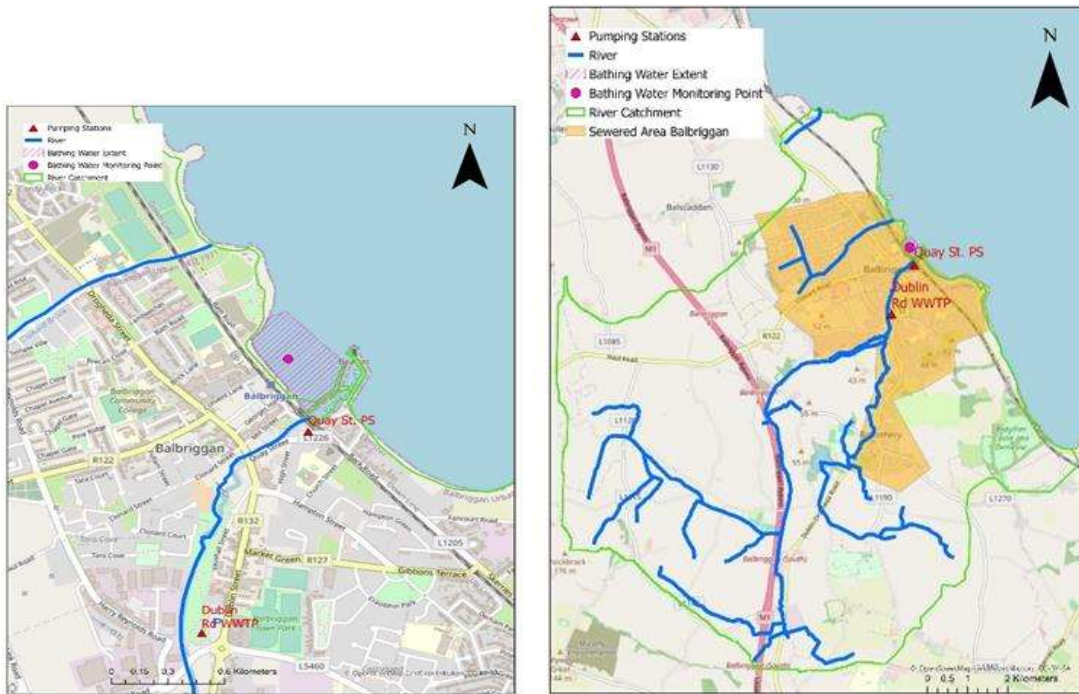



Fingal County Council

Bathing Water Management Plan for Front Strand Beach, Balbriggan



Map 1: Location and Extent of Front Strand, Balbriggan bathing water

Bathing Water Name	Front Strand Beach, Balbriggan
County	Dublin
River Basin District	Eastern River Basin District
Bathing Water ID (as per the WFD)	IEEABWC020_0000_0600
Year of Designation	1996
Location of Sampling Point incl. 6 digit grid ref	320340E, 264059N
	
Responsible Authority	Fingal County Council

Status	Date	Prepared by	Reviewed by	Approved by
draft	25/1/23	Rita McGrath	James Walls	Dave Storey
Final	2/2/23	Rita McGrath	James Walls	James Walls
Map - edit & Staff change	30/3/23	Rita McGrath	David Byrne	David Byrne

1.0 INTRODUCTION: EPA GUIDANCE ON MANAGEMENT OF POOR BATHING WATERS

Guidance was issued by the EPA to inform Fingal County Council of the

- *Legislative requirements to be undertaken following the classification of a bathing water as **Poor** and*
- *The management approach to be undertaken to improve the water quality of a Poor bathing water.*

The guidance advised that the management plan needs to address the following:

- a. **Local authority confirms** that there is a requirement for the bathing water to remain as identified bathing water
- b. **Local authority informs** of its decision on the **type of seasonal bathing restriction**, i.e. advice against bathing or bathing prohibition, to be issued at the Poor bathing water for the following season. The local authority's decision on the type of seasonal bathing restriction to issue at the Poor bathing water should be based on ensuring adequate bather protection.
- c. The **cause(s) of pollution** affecting the bathing water are clearly identified. Where causes of pollution require further investigation provide relevant details and timelines for completion of this task.
- d. The **measures**, including interim actions, proposed to prevent, reduce or eliminate the causes of pollution. Details of the measures proposed, timelines and responsible authority will need to be provided.
- e. Local authority **strategy for communicating** to the public (in addition to notice at the bathing water) of the:
 - *causes and reasons for Poor classification of the bathing water,*
 - *measures being undertaken and planned to improve the water quality of the bathing water*
 - *implications for bather health*
 - *where/who to contact for more information.*

2.0 DESCRIPTION OF BATHING WATER

Front Strand Beach is located in Balbriggan town which is situated in Fingal, North County Dublin. The beach is approx. 35km from Dublin City Centre.

