

BCP Overview & Scrutiny Board Meeting

Monday 31st January 2022

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Wessex Water
YTL GROUP



Specific Questions Raised

The purpose of this agenda item is to help Councillors and the public, to gain a better understanding of the issues around water pollution in the BCP Area – including Poole Harbour, Christchurch Harbour, the Rivers Stour, Avon and Piddle and Poole Bay coastal outflows.

Questions to Wessex Water:

1. What is the current situation regarding water pollution, where does it come from, how serious is it and what are the effects arising from it?
2. What is being done to reduce pollution and how long will this take?

Question 1

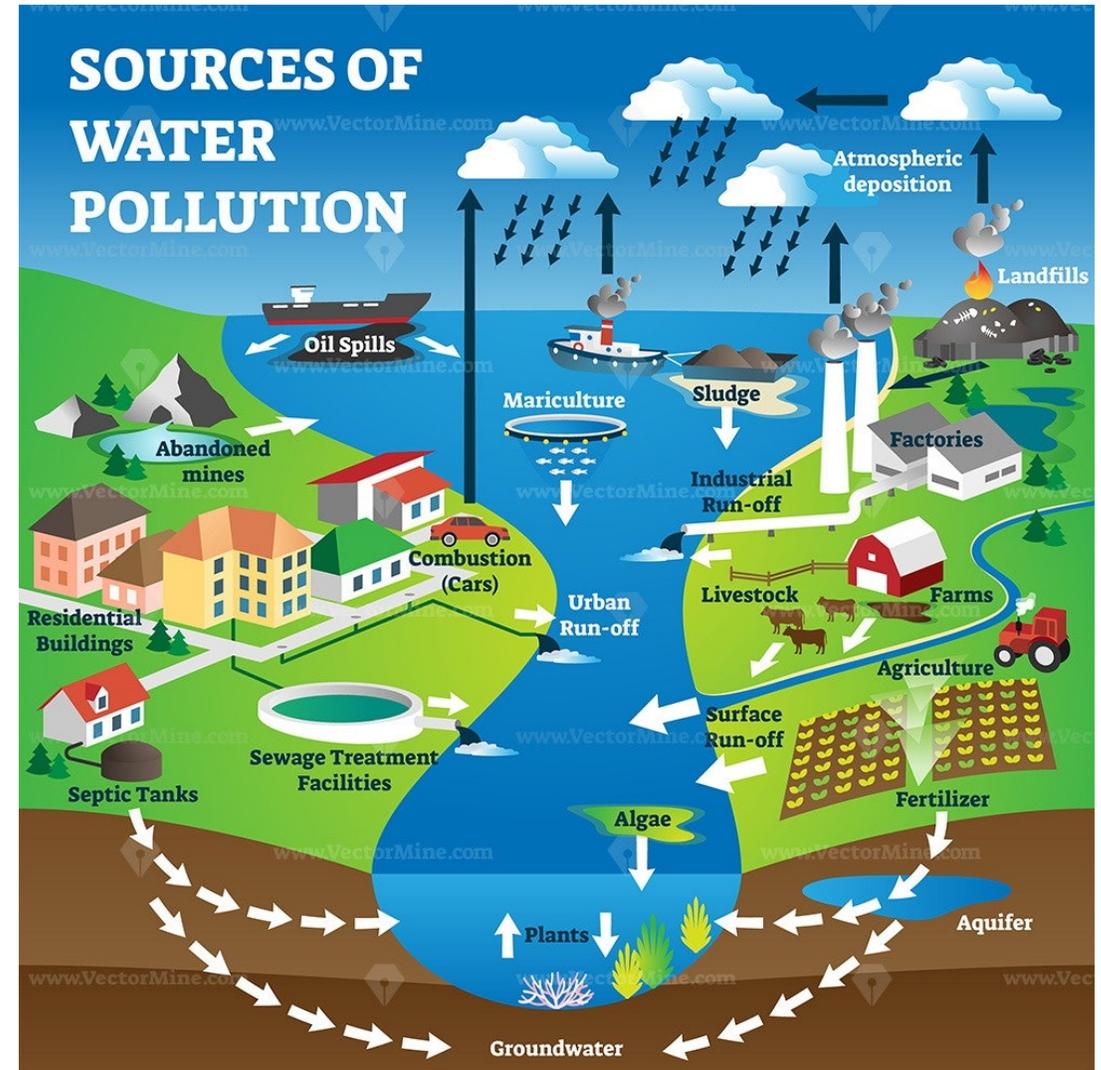
What is the current situation regarding water pollution, where does it come from, how serious is it and what are the effects arising from it?

- The Environment Agency is responsible for classifying water quality and regulating against pollution, rather than Wessex Water.
- More information on water quality can be found on the EA's website: [Dorset Management Catchment | Catchment Data Explorer](#)
- More detail in subsequent slides on Wessex Water's responsibilities and activities

Sources of pollution

What is meant by pollution?

- Point source or diffuse
- Urban or rural
- Acute or chronic
- Not all discharges are 'pollution', many are permitted and compliant and have no adverse environmental impact



Wessex Water's Roles & Responsibilities

Responsibilities for:

- Provision and maintenance of the public sewerage system
- Treating sewage effluent to permitted levels before returning to the environment
- Protecting and enhancing the environment

Company purpose:

Customers

To provide our customers and communities excellent service and value for money.

Environment

To protect and improve the environment.

Employees

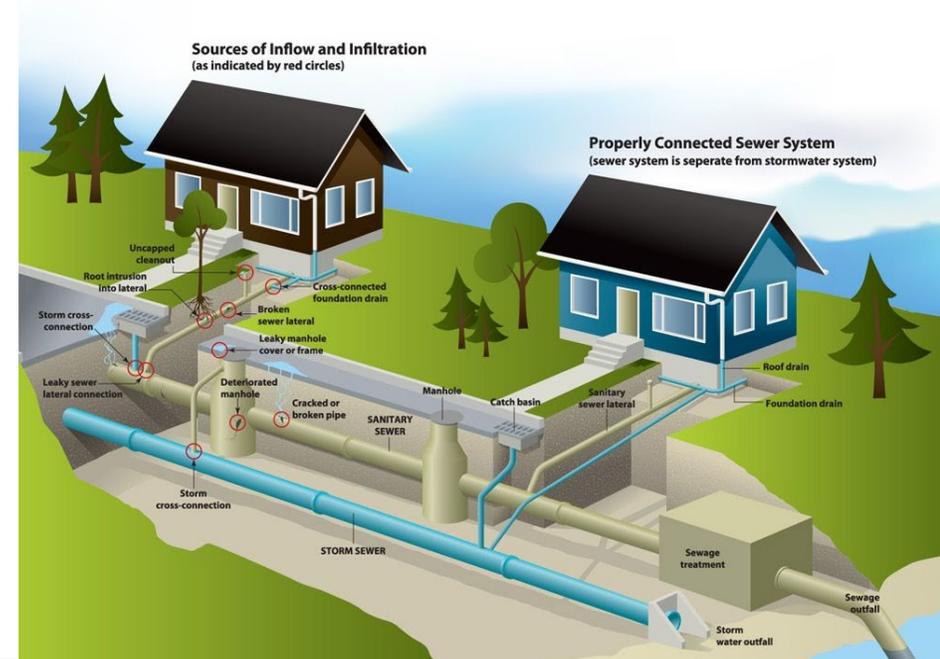
To provide our people with the opportunity for personal development and a satisfying career.

Investors

To provide our investors with a fair return for their investment.

We are a regulated business, both economically and environmentally, which informs our investment decisions.

