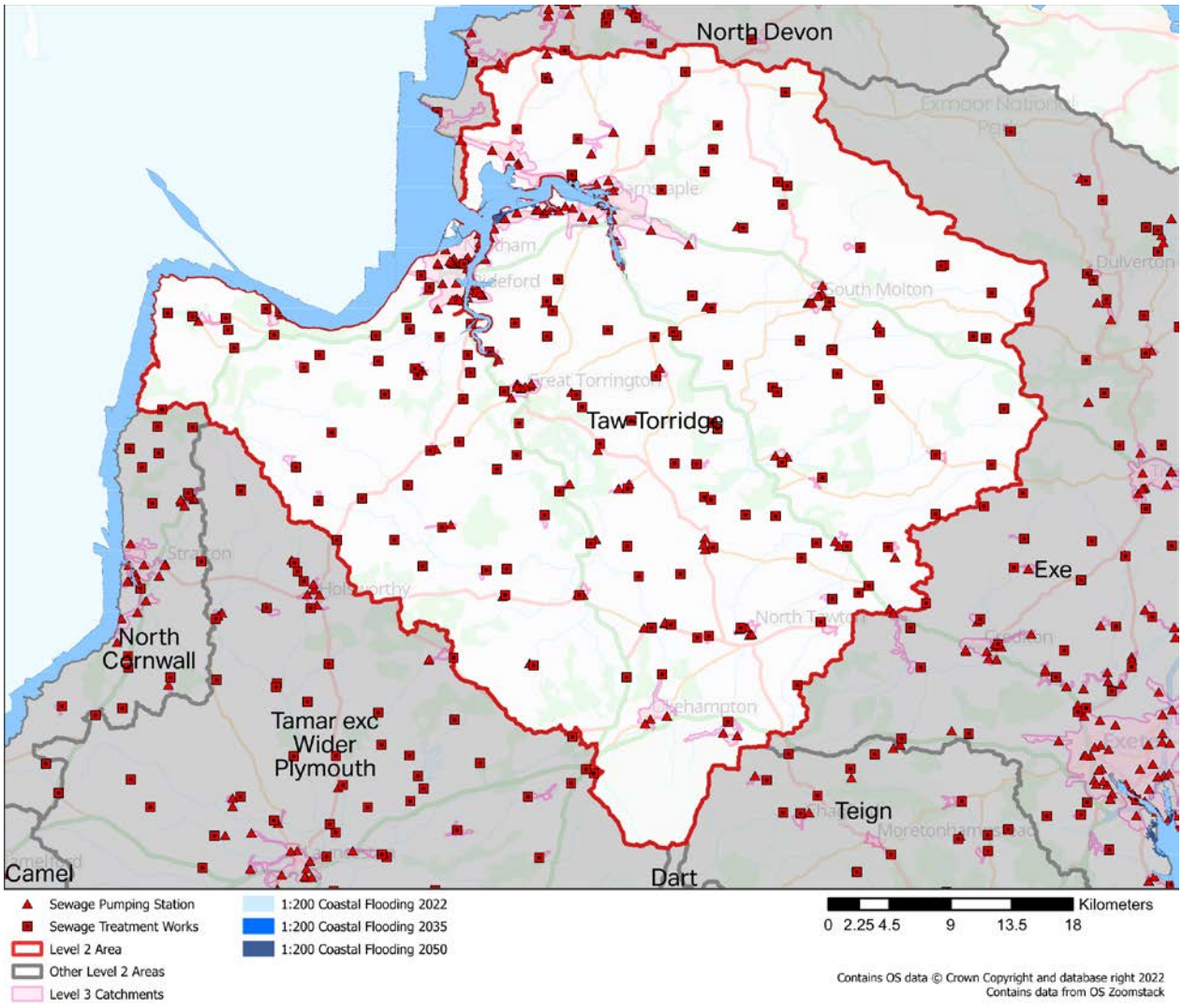

Figure 15: Extent of coastal flooding

Possible interventions to manage the risks have been identified as the provision of flood defences for the site, either as a SWW deliverable or as part of a wider programme of coastal defences working with EA and other RMAs. Thereby delivering greater benefit for coastal communities. An alternative intervention is to relocate the asset to a more secure location ensuring ability to continue to service local communities. This option is more likely to be part of a wider decision to relocate communities at risk and would be taken in close collaboration with the EA and responsible RMAs. The sewer infrastructure identified at risk

[1] Catchments are being continually reviewed as part of other workstreams and may be subject to change, Power Outage and OT defined in 'Our Regional Plan'

is associated with the hydrodynamic modelling outputs. This provides additional assurance for the network assessed as being at risk.

Coastal Erosion

A hazard assessment of coastal erosion susceptibility was undertaken with the aim of better understanding the risk posed to SWW assets and provide information whereby asset investment can be effectively prioritised allowing for a more targeted approach for future allocation of operational and capital expenditure. A detailed assessment of coastal erosion risk was assessed for all of our operational wastewater sites (653 STW's and co-located Sludge Treatment Centre [STC], 1235 SPS's plus associated infrastructure). All sites were only at risk from erosion and not from coastal flooding.
The assessment combines two approaches:

- A high-level screening to identify sites at coastal erosion risk by 2118
- A detailed site-by-site erosion analysis for the three epochs: 2022, 2035, and 2050

The high-level coastal erosion risk assessment is based on the NCERM (National Coastal Erosion Risk Mapping) dataset. The erosion risk was calculated based on the distance of the asset from the projected cliff edge with a geological scaling factor applied based on the erodibility of the underlying geology. Each site identified at risk had detailed erosion analysis undertaken. This included site-specific conditions that influence the rate of coastal erosion, such as geology, for the three time frames 2022, 2035, and 2050. This produced a ranked output highlighting assets at greatest risk of coastal erosion. The extent of coastal erosion in 2035 and 2050 is indicated in Figure 16 below.

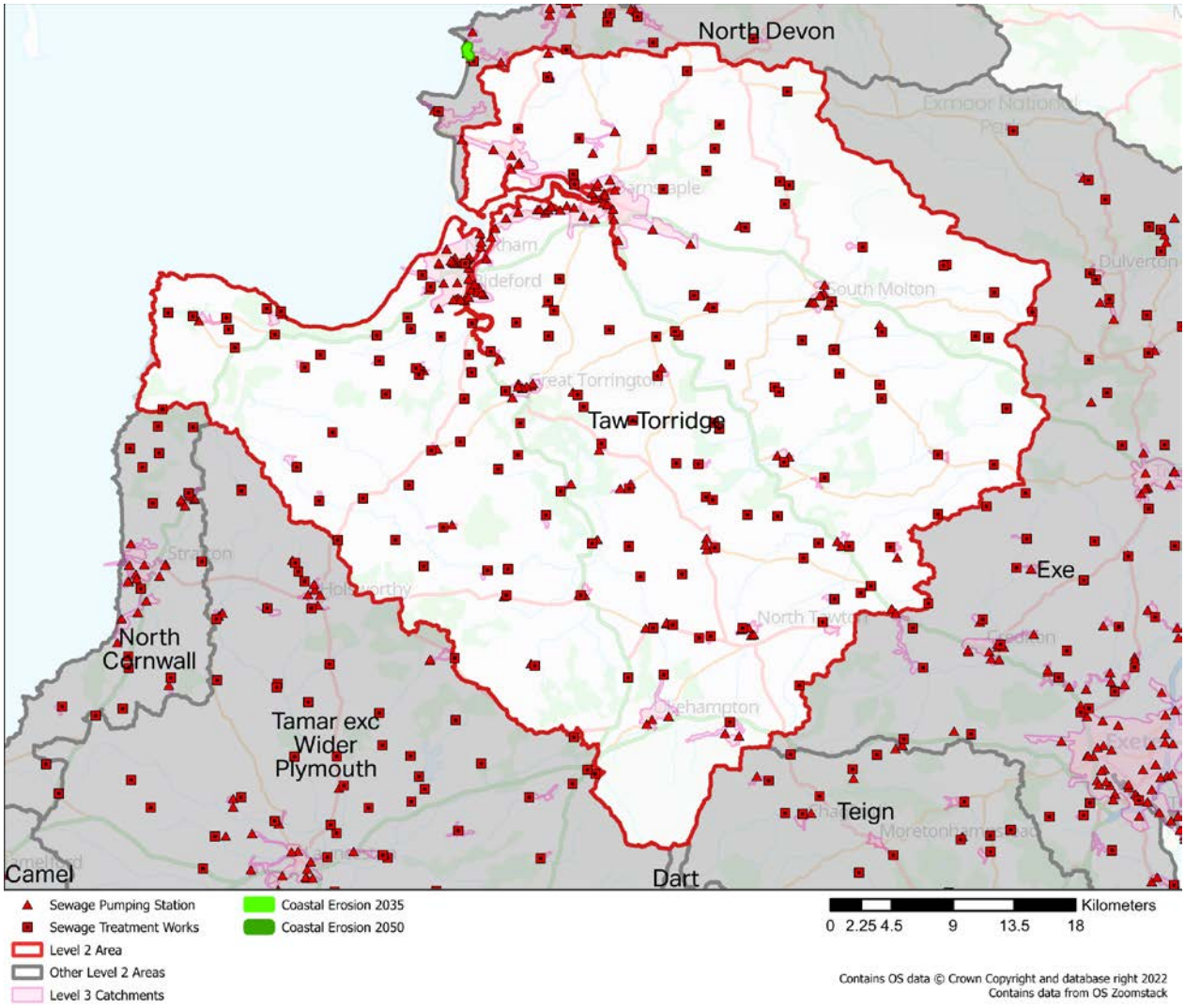

Figure 16: Extent of coastal erosion in 2035 and 2050

The EA have been allocated £2.5m capital funding to work with partners to deliver an update to the NCERM, across England by the end of 2023. The update to NCERM complements the dependent project to refresh the 20 Shoreline Management Plans (SMPs) across England, and other similar EA/DEFRA projects seeking to update flood and coastal erosion risk mapping, modelling and assessment. Combined, all of this activity will provide an essential body of data and evidence to underpin future adaptation and planning investment decisions of relevant coastal RMAs. This being the case the current strategy is to continue to evaluate the risks through AMP8 following the publication of the revised NCERM, working alongside other external agencies and key stakeholders including the relevant coastal risk management authorities to determine the level of risk, relevant SMP policy and therefore any subsequent required investment to mitigate coastal erosion impact.

Fluvial and Pluvial Flooding

UK fluvial flood risk is expected to increase over the 21st century which means that we can expect to see both an increase in the frequency and magnitude of extreme water levels around the UK. As a consequence, an assessment of the risks associated with future fluvial

flooding due to projected climate change has been evaluated using the latest available science, UKCP18. The UKCP (United Kingdom Climate Projections) is a suite of climate models developed by the UK Met Office (Meteorological Office) and the Centre for Ecology & Hydrology to provide projections of future climate change in the United Kingdom. The UKCP models use data from global climate models to provide regional and local-scale projections of temperature, precipitation, and other climate variables over the coming decades. The UKCP models have been used to inform policy and decision-making in the UK on issues related to climate change adaptation and mitigation. The UKCP model projections are based on scenarios of future greenhouse gas emissions and consider the most up-to-date scientific understanding of the physical processes that drive the climate system. A total of 653 STW's, 1235 SPS's plus the associated wastewater infrastructure were assessed.

