

















ATTACHMENT NO: F.1 (i)

WFD CHARACTERISATION - AVONBEG_040



















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WFD Charatersition - AVONBEG_040 (Source: catchments.ie)

SW 2010-2012



















▼ Ecological Status or Potential	Good	
▼ Biological Status or Potential	Good	
Invertebrate Status or Potential	Good	
▼ Supporting Chemistry Conditions	Pass	
▼ General Conditions	Pass	
▼ Oxygenation Conditions	Pass	
Acidification Conditions	Pass	
pH	Pass	
Nutrient Conditions	Pass	
Nitrogen Conditions	High	
Nitrate	High	
Ammonium	High	
Phosphorous Conditions	High	
Orthophosphate	High	

SW 2010-2015

▼ Ecological Status or Potential	Good	
▼ Biological Status or Potential	Good	
Invertebrate Status or Potential	Good	
▼ Supporting Chemistry Conditions	Pass	
▼ General Conditions	Pass	
▼ Oxygenation Conditions	Pass	
Dissolved Oxygen (% Sat)	Pass	
Other determinand for oxygenation conditions	High	
Acidification Conditions	Pass	
pH	Pass	
Nutrient Conditions	Pass	
Nitrogen Conditions	High	
Nitrate	High	
Ammonium	High	
Phosphorous Conditions	High	
Orthophosphate	High	
Specific Pollutant Conditions	Pass	
Chemical Surface Water Status	Good	

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SW 2013-2018

▼ Ecological Status or Potential	Good	
▼ Biological Status or Potential	Good	
Invertebrate Status or Potential	Good	
▼ Supporting Chemistry Conditions	Pass	
▼ General Conditions	Pass	
Oxygenation Conditions	Pass	
Dissolved Oxygen (% Sat)	Pass	
Other determinand for oxygenation conditions	High	
Acidification Conditions	Pass	
pH	Pass	
Nutrient Conditions	Pass	
Nitrogen Conditions	High	
Nitrate	High	
Ammonium	High	
Phosphorous Conditions	High	
Orthophosphate	High	
Specific Pollutant Conditions	Pass	
Chemical Surface Water Status	Failing to achieve good	

(Fluoranthene Failure for Chemical Status EA_10A040800)

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ATTACHMENT NO: F.1 (ii)

WASTE ASSIMILATIVE CAPACITY CALCULATIONS

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Waste Assimilative Capacity (WAC) Calculation

Calculation Sheet

Date	16/09/2021
------	------------

WWTP	Ballinaclesh	Data Source	m ³ /d
Name of River	Avonbeg River		
95% Flow	0.500	IW Low Flow Estimation	43,200

Proposed Operational Standard	mg/l
Carbonaceous BOD	25.000
Ammonia	15.000
Ortho-Phosphate (OP)	8.000

Average Background Concentration (Notional)			Average Background Concentration (Actual)				
Parameter	mg/l	Data Source	mg/l	Data Source			
Carbonaceous BOD	0.260	EPA Notionally Clean	0.976	Jan 2018 -Oct 2020 Data	(Station: US of WwTP - RS10A040690)		
Ammonia	0.008	EPA Notionally Clean	0.018	Jan 2018 -Oct 2020 Data			
Ortho-Phosphate (OP)	0.005	EPA Notionally Clean	0.008	Jan 2018 -Oct 2020 Data			
Allowable Downstream Concentration (Surface Water Regulations) - GOOD STATUS							
Parameter	95%ile mg/l	Mean mg/l	Data Ref				
Carbonaceous BOD	2.60	1.50	Surface Water Regs (S.I. No. 77 of 2019) Good Status EQS's				
Ammonia	0.14	0.065					
Ortho-Phosphate (OP)	0.075	0.035					
PE	WWTP Daily Flow (DWF)	Allowable effluent conc (Notionally Clean)			Allowable effluent conc (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m ³ /d	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
600	135	751.40	42.38	22.48	522.41	39.20	21.50
PE	WWTP Daily Flow (DWF)	WAC (Notionally Clean)			WAC (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m ³ /d	kg/d	kg/d	kg/d	kg/d	kg/d	kg/d
600	135	101.44	5.72	3.03	70.53	5.29	2.90
PE	WWTP Daily Flow (DWF)	Resultant Concentration (Notionally Clean)			Resultant Concentration (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m ³ /d	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
600	135	0.34	0.055	0.030	1.053	0.065	0.033
		Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

Parameter	% Headroom	% of Available WAC Taken by Discharge	Contribution from Discharge
Carbonaceous BOD	41%	5%	0.078
Total Ammonia (NH ₃)	46%	38%	0.047
Ortho-Phosphate (OP)	44%	37%	0.025

Waste Assimilative Capacity (WAC) Calculation

Calculation Sheet

Date	16/09/2021
------	------------

WWTP	Ballinaclesh	Data Source	m ³ /d
Name of River	Avonbeg River		
95% Flow	0.500	IW Low Flow Estimation	43,200

Proposed Operational Standard	mg/l
Carbonaceous BOD	25.000
Ammonia	15.000
Ortho-Phosphate (OP)	8.000

Average Background Concentration (Notional)			Average Background Concentration (Actual)				
Parameter	mg/l	Data Source	mg/l	Data Source			
Carbonaceous BOD	0.260	EPA Notionally Clean	0.976	Jan 2018 -Oct 2020 Data	(Station: US of WwTP - RS10A040690)		
Ammonia	0.008	EPA Notionally Clean	0.018	Jan 2018 -Oct 2020 Data			
Ortho-Phosphate (OP)	0.005	EPA Notionally Clean	0.008	Jan 2018 -Oct 2020 Data			
Allowable Downstream Concentration (Surface Water Regulations) - HIGH STATUS							
Parameter	95%ile mg/l	Mean mg/l	Data Ref				
Carbonaceous BOD	2.20	1.30	Surface Water Regs (S.I. No. 77 of 2019) High Status EQS's				
Ammonia	0.09	0.040					
Ortho-Phosphate (OP)	0.045	0.025					
PE	WWTP Daily Flow (DWF)	Allowable effluent conc (Notionally Clean)			Allowable effluent conc (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m ³ /d	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
600	135	623.00	26.33	12.85	394.01	23.15	11.87
PE	WWTP Daily Flow (DWF)	WAC (Notionally Clean)			WAC (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m ³ /d	kg/d	kg/d	kg/d	kg/d	kg/d	kg/d
600	135	84.11	3.55	1.73	53.19	3.13	1.60
PE	WWTP Daily Flow (DWF)	Resultant Concentration (Notionally Clean)			Resultant Concentration (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m ³ /d	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
600	135	0.34	0.055	0.030	1.053	0.065	0.033
		Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