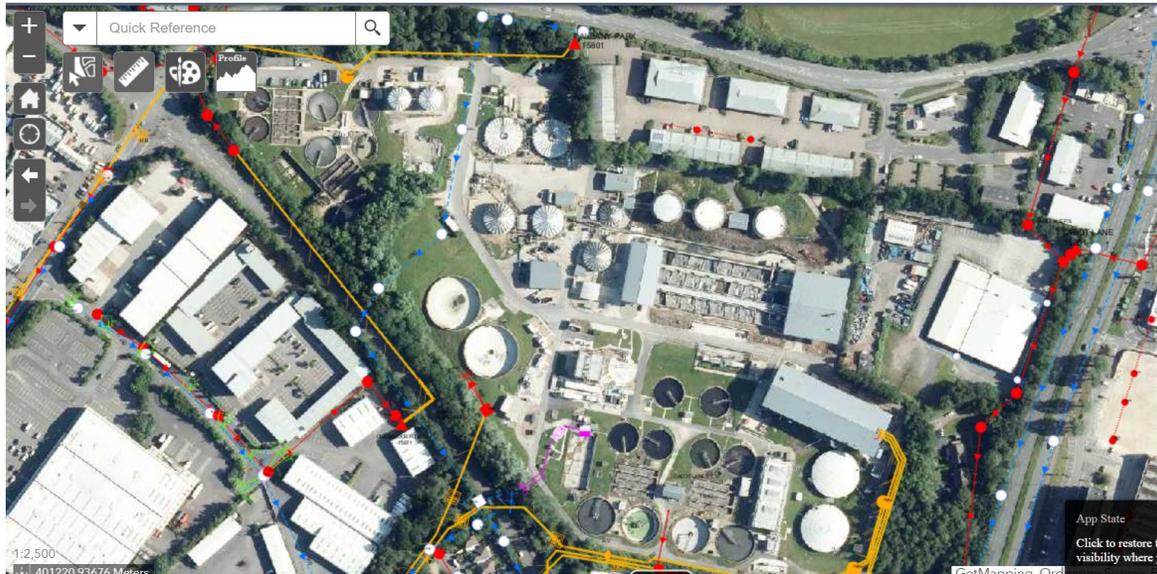
We try to work in partnership to enable efficient delivery where we have common aims and outcomes, e.g. with Local Councils, regulators and local interest groups



What assets do we operate?

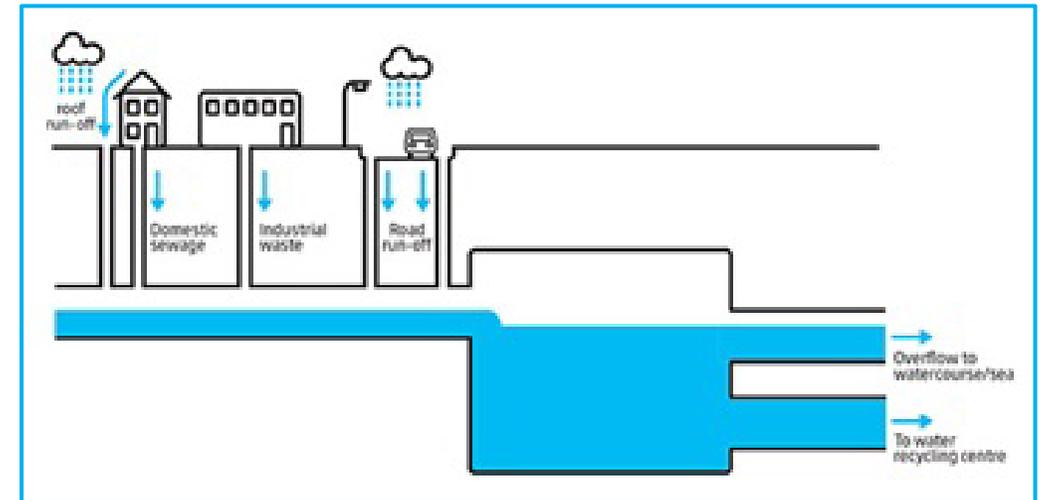
Water Recycling Centres

- Designed to treat sewage to the required (permitted) standard before returning to the environment.
- Includes sewage, rainwater & trade wastes



Storm Overflows

- Act as a pressure relief valves to prevent property flooding during heavy rainfall events
- Carry predominantly rainwater plus sewage and trade discharges



Separate systems

Foul water



Foul
sewer



Water Recycling
Centre (WRC)

Surface water



Surface water
sewer

Highway
drains



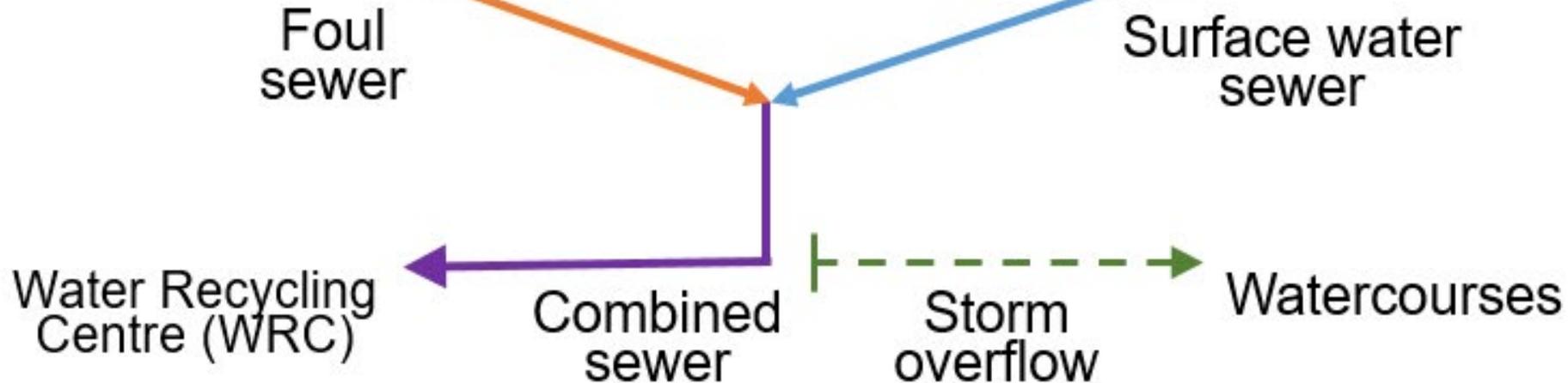
Watercourses

What is a combined sewer?

Foul water



Surface water



Comparison of flows



Surface water

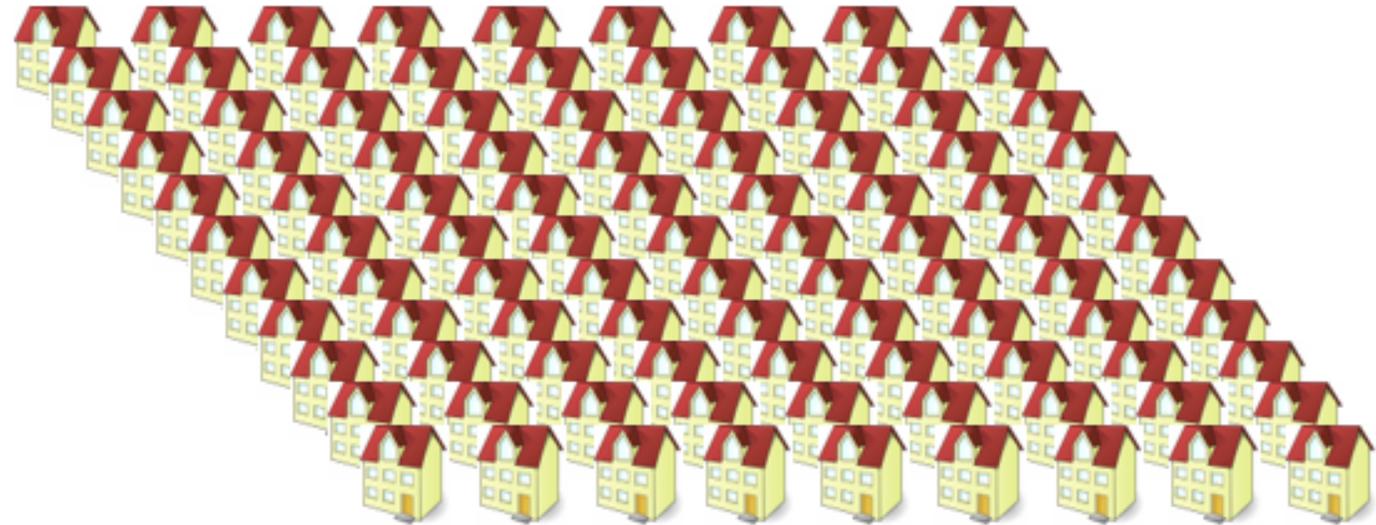
The flow generated by
1 average house roof
in a heavy* downpour



is equivalent
to

Foul water

The foul flow generated by
128 houses foul only water



*e.g. a 1 hour-duration 1-in-1 year rainfall event

How did we get here?

Combined sewers systems have been constructed since the 1850s. Storm overflows are essential to prevent property flooding.