There was a phase 1 screening to identify sites at risk and a high-level screening exercise was undertaken against existing known flood zone extents. This utilised EA flood zone data sets and Defra surface water flooding data sets. A further step was taken in refining the fluvial flood zone data to exclude coastal flooding from the dataset as this risk was appraised separately as part of a Coastal Flood Risk Assessment.

Following a review of outputs from Phase 1 the assessment of sites identified at risk are taken forward to a Phase 2 assessment. The detailed assessment includes both present day risk and two climate change scenarios (RCP2.6 and 8.5) to understand the changes in flood risk over time. The assessment considers both the area flooded and a range of modelled flood depth statistics. These enhanced flood metrics can then be combined with asset information and external factors to develop a more detailed assessment of the risk to each shortlisted asset. For these sites detailed Flood Assessment Reports (FARs) are produced. These reports are designed to be used as a preliminary form of flood risk assessment identifying the potential flood risk for a specified location.

Option Development and Appraisal

Future WINEP Investment

Earlier this year, we presented our WINEP investment programme for 2025 onwards to the EA. Our programme includes substantial investment to improve and protect the environment from our drainage and wastewater activities. The plan focuses on the period between 2025-2030 but also considers our, and the government's, longer term strategy for environmental improvements over the next 25 years. The wastewater investments included in the WINEP for 2025 to 2030 include:

- Investigating and reducing storm overflow discharges
- Investigating and improving bathing water and shellfish water quality, usually through a reduction in storm overflow discharges
- Investigating and protecting high priority sites such as SSSIs and SACs that are impacted by our drainage and wastewater treatment activities
- Investigating and reducing the impact of nutrients and chemicals from our WwTW discharges, especially Phosphorus, usually by increasing treatment capacity to meet more stringent permit levels

- Investments at WwTWs to meet more stringent requirements under the Urban Waste Water Treatment (England and Wales) Regulations 1994, driven by population growth and to provide increased treatment capacity at septic tanks
- Increased monitoring at WwTWs, SPSs, emergency overflows, and in rivers close to our storm overflow discharge points
- Investment in bio-resources
- Investigations into future potential improvements in the treatment of nitrogen and microplastics

In all cases, we have reviewed a number of different options for each investment and have taken into account the wider environmental and societal benefits, including impacts on embodied and operational carbon. We also spoke to our customers about the types of investments, as well as solutions, that they would prefer to see in our plan. All of this, combined with a long-term 30-year view of Total Expenditure (Totex) expenditure allowed us to present a preferred option to the EA for assessment. The investments in the WINEP programme have been produced in alignment with our DWMP. The final WINEP programme is expected to be agreed in July 2023 and hence is not presented here in detail.

ODA Prioritisation

The RBCS and BRAVA steps identified the Level 3 TPUs that were likely to need interventions to mitigate future risk. The PC step then assessed the severity and timing of these risks from 2020 to 2050. To further prioritise ODA effort and future interventions, ODA performance thresholds were applied to all TPUs as follows:

- Collapse Risk – < 10 collapses
- Pollution & Flooding Risk – incidents < 0.1% catchment total, external issues, hydraulic issues, hotspots present
- Future Flood Risk (FFR) – < 5% properties at risk of internal flooding in a 1 in 50 event
- Storm Overflow (SO) Risk – < 10 spills from any SO
- WWTW Compliance – Best judgement

Where no thresholds were met, risk was considered low and TPUs did not proceed to ODA. Performance will continue to be monitored through the DWMP process.

The TPUs that proceeded to ODA were then classed as Standard, Extended or Complex based on the total risk score and quality of hydraulic models, to determine our ODA approach taken in ODA. Standard TPUs are small (average population 756) with simpler problems and more straightforward interventions. Extended TPUs are larger (average population 9,553), have more risks and more complicated solutions. Complex TPUs are the largest (average population 23,132) with more complex systems and solutions, but better hydraulic models.

***Table 23**: Level 3 TPUs - Progression through DWMP stages and ODA class*

TPU	RBCS	BRAVA	ODA	TPU Class
ABBOTSHAM_STW_ABBOTSHAM	YES	YES	YES	Standard
ASHFORD_STW_BARNSTAPLE	YES	YES	YES	Complex
ASHREIGNEY_STW_ASHREIGNEY	YES	YES	NO	N/A
BEAFORD_STW_BEAFORD	YES	YES	YES	Standard
BELSTONE & SOUTH TAWTON_STW_SOUTH TAWTON	YES	YES	YES	Standard
BISHOPS NYMPTON_STW_BISHOPS NYMPTON	YES	YES	YES	Standard
BLACK TORRINGTON_STW_BLACK TORRINGTON	YES	YES	YES	Standard
BOW_STW_BOW	YES	YES	YES	Standard
BRADWORTHY_STW_BRADWORTHY	YES	YES	YES	Standard
BUCKLAND BREWER_STW_BUCKLAND BREWER	YES	YES	YES	Standard
BURRINGTON_STW_BURRINGTON	YES	YES	YES	Standard
CHAWLEIGH_STW_CHAWLEIGH	YES	YES	NO	N/A
CHITTLEHAMPTON_STW_CHITTLEHAMPTON	YES	YES	NO	N/A
CHULMLEIGH_STW_CHULMLEIGH	YES	YES	NO	N/A
CORNBOROUGH_STW_BIDEFORD	YES	YES	YES	Complex
DOLTON_STW_DOLTON	YES	YES	YES	Standard
EXBOURNE_STW_OKEHAMPTON	YES	YES	YES	Standard
GOODLEIGH_STW_GOODLEIGH	YES	YES	YES	Standard
HARTLAND_STW_HARTLAND	YES	YES	YES	Standard
HATHERLEIGH_STW_HATHERLEIGH	YES	YES	YES	Standard
HIGH BICKINGTON_STW_HIGH BICKINGTON	YES	YES	NO	N/A
HIGHER CLOVELLY_STW_CLOVELLY CROSS	YES	YES	YES	Standard
HILL BARTON_STW_OKEHAMPTON	YES	YES	YES	Extended
HORNS CROSS_STW_HORNS CROSS	YES	YES	NO	N/A

TPU	RBCS	BRAVA	ODA	TPU Class
KNOWLE_STW_BRAUNTON	YES	YES	YES	Standard
LAPFORD_STW_LAPFORD	YES	YES	NO	N/A
LOVACOTT_STW_LOVACOTT	YES	YES	NO	N/A
LOWER CLOVELLY_STW_CLOVELLY	YES	YES	YES	Standard
MERTON_STW_MERTON	YES	YES	YES	Standard
MIDDLE MARWOOD_STW_MARWOOD	YES	YES	YES	Standard
MONKLEIGH_STW_MONKLEIGH	YES	YES	YES	Standard
MORCHARD BISHOP_STW_MORCHARD BISHOP	YES	YES	YES	Standard
NORTH MOLTON_STW_NORTH MOLTON	YES	YES	YES	Standard
NORTH TAWTON_STW_NORTH TAWTON	YES	YES	YES	Standard
NORTHLEW_STW_HATHERLEIGH	YES	YES	NO	N/A
PARKHAM_STW_PARKHAM	YES	YES	YES	Standard
PETROCKSTOWE_STW_PETROCKSTOW	YES	YES	YES	Standard
SAMPFORD COURTENAY_STW_SAMPFORD COURTENY	YES	YES	NO	N/A
SHEBBEAR_STW_SHEBBEAR	YES	YES	YES	Standard
SOUTH MOLTON_STW_SOUTH MOLTON	YES	YES	YES	Extended
STIBB CROSS_STW_TORRINGTON	YES	YES	YES	Standard
STOKE_STW_HARTLAND	YES	YES	YES	Standard
SUTCOMBE MILL_STW_SUTCOMBE	YES	YES	YES	Standard
TORRINGTON_STW_TORRINGTON	YES	YES	YES	Extended
WEARE GIFFARD_STW_WEARE GIFFARD	YES	YES	YES	Extended
WESTDOWN_STW_WEST DOWN	YES	YES	YES	Standard
WINKLEIGH_STW_WINKLEIGH	YES	YES	YES	Standard
WITHERIDGE_STW_WITHERIDGE	YES	YES	YES	Standard
WOOLSERY_STW_WOOLFARDISWORTHY	YES	YES	NO	N/A
ZEAL MONACHORUM_STW_ZEAL	YES	YES	YES	Standard

TPU	RBCS	BRAVA	ODA	TPU Class
MONACHORUM				
ALLINGTON TERRACE_STW_MORCHARD ROAD	YES	NO	NO	N/A
ALSWEAR NO 1 S T_STW_ALSWEAR	YES	NO	NO	N/A
ALSWEAR NO 2 S T_SEPTNK_ALSWEAR	YES	NO	NO	N/A
ALVERDISCOTT_STW_ALVERDISCOTT	YES	NO	NO	N/A
ASHFORD MEADOWSIDE_STW_ASHFORD	YES	NO	NO	N/A
ATHERINGTON_STW_ATHERINGTON	YES	NO	NO	N/A
BALLS CORNER_STW_BURRINGTON	YES	NO	NO	N/A
BAXWORTHY S T_STW_HARTLAND	YES	NO	NO	N/A
BLACK DOG_STW_BLACK DOG	YES	NO	NO	N/A
BRADFORD_STW_BRADFORD	YES	NO	NO	N/A
BRATTON FLEMING S T_STW_BRATTON FLEMING	YES	NO	NO	N/A
BRATTON FLEMING_STW_BRATTON FLEMING	YES	NO	NO	N/A
BRAYFORD_STW_BRAYFORD	YES	NO	NO	N/A
BROADWOODKELLY_STW_BROADWOODKELLY	YES	NO	NO	N/A
CHALLACOMBE S T_STW_CHALLACOMBE	YES	NO	NO	N/A
CHARLES S T_STW_CHARLES	YES	NO	NO	N/A
CHITTLEHAMHOLT_STW_CHITTLEHAMHOLT	YES	NO	NO	N/A
CLEVELANDS PARK_STW_BIDEFORD	YES	NO	NO	N/A
COBBATON_STW_COBBATON	YES	NO	NO	N/A
COLDRIDGE_STW_COLDRIDGE	YES	NO	NO	N/A
CRANFORD S T_STW_WOOLSERY	YES	NO	NO	N/A
DARRACOTT_STW_DARRACOTT	YES	NO	NO	N/A
DOWN ST MARY_STW_DOWN ST MARY	YES	NO	NO	N/A
DYKE GREEN_STW_CLOVELLY	YES	NO	NO	N/A
EAST YARDE_STW_PETERS MARLAND	YES	NO	NO	N/A