Parameter	% Headroom	% of Available WAC Taken by Discharge	Contribution from Discharge
Carbonaceous BOD	48%	6%	0.078
Total Ammonia (NH ₃)	72%	65%	0.047
Ortho-Phosphate (OP)	73%	67%	0.025



ATTACHMENT NO: F.1 (iii)

IW RIVER FLOW ESTIMATE REPORT

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Hydrological Estimation Note – Ballinaclash WWTP

Introduction

River flow estimates are required at Ballinaclash Wastewater Treatment Plant (WWTP). Mean flow estimates (Q_{30}) and low flow estimates (Q_{95}) are required. The following note sets out the calculation process followed for this site.

Ballinaclash WWTP Location

Ballinaclash WWTP discharges into the River Avonbeg southwest of the village of Rathdrum. The site location and river catchment area are shown in Figure 1. There are no gauging stations on the River Avonbeg and spot flow data are too sparse to use to estimate the required flow conditions.

However, the adjacent catchment of the River Avonmore is gauged at Rathdrum (Figure 2) and the Avonbeg and Avonmore combine to form the River Avoca downstream, which is gauged at White Bridge (Figure 3).

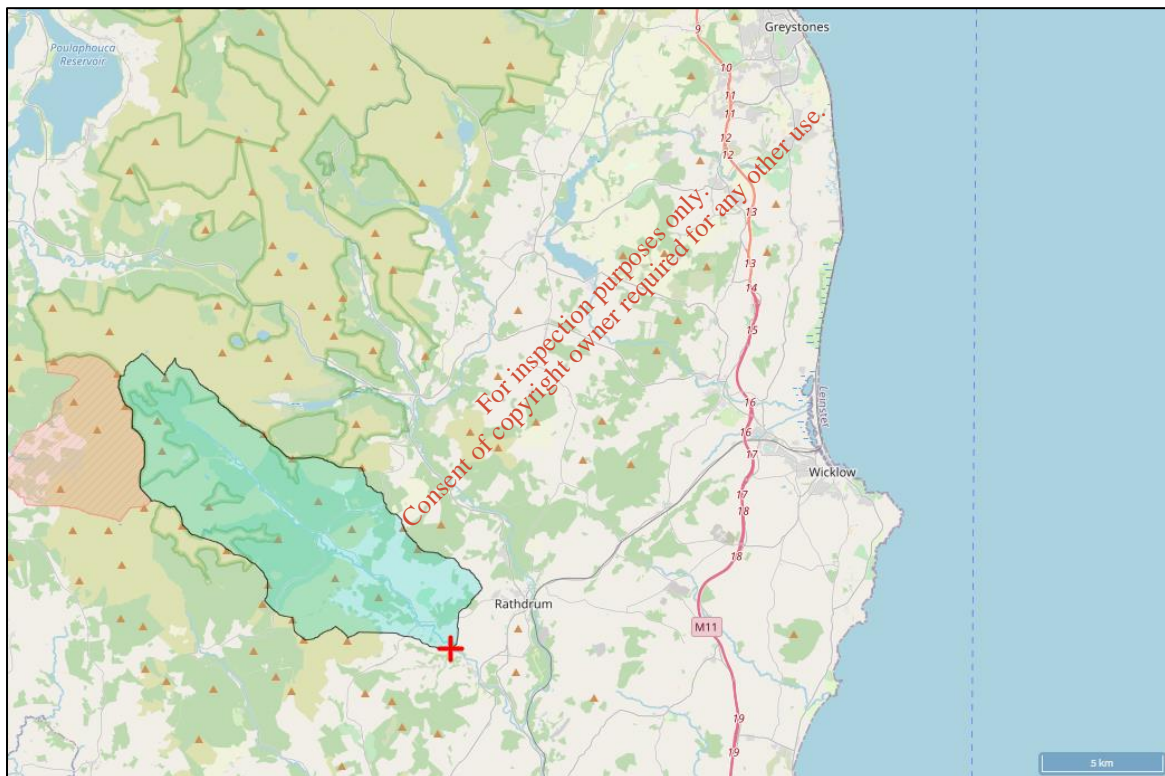


Figure 1: Ballinaclash WWTP Location (red cross) and River Avonbeg Catchment Area at Ballinaclash (blue region)

