

Sewage Policy Supporting Document

Whitburn Neighbourhood Plan

June 2021



Whitburn Neighbourhood Forum

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Introduction

This document is intended to act as an evidence base for the Whitburn Forum Sewage Policy in the proposed Neighbourhood Plan.

The document will give more of the detail that informs the policy.

How the wastewater treatment system works.

Combined sewers convey sewage for treatment at the sewage treatment works, and also take away rainwater to prevent flooding. During rainfall, the rain dilutes the sewage in the sewer. Combined Sewer Overflows (CSOs) are the safety valves on the system, ensuring that sewage treatment works are not overwhelmed. CSOs discharge into watercourses. The sewage discharged from CSOs during rainfall events is the same dilution as the sewage treated at sewage treatment works.

Section 1

Sewage infrastructure as a material planning consideration

a) The National Planning Policy Framework

The overarching objectives of the NPPF relative to conserving and enhancing the natural environment are outlined at paragraphs 170, 180 and 181.

170. Planning policies and decisions should contribute to and enhance the natural and local environment by:

(e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans¹

180. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.

181. Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants.

¹ <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

b) The National Planning Policy Framework and relevant national Planning Practice Guidance.²

Wastewater:

Plan-making may need to consider:

- the sufficiency and capacity of wastewater infrastructure
- the circumstances where wastewater from new development would not be expected to drain to a public sewer
- the capacity of the environment to receive effluent from development in different parts of a strategic policy-making authority's area without preventing relevant statutory objectives being met

The Framework expects local planning authorities to plan for the development and infrastructure required in their area, including infrastructure for wastewater. They should work with other providers, such as water and sewerage companies, to assess the quality and capacity of infrastructure and its ability to meet forecast demands

A key sustainability objective for the preparation of Local Plans and Neighbourhood Plans should be for new development to be coordinated with the infrastructure it demands and to take into account the capacity of existing infrastructure. New development should be coordinated with the infrastructure it demands and to take into account the capacity of existing infrastructure.

National Planning Practice Guidance sets out the role that the planning system has in relation to wastewater and sewage infrastructure. It states that good design and mitigation measures can be secured through site specific policies for allocated sites and through non-site specific policies on water infrastructure and protecting the water environment.

For example, they can be used to ensure that new development and mains water and wastewater infrastructure provision is aligned and to

² [Water supply, wastewater and water quality - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/water-supply-wastewater-and-water-quality)

ensure new development is phased and not occupied until the necessary works relating to water and wastewater have been carried out. Local planning authorities can use planning conditions and / or obligations to secure mitigation and compensatory measures where the relevant tests are met.

Planning obligations can be used to set out requirements relating to monitoring water quality, habitat creation and maintenance and the transfer of assets where this mitigates an impact on water quality³

³ Paragraph: 019 Reference ID: 34-019-20140306

Section 2

Evidence of Sewage Pollution in the Whitburn Neighbourhood Area

See Annex A for the volumes of sewage discharged at Whitburn since 1997.

Photo of Whitburn Rock Pools 22nd February 2019 showing the debris from sewage discharges



Effect of Sewage discharges at Marsden from the Combined Sewer Overflow

Whitburn does not have a designated bathing area but residents and visitors do regularly visit the beaches and rocky pools on the shoreline of Whitburn.

Marsden bathing waters are designated as part of Whitburn Neighbourhood Area and are also designated bathing waters.

Environmental Agency water samples history at Marsden⁴

Date	Intestinal Enterococci colonies per 100ml seawater	Escherichia Coli colonies per 100ml seawater
20th August 2018	973	3000
12th August 2019	1600	3200

Such levels of bacteria as shown in the above table can be attributed to the discharges of untreated sewage from the Long Sea Outfall at Whitburn combined with sewage from Marsden CSO, Coast Road (A193) Redwell Lane.

At levels of less than 40 Intestinal Enterococci colonies (IE) per 100ml seawater there is an average probability of less than one case of gastroenteritis in every 100 exposures.

