



## City of Dunwoody, Georgia

# Impaired Waters Plan 2022 Annual Report – Narrative Analysis

## Data Assessment

### Bacteria

On August 31, 2022, US EPA Region IV approved the updates to its Water Quality Standards after being adopted by the Georgia DNR Board on January 28, 2022. The updated standards replaced fecal coliform with E. coli as the indicator organism for waters listed as impaired for bacteria. Because the City's third quarter sampling began on August 10, 2022, before the updated standards were approved, the City used fecal coliform for the remainder of that quarter and changed to sampling for E. coli in the final quarter.

Results for the individual fecal coliform and E. coli samples were logged in spreadsheets, where the quarterly geometric means for each site of the three sites were calculated. The results are summarized in the following pages and complete documentation is provided in the City's 2022 MS4 Annual Report attachments.

In addition to the sampling results, the City utilizes sanitary sewer overflow (SSO) reports in its data assessment. The SSO reports are received directly from DeKalb County Watershed Management (DWM) when an SSO occurs within Dunwoody's city limits. To account for SSO's that occur outside of DWM's jurisdiction, but within the same impaired watersheds, sewage spill reports are also obtained from EPD's documents webpage (<https://epd.georgia.gov/forms-permits/eservices/online-resources/documents>). **Figure 1** shows the adjoining cities (Doraville, Chamblee and Peachtree Corners) that contribute drainage to the Nancy Creek sampling sites in Dunwoody.

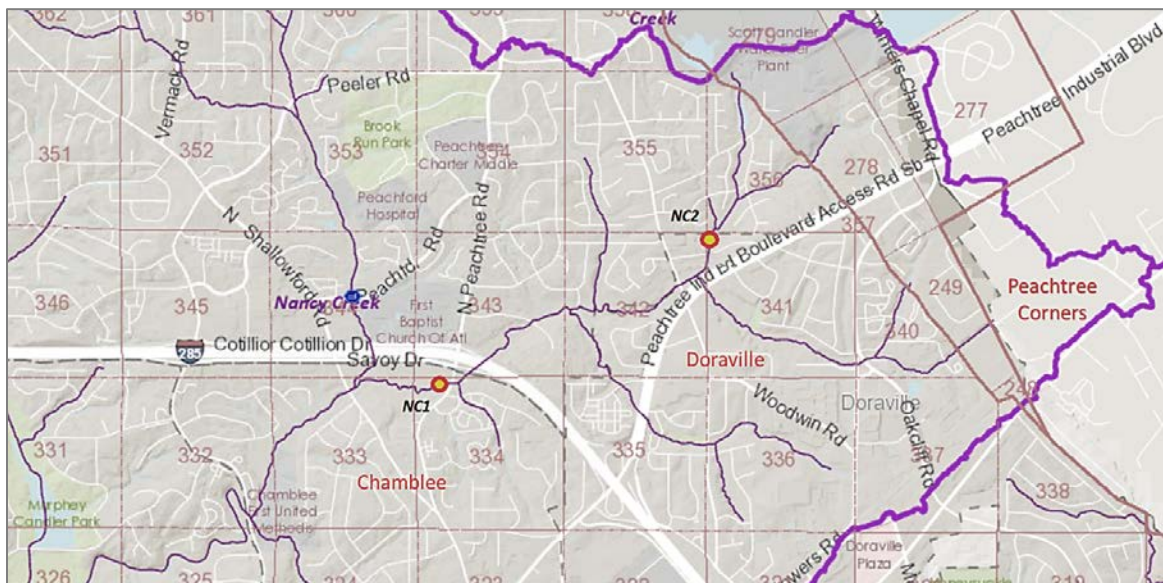


Figure 1 - DeKalb County Basins Map, Nancy Creek Watershed Contributing Municipalities; City of Dunwoody IWP Sampling Sites

In 2022, DWM notified the City of 6 separate SSO's. All reports are included as attachments to the Annual Report. The spills reported to the City by DWM did not correspond with the instances of elevated fecal coliform levels of in the 2022 samples. However, the 8/23/2022 Sanitary Sewer Spills report, obtained from the EPD's documents webpage, showed an SSO occurred at 6800 Peachtree Dunwoody Rd on 8/20/2022. The time and location of the spill corresponds with an increase in fecal coliform on 8/22/2022 at the nearest downstream monitoring location, "NC2" (at Binghampton Dr). The levels at the other 2 sites were normal on this same date. **Figure 2** shows the location of the spill in relation to the Nancy Creek sampling sites in Dunwoody.