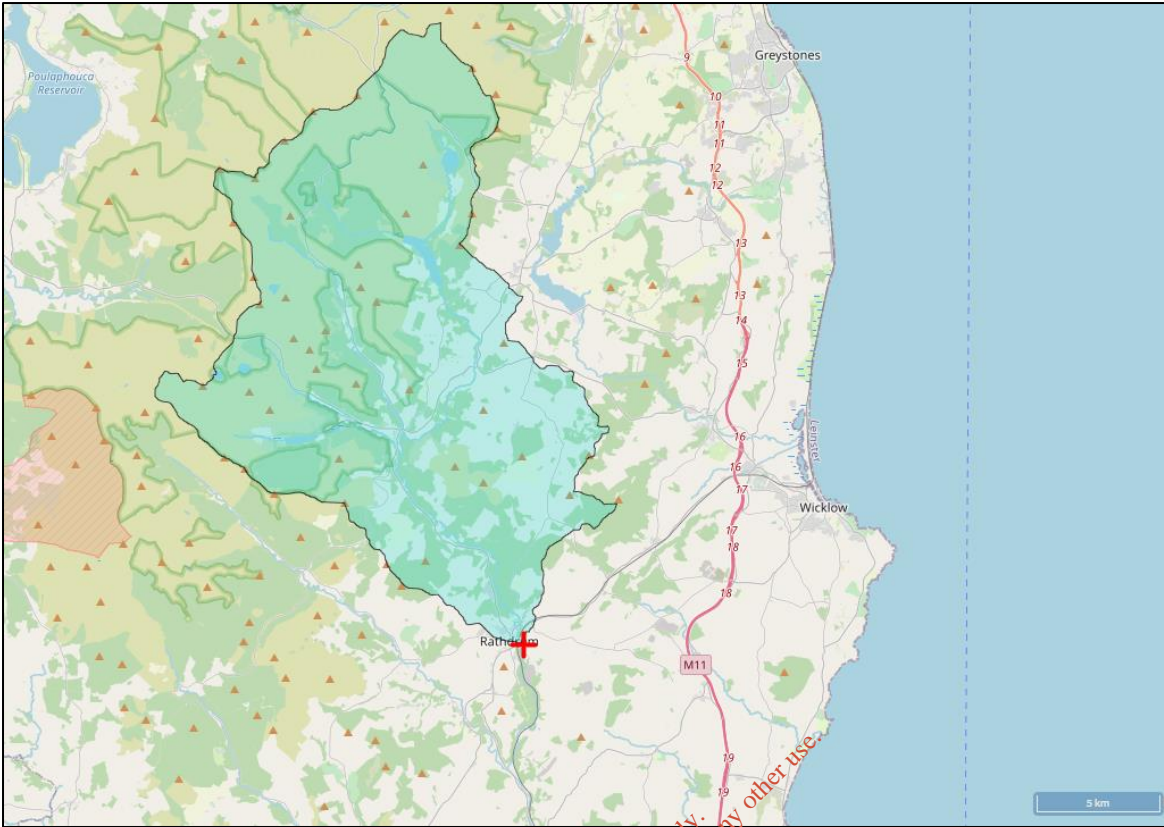


Figure 2: Rathdrum Gauging Station Location (red cross) and River Avonmore Catchment Area at Rathdrum (blue region)

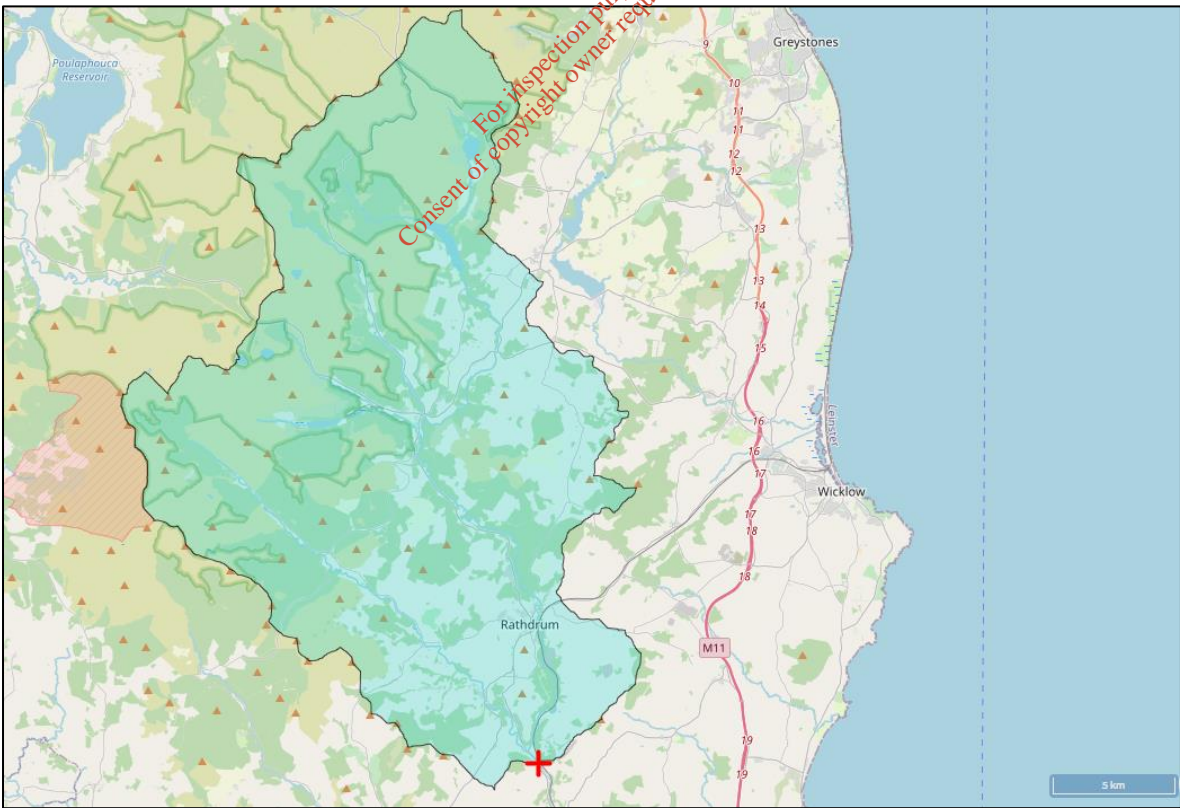


Figure 3: White Bridge Gauging Station Location (red cross) and River Avoca Catchment Area at Rathdrum (blue region)

Donor Catchment Data

The gauge datasets from Rathdrum and White Bridge have been used below as donor catchments for key flow conditions, as discussed in Section 9.2 of the Manual on Low Flow Estimation and Prediction¹. Details of the gauged flow records are provided in Table 1.

Table 1: Avonmore and Avoca Gauging Station Details

Station Number	10002	10044
Station Name	Rathdrum	White Bridge
Waterbody	Avonmore	Avoca
Site Owner	Wicklow County Council	Wicklow County Council
Grid Reference	319442 188182	319844 182017
River Basin District	Eastern	Eastern
Catchment Area	233km ²	363km ²
Data Start Date	26/03/1953	21/12/2009
Data End Date	22/07/2021	22/07/2021
Percent Complete	81.4%	95.8%
Data Resolution	15 minutes	15 minutes

The 15-minute flow data series from the Rathdrum and White Bridge Gauges have been downloaded and reviewed for suitability of use as donor catchments for the Avonbeg at Ballinaclash. The data from Rathdrum covers a very long gauged period of 69 years, however data from 20 years were excluded due to significant missing data within these years. The data from the remaining 49 years of data are 99.6% complete and show no significant trend in annual low or mean flows.

