

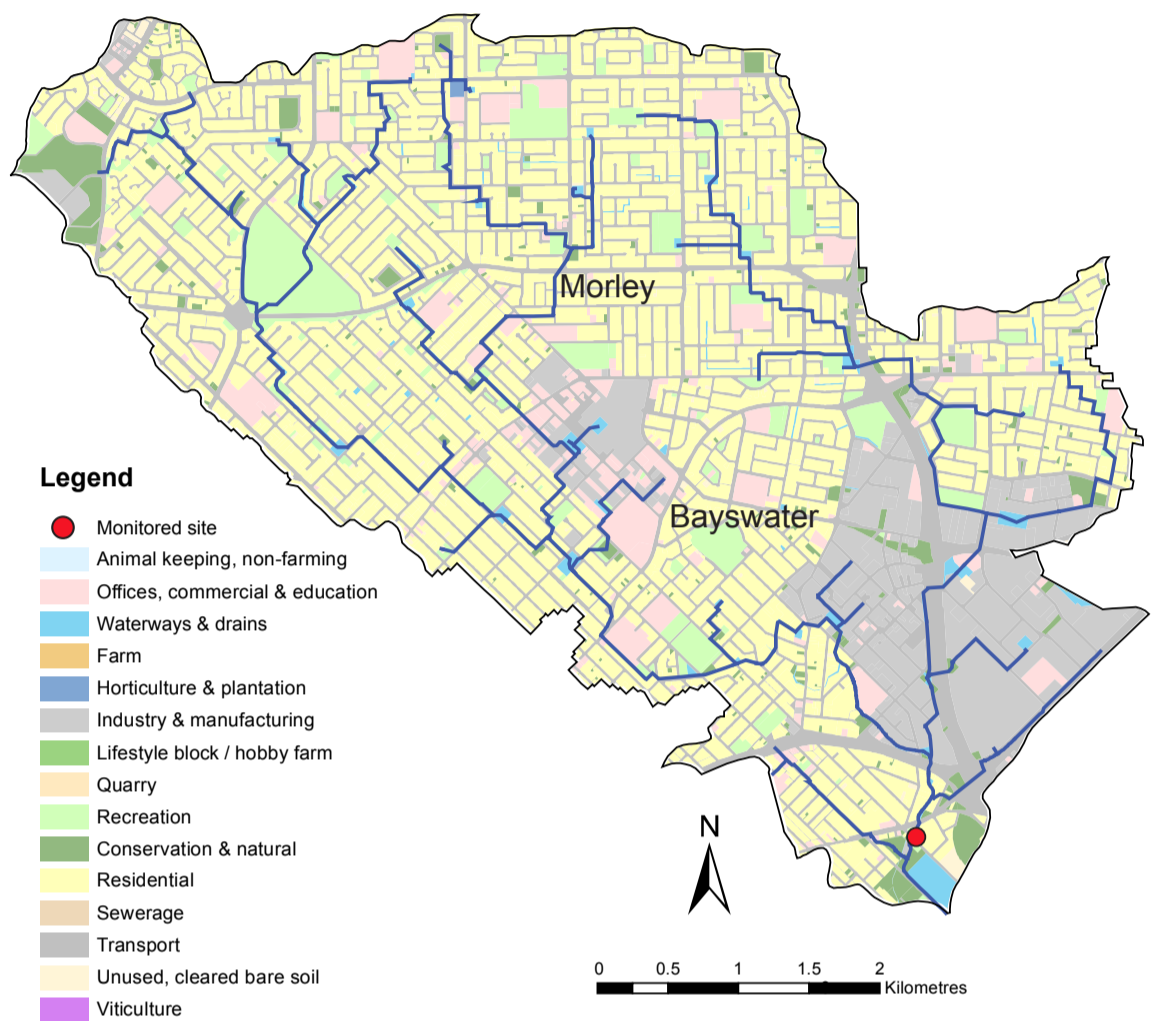
Bayswater Main Drain

Bayswater Main Drain is a permanently flowing drainage network with both open and covered sections. Many of the current drains were once natural watercourses that were modified for use as drainage to allow development of the area. The main drain discharges into the middle Swan Estuary upstream of Garratt Road Bridge in Bayswater.

Clearing and development in the catchment began in the late 1800s and very little native vegetation now remains. This has affected water levels and flow patterns in the drains in two ways. Firstly, groundwater levels have risen, increasing the volume of groundwater entering the drains and causing them to flow year-round. Secondly, the large proportion of the catchment covered by hard surfaces (i.e. roofs and roads) has increased the amount of surface run-off to the drain.

Bassendean sands are the most common soil type in the catchment. This soil type is characterised by its poor nutrient-retention capabilities. Any nutrients applied to the surface will rapidly leach into the groundwater after water is applied. Before development, several peaty swamps were present, most of which have now been in-filled, leaving a peaty layer of soil in some areas.

Water quality is monitored at the Department of Water gauging station near the catchment's lower end, shortly before the drain flows into the King William Street Main Drain and subsequently into the estuary. The site is positioned to indicate nutrient concentrations leaving the catchment and flowing into the Swan Estuary, so the data may not represent nutrient concentrations in upstream areas.



Bayswater MD – facts and figures

Length	~ 6 km (Bayswater Main Drain); ~ 44 km (total Water Corporation drains)
Average rainfall (2011–15)	~ 709 mm per year (Perth metro)
Gauging station near monitored site	Site number 616082
Catchment area	27 km ² (total) 26 km ² (monitored)
River flow	Permanent No major water supply dams in catchment
Average annual flow	~ 6.5 GL per year (2011–15 average)
Main land uses	High-density residential, commercial areas and light to medium industry. Historically agriculture in the form of market gardens was also common



Bayswater Main Drain at the gauging station, August, 2012.
Photo: Dominic Heald

Nutrient Summary: concentrations, loads and targets

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Annual flow (GL)	7.7	5.8	15.3	3.2	6.0	11.2	6.9	4.3	6.3	8.2	6.4	5.3*	6.5*
TN median (mg/L)	1.30	1.20	1.40	1.10	1.30	1.20	1.30	1.30	1.60	1.35	1.40	1.40	1.40
TP median (mg/L)	0.051	0.050	0.052	0.068	0.047	0.060	0.060	0.057	0.056	0.059	0.061	0.049	0.047
TN load (t/yr)	9.73	7.70	17.68	4.45	7.92	13.49	8.98	5.93	8.37	10.66	8.52	7.26*	8.49*
TP load (t/yr)	0.55	0.41	1.19	0.25	0.42	0.84	0.50	0.32	0.46	0.56	0.45	0.35*	0.46*

TN short-term target = 2.0 mg/L

TN long-term target = 1.0 mg/L

TP short-term target = 0.2 mg/L

TP long-term target = 0.1 mg/L

insufficient data to test target failing both short and long-term target passing short but failing long-term target passing both short and long-term target

* best estimate using available data. Statistical tests that account for the number of samples and large data variability are used for testing against targets on three years of winter data. Thus the annual median value can be above the target even when the site passes the target (or below the target when the site fails).