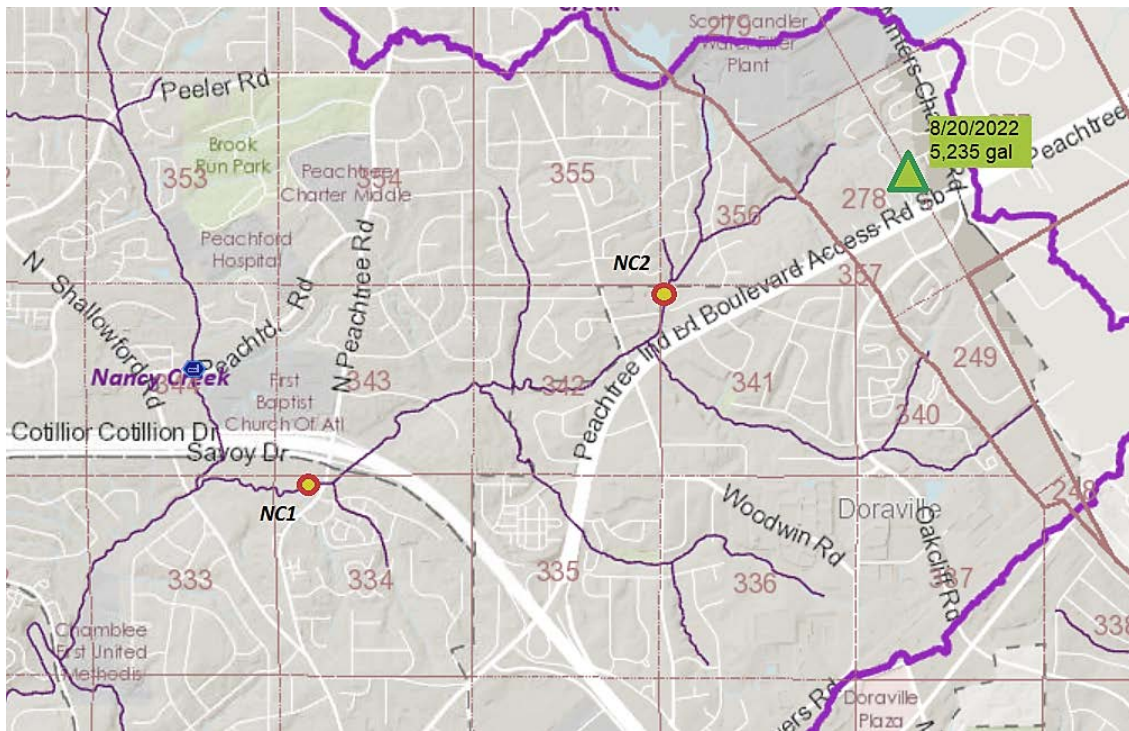


Figure 2 - Location of Major SSO in Doraville (6202 Peachtree Industrial Blvd.)

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 fecal coliform results are provided in the

results section. The data trend in 2022 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.

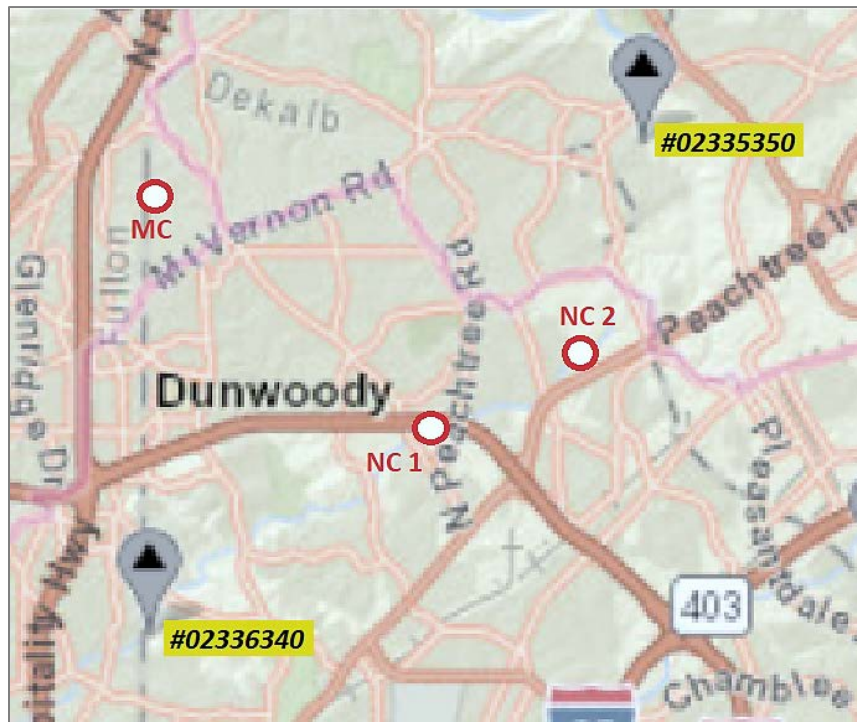


Figure 3 - USGS - NWIS: Mapper <https://maps.waterdata.usgs.gov/mapper/index.html>

Overall, the geometric means calculated in 2022 were slightly higher than 2021, but were not outside of the relative normal ranges for each site. All instances of elevated fecal coliform levels could be attributed to either an SSO event or a period of sustained wet weather conditions.