The 15-minute flow data from the White Bridge gauge is a lot shorter, with only ten complete hydrological years of flow data. The data also show upper bounding at high flows, such that this gauging station would not be appropriated for high flow estimation. However, there is no apparent bounding at low to normal flow conditions and the record length is more than sufficient to calculate a Q₉₅ and Q₃₀ flow condition at this gauge. The record length does make assessing for long term trends in the data is more difficult: the data show a small trend towards reduced annual Q₉₅ over the period of record, but an increasing trend in Q₃₀. Since the trends are in opposite directions, this variation in flow condition is more likely indicative of the natural variation in flow over the period of record rather than a true long-term trend in river flows.

The 15-minute timeseries flow data is shown in Figure 4 for the Avonmore at Rathdrum and in Figure 5 for the Avoca at White Bridge. Tables 2 and 3 provide the annual maximum and minimum flows as well as flow percentiles at each gauge (note that maximum flows at White Bridge are likely to be suspect due to upper bounding in the flow measurements above approximately 95m³/s).

¹ Gustard, A. and Demuth, S. (eds.), (2008) Manual on Low-Flow Estimation and Prediction, Operational Hydrology Report No. 50 (WMO No.-1029), World Meteorological Organisation, Switzerland.

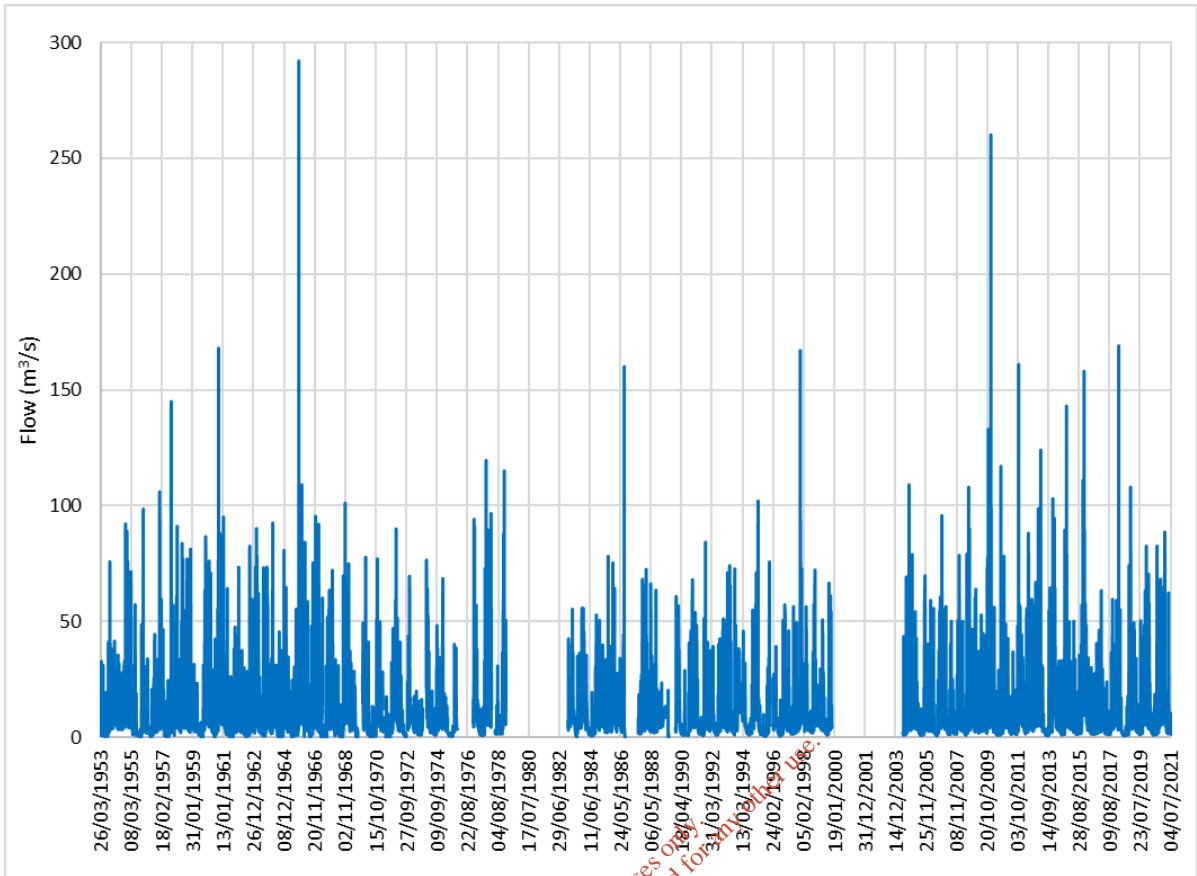


Figure 4: River Flow Timeseries for the River Avonmore at Roundam

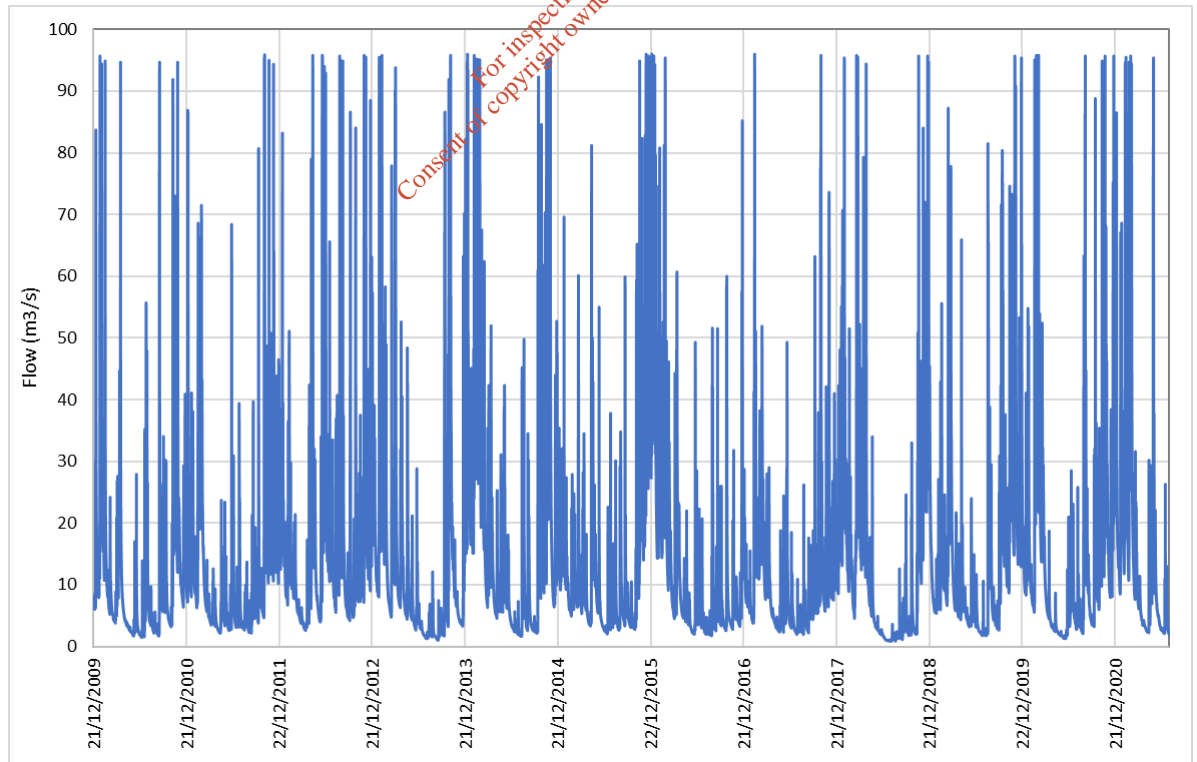


Figure 5: River Flow Timeseries for the River Avoca at White Bridge

Table 2: Annual Maximum, Minimum and Percentile Flows on the River Avonmore at Rathmore (1953-2020)

Year	% missing	Flow (m ³ /s)												
		Max	Min	Q ₅	Q ₁₀	Q ₂₀	Q ₃₀	Q ₄₀	Q ₅₀	Q ₆₀	Q ₇₀	Q ₈₀	Q ₉₀	Q ₉₅
1953	3.8	75.8	2.14	14.3	11.3	8.84	6.94	5.87	5.00	4.45	4.16	3.92	3.53	2.69
1954	0.03	92.1	0.13	30.6	22.2	13.5	9.85	7.73	6.04	4.82	3.69	1.92	0.87	0.53
1955	1.9	98.4	0.02	18.8	13.3	8.15	6.05	4.34	3.47	2.7	2.16	1.62	1.15	0.56
1956	0	145	0.12	20.2	14.5	9.89	7.64	6.17	4.99	3.94	3.15	2.00	1.45	1.04
1957	0	91.0	0.80	27.2	19.0	13.0	10.4	8.87	7.73	6.51	5.66	4.61	3.45	2.71