TPU	RBCS	BRAVA	ODA	TPU Class
EGGESFORD FOURWAYS_STW_EGGESFORD	YES	NO	NO	N/A
FOLLY GATE_STW_OKEHAMPTON	YES	NO	NO	N/A
FORD AND FAIRY CROSS_STW_FORD	YES	NO	NO	N/A
FRITHELSTOCKSTONE_STW_FRITHELSTOCKSTONE	YES	NO	NO	N/A
GAMMATON S T_STW_GAMMATON	YES	NO	NO	N/A
GEORGE NYMPTON_STW_GEORGE NYMPTON	YES	NO	NO	N/A
HALSBURY S T_STW_PARKHAM	YES	NO	NO	N/A
HIGH BRAY S T_STW_HIGH BRAY	YES	NO	NO	N/A
HIGHAMPTON_STW_HATHERLEIGH	YES	NO	NO	N/A
HOLLOCOMBE BARTON CLOSE_STW_HOLLOCOMBE	YES	NO	NO	N/A
HOLLOCOMBE_STW_HOLLOCOMBE	YES	NO	NO	N/A
HOLSWORTHY BEACON_STW_HOLSWORTHY	YES	NO	NO	N/A
HUNTSHAW S T_STW_HUNTSHAW CROSS	YES	NO	NO	N/A
IDDESLEIGH_STW_IDDESLEIGH	YES	NO	NO	N/A
JACOBSTOWE_STW_OKEHAMPTON	YES	NO	NO	N/A
KINGS NYMPTON NORTH_STW_KINGS NYMPTON	YES	NO	NO	N/A
KINGS NYMPTON SOUTH_STW_KINGS NYMPTON	YES	NO	NO	N/A
KINGSCOTT_STW_KINGSCOTT	YES	NO	NO	N/A
KNOWSTONE EAST_STW_KNOWSTONE	YES	NO	NO	N/A
KNOWSTONE VILLAGE_STW_KNOWSTONE	YES	NO	NO	N/A
LANGTREE_STW_LANGTREE	YES	NO	NO	N/A
LITTLE TORRINGTON_STW_LITTLE TORRINGTON	YES	NO	NO	N/A
LITTLEHAM_STW_LITTLEHAM	YES	NO	NO	N/A
MEETH_STW_MEETH	YES	NO	NO	N/A

TPU	RBCS	BRAVA	ODA	TPU Class
MESHAW MOOR_STW_SOUTH MOLTON	YES	NO	NO	N/A
MESHAW_STW_SOUTH MOLTON	YES	NO	NO	N/A
MILTON DAMEREL_STW_MILTON DAMEREL	YES	NO	NO	N/A
MOLLAND EAST_STW_MOLLAND	YES	NO	NO	N/A
MOLLAND WEST_STW_MOLLAND	YES	NO	NO	N/A
MONKOKEHAMPTON_STW_OKEHAMPTON	YES	NO	NO	N/A
NATCOTT_STW_HARTLAND	YES	NO	NO	N/A
NEWTON ST PETROCK S T_STW_NEWTON ST PETR	YES	NO	NO	N/A
NOMANSLAND_STW_NOMANSLAND	YES	NO	NO	N/A
NYMET ROWLAND_STW_NYMET ROWLAND	YES	NO	NO	N/A
PARKGATE S T_STW_UMBERLEIGH	YES	NO	NO	N/A
PETERS MARLAND S T_STW_LANGTREE	YES	NO	NO	N/A
RACKENFORD_STW_RACKENFORD	YES	NO	NO	N/A
RIDDLECOMBE S T_STW_RIDDLECOMBE	YES	NO	NO	N/A
ROBOROUGH_STW_ROBOROUGH	YES	NO	NO	N/A
ROMANSLEIGH_STW_ROMANSLEIGH	YES	NO	NO	N/A
ROSEDOWN S T_STW_HARTLAND	YES	NO	NO	N/A
RUXFIELD S T_STW_KENTISBURY	YES	NO	NO	N/A
SALTRENS_STW_MONKLEIGH	YES	NO	NO	N/A
SAMPFORD CHAPPLE_STW_NORTH TAWTON	YES	NO	NO	N/A
SESSACOTT S T_STW_WEST PUTFORD	YES	NO	NO	N/A
SHEEPWASH_STW_SHEEPWASH	YES	NO	NO	N/A
SHIRWELL_STW_SHIRWELL	YES	NO	NO	N/A
SPREYTON_STW_SPREYTON	YES	NO	NO	N/A
ST GILES IN THE WOOD_STW_TORRINGTON	YES	NO	NO	N/A
STOKE RIVERS_STW_STOKE RIVERS	YES	NO	NO	N/A

TPU	RBCS	BRAVA	ODA	TPU Class
STONY CROSS_STW_HORWOOD	YES	NO	NO	N/A
THORNBURY_STW_THORNBURY	YES	NO	NO	N/A
TWITCHEN HILL S T_STW_BUCKLAND BREWER	YES	NO	NO	N/A
UMBERLEIGH S T_STW_UMBERLEIGH	YES	NO	NO	N/A
WEMBWORTHY NEW_STW_WEMBWORTHY	YES	NO	NO	N/A
WEST BUCKLAND_STW_WEST BUCKLAND	YES	NO	NO	N/A
WHITEHALL LANDCROSS_STW_BIDEFORD	YES	NO	NO	N/A
WOODTOWN_STW_BIDEFORD	YES	NO	NO	N/A
YARNSCOMBE_STW_YARNSCOMBE	YES	NO	NO	N/A
YEO MILL S T_STW_WEST ANSTEY	YES	NO	NO	N/A

Of the 135 TPUs in the Taw-Torridge catchment, 50 proceeded through RBCS to BRAVA (the 85 remaining catchments had 1 or no indicators breached, and if 1 indicator was breached it was not tier 1) and 39 proceeded to ODA. Of these, 33 were classed as Standard, 4 Extended and 2 Complex.

Intervention Selection and Assessment

Catchment area teams reviewed each TPU and assigned up to 3 interventions to address the specific catchment risks from the standard list in the DWMP guidance (Table 24 below).

***Table 24**: Generic Interventions*

Management Area/Option Type	Description	Generic option examples- Standard TPU's	Sub-option examples- Extended & Complex TPU's	Option ID
Customer side management options	Generic options to manage the use of water in and arising from customer properties	Water efficient appliances	Promote and make available water efficient appliances to reduce production of domestic wastewater	CE1
		Rainwater harvesting	Promote and make available rainwater harvesting systems	CE2
		Customer incentives	Promotion of incentives to reduce impermeable areas	CE3
		Domestic and business customer education (Targeted Customer Behaviours)	Love Your Loo, etc. Likely focus at L1; however, where location specific issues are identified activities could be targeted around what should and shouldn't be put down sewers	CE4
Surface water management - Pollution & Flooding, Overflows	Generic options within catchments to manage surface water flows entering the conveyance system	Surface water source control measures	Company installation of source control sustainable drainage systems (SuDS)	SWM1
		Surface water source control measures	SuDS partnerships with key stakeholders	SWM2
		Surface water source control measures	Upper Catchment Solution/Upstream Thinking	SWM3
		Surface water pathway measures	Separate surface water from combined systems by constructing new surface water networks (and/or	SWM4

Management Area/Option Type	Description	Generic option examples- Standard TPU's	Sub-option examples- Extended & Complex TPU's	Option ID
			modify existing)	
		Surface water pathway measures	Integrate surface water pathway measures into new and upgraded third party designs	SWM5
		Surface water infiltration measures	Develop a program to reduce Surface Water Infiltration	SWM6
Combined and foul sewer systems - Overflows, Pollution & Flooding Collapses	Generic options to manage flows within the conveyance system to minimise impacts on customers and the environment	Intelligent network operation	Implement widespread sewer/pumping station level monitoring, live network modelling linked to operational responses such as proactive jetting	CFS1
		Increase the capacity of existing foul/combined networks	Construct new stormwater storage systems	CFS2
		Increase the capacity of existing foul/combined networks	Replace or upgrade existing networks	CFS3
		Wastewater transfers	Inter-catchment network transfers	CFS4
		Wastewater transfers	inter-catchment WwTW transfers	CFS5
Wastewater treatment	Generic options to manage flows and loads at wastewater treatment works to minimise impacts on customers and the environment	Treat or pre-treat wastewater in the network	Treat or pre-treat flows at existing pumping stations or within sewer network	WWT1
		Increase treatment capacity	Upgrade existing works using more intensive processes	WWT2

Management Area/Option Type	Description	Generic option examples- Standard TPU's	Sub-option examples- Extended & Complex TPU's	Option ID
		Increase treatment capacity	Add additional process streams (increase plant capacity)	WWT3
		Treatment works rationalisation/ decentralisation	Replace existing treatment works with one large scale installation	WWT4
		Treatment works rationalisation/ decentralisation	Replace existing treatment works with several smaller scale installations	WWT5
		Modify consents and permits	Catchment consenting	WWT7
		Modify consents and permits	Adaptive consenting (e.g. "wet weather" relaxation)	WWT8
		Catchment management initiatives	Initiatives to address fertiliser use and application	WWT9

These initial selections were then subject the following checks and reviews:

- Internal review by Catchment Managers (all) and WwTW experts (WwTW)
- External review by key stakeholders (all)
- Internal hydraulic modelling of selected catchments and extrapolation of modelling results to non-modelled catchments (FFR and SO risk)
- Internal review of the above by DWMP team

Intervention Quantification and Costing

Preferred interventions were quantified using modelling and extrapolation. Up to 5 final interventions were selected, reflecting the need for a combination of solutions. Costs were provided by South West Water's cost consultants, using approved cost models based on South West Water data where possible, and from past South West Water scheme data or industry recognised estimates if not.

The approach was different for different risks:

Collapses – Quantification and costing not included in DWMP. Risks and interventions noted but plan already covered by wider programme of sewer rehabilitation and repairs.

Pollution & Flooding – Quantification and costing included in DWMP only where an enhancement over and above existing programmes of work were recommended.

Future Flood Risk (FFR) – 26 Complex catchments were hydraulically modelled to assess options to address risk. The results were used to extrapolate to non-modelled catchments. It was assumed at the outset that Nature Based solutions such as Sustainable drainage systems (SuDS) were a possibility wherever surface water separation (SWS) was suggested. Suitability of SuDS for surface water separation assessed at high level using Stantec's GIS based Surface Water Assessment Tool (SWAT) analysis.

Storm Overflows (SO) - 12 catchments (8 complex 4 extended) were selected for hydraulic modelling to give coverage of 233 SOs (c.20% of South West Water total) and a representative sample of receiving waters. Results were used to extrapolate to non-modelled DWMP TPUs. To meet the later DEFRA SO guidance, a separate top-down desktop model based on Event Duration Monitor (EDM) spill data was developed to assess total need for all TPUs.

WWTW Performance – Analyses of Biological Oxygen Demand (BOD) Capacity and DWF permit compared with future population and flow projections were used to assess sites at future risk of meeting permit requirements. The scale of upgrades needed was estimated using a calculation of the increase in population equivalent PE or additional capacity in cubic metres required at the works.

Results - Interventions

Table 25 below outlines the final interventions selected for the TPUs in the Taw-Torridge catchment, along with potential solutions involving partnership working or nature-based solutions. The intervention codes applied are defined in Table 24 above.