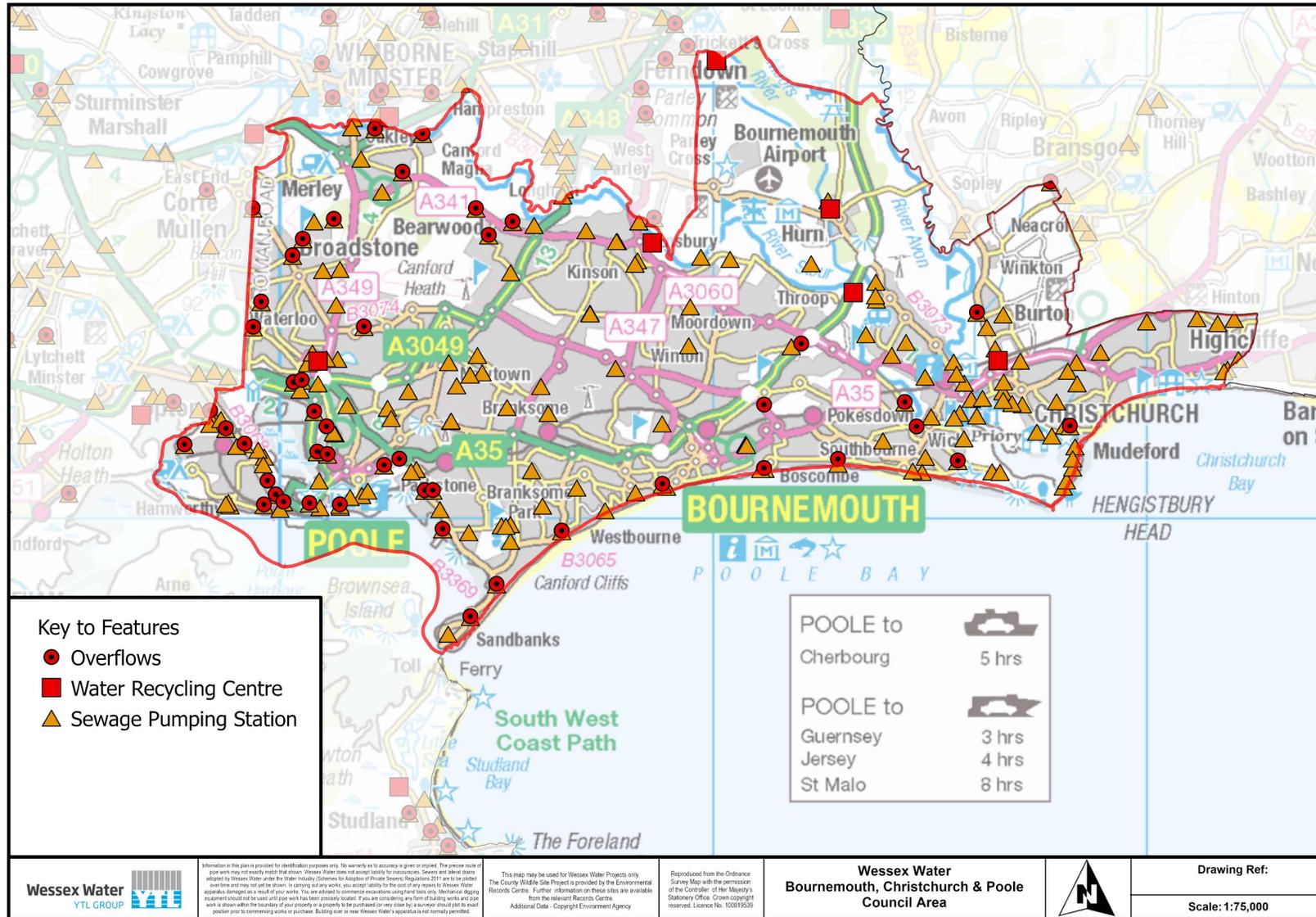


Up until the 1960's properties were constructed with 1 drainage pipe which carried both:

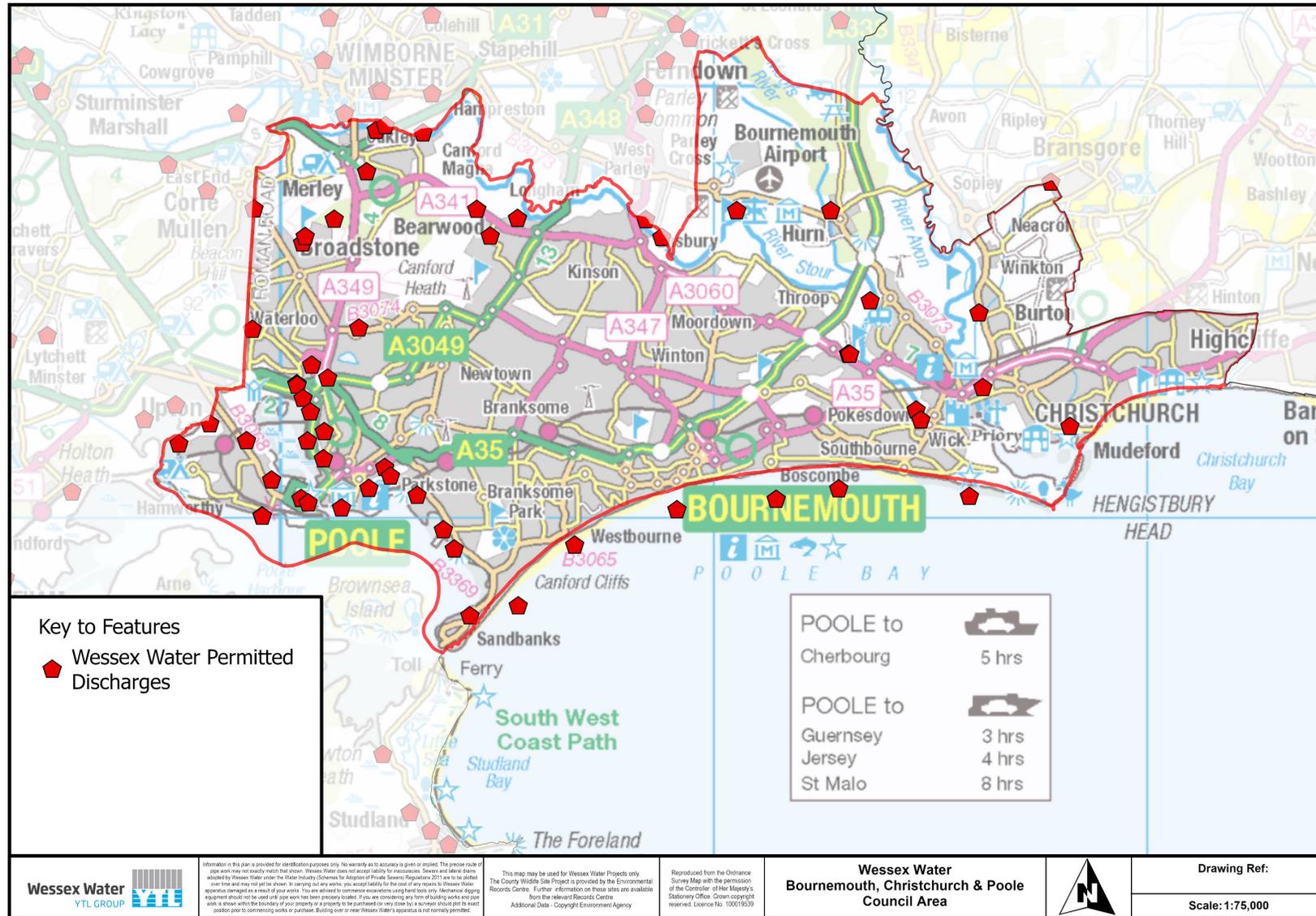
surface water
and
foul water

This means c50% of the houses in England are built this way

WW Waste assets



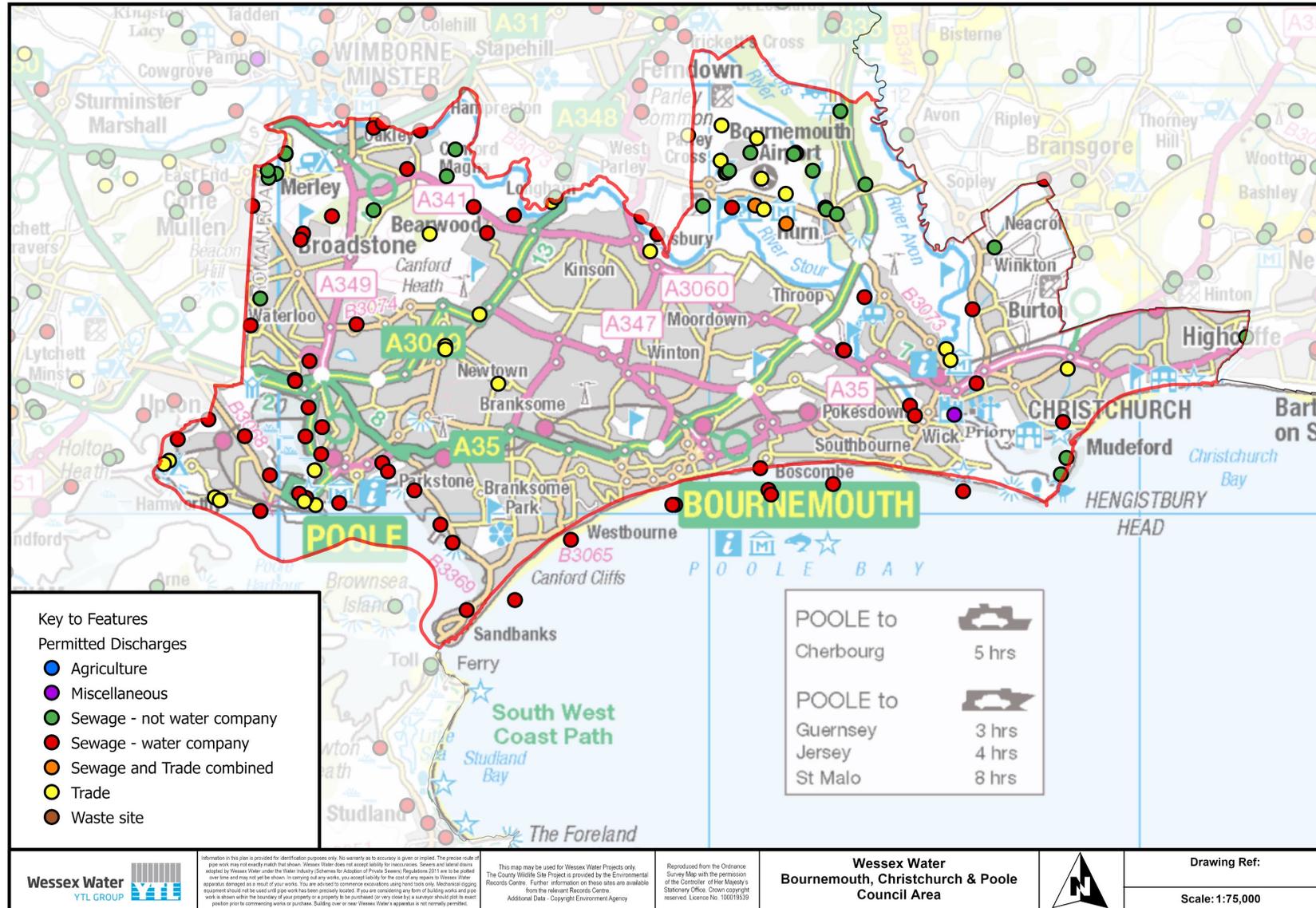
WW Permitted Discharges



All Permitted Discharges

Not just Wessex Water, includes agriculture, trade and private waste sources.

Most sewerage assets by length are not owned by WW – they are privately owned



Storm Overflow Operation: surface water influenced

Council Area	Year	Permit No.	Site Name	Discharge type	Total Duration (hours)	12-24 Counted discharges
CHRISTCHURCH	2020	401065	HOLDENHURST RIVERSIDE AVENUE STW 13152	STORM OVERFLOW AT WRC WITH SETTLEMENT TREATMENT	115	24
BOURNEMOUTH	2020	401495	KINSON NEW ROAD NORTHBOURNE STW 13172	STORM OVERFLOW AT WRC WITH SETTLEMENT TREATMENT	167	14
CHRISTCHURCH	2020	401485	PALMERSFORD STW 13232	STORM OVERFLOW AT WRC WITH SETTLEMENT TREATMENT	35	4
POOLE	2020	401354	POOLE CABOT LANE STW 13242	STORM OVERFLOW AT WRC WITH SETTLEMENT TREATMENT	112	17
POOLE	2020	401354	POOLE CABOT LANE STW 13242	STORM OVERFLOW AT WRC	6	3
BOURNEMOUTH	2020	400551	BOSCOMBE NO 1 SPS 15002	STORM OVERFLOW	5	6
BOURNEMOUTH	2020	401244	BOURNEMOUTH IFORD LANE TUCKTON SPS 15007	STORM OVERFLOW	38	14
BOURNEMOUTH	2020	400550	SOUTHBOURNE HENGISTBURY HEAD SPS 15013	STORM OVERFLOW	67	25
BOURNEMOUTH	2020	400758	BOURNEMOUTH NO 1 SPS 15019	STORM OVERFLOW	25	7
POOLE	2020	400790	POOLE ROCKLEY ROAD SPS 15228	STORM OVERFLOW	4	2
POOLE	2020	051301	POOLE WHITECLIFF RECREATION GROUND SPS 15229	STORM OVERFLOW	172	30
POOLE	2020	EPR/QB3993NE	POOLE KENNART ROAD SPS 15230	STORM OVERFLOW	35	7
POOLE	2020	051303	POOLE SANDBANKS PAVILION SPS 15231	STORM OVERFLOW	9	1
POOLE	2020	051302	POOLE SALTERNS WAY SPS 15232	STORM OVERFLOW	28	2
POOLE	2020	051290	POOLE SHORE ROAD SPS 15235	STORM OVERFLOW	83	53
POOLE	2020	400714	POOLE MAGNA ROAD SPS 15237	STORM OVERFLOW	1	1
POOLE	2020	400718	POOLE POOLE PARK SPS 15239	STORM OVERFLOW	6	3
POOLE	2020	NPSWQD003865	POOLE BRANKSOME CHINE SPS 15240	STORM OVERFLOW	45	15
POOLE	2020	051289	POOLE ELGIN ROAD SPS 15244	STORM OVERFLOW	6	10
POOLE	2020	040821	CANFORD MAGNA CANFORD MAIN SPS 15246	STORM OVERFLOW	11	7
POOLE	2020	400849	POOLE RECTORY / ASHMORE AVENUE SPS 15247	STORM OVERFLOW	-	0
POOLE	2020	402037	POOLE EGMONT ROAD SPS 15252	STORM OVERFLOW	-	0
POOLE	2020	401394	POOLE FAIRVIEW ROAD SPS 15253	STORM OVERFLOW	7	7
POOLE	2020	400719	POOLE POOLE BRIDGE POOLE QUAY SPS 15257	STORM OVERFLOW	7	1
POOLE	2020	401620	POOLE WILLIS WAY SPS 15258	STORM OVERFLOW	-	0
POOLE	2020	400742	POOLE ESPLANADE STERTE SPS 15260	STORM OVERFLOW	-	0
POOLE	2020	040459	POOLE MERLEY LANE MERLEY SPS 15266	STORM OVERFLOW	-	0
POOLE	2020	400792	POOLE BLANDFORD ROAD SPS 15269	STORM OVERFLOW	-	0
POOLE	2020	401047	POOLE CREEKMOOR LANE SPS 15270	STORM OVERFLOW	-	0
POOLE	2020	400850	POOLE TURLIN MAIN BLANDFORD ROAD TURLIN MOOR SPS 15273	STORM OVERFLOW	-	0
POOLE	2020	400793	POOLE TURLIN MAIN BLANDFORD ROAD TURLIN MOOR SPS 15273	STORM OVERFLOW	-	0
POOLE	2020	402038	POOLE HEWITT ROAD SPS 15275	STORM OVERFLOW	5	2
POOLE	2020	401257	POOLE WOOD LANE SPS 15277	STORM OVERFLOW	64	24
POOLE	2020	NPSWQD007062	POOLE EAST QUAY PERRY GARDENS SPS 15383	STORM OVERFLOW	-	0
POOLE	2020	041005	POOLE STERTE F W SPS 15642	STORM OVERFLOW	-	0
BOURNEMOUTH	2020	401566	BOURNEMOUTH TUCKTON ROAD O/S 156 CSO 16131	STORM OVERFLOW	8	12
POOLE	2020	400743	POOLE STANLEY GREEN ROAD CSO 16613	STORM OVERFLOW	277	44
BOURNEMOUTH	2020	041221	BOURNEMOUTH COOPER DEAN DETENTION TANK INT 18015	STORM OVERFLOW	39	15
BOURNEMOUTH	2020	051310	BOURNEMOUTH FISHERMANS WALK CIS CSO 19266	STORM OVERFLOW	-	0
POOLE	2020	400457	POOLE POOLE PARK ATTENUATION TANK INT 19529	STORM OVERFLOW	11	5
POOLE	2020	400791	POOLE WOODLANDS AVE/HINCHLIFFE ROAD O/F CSO 19584	STORM OVERFLOW	33	11

Storm Overflow Operation: groundwater influenced

Council Area	Year	Permit No.	Site Name	Discharge type	Total Duration (hours)	12-24 Counted discharges
CHRISTCHURCH	2020	401355	CHRISTCHURCH STONEY LANE STW 13066	STORM OVERFLOW AT WRC WITH SETTLEMENT TREATMENT	594	43
CHRISTCHURCH	2020	401565	BRANSGORE WILTSHIRE GARDENS SPS 14132	STORM OVERFLOW	3	4
CHRISTCHURCH	2020	401748	MUDEFORD MUDEFORD GARDENS SPS 15043	STORM OVERFLOW	-	0

Several locations in our region with water bearing chalk strata can be affected by high groundwater levels which infiltrate the sewer network and restrict toilet use.