1958	1.9	81.2	0.01	17.8	12.9	8.62	6.05	4.99	4.25	3.46	2.54	1.64	0.57	0.40
1959	0	86.6	0.04	30.1	21.9	15.9	11.6	8.65	6.28	4.84	3.73	2.95	2.09	1.32
1960	0.003	168	0.07	30.2	21.4	14.9	11.3	8.49	5.73	3.77	2.68	2.07	1.36	1.03
1961	0.25	82.1	0.06	19.5	14.4	10.6	7.85	5.88	4.53	3.67	3.15	2.69	2.02	1.60
1962	0	90.1	0.49	29.4	17.7	10.7	7.50	6.00	5.11	4.37	3.59	2.90	2.42	2.07
1963	2.5	92.4	0.13	26.1	18.3	11.5	8.60	6.92	5.25	4.41	3.32	2.55	1.77	1.43
1964	0	80.4	0.14	21.5	16.0	10.3	8.09	6.66	5.64	4.82	4.16	3.63	2.95	2.42
1965	0	292	0.17	39.4	29.5	21.4	16.1	10.3	7.64	6.04	4.49	3.51	2.59	1.80
1966	0	95.4	0.08	28.9	21.6	15.6	12.0	8.88	6.41	5.05	3.52	2.30	1.50	1.25
1967	0	72.1	0.08	21.3	15.7	12.3	9.23	7.26	5.80	4.74	3.69	2.76	2.02	1.20
1968	0	101	0.12	30.1	21.9	15.2	11.4	9.23	7.31	6.03	4.37	2.36	1.34	1.34
1969	0	77.7	0.07	21.7	18.2	9.97	6.75	4.90	2.96	2.09	1.60	1.34	1.34	1.26
1970	0	76.9	0.01	18.5	13.2	8.62	6.88	5.66	4.03	3.17	3.17	2.04	1.64	1.03
1971	0	89.9	0.19	27.0	19.8	19.8	11.9	7.65	5.28	4.12	3.08	1.91	1.09	1.03
1972	0	69.5	0.41	15.7	15.7	14.3	8.83	6.15	4.38	3.10	2.30	1.51	1.11	0.41
1973	0	76.5	0.80	26.0	16.0	12.3	12.3	10.1	6.96	4.78	2.69	2.11	1.66	1.25
1974	0	68.5	0.34	18.2	12.4	8.08	6.03	4.96	3.84	3.05	1.42	0.81	0.53	0.47
1975	70.2	40.1		9.42	6.13	3.39								
1976	25.2	94.1		24.2	18.9	10.9	6.69	3.71	2.00	1.23	0.87			
1977	22.1	119		28.6	19.3	12.6	9.46	6.38	5.06	2.27	1.67			
1978	100													
1979	100													
1980	100													
1981	100													
1982	100													
1983	0	55.7	0.51	22.0	16.3	12.4	9.58	6.96	5.33	2.96	1.86	1.36	0.90	0.75
1984	0	78.1	1.49	25.0	19.4	14.6	10.5	8.53	7.48	6.43	4.85	3.59	2.65	2.29
1985	2.8	160	0.14	24.6	16.2	11.7	9.64	7.97	6.69	5.35	3.82	2.89	2.35	0.21
1986	79.1	24.2		5.21	3.40	1.53								
1987	1.2	72.5	1.72	26.1	18.3	11.8	8.5	6.38	5.23	4.50	3.86	3.19	2.53	2.30
1988	74.3	23.4		7.85	5.68	4.29								
1989	17.5	60.8		21.5	15.4	8.14	3.33	2.22	1.70	1.29	1.01	0.83		
1990	0	68	0.65	26.0	20.1	13.0	8.23	6.25	5.03	3.80	2.65	1.75	1.21	0.94
1991	0	84.2	0.91	61.2	27.9	10.3	7.26	5.76	4.63	3.80	3.08	2.36	1.41	1.14
1992	0	74.1	0.98	25.7	18.3	11.9	9.11	7.12	5.11	3.94	3.24	2.73	2.47	1.71
1993	10.4	48.2		21.3	17.3	15.9	15.9	11.1	9.55	5.59	3.40	1.83		