***Table 25**: TPU interventions selection and feedback*

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
ABBOTSHAM_STW_ABBOTSHAM	Standard	SWW: N/A for catchment transfer	SWW: N/A for catchment transfer	CFS2	SWM6	WWT3			Wastewater treatment interventions WWT3, Combined and foul sewer systems CFS2 and SWM6 added. CFS5 Removed
ASHFORD_STW_BARNSTAPLE	Complex	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6	WWT3		Combined and foul sewer systems CFS2 and Surface water management SWM4 and SWM6 carried over
BEAFORD_STW_BEAFORD	Standard	SWW: Potential	SWW: Potential	WWT3					Wastewater treatment

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
		SUDS for SW separation	SUDS						intervention WWT3 carried over, both Surface water management interventions removed
BELSTONE & SOUTH TAWTON_STW _SOUTH TAWTON	Standard	SWW: Potential SUDS for SW separation. Potential UST identified	SWW: Potential SUDS / UST	CFS2	SWM4	SWM6	WWT3		Wastewater treatment intervention WWT3 added. Surface water management intervention SWM3 removed, SWM4 and SWM6 carried over. CFS2 remains the same.
BISHOPS NYMPTON_ST W_BISHOPS NYMPTON	Standard	SWW: Potential SUDS for SW separation identified	SWW: Potential SUDS identified	CFS2	SWM4	SWM6	SWM2		Combined and foul sewer systems CFS2 added. Wastewater treatment WWT3

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									removed. Surface water management SWM6 and SWM4 carried over.
BLACK TORRINGTON_ STW_BLACK TORRINGTON	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6			Combined and foul sewer system CFS2 carried over with both Surface water management interventions SWM4 and SWM6.
BOW_STW_BO W	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	WWT3					Wastewater treatment intervention WWT3 carried over, both Surface water management interventions removed alongside CFS2
BRADWORTHY _STW_BRADW	Standard	SWW: Potential	SWW: Potential	CFS2	SWM4	SWM6			Wastewater treatment

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
ORTHY		SUDS for SW separation	SUDS						intervention WWT3 and WWT2 removed. Combined and foul sewer systems CFS2 carried over with SWM4 and SWM6.
BUCKLAND BREWER_STW _BUCKLAND BREWER	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	WWT3					Wastewater treatment intervention WWT3 carried over but WWT2 removed, both Surface water management interventions removed, Combined and foul sewer systems CFS2 also removed
BURRINGTON_ STW_BURRING TON	Standard	SWW: Potential SUDS for SW	SWW: Potential SUDS	WWT3					Wastewater treatment intervention

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
		separation							WWT3 carried over but WWT2 removed, both Surface water management interventions removed, Combined and foul sewer systems CFS2 also removed
CORNBOROUGH_STW_BIDEFORD	Complex	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6			Combined and foul sewer systems CFS2 carried over with Surface water management SWM4 and SWM6. CFS4 removed.
DOLTON_STW_DOLTON	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	WWT3					Wastewater treatment intervention WWT3 carried over. WWT2 removed, both

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									SWM4 & SWM6 Surface water management interventions removed, Combined and foul sewer systems CFS2 also removed
EXBOURNE_STW_OKEHAMPTON	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6	WWT3		Combined and foul sewer systems CFS2, Surface water management intervention SWM4 and SWM6 and WWT3 Wastewater treatment carried over.
GOODLEIGH_STW_GOODLEIGH	Standard	SWW: N/A as proposing transfer	SWW: N/A for catchment transfer	CFS2	SWM4	SWM6	WWT3		Combined and foul sewer systems CFS2, Surface water management intervention

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									SWM4 and SWM6 and WWT3 Wastewater treatment added. Combined and foul sewer systems CFS5 removed.
HARTLAND_STW_HARTLAND	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	WWT3					Wastewater treatment intervention WWT3 carried over, both Surface water management interventions removed, Combined and foul sewer systems CFS2 also removed.
HATHERLEIGH_STW_HATHERLEIGH	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6	WWT3		Wastewater treatment WWT2 removed. Surface Water

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									management SWM4 carried over with WWT3. Surface Wate management SWM6 added in.
HIGHER CLOVELLY_STW_CLOVELLY CROSS	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	WWT3					Wastewater treatment WWT2, Surface water management SWM4 & SWM6 and Combined and foul sewer systems CFS2 removed. Wastewater treatment WWT3 added.
HILL BARTON_STW_OKEHAMPTON	Extended	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6	WWT3		Surface Water Management SWM4, SWM6 and Combined and foul sewer systems SFS2

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									carried over. Wastewater treatment WWT3 added.
KNOWLE_STW _BRAUNTON	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6	WWT3		Combined and Foul sewer systems CFS2, Surface Water management SWM2 and SWM6 carried over. Wastewater treatment WWT3 added.
LOWER CLOVELLY_ST W_CLOVELLY	Standard	SWW: Potential SUDS for SW separation identified	SWW: Potential SUDS identified	CFS2	SWM4	SWM6	SWM2		Combined and foul sewer systems CFS2 and Surface Water Management SWM2, SWM6 and SWM4 carried over.
MERTON_STW _MERTON	Standard	SWW: Potential SUDS for SW	SWW: Potential SUDS	CFS2	SWM4	SWM6	WWT3		Combined and foul sewer systems CFS2, Wastewater

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
		separation							treatment intervention WWT3 and Surface water management SWM4 and SWM6 carried over
MIDDLE MARWOOD_STW_MARWOOD	Standard	SWW: Potential SUDS for SW separation identified	SWW: Potential SUDS identified	CFS2	SWM4	SWM2	WWT3		Combined and foul sewer systems CFS2 and Surface water management SWM4 & SWM2 carried over. Surface water management SWM6 removed. Wastewater treatment WWT3 added.
MONKLEIGH_STW_MONKLEIGH	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6			Wastewater treatment intervention WWT3

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									removed. Combined and foul sewer systems CFS2 and Surface water management SWM4 and SWM6 carried over
MORCHARD BISHOP_STW_ MORCHARD BISHOP	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6	WWT3		Wastewater treatment intervention WWT2 removed, WWT3 carried over. Combined and foul sewer systems CFS2 and Surface water management SWM4 and SWM6 carried over
NORTH MOLTON_STW	Standard	SWW: Potential	SWW: Potential	CFS2	SWM4	SWM6	WWT3		Wastewater treatment

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
_NORTH MOLTON		SUDS for SW separation	SUDS						intervention WWT2 removed. Combined and foul sewer systems CFS2 and Surface water management SWM4 and SWM6 carried over
NORTH TAWTON_STW _NORTH TAWTON	Standard	SWW: Potential SUDS for SW separation identified	Short term, EA: EA scheme feasibility soon, collaboration possible after SWW: Potential SUDS identified	CFS2	SWM4	SWM6	SWM2		Wastewater treatment intervention WWT3 removed. Combined and foul sewer systems CFS2 and Surface water management SWM2, SWM4 and SWM6 carried over.
PARKHAM_STW_PARKHAM	Standard	SWW: Potential	SWW: Potential	CFS2	SWM4	SWM6	WWT3		Combined and foul sewer

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
		SUDS for SW separation	SUDS						systems CFS2, Surface water management SWM4 & SWM6 and Wastewater treatment WWT3 carried over.
PETROCKSTOWE_STW_PETROCKSTOW	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6			Wastewater treatment intervention WWT3 removed. Combined and foul sewer systems CFS2 and Surface water management SWM4 and SWM6 carried over
SHEBBEAR_STW_SHEBBEAR	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	SWM6	WWT3		Combined and foul sewer systems CFS2, Wastewater treatment

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									intervention WWT3 and Surface water management SWM4 and SWM6 carried over. Wastewater treatment WWT2 removed.
SOUTH MOLTON_STW _SOUTH MOLTON	Extended	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	WWT3			Customer side management options CE4 and Surface water management SWM6 removed. Wastewater treatment intervention WWT3 added. Combined and foul sewer systems CFS2 and Surface water management

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									SWM4 carried over
STIBB CROSS_STW_TORRINGTON	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS				WWT3		Wastewater treatment intervention WWT2, Surface water management SWM4 and SWM6 and Combined and foul sewer systems CFS2 removed. Wastewater treatment intervention WWT3 was added
STOKE_STW_HARTLAND	Standard	SWW: Assume no potential unless advised by WWTW team	SWW: Assume no potential	WWT3					Combined and foul sewer systems CFS2 and CFS5 removed, Surface water management SWM6 removed,

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									replaced with Wastewater treatment intervention WWT3
SUTCOMBE MILL_STW_SUTCOMBE	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	WWT3					Wastewater treatment intervention WWT3 carried over but Surface water management SWM4 removed
TORRINGTON_STW_TORRINGTON	Extended	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4				Combined and foul sewer systems CFS2 and Surface water management SWM4 carried over. Combined and foul sewer systems CFS1 and Surface water management

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									SWM6 removed.
WEARE GIFFARD_STW _WEARE GIFFARD	Extended	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	CFS2	SWM4	WWT3			Combined and foul sewer systems CFS2, Surface water management SWM4 and wastewater treatment WWT3 carried over. Surface water management SWM6 removed.
WESTDOWN_S TW_WEST DOWN	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS	SWM6	WWT3				Wastewater treatment WWT3 and Surface water management SWM6 carried over. Combined and foul sewer systems CFS2, Surface water management

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
									SWM4 and Wastewater treatment WWT2 removed.
WINKLEIGH_STW_WINKLEIGH	Standard	SWW: Potential SUDS for SW separation	SWW: Potential SUDS, Highway scheme	SWM6	WWT3				Wastewater treatment WWT3 and Surface water management SWM6 carried over. Surface water management SWM5 & SWM4 and Combined and foul sewer systems CFS2 removed.
WITHERIDGE_STW_WITHERIDGE	Standard	SWW: Assume no potential unless advised by WWTW team	SWW: Assume no potential	WWT3					Wastewater treatment WWT3 carried over. Wastewater treatment WWT2 removed.

TPU	Class	Nature based solutions assessment Comments	Partnership working potential Comments	Final #1	Final #2	Final #3	Final #4	Final #5	Final DWMP ODA assessment summary
ZEAL MONACHORUM_STW_ZEAL MONACHORUM	Standard	SWW: Potential SUDS for SW separation	0	WWT3					Wastewater treatment interventions WWT3 carried over, Surface water management SWM4 and SWM6, Wastewater treatment interventions WWT2 and Combined and foul sewer systems CFS2 removed.

For the Taw-Torridge catchment, 39 TPUs progressed to ODA. Stakeholder feedback was received on 10 TPUs. The feedback was mainly on the need to:

- Consult the EA and partners on potential Surface Water Separation (SWS) plans
- Consider links to surface water, fluvial and sea flooding, planned schemes
- Consider coastal erosion risk

Potential Nature Based Solutions were identified for 12 catchments (largely SuDS for Surface Water Separation) and partnership opportunities were identified for 12 catchments (largely on SWS/SuDS).

Table 26 below summarises the final interventions selected now that the ODA stage is complete.

***Table 26**: Initial and Final Interventions selected by intervention type*

INTERVENTION	Total selected Final
CE1: Promote and make available water efficient appliances to reduce production of domestic wastewater	0
CE2: Promote and make available rainwater harvesting systems	0
CE3: Promotion of incentives to reduce impermeable areas	0
CE4: Love Your Loo, etc	0
SWM1: Company installation of source control sustainable drainage systems (SuDS)	0
SWM2: SuDS partnerships with key stakeholders	4
SWM3: Upper Catchment Solution/Up Stream Thinking	0
SWM4: Separate surface water from combined systems by constructing new surface water networks (and/or modify existing)	24
SWM5: Integrate surface water pathway measures into new and upgraded third party designs	0
SWM6: Develop a program to reduce infiltration	23
CFS1: Implement widespread sewer/pumping station level monitoring, live; network modelling linked to operational responses such as proactive jetting	0
CFS2: Construct new combined or foul storage systems	25
CFS3: Replace or upgrade existing networks	0
CFS4: Inter-catchment network transfers	0
CFS5: inter-catchment WwTW's transfers	0

INTERVENTION	Total selected Final
WWT1: Treat or pre-treat flows at existing pumping stations or within sewer network	0
WWT2: Upgrade existing works using more intensive processes	0
WWT3: Add additional process streams (increase plant capacity)	30
WWT4: Replace existing treatment works with one large scale installation	0
WWT5: Replace existing treatment works with several smaller scale installations	0
WWT7: Catchment consenting	0
WWT8: Adapative consenting (e.g. "wet weather" relaxation)	0
WWT9: Initiatives to address fertiliser use and application	0
Total	106

There were no interventions selected in the Taw-Torridge catchment for customer education, although education to promote water efficiency, rainwater harvesting, reducing impermeable areas and preventing sewer misuse will be delivered across the region as part of a company-wide initiative. There were no interventions selected for CFS1 monitoring to direct proactive jetting effort to manage flooding and pollution incidents due to blockages.

