

In 2023, DWM notified the City of 5 separate SSO's. All reports are included as attachments to the Annual Report. One of these spills reported to the City by DWM (Amberly Dr) corresponded with an instance of elevated levels of E. coli at sampling site "NC2" (at Binghampton Dr). A second instance of elevated E. coli levels at this same sampling site can be attributed to an SSO that occurred on 9/18/2023 at 6648 Peachtree Dunwoody Rd. The location of this spill is approximately 2,000 linear feet upstream of "NC2" and is recorded in the 10/4/2023 Sanitary Sewer Spills Report, obtained from the EPD's documents webpage. **Figure 2** shows the location of the spill in relation to the Nancy Creek sampling sites in Dunwoody.

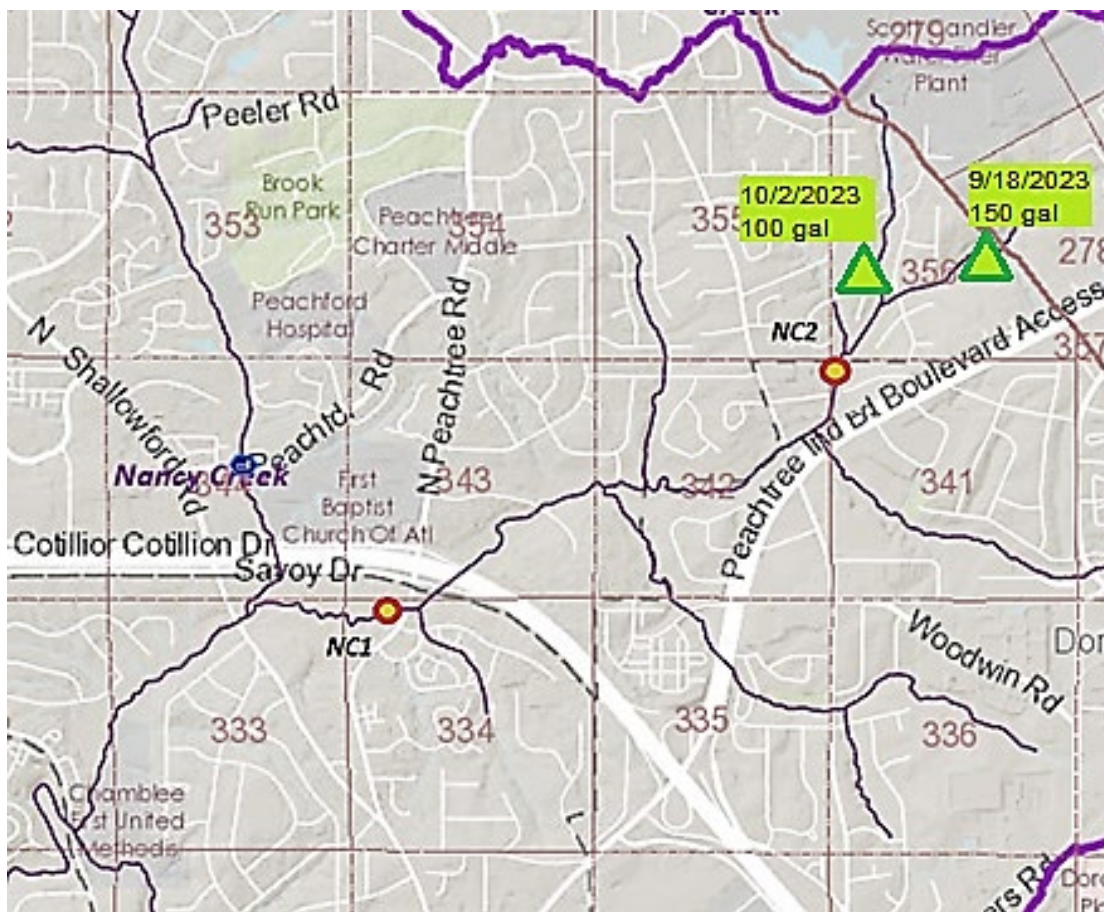


Figure 2 - Location of SSO's related to elevated E. coli at Sampling Site NC2 in 2023.