Balbriggan Front Beach lies adjacent to Balbriggan Harbour. The Matt River (known locally as the Bracken River) discharges through the harbour, immediately south of the identified bathing area. Visitors access the beach by passing under an arch limestone and brick railway viaduct.

Balbriggan Front Beach is approximately 350m wide and 0.06 sq. km in area. Balbriggan Front Beach is a small flat sandy beach, sloping gently towards the sea. The adjacent harbour is a working fishing harbour. There is a rocky shore to the north of the identified beach.

A more detailed description of the bathing water and contributing catchment and pressures can be found in the Front Strand Beach, Balbriggan bathing water profile on the EPA's Beaches.ie website.

Fingal County Council confirms that Front Strand, Balbriggan bathing water will remain as an Identified Bathing Water for 2023.

3.0 DESCRIPTION OF THE CONTRIBUTING CATCHMENT

Land use in the contributing catchment area consists of industrial, agricultural, commercial and residential elements, including Balrothery village and Balbriggan town.

Balbriggan Front Beach is located in the Nanny-Delvin catchment area. The main surface water body is the Bracken (Matt) River and its catchment is 36 sq. km. in area. The contributing catchment for Balbriggan Front Beach is limited to Balbriggan and Balrothery areas.

The Bracken (Matt) River is the main water body discharging adjacent to the bathing area. The river discharges to the harbour at the south end of Balbriggan Front Beach. There is no surface water discharge directly to the beach.

4.0 BATHING WATER QUALITY ASSESSMENT

4.1 Bathing Water Regulations 2008

The Bathing Water Regulations 2008 specifies that two parameters Escherichia coli and Intestinal enterococci are monitored at identified bathing waters throughout the bathing season. Laboratory reported bacterial counts from samples taken during the bathing season define water quality. Table 1 provides an explanation of water quality for each of these parameters.

Parameter	Excellent Quality	Good Quality	Sufficient Quality
Escherichia coli (mpn/100ml)	250(*)	500(*)	500(**)
Intestinal enterococci (cfu/100ml)	100(*)	200(*)	185(**)

Table 1 Water Quality as per Bathing Water Regulations

(*) Based upon a 95-percentile evaluation

(**) Based upon a 90-percentile evaluation

The classification of water quality status for Front Strand, Balbriggan for the period 2019-2022 is as follows:

2019 – Sufficient

2020 – Poor

2021 – Poor

2022 - Poor

4.2 Bathing Water Quality 2019-2022

Bathing Water Quality data collected for Front Strand, Balbriggan beach has been compared to the in-season single sample status assessment limits (Refer to Table 2). These limits are for informational purposes throughout the bathing season only. The annual classification is based on a 4 year assessment (Refer to Section 4.1).

Parameter	Excellent	Good	Sufficient	Poor
Intestinal enterococci	≤ 100	101 - 200	201 - 250	>250
Escherichia coli	≤250	251 - 500	501 - 1000	>1000

Table 2 Single Sample Limits for In-Season Water Quality Status Assessment

Bathing Water Quality data which has been collected for Front Strand, Balbriggan beach and is compared to the single sample status assessment limits is presented in Table 2 (Source: www.beaches.ie).