1994	0	102	0.26	22.6	15.7	10.5	9.39	5.73	3.37	1.99	1.62	1.04	0.77	0.58
1995	0	75.6	0.81	25.6	25.6	25.6	15.4	9.23	6.51	3.96	2.38	1.68	1.17	1.01
1996	1.3	57.2	1.26	23.1	19.3	12.0	8.11	6.15	4.33	3.50	2.98	2.52	1.86	1.51
1997	0	167	1.80	22.9	21.8	21.8	14.7	9.14	5.21	3.46	2.93	2.93	2.52	1.84
1998	0	72.2	0.88	23.4	18.2	11.9	11.0	7.88	6.10	4.96	3.88	2.47	1.52	1.43
1999	85.1	60.9	3.17	8.44	5.49									
2000	100													
2001	100													
2002	100													
2003	67.4	69.2		6.93	3.89	1.78	1.11							
2004	0	109	0.76	17.9	14.0	9.45	7.37	6.08	5.09	4.12	3.15	1.67	1.17	0.96
2005	0	69.7	0.65	23.9	16.7	11.1	7.63	5.35	4.17	3.48	2.75	1.86	1.17	0.79
2006	0.9	95.7	1.14	23.2	17.8	13.4	10.5	8.13	5.96	4.37	3.23	2.05	1.48	1.32
2007	1.9	108	0.85	24.4	17.3	11.8	8.09	5.74	4.53	3.72	2.95	1.92	1.43	1.23
2008	0	63.9	1.72	22.0	17.4	12.9	10.4	8.76	7.15	5.74	4.75	3.74	2.77	2.34
2009	7.9	260	0.75	35.3	22.6	13.2	8.79	6.05	4.04	2.50	1.89	1.41	1.00	
2010	0.3	78.1	1.14	19.5	15.1	10.0	6.51	4.99	4.02	3.12	2.48	2.06	1.70	1.47
2011	0	161	1.42	27.2	19.1	13.7	10.9	9.23	7.89	6.51	5.03	3.78	2.69	2.22
2012	7.7	124	0.62	22.7	16.0	12.1	9.23	6.43	5.24	3.93	1.78	1.08	0.74	
2013	0	103	0.94	31.8	24.2	16.6	12.1	8.47	5.91	4.46	3.28	2.14	1.46	1.26
2014	0	143	1.11	21.9	15.8	11.1	8.33	6.87	5.53	4.46	3.68	2.59	1.86	1.49
2015	0	158	1.14	33.9	25.1	17.0	13.0	8.76	4.96	3.66	2.99	2.17	1.64	1.46
2016	0	63.3	1.07	14.8	11.9	7.69	5.61	4.39	3.60	2.89	2.30	1.86	1.54	1.38
2017	0	169	0.61	22.3	16.0	11.7	8.54	6.45	4.92	3.62	1.82	1.11	0.83	0.68
2018	0	108	0.96	23.3	18.2	12.1	7.93	6.16	4.70	3.76	2.89	2.01	1.30	1.15
2019	0	82.5	0.84	27.4	20.6	14.7	11.0	8.37	5.96	4.17	2.87	2.09	1.34	1.05
2020	0.1	88.6		28.6	21.3	14.4	10.6	7.93	5.83	3.68	2.09	1.35		

Table 3: Annual Maximum, Minimum and Percentile Flows on the River Avoca at White Bridge (2009-2020)

Year	% missing	Flow (m ³ /s)												
		Max*	Min	Q ₅	Q ₁₀	Q ₂₀	Q ₃₀	Q ₄₀	Q ₅₀	Q ₆₀	Q ₇₀	Q ₈₀	Q ₉₀	Q ₉₅
2009	23.2	95.7		25.0	17.4	10.9	7.54	5.36	3.91	2.75	2.03			
2010	0.08	94.7	2.14	30.6	23.1	15.6	10.7	8.20	6.55	5.17	4.26	3.59	3.07	2.65
2011	1.1	95.9	2.59	37.7	28.3	20.2	16.5	14.4	12.2	9.76	7.91	6.06	4.46	3.49
2012	0.8	95.8	1.00	32.9	23.8	17.2	13.1	10.1	7.87	5.92	4.29	2.59	1.73	1.42
2013	0.8	96.0	1.63	46.9	36.6	23.7	16.7	11.9	8.41	6.59	4.86	3.46	2.57	2.19
2014	0.7	95.4	2.02	33.0	23.5	16.4	12.9	10.4	8.41	6.85	5.68	4.26	3.30	2.75
2015	1.3	96.0	1.74	48.8	37.2	24.5	18.3	12.4	7.19	5.3	4.34	3.37	2.49	2.12
2016	0.05	96.0	1.95	22.9	17.8	12.4	8.85	7.04	5.62	4.66	3.91	3.27	2.67	2.41
2017	0.5	95.8	0.85	34.4	24.8	17.5	13.6	10.5	7.83	5.78	3.03	1.95	1.25	0.98
2018	0.4	95.7	1.76	38.0	28.9	18.1	12.4	9.29	7.15	5.78	4.49	3.32	2.26	2.03
2019	0.6	95.8	1.28	42.9	32.1	22.2	17.0	13.1	9.29	6.3	4.51	3.30	2.16	1.76
2020	20.4	95.7		42.9	32.1	21.3	15.4	11.3	8.33	5.02	2.96			

*unlikely to be representative of true high flow condition due to upper bounding in high flow measurements at this gauge

The full 15 minute datasets from the Rathdrum and White Bridge gauges have been used to derive the flow duration curves and key flow conditions shown in Figure 6.