For more info see explanatory video: <https://youtu.be/7b4uaY4H1Tk>

To find the location of storm overflows and how frequently they have been in use, you can find data in our portal under 'storm overflows' and 'performance': [Drainage and wastewater management plan | Wessex Water](#)



More information on Storm Overflows

Background info	
Storm overflow page	Contains briefing note on why they exist, what impact they have and what can be done about them
Wild Swimming page	Video explains the consideration and risks associated with wild swimming
Warleigh Weir page	Explains the ongoing investigation at Warleigh Weir with latest water quality data
Combined sewers explained	Environment Agency explain why storm overflows exist. YouTube video here
Discharge data	
Historical data on Drainage and Wastewater Management Plan portal (Storm Overflows/Performance)	Contains Event and Duration data for all monitored overflows from 2016-2020.
Live data from Coast and RiversWatch	Near real-time alerts where water quality may be affected by storm overflows
Site specific discharge data	Available on request from Wessex Water
National Event and Duration Monitoring Data	Data for England for 2020
Surfers Against Sewage Safer Seas and Rivers App	Repeats information provided by Coastwatch for an Android and iOS app
Rainfall data	
Site and time specific	Available on request from Wessex Water
Impact data	
Warleigh Weir water quality info page	E.Coli and I. Enterococci data from bathing water investigation
Drainage and Wastewater Management Plan portal	Performance spreadsheet contains impact data: where we have carried out invertebrate surveys and where the SO is associated with a WFD Reason for Not Achieving Good status
Bathing Water Profiles	Historical and most recent bathing water samples for Faecal Indicator Organisms
Environmental impact data from Catchment Data Explorer	Historical water quality data for Water Framework Directive compliance
Investment planning approach	
Storm Overflow Assessment Framework	Process for assessing the costs and benefits associated with dealing with frequently spilling overflows
Investment Plans	
Drainage and Wastewater Management Plan	Performance spreadsheet (under Storm Overflows/Performance/*) has investment plans associated with storm overflows

- Wessex Water's **Coastwatch** email notification & website:
 - Email Ruth Barden if you would like to receive email notifications
 - [Bathing waters \(wessexwater.co.uk\)](http://www.wessexwater.co.uk)
- Environment Agency's notification and sampling data:
 - [Bathing water quality \(data.gov.uk\)](http://data.gov.uk)
- Surfers Against Sewage **Safer Seas Alert** (using WW notifications):
 - [Safer Seas Service Interactive Map • Surfers Against Sewage \(sas.org.uk\)](http://sas.org.uk)
 - Also app downloadable for Apple & Android devices

Question 2

What is being done to reduce pollution and how long will this take?

- Water company investment cycles are five-yearly.
- The next Business Plan (investment plan) will be submitted to Ofwat in 2024 (PR24) to start from 1st April 2025 until 31st March 2030.



Requirements set in legislation, e.g:

- Water Framework Directive – nutrients, chemicals, flows
- Water Framework Directive (Protected Areas) – e.g. Shellfish areas (bacterial load)
- Bathing Water Regulations – bacterial load
- Habitats Regulations - nutrients
- Urban Wastewater Treatment Directive – infrastructure provision, nutrients

Improvements driven by an evidential need, risk or regulatory change

- WFD - Phosphorus removal
- Shellfish – UV disinfection, spill frequency
- Bathing Waters – UV disinfection, spill frequency
- Habitats Regs – Phosphorus removal
- Urban Wastewater Treatment Directive – Nitrogen removal, overflow operation

Recent & current investment

- AMP5 (2010-15)
 - Transfer from Holton Heath to Wareham + UV disinfection
- AMP6 (2015-20)
 - Poole Harbour south investigations at Studland & Corfe Castle
 - Over 22 tonnes phosphorus removal in Poole Harbour catchment
- AMP 7 (2020-25)
 - UV disinfection at Corfe Castle (2021)
 - 7 no investigations in Poole Harbour, 2 in Dorset Stour
 - Removing 186 tonnes phosphorus in Stour and 19.45 tonnes in Poole Harbour
 - 65 tonnes nitrogen reduced via offsetting in 2021, in additional to Poole (2009 – removing >900 tonnes) and Wareham (2021 – c.10 tonnes) WRCs
 - £150m across WW on storm overflows, inc Bulbury Lane wetland
 - Flow and storage improvements at Holdenhurst, Bourton & Shillingstone
 - Ongoing operational maintenance investment e.g. Moorland Way & Shore Road SPS

More info:

[Poole Harbour Factsheet](#)

[Stour Factsheet](#)

Storm overflow improvements

		2020	2025	2030	2035	2050
WRC	Storm Overflow	Current	Short term	Medium term	Long term	
Lytchett Minster	Lytchett Bay (ID 13190)	Consider options for future WINEP	Investigate / design options / possible separation?			Surface water separation Infiltration sealing Nature based solutions Storage
	Sandy Lane (ID 14219)	Design pumping station and rising main enhancements (2022)				
		Construction of pumping station & rising main enhancements (2023-2025)	Monitor improvements / possible separation?			
Moorlands Way (ID 14265)	Pumping station improvements (2020)	Monitor and consider further improvements / possible separation?				
Poole	Sandbanks Road (ID 16615)	Pumping station improvements (2023)	Monitor improvements / possible separation?			
	Egmont Road (ID 15252)	No works currently planned	Monitor operation / possible separation?			
	Cabot Lane (ID 13242)	No works currently planned	Monitor operation / possible separation?			
DWMP	Customer education – surface water separation -					

Addressing storm overflows

Eliminating storm overflows in England by attenuation currently estimated at **>£300 billion**



**storage and
capacity**



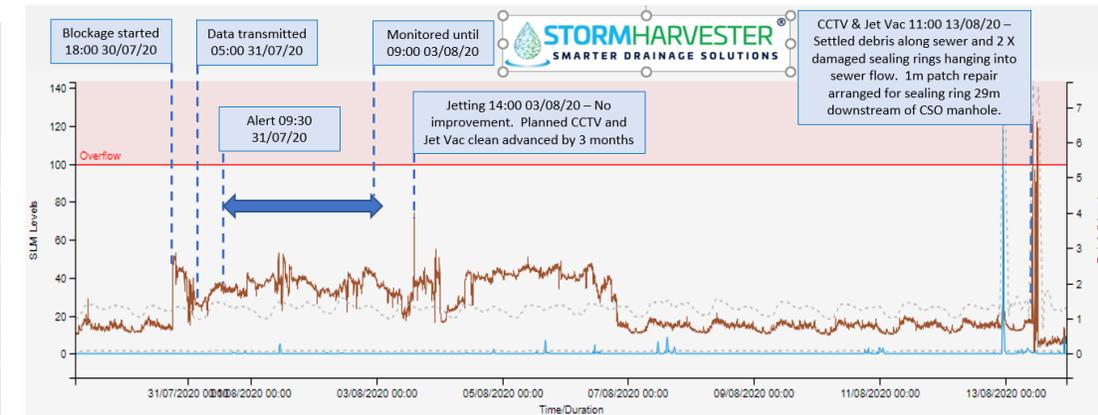
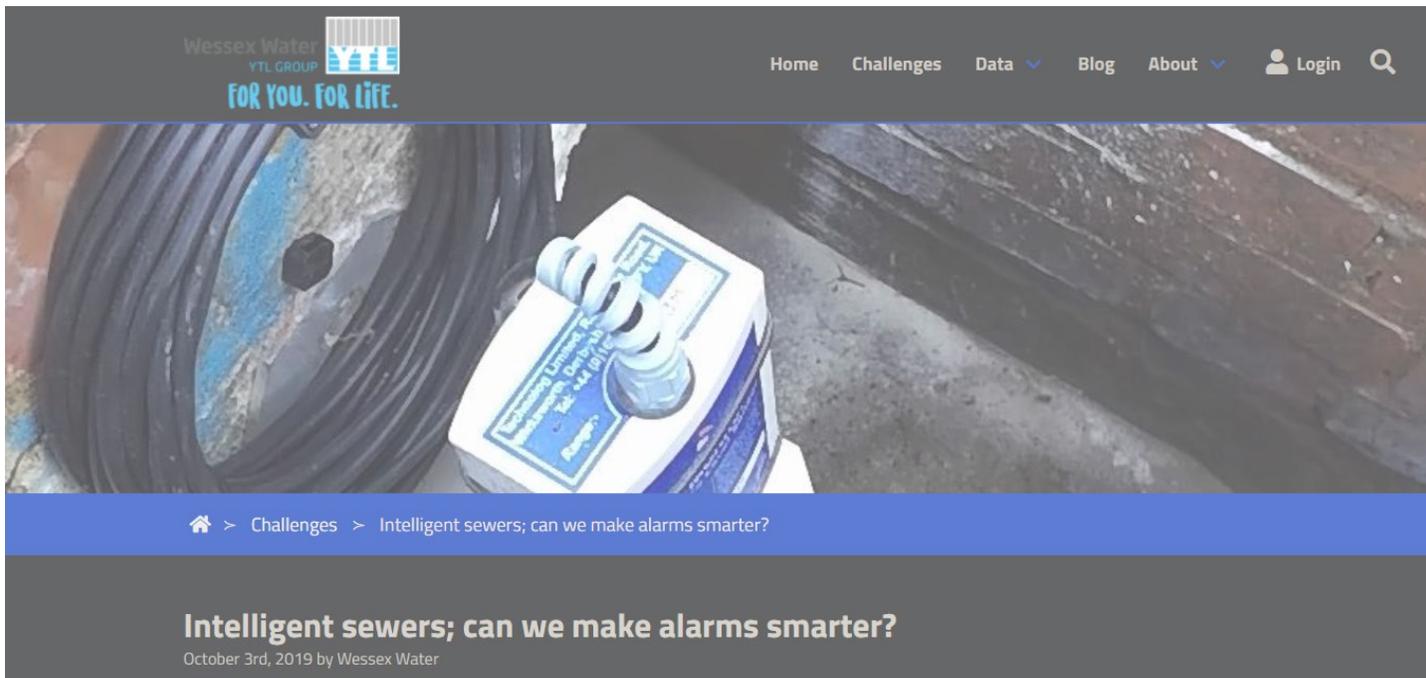
separation