At levels of greater than 500 Intestinal Enterococci colonies (IE) per 100ml seawater there is a greater than 10% chance of gastroenteritis per single exposure.⁵

⁴ <https://environment.data.gov.uk/bwq/profiles/data-samples.html?bw=ukc2204-05400,ukc2300-05500,ukc2204-05300>

⁵ WHO Guidelines for Safe Recreational Water Environments - Volume 1 <https://bit.ly/2SByHyl>

Recent sewage discharge record for Marsden CSO

Permit	2018		2019		2020	
	Spills	Duration (hours)	Spills	Duration (hours)	Spills	Duration (hours)
235/1588	17	58	18	59.16667	21	54.17

The Environment Agency carried out investigative sampling at Marsden in 2019 to identify the pollution source causing the recent high results. DNA analysis on the water samples showed that both human and seabird sources are contributors to reduced water quality at Marsden.

The local sewage undertaker is currently investigating the impact of their assets on bathing water quality at Marsden. If water company assets are found to be a significant contributor to pollution, then remedial action will be taken to reduce their impact.⁶

⁶ [Bathing water profile \(data.gov.uk\)](#)

Section 3

Current analysis of the Whitburn sewage system.

Untreated sewage is regularly pumped from Whitburn Steel pumping station (which does not have any method of sewage treatment apart from screening)⁷ via the Long Sea Outfall (LSO) directly into the North Sea at Whitburn. (See Annex A). The LSO receives flows from ten identified CSOs under conditions specified in a discharge permit.

The local sewage undertaker has a consent to discharge screened storm sewage (permit 245/1207 issued by the Environment Agency) at times of heavy flow due to rain / snowmelt from the LSO. The storm sewage is combined sewage, a mixture of surface water and domestic waste that includes excrement.

The UK Environment Agency state that:

discharge from the Whitburn LSO can only be triggered by high amounts or intense rainfall or from snowmelt. Whitburn LSO will only operate once rainfall has exceeded the capacity of the sewers and then exceed the operating capacity of the interceptor tunnel. It requires enormous volumes of rainfall to trigger the discharge.

This statement is roughly in line with the view of the European Court of Justice who in 2012 found that failure to treat urban wastewater cannot be accepted under usual climatic and seasonal conditions, as otherwise the Urban Waste Water Treatment Directive (91/271) would be rendered meaningless.

Recent performance of the Whitburn sewage system

⁷ Consent to Discharge 245/1207 Sec 6 (a) states: The discharge shall not be comminuted or macerated to achieve the standard.

In 10 months of a relatively dry 2018⁸ (553 mm rainfall for the year⁹) over 370,000 tonnes of untreated sewage were discharged from Whitburn Steel pumping station directly into the North Sea at Whitburn.¹⁰

In 2019 rainfall in the North East of England increased to 750 mm rainfall and 760,993.50 tonnes¹¹ of untreated sewage were discharged from Whitburn Steel pumping station directly into the North Sea at Whitburn.

In the first 6 months of 2020 a modest 282 mm of rain was recorded at the nearest weather station to Whitburn (Fulwell weather station) and 149,557.50 tonnes of untreated wastewater were discharged

The 15-minute interval rainfall figures for the area for the first 6 months of 2020 (Relevant excerpt included in supporting documents) have been plotted against the discharge figures for the Long Sea Outfall at Whitburn and the following table produced.

In 2020 the Long Sea outfall discharged a total of 460,000 tonnes of untreated sewage into the Northumbria Coast Special Protection Area.