Date	Escherichia Coli	Intestinal Enterococci	Sample Status*	Quality
5/9/2022	906	870	Poor	
22/08/2022	>24196	>2000	Poor	
08/08/2022	86	55	Excellent	
25/07/2022	1500	720	Poor	
11/07/2022	10	7	Excellent	
27/06/2022	364	49	Good	
13/06/2022	10	5	Excellent	
07/06/2022	20	12	Excellent	
24/05/2022	20	30	Excellent	
6/9/2021	20	5	Excellent	
31/8/2021	10	18	Excellent	
17/8/2021	30	13	Excellent	
3/8/2021	241	71	Excellent	
19/7/2021	345	64	Good	
5/7/2021	496	250	Sufficient	
21/6/2021	10	5	Excellent	
8/6/2021	10	4	Excellent	
24/5/2021	98	5	Excellent	
1/9/2020	121	12	Excellent	
25/8/2020	7701	2000	Poor	
11/8/2020	110	210	Sufficient	
27/7/2020	109	29	Excellent	
13/7/2020	62	4	Excellent	
29/6/2020	171	66	Excellent	
15/6/2020	10	2	Excellent	
2/6/2020	10	1	Excellent	
25/5/2020	10	1	Excellent	

09/09/2019	771	480	Poor
26/08/2019	331	88	Good
12/08/2019	836	270	Poor
29/07/2019	31	13	Excellent
15/07/2019	31	38	Excellent
01/07/2019	10	7	Excellent
17/06/2019	52	11	Excellent
11/06/2019	10	12	Excellent
28/05/2019	10	23	Excellent

Table 3 Bathing Water Quality at Front Strand, Balbriggan Beach 2019-2022

*From 2014 onwards bathing water sample results were categorised as 'excellent', 'good', 'sufficient' or 'poor'. Prior to 2014, bathing water sample results were categorised as 'good', 'sufficient' or 'poor'.

4.3 Bathing Water Assessment 2023

In December 2022 the EPA advised that the classification of water quality status for Front Strand, Balbriggan beach for the 2023 bathing season is **Poor** (based on the assessment of 2019-2022 data).

4.4 Seasonal Bathing Restriction for 2023

During the period 2019 – 2022, there were a total of 30 samples analysed for bathing water quality. Of these, 6 were classified as 'Poor', 2 as 'Sufficient', 3 as 'Good' and the remaining 25 samples classified as 'Excellent'.

On the basis of the above results, the HSE has agreed with Fingal County Council that an Advisory Notice be placed at the beach for the duration of the bathing season 2023 as a measure to protect bathers' health.

5.0 REVIEW OF POLLUTION SOURCES

The main causes of pollution that may affect the bathing water are outlined in Table 4:

Pressure No	Pressure Source
1	Surface Water Streams within the beach catchment
2	Agricultural run-off
3	Foul water network and Pumpstations
4	Animal Fouling
5	Bird Colony

Table 4 Summary of pressure sources within the catchment posing a quantifiable microbial risk

1. Surface water streams within the beach catchment

There are no direct surface water outfalls onto the beach. The surface water network (includes surface water run-off from urban areas) from the catchment shown in map fig.

1 (catchment shown in orange) discharges to the River Bracken (Matt River). The river discharges into the Balbriggan Harbour adjacent to the bathing water. Surface water outfalls exiting to this river could pose a risk to the bathing water quality due to misconnections into the surface water system and animal fouling, if present, or bird fouling may contaminate waters also. Risk is highest after heavy rainfall events. Storm overflows from the foul network via Quay Street Pumping Station discharge to the river however, a large storage facility mitigates against such discharges. This was originally designed to overflow only in storms with a frequency of 1 in 5 years. The current operating design criteria is reported as a 1 in 3 criteria bathing season and should be confirmed by Uisce Éireann.

Most of Balbriggan's foul network drains to Quay Street Pumping Station. A portion of the catchment drains to the pumping station at Dublin Road (St. Peter and Paul's Church car park). There was one overflow in 2022, one in 2021 and in 2018 which can explain some failures but not all. The overflow in 2022 arose following heavy rainfall (Met Eireann Yellow Warning in place) and a Prohibition (Do Not Swim) Notice was already in place at the time due to an earlier incident not attributed to failures in the foul network. Failures in dry weather cannot be explained by Quay Street Pumping Station overflows.