In the absence of correlating SSO reports, rain data can also be useful in determining the cause of elevated bacteria levels. Higher bacteria loads are commonly found in samples that are taken during rainy weather, which can be due to unreported, acute overflows caused by reduced capacity within the sanitary sewer system as it attempts to accommodate excessive infiltration from surrounding, saturated soils. When using rain data, results for different sample sites can be compared to demonstrate if elevated bacteria counts may be caused by general environmental conditions (i.e., wet weather). If results are not elevated across all sites during the wet weather, there is likely a localized issue to be investigated. USGS Site #02336340 (NANCY CREEK AT JOHNSON FERRY RD, AT CHAMBLEE, GA) is used as the primary source of rain data in the analysis. USGS Site #02335350 (CROOKED CREEK NEAR NORCROSS, GA) is used as a second source of data, which can help establish and verify weather patterns in the area. **Figure 3** shows the locations of the USGS sites as well as the 3 sample sites in Dunwoody. Tables of the collected rain data and the E. coli results are provided in the results

section. The data trend in 2023 continued to show that, in Dunwoody, elevated bacteria levels tend to happen when the area receives a more than 0.5 inches of rain over a 24-hour period.

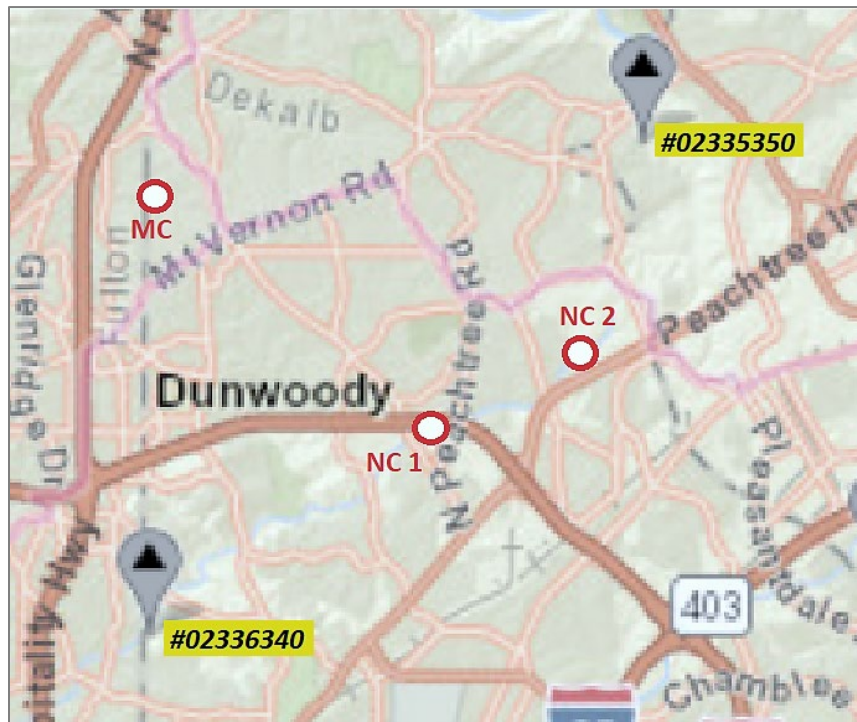


Figure 3 - USGS - NWIS: Mapper <https://maps.waterdata.usgs.gov/mapper/index.html>

Overall, the geometric means calculated in 2023 were lower than those obtained in previous years. However, because the City began sampling for E. coli in place of fecal coliform in November 2022, the 2023 results are not directly comparable to all past data where only fecal coliform was being sampled for as the bacteriological indicator. It does appear, though, that all instances of elevated E. coli levels were attributable to either an SSO event or a period of sustained wet weather (over 0.5 inches of rain within 24 hours of sampling).

Total Suspended Solids (TSS)

TSS is sampled for once annually at each of the three locations: 2 sites along Nancy Creek and 1 site at the City limits along Marsh Creek. Samples were taken for TSS at all three locations on 4/19/2023. The TSS samples were taken during dry weather, under conditions similar to previous years. There were no detectable levels of TSS at any of the sites in 2023. The 2019-2023 TSS results are provided in a table and chart in the Results section.