Date	Rainfall Period Hours	Rainfall mm	Average Rainfall per Hour	Volume discharge m3	Volume m3 per mm rain
9/1/20	12.75	14.8	1.16	17850	
9/2/20	16	18	1.12	22869	

⁸ 2018 only had 60% of the normal average rainfall. In 2018 there were approximately 147 days in England in which 1 mm or more of rain fell. This was the fewest number of days since 2010, when there were 143. <https://www.statista.com/statistics/610677/annual-raindays-uk/>

⁹ Rainfall registered at Fulwell Recording station as supplied by Environment Agency

¹⁰ In a letter of 22 March 2019 to the Environmental Enforcement section of the European Commission, the United Kingdom confirmed that in 2018 there were 376,593 m3 discharged in 17 spills from the Long Sea Outfall at Whitburn

¹¹ See Annex A - Figures supplied by the Environment Agency

13/2/20	10.5	10.6	1.00	10650	
15/2/20	19.75	19.4	0.98	55993.50	
24/2/20	6	11.4	1.90	22209	
12/6/20	17.5	18.2	1.04	19986	
	82.50	92.40	1.12	149557.50	1618

The UK Met office use the following to describe rainfall:

Light = less than 0.5 mm/hr, Moderate = 0.5 to 4 mm/hr, Heavy = more than 4 mm/hr

Results

92.40 mm of rain fell during the first 6 months of 2020 during the periods leading up to and during discharge operations for a total of 82.5 hours.

The maximum hourly rainfall during these 6 months fell on 15/02/20 between 17.45 and 18.45 when a cumulative total of 5 mm of rain fell during that hour as follows:

15/02/2020 17:45:00 1.2mm
15/02/2020 18:00:00 1.8 mm
15/02/2020 18:15:00 0.4 mm
15/02/2020 18:30:00 1.6 mm

- This is the only hour of the 82.5 hours when the rain could be classed as anywhere near as heavy enough to trigger a discharge.
- The remaining 72.5 hours did not generate the enormous volumes of rainfall that the Environment Agency regards as necessary to trigger the discharge.

- The average rainfall during these rainy 82.5 hours was 1.12 mm per hour. (Moderate rainfall)
- For every 1 mm of rain that fell, 1,618 tonnes of untreated wastewater were discharged into the North Sea.

These discharges contribute to the pollution in the North Sea at Marsden and the pollution to the beaches and rock pools at Whitburn.

Annex A

(As provided to the Commission by UK authorities)

Summary of data on spill events and volumes at Whitburn Steel

Year	Frequency of 'spills' at Whitburn			Total volume spilled to sea(m3)	Rainfall (mm)
	Pump operations	12 Hour Rule*	24 Hour Rule*		
1997	208			295,200	271.5
1998	487			717,570	750.7
1999	285			709,290	624
2000	117			367,290	426
2001	310			561240	
2002	67	26	22	359,640	663.2
2003	56	23	20	387,450	692.6
2004	110	37	24	530,100	693.8
2005	96	27	21	542,070	693.8
2006	51	23	20	248,130	521.2
2007	75	25	23	478,620	529.4
2008	108	42	37	744,660	742
2009	93	34	27	762,300	609.8
2010	73	39	31	548.370	711
2011	11	9	9	163,620	503
2012	83	43	32	703.620	888

2013	62			580,672	
2014	38			439,959	
2015	55			651,959	
2016	61		19	624,600	
2017	50		19	569,221	
2018	43		17	376,593	553
2019	75		26	760,993	749.8
2020	65		23	460,339	610.6

NB Guidance: Water companies: environmental permits for storm overflows and emergency overflows :¹² 12/24 Spill counting method

In general, a spill greater than 50m³ is considered significant.

Count spills using the 12/24 counting method:

1. Start counting when the first discharge occurs.
2. Any discharge (or discharges) in the first 12-hour block are counted as one spill.
3. Any discharge (or discharges) in the next, and subsequent 24-hour blocks, are each counted as one additional spill per block.
4. Continue counting until there's a 24-hour block with no discharge.

For the next discharge after the 24-hour block with no discharge, you begin again with the 12-hour and 24-hour block spill counting sequence.

¹² Counting spills: bathing and shellfish waters. <https://bit.ly/37aHBZt>