A report on the assessment of pollution sources within the Bracken (Matt) River was commissioned by the Balbriggan Tidy Towns Committee from CDM Smith in 2020 which will assist in further investigations. Microbial source tracking (MST) analysis was used to identify the type of faecal bacterial sources in the bathing water (following the "Poor" results in 2020). MST results were positive for 'human marker' indicating a pollutant source of human origin was present. There were no individual sample results of 'poor' in 2021. Further Microbial Source tracking (MST) was carried out in 2022 using faecal markers for Human, Ruminant, Horse, Dog and Gull and identified positive results for all markers tested during the bathing season at this bathing water. In Bathing Water compliance point samples tested, where results were less than excellent, the percentage testing positive were as follows; Gull marker (100%), Dog marker (86%), Human (71%), Horse marker (50%) and Ruminants (43%) - with the latter absent in dry weather conditions. This information assisted in faecal contamination investigations at the river and helps concentrate actions to address faecal contamination to the river which is the main conduit of faecal contamination to the bathing water. Combined storm overflows in the catchment may contribute to pollution of streams within the catchment and consequently may affect the bathing water.

A work programme will be prepared by the Local Authority Waters Programme Office to meet the restoration objective for the Bracken (Matt) River if this waterbody is included on the list of proposed Areas for Action in the final issue of River Basin Management Plan for the 3rd cycle (2022-2027) awaiting final publication in 2023.

2. Agricultural run-off

Farming practices containing faecal contamination sources such as run-off from slurry storage, landspreading of slurry to lands and animal feeding near streams may contribute to pollution of streams within the catchment (pasture and mixed farming primarily) and consequently may affect Bracken River and ultimately the bathing water. The risk is highest during intense rainfall events (MST results in 2022 showed positive for 'ruminant markers' on sampling dates with rainfall within the previous 2 days of sample date. Approximately, 61% of the catchment has agricultural use which can be estimated to be associated with 59% tillage and 41% pasture.

3. Foul Sewer Network and Pumpstations

The sewer network at Balbriggan, particularly the older parts of the town in the vicinity of the Harbour had been identified in Irish Water's National Sewer Rehabilitation Programme

as needing repairs/rehabilitation. There are three pumpstations within the catchment. The closest pumpstation to the bathing area is Quay Street pumpstation. This pumps directly to the Dublin Road pumpstation for delivery to Balbriggan WWTP at Skerries (70,000pe) ref. D0023-01. The Quay Street pumpstation conveys flows to this rising main via a storm tank (capacity of 1,500m³) and when the tank overflows this discharges into the River Bracken. The River Bracken flows into Balbriggan harbour adjacent to the southern end of the bathing water. Risk of stormwater overflows to bathing water is highest during intense rainfall events.

In heavy rainfall conditions, the system is designed to discharge to River Bracken when the stormwater storage tank capacity is full (i.e. flow is greater than the pumped flow) in order to prevent flooding. Storm Water Overflow alarms are activated (pump station failure) and monitored when they occur using telemetry. Also in the case of mechanical breakdown of the waste water pump station, the alarm is sent to an operative with the storm tank being used as an emergency holding tank. Uisce Éireann currently have investigations on going in the catchment to assess its performance under its Drainage Area Programme.

An upgrade of the pumps at Quay Street pumping station is proposed by Uisce Éireann and flow surveys will be conducted in 2023 as part of the Drainage Action Plan for the Balbriggan area. In 2022 CCTV surveys of the foul network were undertaken and found 2 anomalies which were subsequently remedied but these were not sources of failures at the bathing water. The remedies involved cleaning and relining of the pipe. No overflows to surface water network were found from the foul network in areas examined by CCTV. In 2021 rehabilitation of pipes were also done around the Harbour area and other parts of the catchment and no individual bathing water sample result was 'poor' in 2021. A misconnected foul pipe was found in Summer 2022 to be connected to a surface water pipe which discharges to the River Bracken. This was rectified.

A portion of a foul sewer pipe has been identified to Uisce Éireann as present in the river channel for their investigation (as a potential source) and to investigate possibly removing the pipe from the river.

4. Animal fouling at the beach

Use of the beach by dog and horses (at back beach) and subsequent fouling may pose a risk to bathing water quality. Dog fouling on paved areas and roads can also enter the river as run-off during wet weather. Dog litter not disposed of in a bin but buried in the sand can also affect water quality when re-suspended in water with the tide. MST results were positive for 'dog marker' and were present on nearly all dates sampled in 2022 during the bathing season at the bathing water, including dates where 'poor samples were obtained. In addition, 'ruminant markers' were identified in the River Bracken and at the bathing water on sampling dates in 2022 (in particular when there was rainfall two days prior to sampling). Findings to date have found 'horse marker' and 'dog marker' and 'ruminant marker' as a pollution pressure present at this beach.