treatment

Real time notification for shellfisheries

- Link to UnifAI/BCP real time water quality data
- Better understanding of community health data – Norovirus
- Use ‘StormHarvester’ to predict asset operation – providing 12-hour warning to shellfisheries, enabling active harvesting during 2021



1. Rockley Park
Water ski buoy



C2BA52

2. Oyster Bay
Shellfish beds



C2BA5C

3. Port Turning Basin
"Stakes" Buoy



C2BC3A

4. Middle Ship Channel
"Aunt Betty" Buoy



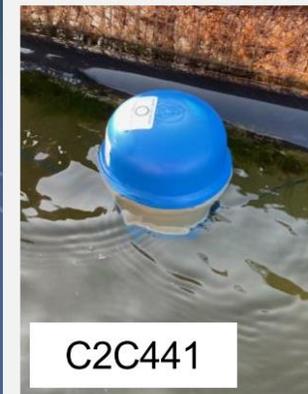
C2BA61

6. Holes Bay
Pontoon



C2C221

5. Pool Park
Lagoon



C2C441

DWMP context – aims

- To provide visibility of Drainage and Wastewater long term planning needs
 - Climate change
 - Growth and urban creep
- To work in partnership with others, to make plans for the future that will ensure the sustainability of our drainage infrastructure, and the services it provides to customers and the environment
- Inform our PR24 business plan and beyond.

Working together to improve drainage and environmental water quality

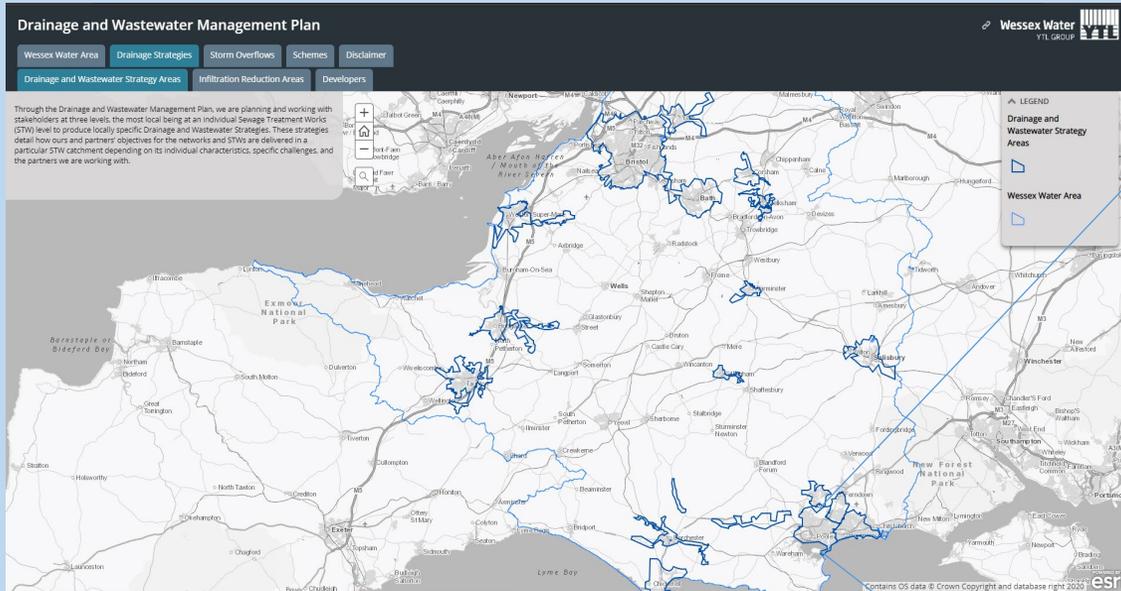
An overview of Drainage and Wastewater Management Plans

September 2019



DWMP Consultation in **June 2022** – good engagement with BCP Officers to date.

• DWMP Public Portal



• <https://www.wessexwater.co.uk/dwmp>

- Public Access to final DWMP / Drainage Strategies
- Drainage strategies
- Infiltration Reduction Areas
- Development constraints
- Storm overflow
- Schemes / partnership schemes

Strategy

Partnership working

We are working in partnership with the Lead Local Flood Authority, Bournemouth, Christchurch and Poole Council, to develop Surface Water Management Plans. These plans set out how surface water will be managed in the long term to prevent flooding from sewers, drains, groundwater, land runoff and small watercourses.

Short term

- Upgrade of East Quay pumping station and the rising main.
- Investigate and identify options to mitigate for development in the area.
- Review capacity at the WRC, considering growth in the catchment and climate change, and identify mitigation measures if required.

Medium term

- Increase capacity at the WRC to accommodate development in the catchment.
- Investigate and identify options to reduce the nutrient loading from the WRC to Poole Harbour.
- Reduce spill frequency from storm overflows to reduce impact on bathing waters.
- Investigate impact of Wessex Water's operation on Holes Bay and the shellfish waters of Poole Harbour.

Long term

- Investigate options to reduce the impact of the WRC on Poole Harbour such as the possibility of a new long sea outfall.
- Complete improvements to the WRC and install any additional nutrient removal required to reduce the nutrient loading to Poole Harbour.

We are developing further long-term options that address and mitigate for climate change, development, urban creep and other future challenges as a part of the drainage and wastewater management plan process.

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Working in Partnership

- BCP Poole Harbour relevant authority regular meetings (shellfisheries)
- Dorset Council Aquaculture strategy
- Catchment Partnership
- Westcountry Water Resources Group – Poole WRC eff reuse
- Shellfishery action group
- Bathing water stakeholder liaison, e.g. Sorted Surf Shop, Beach People – sampling & analysis
- Liaison with BCP planning and development teams over infrastructure requirements

- Frequent spilling overflow investigations and improvements to reduce harm
 - Scale and speed to be influenced by Defra policy on storm overflow improvements
- Flow to full treatment monitoring (FFT)
- Avonmouth and potential other upstream WRC FFT improvements
- Environment Act is introducing
 - New requirement for monitoring of water quality
 - 'Live' event duration reporting
 - Reducing harm from storm overflows
 - DWMP to become statutory
- Drainage and Wastewater Management Plan
 - 25 year strategic plan for investment
 - Visibility of plans for partnership working opportunities (e.g. separating highways, school roofs)



Enabling the right solutions...

...by having **legislation** that supports the following 2 principles

1. Surface water should be kept separate from foul water
2. Surface water should be returned to the environment as close as possible to where it lands

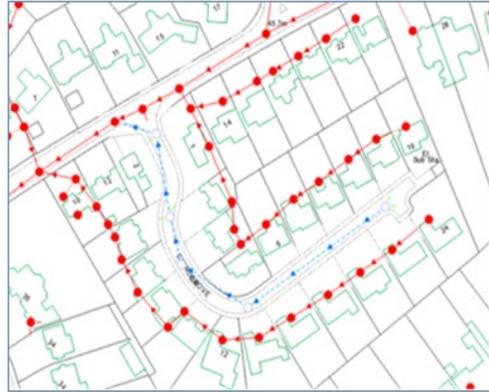
In other words legislation needs to....