Construction of storage systems (CFS2) was recommended based on the results of modelling for storm overflow risk and the preferred solution being a combination of surface water separation and storage.

Where a strategic network or treatment intervention was selected (CFS4,5 WWT4,5) the selection was noted but not progressed under DWMP. These strategic decisions will lead to bespoke plans which will be revisited for PR24 and captured separately in the programme.

The ODA process led to a lot more Surface Water Management (SWM) interventions being selected. Infiltration (SWM6) was selected in all catchments, with the view that this would be the first task to help understand flows and identify opportunities for Surface Water Separation (SWM4), SuDS (SWM1,2) and other nature-based solutions such as Upstream Thinking and Natural Flood Management (SWM3). Our assumption is that unless specifically ruled out, Nature Based solutions such as SuDS will be possible, so they will be explored wherever surface water separation was selected.

Results – Quantities

Table 27 below outlines the quantities of interventions proposed by the DWMP for the Taw-Torridge catchment.

***Table 27**: Quantities for proposed interventions*

TPU	Storage (m3)	SWS (ha)	Network Enhancement (km)	No. WWTW for Capacity increase	No. WWTW for DWF increase	No. WWTW for Nutrient reduction
ABBOTSHAM_STW_ABBOTSHAM	7,820	0.00	2.62	1	0	1
ALLINGTON TERRACE_STW_MORCHARD ROAD	0	0.00	0.00	0	0	0
ALSWEAR NO 1 S T_STW_ALSWEAR	0	0.00	0.00	0	0	0
ALSWEAR NO 2 S T_SEPTNK_ALSWEAR	0	0.00	0.00	0	0	0
ALVERDISCOTT_STW_ALVERDISCOTT	0	0.00	0.00	0	0	0
ASHFORD MEADOWSIDE_STW_ASHFORD	0	0.00	0.00	0	0	0
ASHFORD_STW_BARNSTAPLE	13,125	32.94	3.88	1	1	0
ASHREIGNEY_STW_ASHREIGNEY	0	0.00	0.00	0	0	0
ATHERINGTON_STW_ATHERINGTON	0	0.00	0.00	0	0	0
BALLS CORNER_STW_BURRINGTON	0	0.00	0.00	0	0	0
BAXWORTHY S T_STW_HARTLAND	0	0.00	0.00	0	0	0
BEAFORD_STW_BEAFORD	0	0.00	0.00	0	0	1
BELSTONE & SOUTH TAWTON_STW_SOUTH TAWTON	3,053	6.65	11.12	0	0	1
BISHOPS NYMPTON_STW_BISHOPS NYMPTON	579	3.26	0.97	0	0	0
BLACK DOG_STW_BLACK DOG	0	0.00	0.00	0	0	0
BLACK TORRINGTON_STW_BLACK TORRINGTON	5,560	5.48	1.32	0	0	0

TPU	Storage (m3)	SWS (ha)	Network Enhancement (km)	No. WWTW for Capacity increase	No. WWTW for DWF increase	No. WWTW for Nutrient reduction
BOW_STW_BOW	0	0.00	0.00	1	0	0
BRADFORD_STW_BRADFORD	0	0.00	0.00	0	0	0
BRADWORTHY_STW_BRADWORTHY	3,482	5.02	3.17	0	0	0
BRATTON FLEMING S T_STW_BRATTON FLEMING	0	0.00	0.00	0	0	0
BRATTON FLEMING_STW_BRATTON FLEMING	0	0.00	0.00	0	0	1
BRAYFORD_STW_BRAYFORD	0	0.00	0.00	0	0	0
BROADWOODKELLY_STW_BROADWOODKELLY	0	0.00	0.00	0	0	0
BUCKLAND BREWER_STW_BUCKLAND BREWER	0	0.00	0.00	1	0	1
BURRINGTON_STW_BURRINGTON	0	0.00	0.00	1	0	0
CHALLACOMBE S T_STW_CHALLACOMBE	0	0.00	0.00	0	0	0
CHARLES S T_STW_CHARLES	0	0.00	0.00	0	0	0
CHAWLEIGH_STW_CHAWLEIGH	82	1.34	1.99	0	0	1
CHITTLEHAMHOLT_STW_CHITTLEHAMHOLT	0	0.00	0.00	0	0	0
CHITTLEHAMPTON_STW_CHITTLEHAMPTON	5,000	5.73	1.89	0	0	1
CHULMLEIGH_STW_CHULMLEIGH	7,820	5.94	4.93	0	0	0
CLEVELANDS PARK_STW_BIDEFORD	0	0.00	0.00	0	0	0
COBBATON_STW_COBBATON	0	0.00	0.00	0	0	0
COLDRIDGE_STW_COLDRIDGE	0	0.00	0.00	0	0	0
CORNBOROUGH_STW_BIDEF	6,847	25.82	14.38	0	0	0

TPU	Storage (m3)	SWS (ha)	Network Enhancement (km)	No. WWTW for Capacity increase	No. WWTW for DWF increase	No. WWTW for Nutrient reduction
ORD						
CRANFORD S T_STW_WOOLSERY	0	0.00	0.00	0	0	0
DARRACOTT_STW_DARRACOT T	0	0.00	0.00	0	0	0
DOLTON_STW_DOLTON	0	0.00	0.00	1	0	1
DOWN ST MARY_STW_DOWN ST MARY	0	0.00	0.00	0	0	0
DYKE GREEN_STW_CLOVELLY	0	0.00	0.00	0	0	0
EAST YARDE_STW_PETERS MARLAND	0	0.00	0.00	0	0	0
EGGESFORD FOURWAYS_STW_EGGESFOR D	0	0.00	0.00	0	0	0
EXBOURNE_STW_OKEHAMPT ON	458	3.03	1.41	1	1	1
FOLLY GATE_STW_OKEHAMPTON	0	0.00	0.00	0	0	0
FORD AND FAIRY CROSS_STW_FORD	0	0.00	0.00	0	0	0
FRITHELSTOCKSTONE_STW_F RITHELSTOCKSTONE	0	0.00	0.00	0	0	0
GAMMATON S T_STW_GAMMATON	0	0.00	0.00	0	0	0
GEORGE NYMPTON_STW_GEORGE NYMPTON	0	0.00	0.00	0	0	0
GOODLEIGH_STW_GOODLEIG H	45	0.75	0.98	0	0	1
HALSBURY S T_STW_PARKHAM	0	0.00	0.00	0	0	0
HARTLAND_STW_HARTLAND	0	0.00	0.00	1	0	1
HATHERLEIGH_STW_HATHERL EIGH	1,342	9.01	6.15	1	1	1

TPU	Storage (m3)	SWS (ha)	Network Enhancement (km)	No. WWTW for Capacity increase	No. WWTW for DWF increase	No. WWTW for Nutrient reduction
HIGH BICKINGTON_STW_HIGH BICKINGTON	889	3.68	3.01	0	0	1
HIGH BRAY S T_STW_HIGH BRAY	0	0.00	0.00	0	0	0
HIGHAMPTON S T_STW_HATHERLEIGH	0	0.00	0.00	0	0	1
HIGHER CLOVELLY_STW_CLOVELLY CROSS	0	0.00	0.00	1	0	0
HILL BARTON_STW_OKEHAMPTON	1,004	9.73	33.60	0	0	1
HOLLOCOMBE BARTON CLOSE_STW_HOLLOCOMBE	0	0.00	0.00	0	0	0
HOLLOCOMBE_STW_HOLLOCOMBE	0	0.00	0.00	0	0	0
HOLSWORTHY BEACON_STW_HOLSWORTHY	0	0.00	0.00	0	0	0
HORNS CROSS_STW_HORNS CROSS	0	0.00	0.00	0	0	0
HUNTSHAW S T_STW_HUNTSHAW CROSS	0	0.00	0.00	0	0	0
IDDESLEIGH_STW_IDDESLEIGH	0	0.00	0.00	0	0	0
JACOBSTOWE_STW_OKEHAMPTON	0	0.00	0.00	0	0	0
KINGS NYMPTON NORTH_STW_KINGS NYMPTON	0	0.00	0.00	0	0	0
KINGS NYMPTON SOUTH_STW_KINGS NYMPTON	0	0.00	0.00	0	0	0
KINGSCOTT_STW_KINGSCOTT	0	0.00	0.00	0	0	0
KNOWLE_STW_BRAUNTON	458	3.03	0.89	0	0	1
KNOWSTONE	0	0.00	0.00	0	0	0

TPU	Storage (m3)	SWS (ha)	Network Enhancement (km)	No. WWTW for Capacity increase	No. WWTW for DWF increase	No. WWTW for Nutrient reduction
EAST_STW_KNOWSTONE						
LANGTREE_STW_LANGTREE	0	0.00	0.00	0	0	0
LAPFORD_STW_LAPFORD	0	0.00	0.00	0	0	1
LITTLE TORRINGTON_STW_LITTLE TORRINGTON	0	0.00	0.00	0	0	0
LITTLEHAM_STW_LITTLEHAM	0	0.00	0.00	0	0	0
LOVACOTT_STW_LOVACOTT	0	0.00	0.00	0	0	0
LOWER CLOVELLY_STW_CLOVELLY	458	3.03	0.94	0	0	0
MEETH_STW_MEETH	0	0.00	0.00	0	0	1
MERTON_STW_MERTON	194	2.18	1.78	1	0	0
MESHAW MOOR_STW_SOUTH MOLTON	0	0.00	0.00	0	0	0
MESHAW_STW_SOUTH MOLTON	0	0.00	0.00	0	0	0
MIDDLE MARWOOD_STW_MARWOOD	694	7.94	0.00	0	0	1
MILTON DAMEREL_STW_MILTON DAMEREL	0	0.00	0.00	0	0	0
MOLLAND EAST_STW_MOLLAND	0	0.00	0.00	0	0	0
MOLLAND WEST_STW_MOLLAND	0	0.00	0.00	0	0	0
MONKLEIGH_STW_MONKLEIGH	48	0.80	1.10	0	0	0
MONKOKEHAMPTON_STW_OKEHAMPTON	0	0.00	0.00	0	0	0
MORCHARD BISHOP_STW_MORCHARD BISHOP	108	1.61	3.57	0	0	1
NATCOTT_STW_HARTLAND	0	0.00	0.00	0	0	0