5. Bird Colony

Balbriggan is a well-known area for urban breeding gulls. All samples tested in 2022 using MST were positive for 'gull marker'. Any outdoor eating activities (picnics and takeaways) are known to attract bird populations however during beach inspections the birds, when sighted, were mostly congregating in the adjacent Balbriggan Harbour area rather than the bathing water. A Bird flu outbreak in 2022 did result in dead birds being found on beaches in Fingal.

*ref. National Urban Gull Survey 2021: Technical Report (December) - ALCnature, Unit D1, Wicklow Enterprise Centre, The Murrrough, Wicklow Town, Co. Wicklow.

6.0 PROPOSED MEASURES TO IMPROVE BATHING WATER QUALITY AT FRONT STRAND, BALBRIGGAN BEACH

Details of the proposed measures, timelines and responsible authorities are outlined in Appendix 1.

The programme of measures will be reviewed annually.

7.0 COMMUNICATIONS STRATEGY

Fingal County Council proposes to promote public awareness of the poor status of Front Strand, Balbriggan by implementing those actions as outlined in Table 5. These have been devised in conjunction with the Council's Communications Department. The nominated point of contact for further information is: Executive Scientist, Environment, Climate Action and Active Travel Department, Water Pollution Control Section, Fingal County Council, phone no. 01-8905000.

Item	Description	Action by
1	Place the appropriate <i>EPA-standard poor bathing water template sign for seasonal bathing water restriction</i> with information regarding the causes of the pollution affecting the bathing water and measures taken on the beach notice board	HSE/Environment Division
2	Train lifeguards in the significance of water quality data and providing advice to the public on how to obtain further information	Operations Department and Environment Division
3	Provide information on bathing waters on the EPA's national website; beaches.ie and Fingal Website; www.fingal.ie and at digital sign at Front Beach.	Environment Division/Communications Department
4	Direct communications to the Elected Members through the 'Our Balbriggan' project and meetings with Community representatives	Environment Division/Operations Department/Economic Development
5	Use social media to circulate updated information and provide information on bathing water results and warning notices to registered users through the Fingal Alerts system	Environment Division/Communications Department
6	General Bathing Water Awareness Programme at the beach (including Dog Warden patrols – subject to resources available)	Environment Division/Communications Department

Table 5 Communications Strategy

APPENDIX 1			
DETAILS OF PROPOSED MEASURES TO IMPROVE BATHING WATER QUALITY AT FRONT STRAND, BALBRIGGAN BEACH 2023			
PRESSURE 1 AND 2	SURFACE WATER STREAMS WITHIN THE BEACH CATCHMENT and AGRICULTURAL RUN-OFF		
PRESSURE TYPE	Contaminated Surface Water/Misconnections		
Microbial Pollution Potential	HIGH		
Pressure Description	Surface water contaminated by misconnections or farming practices discharging onto the beach could pose a risk to bathing water quality.		
	Combined storm overflows in the catchment may also contribute to pollution of streams within the catchment and consequently may affect the bathing water.		
SHORT TERM ACTIONS	Agency responsible	Contact person	Target timeframe
Sampling of bathing water/surface water outfalls to determine water quality and test for pathogen speciation (in particular Bracken River) where identification of the source of pathogens will be investigated if service available (UCD). Liaison with Uisce Éireann for possible sources of sewage if visible during field work.	Fingal County Council Environment Division	R. McGrath	Q2 -Q3/2023
Misconnection training with new Web app with South Dublin County Council to be arranged in 2023. Pollution investigations progressed including misconnection as appropriate. Fortnightly testing at the River Bracken (Q1 and monthly testing Q2-Q4)	Fingal County Council Environment Division	R. McGrath/ D. Byrne	Q1-Q4/2023
Uisce Éireann are progressing their 5 year Drainage Area Plan in 2023. The work will involve a review of the network to identify areas where stormwater (SWO) can be removed from the foul system. Identify misconnections (to foul sewer) and high levels of infiltration to the foul network. All existing SWO's will be surveyed and any unknown SWOS identified will be investigated. The existing SWO performance will be analysed in terms of meeting licence criteria with all expected future performance due to increased growth in the catchment will determined through this study. Surveys (e.g. flow) are due to commence in 2023.	Uisce Éireann	Asset Delivery (various programmes and PM,s)	Stage 1 started in Q3 2022 stage 4 completion is expected 2026