- A. Reduce volume of surface water continually being added
- B. Make it easier to remove and dispose of surface water
- C. Make it easier to tackle groundwater – keep it out
- D. Improve probability of sewer capacity not being compromised

Currently it doesn't:

What we would like to see.....

Reduce the amount of rainfall being added:



- Address the 'right to connect'
- Improve regulation of impermeable urban creep

Make it easier to disconnect and discharge surface water:

There is no statutory right to discharge surface water (or treated sewage effluent) to a watercourse



Better building control for:

- Paving over front gardens
- Extensions
- Ensuring that there are no surface water connections to foul sewers

Key messages

No silver bullet –
many contributing
sectors influencing
water quality

Need data to
demonstrate
environmental
impact

Imperfect regulatory
system which needs
legislative change

WW asset
investment will take
time

Partnership working
and communication
most effective way
to resolve issues

Potentially some
quick wins around
notification and
warnings

Environment Audit Committee (Jan 21):

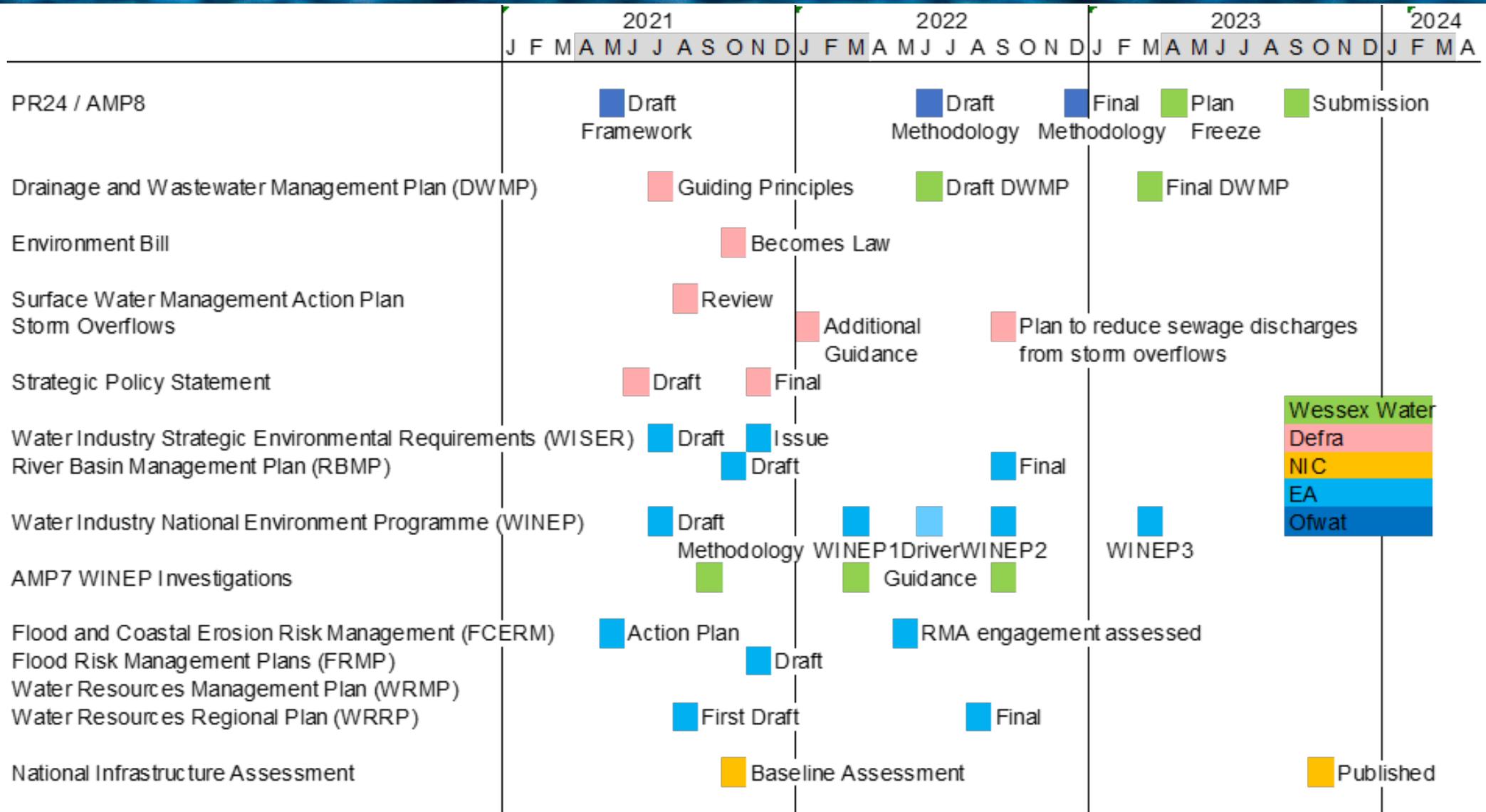
Responsibility for improving water quality in rivers cannot be laid solely at the door of the water industry. The project to restore all rivers in England to good health will require the engagement and collaboration of a wide range of stakeholders

Further Info

Wessex Water
YTL GROUP



Water Company asset planning



Wessex Water
Defra
NIC
EA
Ofwat

Drainage strategy: Poole

Drainage and Wastewater Management Plan

Wessex Water Area

Drainage Strategies

Storm Overflows

Schemes

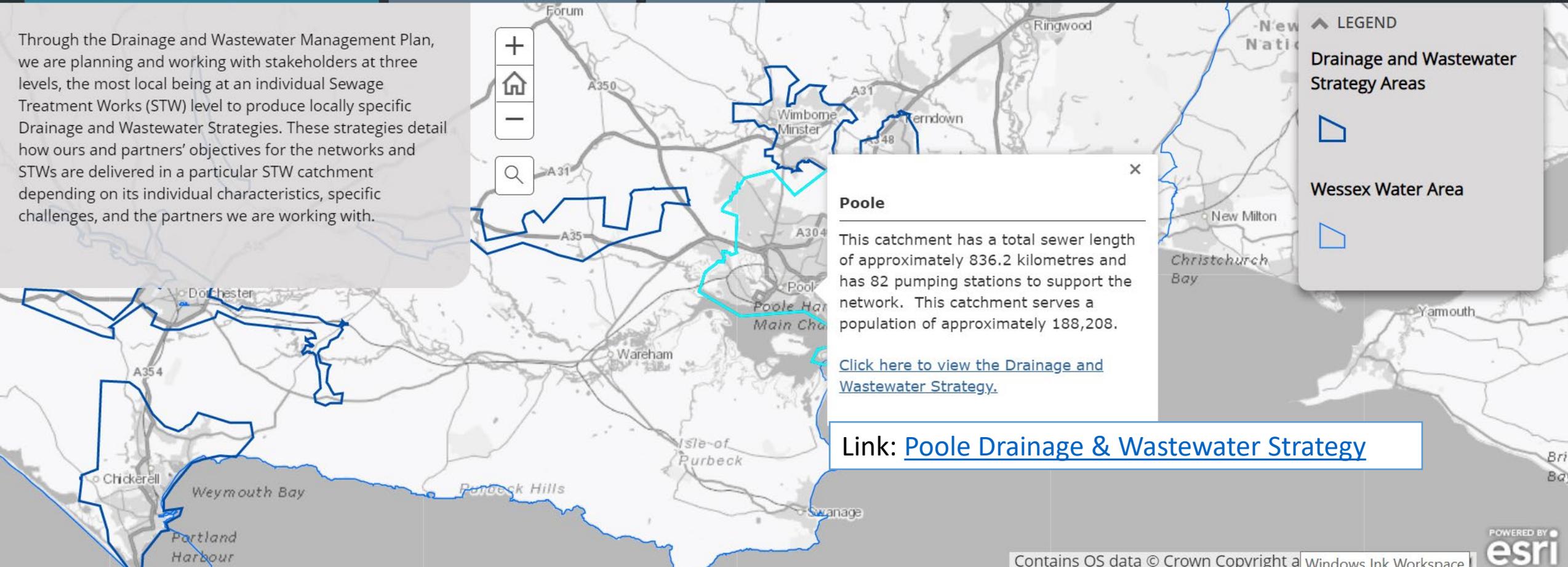
Disclaimer

Drainage and Wastewater Strategy Areas

Infiltration Reduction Areas

Developers

Through the Drainage and Wastewater Management Plan, we are planning and working with stakeholders at three levels, the most local being at an individual Sewage Treatment Works (STW) level to produce locally specific Drainage and Wastewater Strategies. These strategies detail how ours and partners' objectives for the networks and STWs are delivered in a particular STW catchment depending on its individual characteristics, specific challenges, and the partners we are working with.