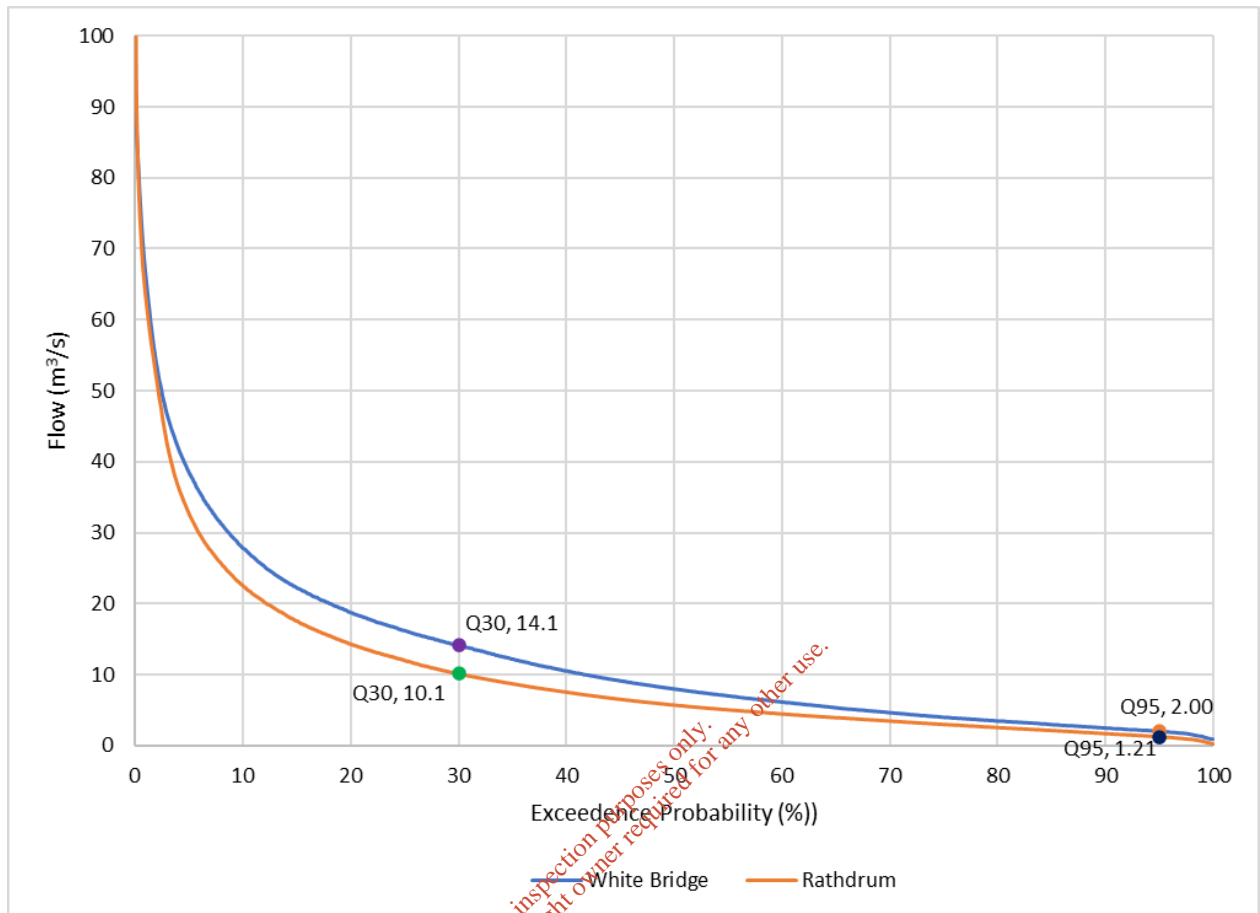


Figure 6: Flow Duration Curve for Rathdrum (1953-2021) and White Bridge (2009-2021) Gauging Stations

Application of Donor Catchment Flows to Subject Catchment

The catchment descriptors for the gauged catchment are compared with those of the ungauged subject site in Table 4. The most hydrologically similar gauged catchment will be used as a donor catchment for flows at the subject site.

Table 4: Catchment Descriptors for Donor and Subject Sites

Catchment Descriptor	Avonbeg at Ballinaclesh	Avonmore at Rathdrum	Avoca at White Bridge
Catchment Area (km ²)	97.23	232.32	360.24
FARL	1.00	0.93	0.95
SAAR (mm)	1541.16	1461.75	1451.91
Evapotranspiration (mm)	509.37	512.16	514.44
PoorlyDrained	45.76	39.32	37.80
Peat	15.30	27.66	21.97
Conduit Kast	0	0	0

Based on the values in Table 4, the Avonmore at Rathdrum has most similar catchment descriptors in terms of catchment area, standard average annual rainfall (SAAR), evapotranspiration rates and catchment areas comprising poorly drained soils and peat. However, this catchment does have greater flood attenuation due to the presence of reservoirs and lakes (FARL).

Both donor catchments have extremely similar flows per unit area under both the Q₉₅ and Q₃₀ flow condition (see Table 5). This indicates that the hydrological behaviour of the two catchments is extremely similar and that the flow estimates can be appropriately scaled by catchment area alone to represent flows in the ungauged Avonbeg catchment. Based on the scaling factors in Table 5, the Q₉₅ flow in the Avonbeg at Ballinaclash is estimated at **0.5m³/s** and the Q₃₀ flow is estimated at **3.8m³/s**.