PRESSURE 1 AND 2 contd.	SURFACE WATER STREAMS WITHIN THE BEACH CATCHMENT and AGRICULTURAL RUN-OFF		
SHORT TERM ACTIONS	Agency responsible	Contact person	Target timeframe
An upgrade/rehabilitation of the Quay Street Pumping Station is in the final stages of design where the works will overhaul the waste water pump station, increasing its pass forward capacity ensuring the site will be capable of meeting the expected formula of future growth flows.	Uisce Éireann		
<p>Harbourmaster will engage with boat owners to remind them of their obligations to prevent pollution from activities under the Sea Pollution Act 1991 and the Sea Pollution (Prevention of Pollution by Sewage from Ships) Regulations 2006.</p> <p>In the event of oil spills to the environment in the Harbour there is an oil spill response contractor engaged (3 year contract).</p>	Fingal County Council, Operations Department	Harbourmaster	Q1-Q4 2023
Sampling of the material in harbour will be carried out in 2023 with a view to progressing the dredging of the Harbour.	Fingal County Council, Operations Department	Senior Executive Engineer, Operations	Q1-Q4 2023
Focussed GAP inspections carried out during 'closed' period and one planned in 'open' season of slurry spreading in the catchment to coincide with bathing season.	Fingal County Council Environment Division	D. Byrne	Q1-Q3 2023

PRESSURE 3	FOUL SEWER NETWORK AND PUMPING STATIONS		
PRESSURE TYPE	Sewage		
Microbial Pollution Potential	HIGH		
Pressure Description	During overflow, effluent from Pump Station can discharge to the River Bracken and via Harbour to the Irish Sea.		
SHORT TERM ACTIONS	Agency responsible	Contact person	Target timeframe
The 2021 National Sewer Rehabilitation Programme was undertaken by Irish Water and included identifying works for the rehabilitation/repair of pipework in Balbriggan including the Harbour area. These identified works are completed in order of priority on a multi annual rolling programme of work	Uisce Éireann	Mark O'Duffy	Q1 2022-24 rolling programme of work
All pumping stations are on a telemetry system which allows for notification of and rapid response to overflows from the Pumping Stations. There are also frequent inspections and maintenance of equipment at the Pumping Stations. The operating standard is to the 3 spill criteria for Bathing Water season.	Uisce Éireann	Uisce Éireann	Q2-Q4/2023
PRESSURE 4	ANIMAL FOULING AT THE BEACH		
PRESSURE TYPE	Fouling		
Microbial Pollution Potential	MODERATE		
Pressure Description	Use of the beach by dog walkers and horse riders and subsequent fouling may pose a risk to bathing water quality.		
SHORT TERM ACTIONS	Agency responsible	Contact person	Target timeframe
Public awareness campaign regarding the dangers of animal fouling.	Fingal County Council Environment Division/	M. Hand	Q2/Q3/2023
Dog warden to target beach for inspections during the Bathing Season.	Fingal County Council Environment Division	M. Hand	Q2/Q3/2023
Duplicate sampling of bathing waters for pathogen speciation purposes if service available.	Fingal County Council Environment Division	R. McGrath	Q2-Q4/2023
New digital sign on beach to be used with content being generated to run at beach with Communications	Fingal County Council Environment Division/Communications	R. McGrath	Q1-Q3/2023

PRESSURE 5	BIRD COLONY		
PRESSURE TYPE	Fouling		
Microbial Pollution Potential	LOW		
Pressure Description	Impact of gull population may pose a risk to bathing water quality.		
SHORT TERM ACTIONS	Agency responsible	Contact person	Target timeframe
A Seagull Information Leaflet on our website has information for the management of food waste relating to controlling bird nuisance (derogation for removal of nests ended April 2020). The website version will be updated in 2023.	Fingal County Council Environment Division	J. Daly	Q1-Q3 2023