BMP Effectiveness

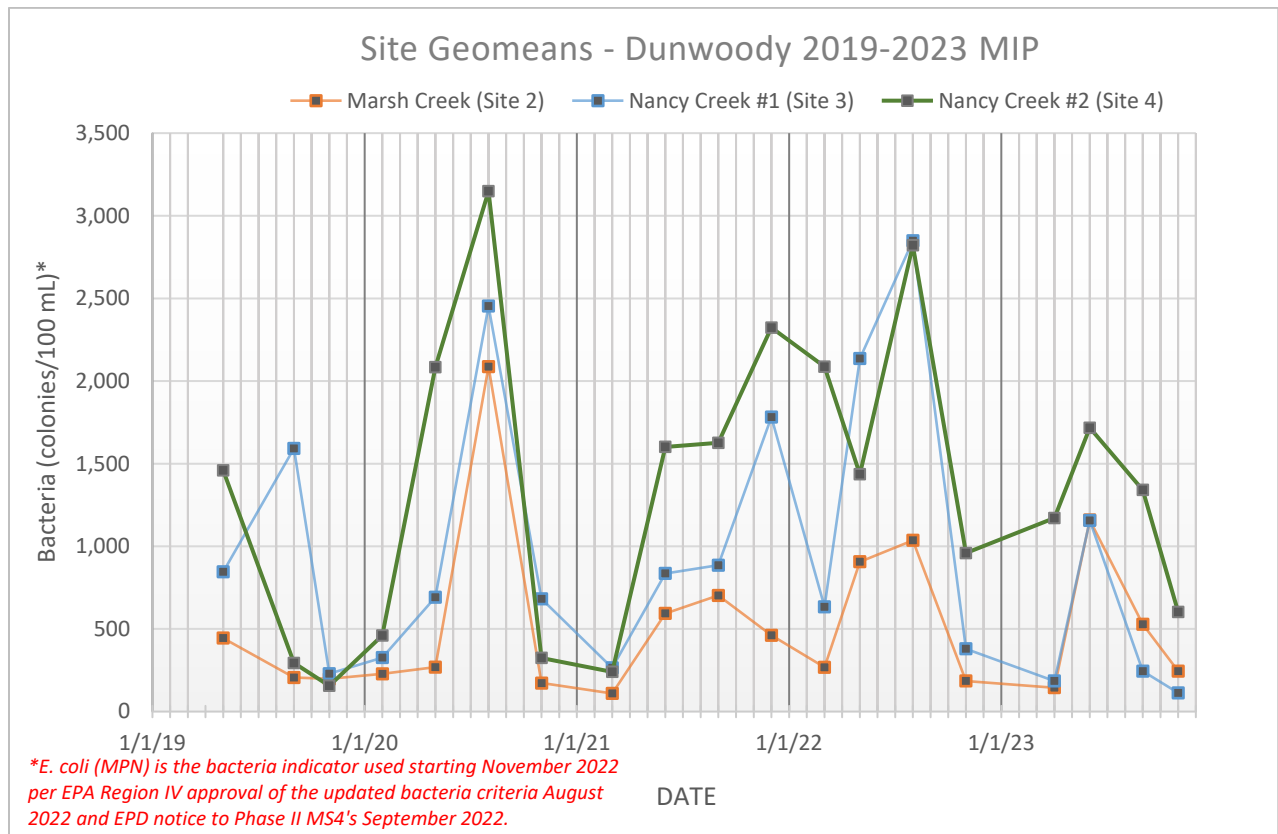
The results generated from the City's sampling of its impaired streams show that the quality has not deteriorated. The instances of elevated bacteria levels correlated with SSO events and sustained wet weather. TSS levels remained stable across all impaired basins in Dunwoody. The City considers its current BMP's to be effective and will continue implementing them per the Impaired Waters Monitoring and Implementation Plan.

Results

Site Location Reference Table

Site	Basin	Location Detail
2	MARSH CREEK	Winding Branch Cir
3	NANCY CREEK #1	N Peachtree Rd
4	NANCY CREEK #2	Binghampton Dr

Bacteria



Bacteria (continued)

Year	Qtr	GEOMEAN Bacteria (Colonies/100ml; MPN)*		
		Site 2 <i>Marsh Creek</i>	Site 3 <i>Nancy Creek #1</i>	Site 4 <i>Nancy Creek #2</i>
2019	2	445	846	1,459
	3	206	1,592	294
	4	198	229	156
2020	1	229	326	460
	2	269	692	2,084
	3	2,088	2,453	3,149
	4	173	682	325
2021	1	109	265	240
	2	594	835	1,601
	3	702	885	1,626
	4	461	1,782	2,323
2022	1	268	634	2,087
	2	906	2,136	1,436
	3	1,036	2,849	2,821
	4	185	380	959
2023	1	144	185	1,171
	2	1,159	1,156	1,717
	3	528	245	1,341
	4	245	113	603