TPU	Storage (m3)	SWS (ha)	Network Enhancement (km)	No. WWTW for Capacity increase	No. WWTW for DWF increase	No. WWTW for Nutrient reduction
NEWTON ST PETROCK S T_STW_NEWTON ST PETR	0	0.00	0.00	0	0	0
NOMANSLAND_STW_NOMANSLAND	0	0.00	0.00	0	0	0
NORTH MOLTON_STW_NORTH MOLTON	7,820	6.43	2.64	1	0	1
NORTH TAWTON_STW_NORTH TAWTON	620	5.67	6.01	0	0	0
NORTHLEW_STW_HATHERLEIGH	142	1.88	1.35	0	0	1
NYMET ROWLAND_STW_NYMET ROWLAND	0	0.00	0.00	0	0	0
PARKGATE S T_STW_UMBERLEIGH	0	0.00	0.00	0	0	0
PARKHAM_STW_PARKHAM	136	2.30	1.04	1	1	1
PETERS MARLAND S T_STW_LANGTREE	0	0.00	0.00	0	0	0
PETROCKSTOWE_STW_PETROCKSTOW	424	2.95	2.09	0	0	0
RACKENFORD_STW_RACKENFORD	0	0.00	0.00	0	0	0
RIDDLECOMBE S T_STW_RIDDLECOMBE	0	0.00	0.00	0	0	0
ROBOROUGH_STW_ROBOROUGH	0	0.00	0.00	0	0	0
ROMANSLEIGH_STW_ROMANSLEIGH	0	0.00	0.00	0	0	0
ROSEDOWN S T_STW_HARTLAND	0	0.00	0.00	0	0	0
RUXFIELD S T_STW_KENTISBURY	0	0.00	0.00	0	0	0
SALTRENS_STW_MONKLEIGH	0	0.00	0.00	0	0	0

TPU	Storage (m3)	SWS (ha)	Network Enhancement (km)	No. WWTW for Capacity increase	No. WWTW for DWF increase	No. WWTW for Nutrient reduction
SAMPFORD CHAPPLE_STW_NORTH TAWTON	0	0.00	0.00	0	0	0
SAMPFORD COURTENAY_STW_SAMPFOR D COURTENY	0	0.00	0.00	0	0	1
SESSACOTT S T_STW_WEST PUTFORD	0	0.00	0.00	0	0	0
SHEBBEAR_STW_SHEBBEAR	5,000	6.15	2.38	1	1	1
SHEEPWASH_STW_SHEEPWAS H	525	3.16	1.46	0	0	0
SHIRWELL_STW_SHIRWELL	0	0.00	0.00	0	0	0
SOUTH MOLTON_STW_SOUTH MOLTON	11,178	16.28	0.00	0	0	1
SPREYTON_STW_SPREYTON	0	0.00	0.00	0	0	0
ST GILES IN THE WOOD_STW_TORRINGTON	0	0.00	0.00	0	0	0
STIBB CROSS_STW_TORRINGTON	0	0.00	0.00	1	0	0
STOKE RIVERS_STW_STOKE RIVERS	0	0.00	0.00	0	0	0
STOKE_STW_HARTLAND	0	0.00	0.00	1	0	0
STONY CROSS_STW_HORWOOD	0	0.00	0.00	0	0	0
SUTCOMBE MILL_STW_SUTCOMBE	0	0.00	0.00	1	0	0
THORNBURY_STW_THORNBU RY	0	0.00	0.00	0	0	0
TORRINGTON_STW_TORRING TON	1,806	14.31	0.00	0	0	0
TWITCHEN HILL S T_STW_BUCKLAND BREWER	0	0.00	0.00	0	0	0
UMBERLEIGH S	0	0.00	0.00	0	0	0

TPU	Storage (m3)	SWS (ha)	Network Enhancement (km)	No. WWTW for Capacity increase	No. WWTW for DWF increase	No. WWTW for Nutrient reduction
T_STW_UMBERLEIGH						
WEARE GIFFARD_STW_WEARE GIFFARD	7,820	7.00	0.00	1	0	0
WEMBWORTHY NEW_STW_WEMBWORTHY	0	0.00	0.00	0	0	0
WEST BUCKLAND_STW_WEST BUCKLAND	0	0.00	0.00	0	0	0
WESTDOWN_STW_WEST DOWN	0	0.00	1.00	1	0	1
WHITEHALL LANDCROSS_STW_BIDEFORD	0	0.00	0.00	0	0	0
WINKLEIGH_STW_WINKLEIGH	0	0.00	4.21	1	0	0
WITHERIDGE_STW_WITHERIDGE	0	0.00	0.00	1	0	0
WOODTOWN_STW_BIDEFORD	0	0.00	0.00	0	0	0
WOOLSERY_STW_WOOLFARDISWORTHY	132	1.80	2.21	0	0	1
YARNSCOMBE_STW_YARNSCOMBE	0	0.00	0.00	0	0	0
YEO MILL S T_STW_WEST ANSTEY	0	0.00	0.00	0	0	0
ZEAL MONACHORUM_STW_ZEAL MONACHORUM	0	0.00	0.00	1	0	1

Our proposals for the Taw-Torridge catchment include approximately 204ha of SWS by conventional or SUDS solutions, 94,670m^3 of storage, 124km of network enhancement, work to improve DWF compliance at 5 treatment sites, upgrading of capacity at 22 treatment sites and work to reduce nutrients at 29 treatment sites. [2]

[2] Please note that these are high level strategic planning proposals and do not represent a commitment. The plans and overall programme need to be assessed against other risks and against the wider South West Water programme for risk and affordability.

Surface Water Separation and SuDS Assessment

To explore opportunities for SWS and SuDS, Stantec's GIS based Surface Water Assessment Tool (SWAT) was applied to the 26 Complex TPUs that were hydraulically modelled for future flood risk (FFR). The tool plots impermeable area, green space, existing networks, buildings, roads and watercourses. It plots existing foul combined and surface water networks and identifies where surface water sewers join combined sewers as potential points for disconnection. It identifies potential land and road space as well as residential and commercial properties for different interventions. Appendix F outlines the approach.

The high-level results indicate that on average it is estimated that SuDS might be suitable for delivering approximately 55% of the SWS required to mitigate the future flood risk in modelled catchments. This ranged from 0% where there was limited space, impermeable land, and no water courses present to discharge to, to 100% in some TPUs. We intend to develop the tool and process in more detail in the future as we progress the first DWMP interventions through feasibility.

Upstream Thinking and Natural Flood Management

Appendix G shows the coverage of current UST projects in the SWW region where upper catchment solutions are being successfully explored and the intention is to expand this approach. South West Water's infiltration and site surveys may identify opportunities for Natural Flood Management and Upstream Thinking interventions in the Taw-Torridge catchment. South West Water intend to collaborate with the EA and take a similar GIS based approach to assessing Natural Flood Management options where tackling shared surface water flooding issues.

Next Steps

A cornerstone of the DWMP framework and process is collaboration between water companies and key stakeholders. To be successful in developing an effective plan that provides innovative solutions and better value for customers, while protecting our environment and ensuring we meet the future pressure on our drainage systems, we need to work together, and we rely on the active participation of our stakeholders to engage with us in the concept, planning and delivery of this plan.

APPENDICES

APPENDIX A: SEWER OVERFLOW DETAILS

South West Water has a programme to monitor the use and performance of storm overflows and the number of monitors is planned to increase. The table below provides a summary of any available performance data for storm overflows in the catchment.

***Table 28**: Storm Overflow Performance Metrics*

CD_Number	Waterbody	2019 Reportable	2019 Nr. Spills	2020 Reportable	2020 Nr. Spills	2021 Reportable	2021 Nr. Spills
CD400010	Torridge and Hartland Streams	Y	206	Y	326	Y	332
CD405461	Torridge and Hartland Streams	Y	179	Y	231	Y	182
CD404400	Torridge and Hartland Streams	Y	0	Y	186	Y	135
CD404570	River Taw and North Devon Streams	Y	104	Y	181	Y	165
CD400380	Torridge and Hartland Streams	Y	45	Y	162	Y	124
CD201110	River Taw and North Devon Streams	Y	138	Y	159	Y	116
CD200190	River Taw and North Devon Streams	Y	108	Y	143	Y	112
CD200250	Taw (Source to Bullow Brook)	Y	65	Y	115	Y	138
CD508440	Torridge (Lew to Estuary)	Y	105	Y	113	Y	90
CD708330	River Taw and North Devon Streams	Y	91	Y	112	Y	88
CD204410	Torridge and Hartland Streams	Y	0	Y	107	Y	58
CD203280	River Taw and North Devon Streams	Y	137	Y	107	Y	92

CD_Number	Waterbody	2019 Reportable	2019 Nr. Spills	2020 Reportable	2020 Nr. Spills	2021 Reportable	2021 Nr. Spills
CD203690	Taw (Source to Bullow Brook)	Y	74	Y	106	Y	87
CD203740	Middle River Okement	Y	85	Y	102	Y	80
CD721280	Torridge and Hartland Streams	Y	84	Y	99	Y	59
CD516590	Lower River Lew (Torridge)	Y	0	Y	94	Y	96
CD516610	Lower River Lew (Torridge)	Y	28	Y	93	Y	61
CD710270	River Taw and North Devon Streams	N	n/a	Y	91	Y	50
CD508450	Torridge (Lew to Estuary)	Y	62	Y	91	Y	86
CD403740	Middle River Okement	Y	58	Y	83	Y	62
CD403280	River Taw and North Devon Streams	Y	73	Y	83	Y	34
CD710300	River Taw and North Devon Streams	Y	59	Y	82	Y	52
CD522070	Torridge (Lew to Estuary)	Y	77	Y	80	Y	45
CD708370	Torridge and Hartland Streams	Y	63	Y	78	Y	59
CD403690	Taw (Source to Bullow Brook)	Y	66	Y	76	Y	72
CD809930	Huntshaw Water	Y	49	Y	75	Y	42
CD708380	Torridge and Hartland Streams	Y	37	Y	74	Y	43
CD402760	River Taw and North Devon Streams	Y	91	Y	74	Y	76

CD_Number	Waterbody	2019 Reportable	2019 Nr. Spills	2020 Reportable	2020 Nr. Spills	2021 Reportable	2021 Nr. Spills
CD706891	River Taw and North Devon Streams	Y	63	Y	72	Y	26
CD706590	Torridge (Lew to Estuary)	Y	48	Y	72	Y	0
CD202060	Torridge (Lew to Estuary)	Y	63	Y	65	Y	44
CD708350	River Taw and North Devon Streams	Y	27	Y	60	Y	21
CD708340	River Taw and North Devon Streams	Y	54	Y	57	Y	0
CD719560	Taw (Source to Bullow Brook)	Y	26	Y	54	Y	40
CD808360	River Taw and North Devon Streams	Y	26	Y	53	Y	0
CD708570	River Taw and North Devon Streams	Y	39	Y	52	Y	49
CD204570	River Taw and North Devon Streams	Y	62	Y	50	Y	74
CD706050	n/a	Y	31	Y	45	Y	22
CD517350	East Okemont River	Y	15	Y	42	Y	60
CD506910	River Taw and North Devon Streams	Y	53	Y	41	Y	34
CD705850	River Taw and North Devon Streams	Y	31	Y	39	Y	29
CD506950	Torridge and Hartland Streams	Y	36	Y	37	Y	41