Table 5: Scaling of Donor Catchment Flows to Subject Site

Catchment	Avonmore at Rathdrum	Avoca at White Bridge
Catchment Area (km ²)	232.32	360.24
Observed Q ₉₅ flow (m ³ /s)	1.21	2.00
Q ₉₅ flow per unit catchment area (m ³ /s/km ²)	0.005	0.006
Scaled Q ₉₅ flow at Ballinaclash (m ³ /s)	0.51	0.54
Observed Q ₃₀ flow (m ³ /s)	9.26	14.0
Q ₃₀ flow per unit catchment area (m ³ /s/km ²)	0.040	0.039
Scaled Q ₃₀ flow at Ballinaclash (m ³ /s)	3.87	3.78

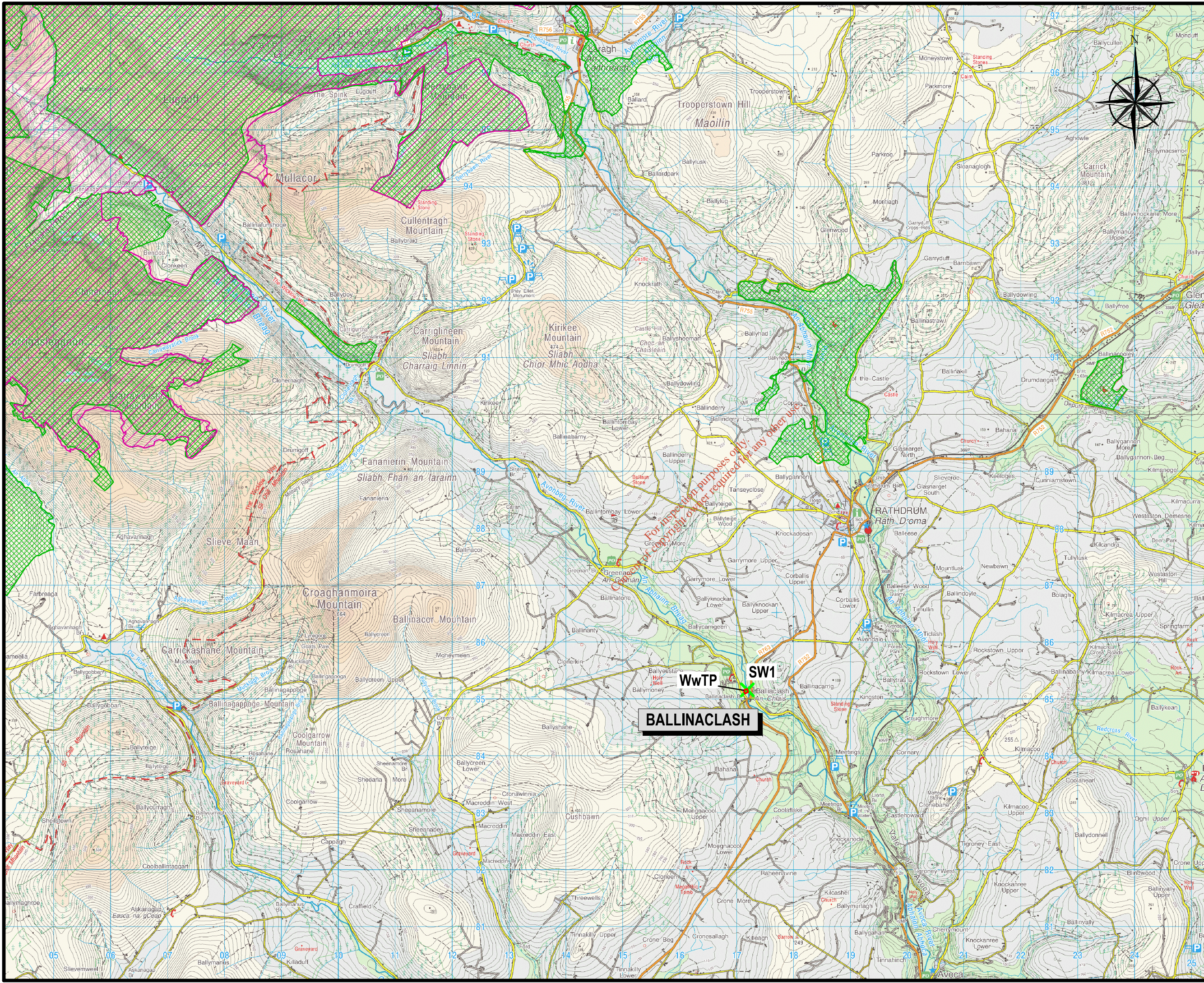
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ATTACHMENT NO: F.1 (iv)

DRAWING NO. 10: LOCATION OF EUROPEAN SITES

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- LEGEND**
- ▭ WASTE WATER TREATMENT PLANT
 - ✕ PRIMARY DISCHARGE POINT
SW1
 - ▨ SPECIAL AREA OF CONSERVATION (S.A.C.)
 - ▨ SPECIAL PROTECTION AREA (S.P.A.)



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SIGNED: _____

PRINT NAME: _____

POSITION: _____

DATE: _____

FOR IRISH WATER

REV	DATE	DESCRIPTION	D	C	A

CERTIFICATE OF AUTHORISATION

CLIENT: **IRISH WATER**
Colville House,
24-26 Talbot Street,
Dublin 1.
Tel. 1890 278 278 Web. www.water.ie

PROJECT: **BALLINACLASH**
WASTE WATER DISCHARGE CERTIFICATE
OF AUTHORISATION APPLICATION

TITLE: **LOCATION OF
EUROPEAN SITES**

SCALES: 1:60,000	DRAWN: D. Smithers
CAD REFERENCE: F.1 20647-DL-BC-10	DATE: 20.09.2021
SECTION: F.1(iv)	DRAWING No: 10
REV: -	REV: -