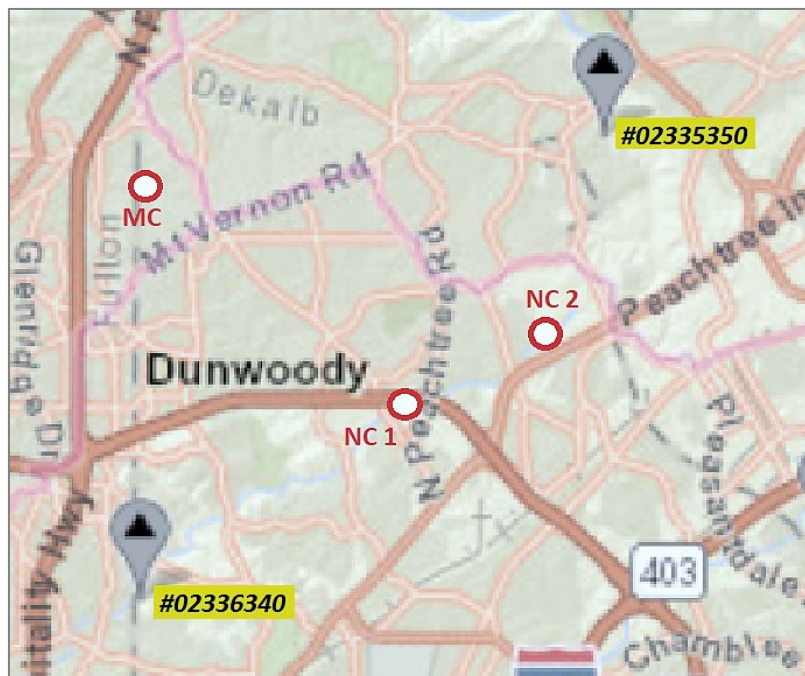
* Bacteria parameter prior to Quarter 4 2022 is Fecal Coliform (Colonies/100mL); E. coli (MPN) results are in red text.

Bacteria(continued)

- 2023 Quarterly Sample Results and USGS Precipitation Data:

	MC	NC1	NC2	Precip. Total (in)	Precip. Prev 24-hrs	Precip. Total (in)	Precip. Prev. 24-hrs
Sampling Dates	Site 2	Site 3	Site 4	USGS 02336340		USGS 02335350	
4/5/23	140	130	730	0.00	0.00	0.00	0.00
4/11/23	140	430	4,000	0.00	0.00	0.00	0.00
4/19/23	200	150	740	0.00	0.00	0.00	0.00
4/24/23	110	140	870	0.00	0.00	0.00	0.00
6/7/23	480	200	710	0.01	0.11	0.00	0.00
6/12/23	1,400	2,200	2,000	0.14	1.14	0.55	1.13
6/19/23	6,100	14,000	12,000	0.90	0.90	0.86	0.86
6/28/23	440	290	510	0.00	0.00	0.00	0.00
9/11/23	1,100	120	340	0.00	0.01	0.01	0.01
9/20/23	630	370	610	0.00	0.00	0.00	0.00
9/25/23	510	310	12,000	0.00	0.00	0.00	0.00
10/3/23	220	260	1,300	0.00	0.00	0.00	0.00
11/15/23	200	160	650	0.00	0.00	0.00	0.00
11/20/23	270	60	370	0.00	0.00	0.00	0.00
12/5/23	510	100	930	0.00	0.00	0.00	0.00
12/4/23	130	170	590	0.00	0.25	0.00	0.32

- USGS Site locations relative to Dunwoody monitoring locations:



USGS - NWIS: Mapper <https://maps.waterdata.usgs.gov/mapper/index.html>

Total Suspended Solids (TSS, mg/L)

SITE	SAMPLE DATE				
	3/27/2019	2/4/2020	3/8/2021	3/14/2022	4/19/2023
2 - Marsh Creek	0.8	BRL (TSS)	1.2	1.2	BRL (TSS)
3 - Nancy Creek #1	2.4	BRL (TSS)	1.2	2.8	BRL (TSS)
4 - Nancy Creek #2	5.2	BRL (TSS)	2.8	4.4	BRL (TSS)