CD_Number	Waterbody	2019 Reportable	2019 Nr. Spills	2020 Reportable	2020 Nr. Spills	2021 Reportable	2021 Nr. Spills
CD516600	Lower River Lew (Torridge)	Y	15	Y	35	Y	18
CD715700	Torridge and Hartland Streams	Y	28	Y	35	Y	21
CD517370	East Okemont River	Y	2	Y	30	Y	46
CD710280	River Taw and North Devon Streams	N	n/a	Y	29	Y	37
CD519960	Torridge and Hartland Streams	Y	21	Y	26	Y	19
CD708270	River Taw and North Devon Streams	Y	32	Y	26	Y	32
CD705570	Torridge and Hartland Streams	Y	41	Y	26	Y	23
CD706940	River Taw and North Devon Streams	Y	24	Y	25	Y	16
CD708590	Torridge and Hartland Streams	Y	7	Y	22	Y	6
CD401990	River Taw and North Devon Streams	Y	24	Y	22	Y	17
CD508220	River Taw and North Devon Streams	Y	12	Y	20	Y	20
CD710290	River Taw and North Devon Streams	Y	16	Y	17	Y	24
CD510180	River Taw and North Devon Streams	Y	15	Y	16	Y	15
CD708250	River Taw and North Devon Streams	Y	20	Y	15	Y	12

CD_Number	Waterbody	2019 Reportable	2019 Nr. Spills	2020 Reportable	2020 Nr. Spills	2021 Reportable	2021 Nr. Spills
CD706830	Torridge and Hartland Streams	Y	13	Y	14	Y	11
CD808470	Torridge and Hartland Streams	Y	10	Y	14	Y	8
CD508390	River Taw and North Devon Streams	Y	12	Y	12	Y	16
CD508560	River Taw and North Devon Streams	Y	17	Y	12	Y	13
CD710291	River Taw and North Devon Streams	Y	5	Y	11	Y	24
CD516560	Lower River Lew (Torridge)	Y	3	Y	10	Y	10
CD708371	Torridge and Hartland Streams	Y	8	Y	9	Y	59
CD708210	Torridge (Lew to Estuary)	Y	1	Y	9	Y	0
CD508420	Torridge (Lew to Estuary)	Y	6	Y	9	Y	11
CD806900	Torridge and Hartland Streams	Y	7	Y	8	Y	1
CD517360	East Okemont River	Y	1	Y	8	Y	0
CD402060	Torridge (Lew to Estuary)	Y	5	Y	7	Y	4
CD516570	Lower River Lew (Torridge)	Y	3	Y	6	Y	0
CD517330	Middle River Okement	Y	0	Y	6	Y	34
CD508520	River Taw and North Devon Streams	Y	4	Y	6	Y	9
CD707850	Torridge and Hartland Streams	Y	3	Y	5	Y	1

CD_Number	Waterbody	2019 Reportable	2019 Nr. Spills	2020 Reportable	2020 Nr. Spills	2021 Reportable	2021 Nr. Spills
CD810350	River Taw and North Devon Streams	Y	1	Y	5	Y	0
CD706930	Torridge and Hartland Streams	Y	7	Y	3	Y	11
CD517380	East Okemont River	Y	0	Y	3	Y	21
CD516450	Lower River Lew (Torridge)	Y	0	Y	2	Y	0
CD508700	River Taw and North Devon Streams	Y	1	Y	2	Y	2
CD706892	River Taw and North Devon Streams	Y	1	Y	2	Y	26
CD516580	Lower River Lew (Torridge)	Y	0	Y	1	Y	0
CD508400	River Taw and North Devon Streams	Y	2	Y	1	Y	0
CD510190	Torridge and Hartland Streams	Y	0	Y	1	Y	6
CD508490	Torridge and Hartland Streams	Y	3	Y	1	Y	0
CD508460	River Taw and North Devon Streams	Y	2	Y	1	Y	1
CD506740	Torridge and Hartland Streams	Y	0	Y	1	Y	0
CD521100	Torridge and Hartland Streams	Y	0	Y	1	Y	0
CD706051	n/a	Y	0	Y	0	Y	22
CD710310	Torridge and Hartland Streams	Y	2	Y	0	Y	0
CD807730	Torridge (Lew to Estuary)	Y	0	Y	0	Y	0

CD_Number	Waterbody	2019 Reportable	2019 Nr. Spills	2020 Reportable	2020 Nr. Spills	2021 Reportable	2021 Nr. Spills
CD721270	Torridge and Hartland Streams	Y	0	Y	0	Y	0
CD517390	East Okemont River	Y	0	Y	0	Y	12
CD808361	River Taw and North Devon Streams	Y	0	Y	0	Y	21
CD508510	Torridge and Hartland Streams	Y	1	Y	0	Y	0
CD302060	Torridge (Lew to Estuary)	Y	0	Y	0	Y	0
CD508430	Torridge (Lew to Estuary)	Y	1	Y	0	Y	0

APPENDIX B: STORM OVERFLOW ASSESSMENT FRAMEWORK (SOAF) DETAILS

Storm overflows which do not affect Bathing Waters or Shellfish Waters, but may impact on amenity watercourses, are managed in accordance with the Storm Overflow Assessment Framework (SOAF) industry guidance. The following table shows the SOAF information for each storm overflow in the catchment

***Table 29**: SOAF triggered investigation sites*

Site Name	CD Number
ABBOTSHAM STW_SSO_ABBOTSHAM	CD400010
CHOPES BRIDGE SPS_PSEO_WEARE GIFFARD	CD809930
BISHOPS TAWTON_PSCSOEO_BARNSTAPLE	CD706050
BLACK TORRINGTON STW_SO_BLACK TORRINGTON	CD400380
CASTLE HILL GARDENS_CSO_TORRINGTON	CD508440
PILL SPS_PSEO_BARNSTAPLE	CD808360
CHITTLEHAMPTON STW_SSO_CHITTLEHAMPTON	CD201110
LONDONDERRY SPS_PSEO_NORTHAM	CD808470
HATHERLEIGH BRIDGE_CSO_HATHERLEIGH	CD516590
HILL BARTON STW_SO_OKEHAMPTON	CD403740
HILL BARTON STW_SSO_OKEHAMPTON	CD203740
KNOWLE STW_SO_BRAUNTON	CD402760
LANDKEY SPS_PSCSOEO_LANDKEY	CD708570
LOWER CLOVELLY SOUTHERN SPST_PSCSOEO_CLO	CD721280
MANOR HALL_CSO_HATHERLEIGH	CD516610
DARTINGTON CLOSE SPS_PSCSOEO_TORRINGTON	CD808200
MIDDLE MARWOOD STW_SO_MARWOOD	CD403280
MIDDLE MARWOOD STW_SSO_MARWOOD	CD203280
MIDDLE MARWOOD STW_SSO_MARWOOD	CD203281
MUDDIFORD SPS_PSCSOEO_MUDDIFORD	CD710270

Site Name	CD Number
DARTINGTON CLOSE SPS_PSCSOEO_TORRINGTON	CD808200
NORTH ST_CSO_OKEHAMPTON	CD517350
NORTH TAWTON STW_SO_NORTH TAWTON	CD403690
NORTH TAWTON STW_SSO_NORTH TAWTON	CD203690
NORTHAM GOLF LINKS ROAD_SPS_BIDEFORD	CD708370
INSTOW B SPS_PSEO_INSTOW	CD806900
ROLLE RD_CSO_TORRINGTON	CD508450
SHEBBEAR STW_SO_SHEBBEAR	CD404400
SHEEPWASH STW_SO_SHEEPWASH	CD204410
SOUTH MOLTON STW_SO_SOUTH MOLTON	CD404570
SOUTH MOLTON STW_SSO_SOUTH MOLTON	CD204570
SOUTH TAWTON STW_SSO_SOUTH TAWTON	CD200250
SOUTH ZEAL SPS_PSCSOEO_SOUTH ZEAL	CD719560
SWIMBRIDGE SPS_PSCSOEO_SWIMBRIDGE	CD710300
TORRIDGE VALE DAIRIES_CSO_TORRINGTON	CD522070
TORRINGTON STW_SSO_TORRINGTON	CD202060
TOWN PARK SPS_PSCSOEO_TORRINGTON	CD706590
CHILPARK SPS_PSEO_FREMINGTON	CD810350
VELATOR SPST_PSCSOEO_BRAUNTON	CD708340
WEARE GIFFARD STW_SO_WEARE GIFFARD	CD405461

APPENDIX C: RESPONSIVE INVESTMENT OPTIMISATION

Reactive investment needs are identified via investigations following reactive response to operational/customer issues and planned surveys that are targeted to detect and resolve problems before they have an impact on customers and the environment.

The investment needs are prioritised based on the risk to properties and the identification of repeat events. These needs then form a programme of works for delivery over the next 12 months. Details for any needs recorded for the Taw-Torridge catchment are also shown in Table below.

***Table 30**: Reactive investment opportunities*

IM Number	Driver	Route	Stage	Status	Stage No
N86717	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Contractor Scoping	In Progress	Stage 3
N92366	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Contractor Scoping	In Progress	Stage 3
N65717	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Contractor Scoping	In Progress	Stage 3
N86820	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Contractor Scoping	In Progress	Stage 3
N92317	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Contractor Scoping	In Progress	Stage 3
N91323	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Review Scope	In Progress	Stage 6
N91117	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Review Scope	In Progress	Stage 6
N93216	Capital Maintenance	Rapid Investment - WWS-Networks (Pollution)	Review Scope	In Progress	Stage 6
N91766	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Review Scope	In Progress	Stage 6
N91767	Capital	Rapid Investment - WWS-Networks	Review Scope	In Progress	Stage 6

IM Number	Driver	Route	Stage	Status	Stage No
	Maintenance	(Flooding)			
N93366	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Review Scope	In Progress	Stage 6
N92216	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Review Scope	In Progress	Stage 6
N91175	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Review Scope	In Progress	Stage 6
N75066	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Confirm Scope	In Progress	Stage 7
N84118	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N71571	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75716	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N84119	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N82479	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N78918	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N82518	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75520	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N91177	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N66416	Capital	Rapid Investment	Confirm Scope	In Progress	Stage 7

IM Number	Driver	Route	Stage	Status	Stage No
	Maintenance	- WWS-Networks (Flooding)			
N75770	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N84466	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N73721	Health & Safety		Confirm Scope	In Progress	Stage 7
N72722	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Confirm Scope	In Progress	Stage 7
N83867	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N71616	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Confirm Scope	In Progress	Stage 7
N82481	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75221	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N84516	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N73317	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N71717	Health & Safety	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75323	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75223	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N71517	Capital	Rapid Investment	Confirm Scope	In Progress	Stage 7

IM Number	Driver	Route	Stage	Status	Stage No
	Maintenance	- WWS-Networks (Flooding)			
N82482	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N82483	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75277	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N82618	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75318	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75769	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N91176	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N85867	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75068	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75067	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Confirm Scope	In Progress	Stage 7
N72519	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Confirm Scope	In Progress	Stage 7
N73068	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N78819	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7

IM Number	Driver	Route	Stage	Status	Stage No
N86766	Capital Maintenance	Rapid Investment - WWS-Networks (Pollution)	Confirm Scope	In Progress	Stage 7
N82433	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75219	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N82474	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N74420	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N80371	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N71167	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Confirm Scope	In Progress	Stage 7
N69578	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N82619	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N74916	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N76074	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75017	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Confirm Scope	In Progress	Stage 7
N76122	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Confirm Scope	In Progress	Stage 7
N75023	Capital	Rapid Investment - WWS-Networks	Confirm Scope	In Progress	Stage 7