Drainage Strategy: Bournemouth

Drainage and Wastewater Management Plan

Wessex Water Area

Drainage Strategies

Storm Overflows

Schemes

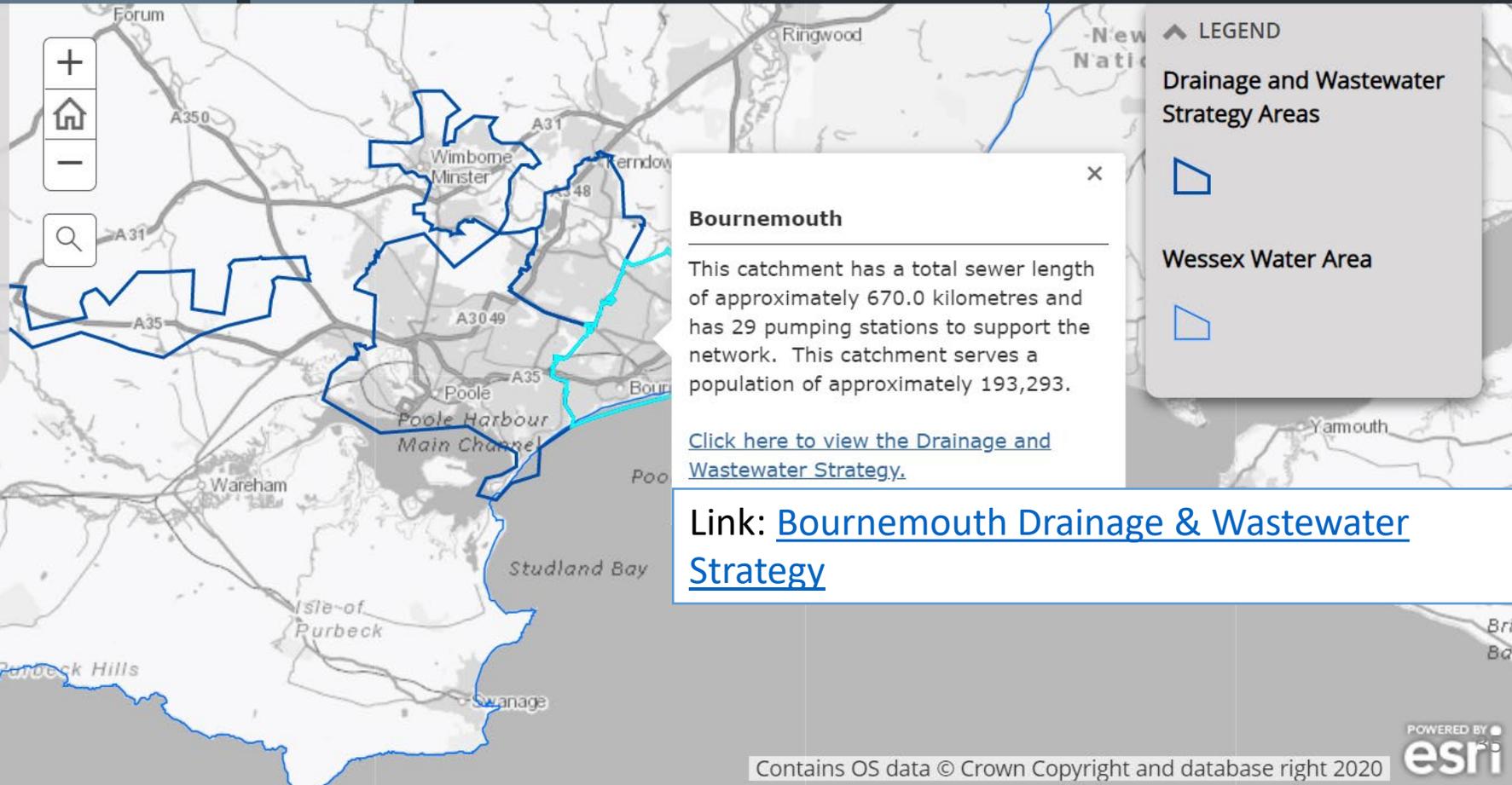
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Drainage Strategy: Kinson

Drainage and Wastewater Management Plan

Wessex Water Area

Drainage Strategies

Storm Overflows

Schemes

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Link: [Kinson Drainage & wastewater Strategy](#)

Drainage Strategy: Wimborne



Drainage and Wastewater Management Plan



Wessex Water Area

Drainage Strategies

Storm Overflows

Schemes

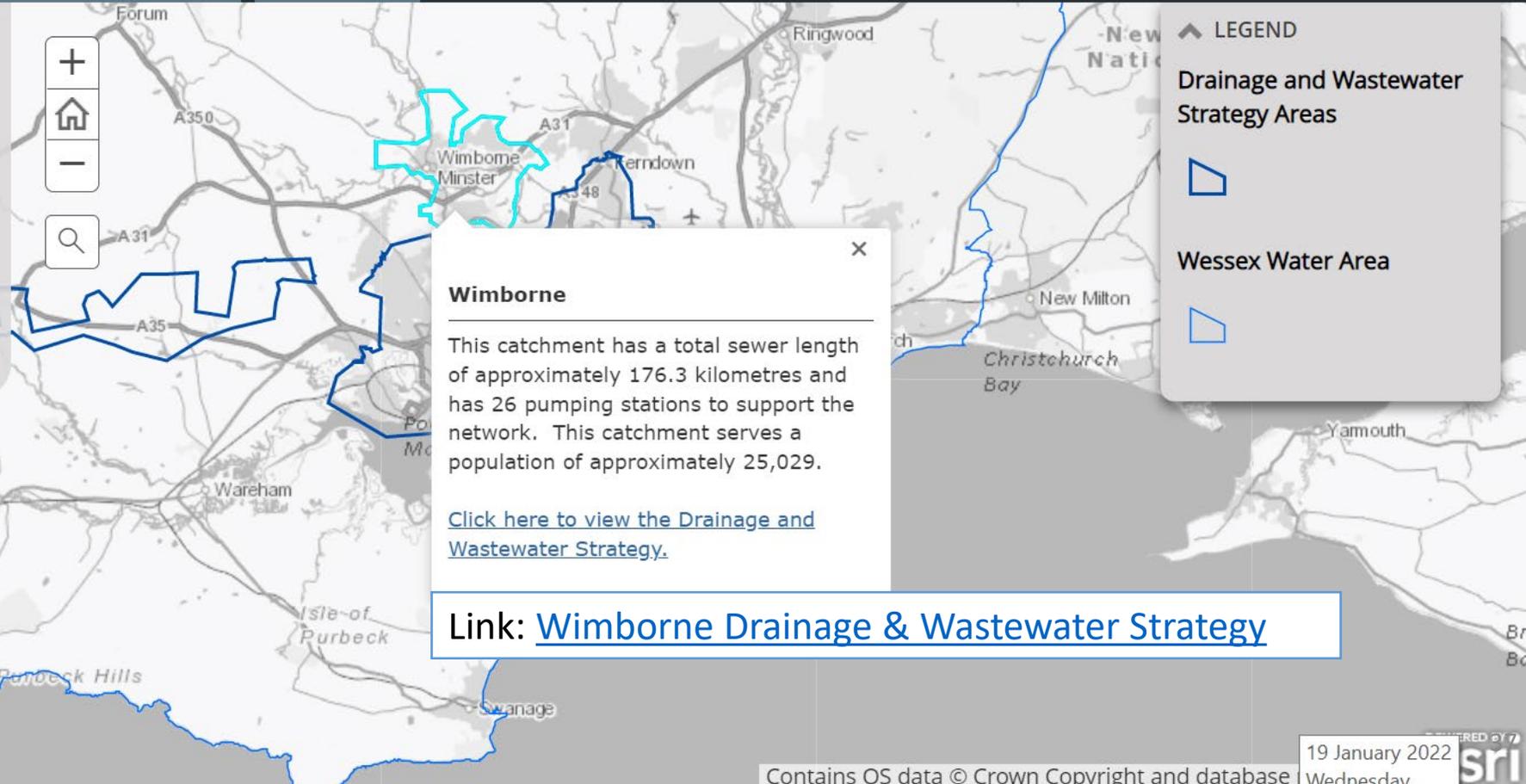
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Link: [Wimborne Drainage & Wastewater Strategy](#)