IM Number	Driver	Route	Stage	Status	Stage No
	Maintenance	(Flooding)			
N84518	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Programmed	In Progress	Stage 8
N84517	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Programmed	In Progress	Stage 8
N83416	Capital Maintenance	Rapid Investment - WWS-Networks (Pollution)	Programmed	In Progress	Stage 8
N63667	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Programmed	In Progress	Stage 8
N73318	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Completed	Completed	Stage 9
N75274	Capital Maintenance	Rapid Investment - WWS-Networks (Pollution)	Completed	Completed	Stage 9
N75366	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N82617	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N82469	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N73266	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Completed	Completed	Stage 9
N76170	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N75267	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N76072	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9

IM Number	Driver	Route	Stage	Status	Stage No
N76067	Capital Maintenance	Rapid Investment - WWS-Networks (Pollution)	Completed	Completed	Stage 9
N76175	Capital Maintenance	Rapid Investment - WWS-Networks (Pollution)	Completed	Completed	Stage 9
N78117	Capital Maintenance	Rapid Investment - WWS-Networks (Pollution)	Completed	Completed	Stage 9
N79917	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N69974	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N65916	Capital Maintenance	Rapid Investment - WWS-Networks (Transferred Sewers)	Completed	Completed	Stage 9
N63966	Capital Maintenance		Completed	Completed	Stage 9
N70817	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N80868	Capital Maintenance	Rapid Investment - WWS-Networks (Pollution)	Completed	Completed	Stage 9
N71167	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N70327	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N82484	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N78572	Capital Maintenance	Rapid Investment - WWS-Networks (Flooding)	Completed	Completed	Stage 9
N79767	Capital Maintenance	Rapid Investment - WWS-Networks (Pollution)	Completed	Completed	Stage 9

APPENDIX D: SURFACE WATER SEPARATION AND SuDS APPROACH

To explore opportunities for SWS and SuDS, Stantec's GIS based Surface Water Assessment Tool (SWAT) was applied to the 26 Complex TPUs that were hydraulically modelled for future flood risk (FFR). The tool plots impermeable areas, green space, existing networks, buildings, roads and watercourses. It plots existing foul combined and surface water networks and identifies where surface water sewers join combined sewers as potential points for disconnection. It identifies potential land and road space as well as residential and commercial properties for different interventions.

Using this insight our approach for surface water separation and SuDS is to find an alternative pathway for surface water, where we identify surface water contributing to risks in our networks. Surface water can originate from buildings, roads/highways and paved areas. Surface water collection may also exist but be connected to the foul network at some point. In this case we would consider options to provide an alternative pathway for the surface water such a swale or other watercourse or SuDS solution where space and natural topography support this approach. This would include conveying the surface water to an appropriate location. Further modelling and investigations are required to ensure this will not generate a surface water flooding risk elsewhere.

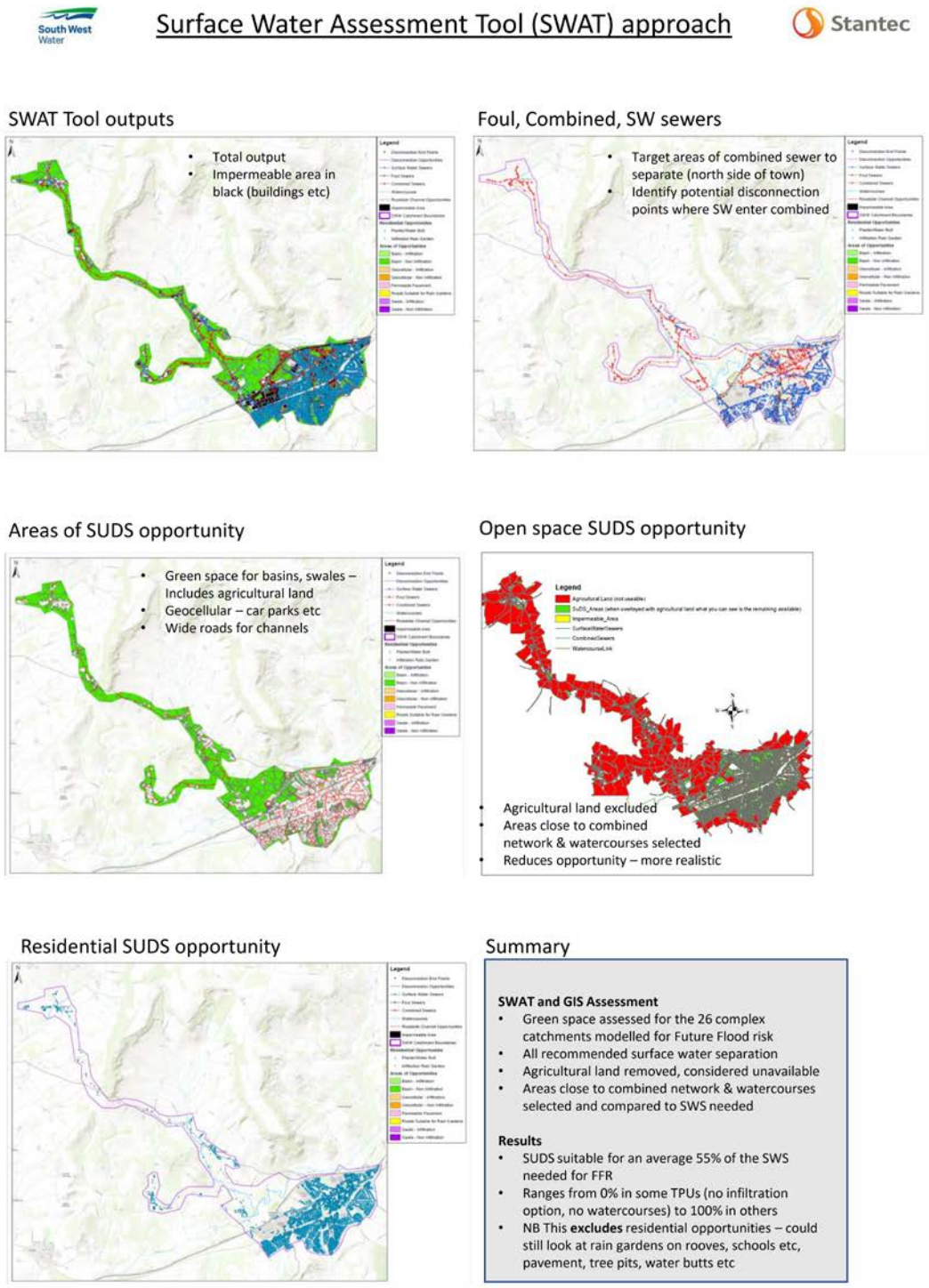

Figure 17: Approach to assessing opportunity for SuDS solutions for Surface Water Separation

APPENDIX E: CURRENT AND PLANNED UPSTREAM THINKING (UST) PROJECTS

South West Water's infiltration and site surveys may identify opportunities for Natural Flood Management and Upstream Thinking interventions in the Taw-Torridge catchment. South West Water intend to collaborate with the EA and take a similar GIS based approach to assessing Natural Flood Management options where tackling shared surface water flooding issues. The figure below shows the coverage of current upstream thinking (UST) projects in the vicinity of the Taw-Torridge catchment where upper catchment solutions are being explored; the intention is to expand this approach.

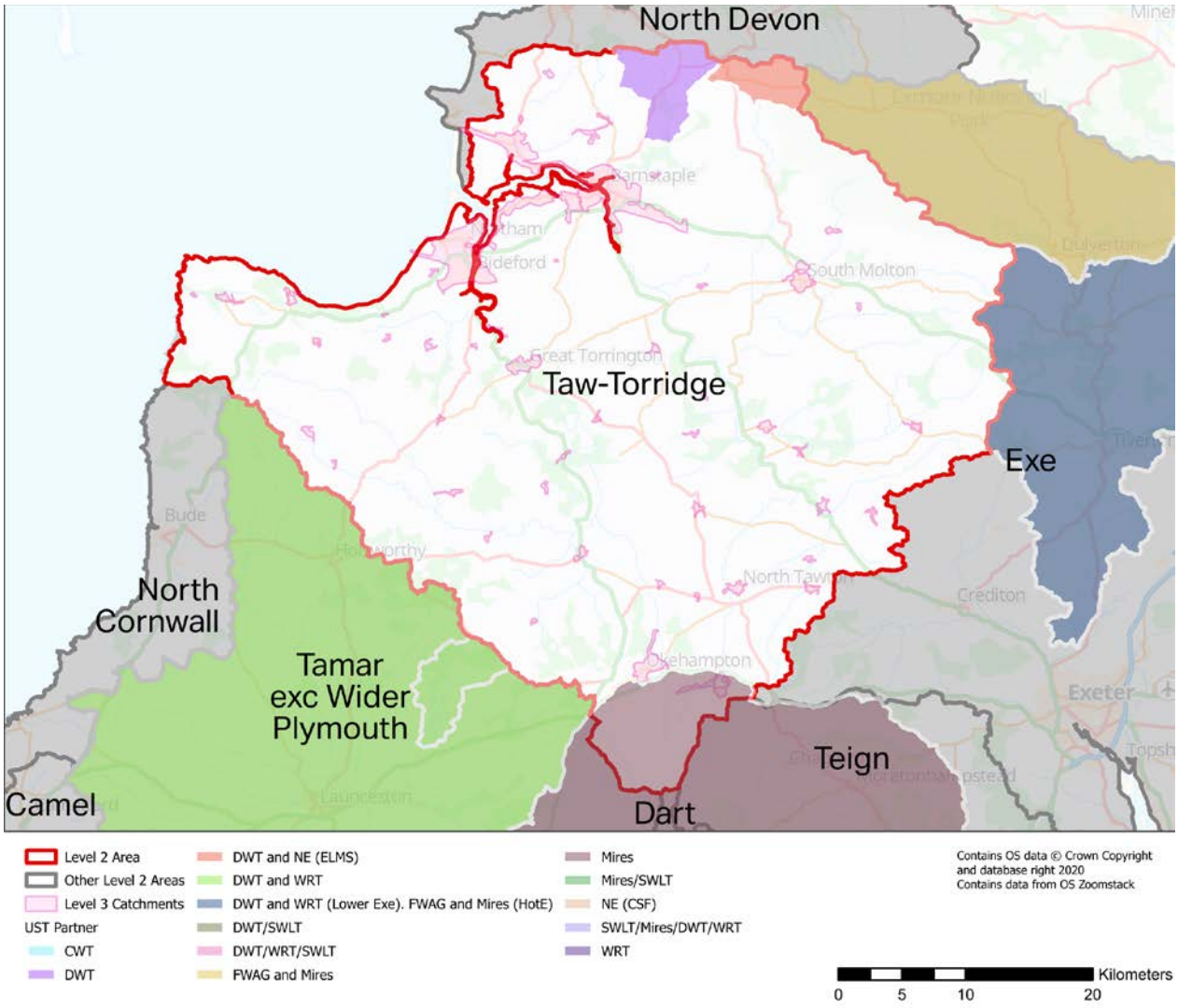

Figure 18: Catchments with Upstream Thinking Programmes