### 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 3/14/2022. The TSS samples were taken during dry weather, under conditions similar to previous years. The TSS levels in 2022 were marginally higher than those from 2021 and were close to the levels reported in 2019. The 2019-2022 TSS results are provided in a table and chart in the Results section.

### **BMP Effectiveness**

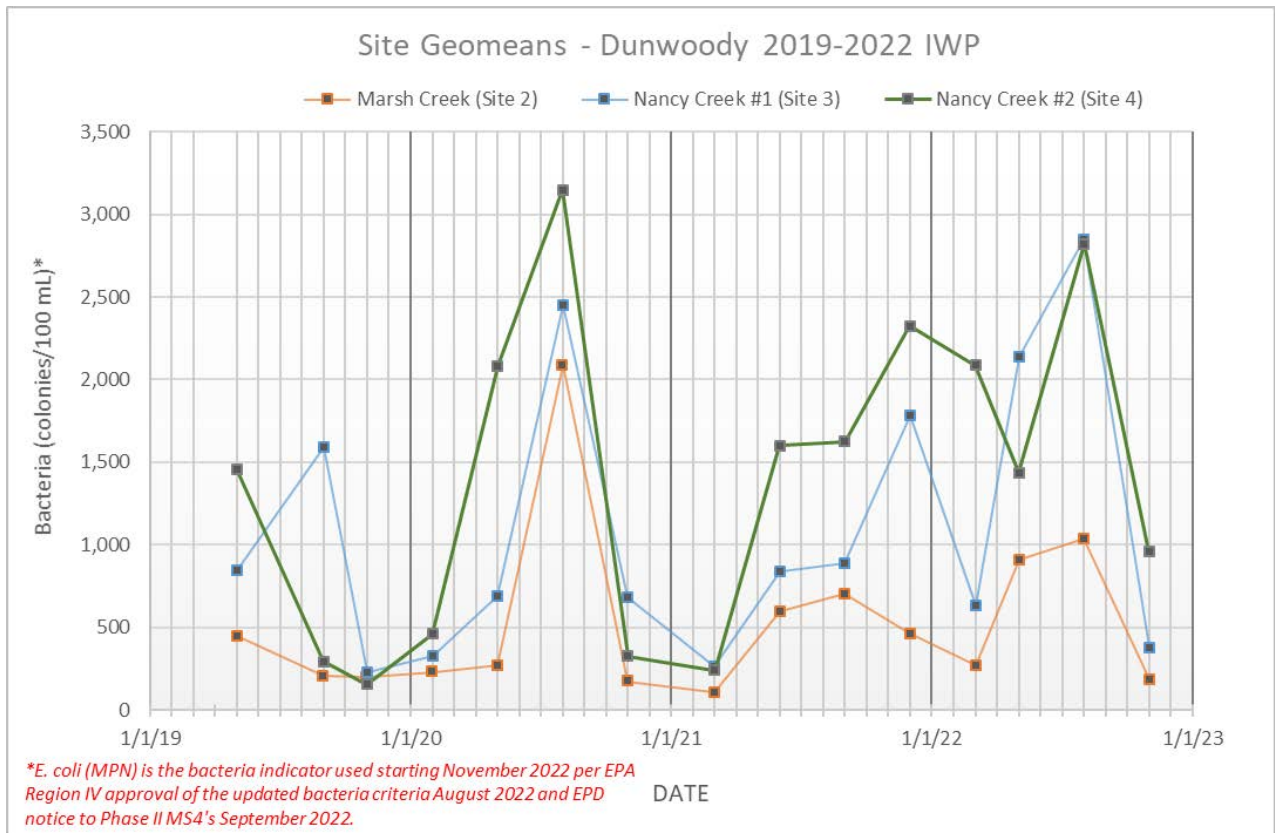
The results generated from the City's sampling of its impaired streams show that the quality has not deteriorated. The instances of elevated bacteria levels correlated with probable SSO events and TSS levels remained stable across all impaired basins in Dunwoody. The City considers its current BMP's to be effective and will continue implementing them per the Impaired Waters Plan. Per the updated 2022-2027 MS4 Phase II Permit terminology, the City will be following a Monitoring and Implementation Plan (MIP) instead. This updated Plan will follow all requirements outlined in the new permit and will be submitted to the EPD in 2023 with the City's updated Stormwater Management Program.

# 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

## Fecal Coliform



Fecal Coliform (continued)

Year	Qtr	GEOMEAN Bacteria (Colonies/100ml)*		
		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

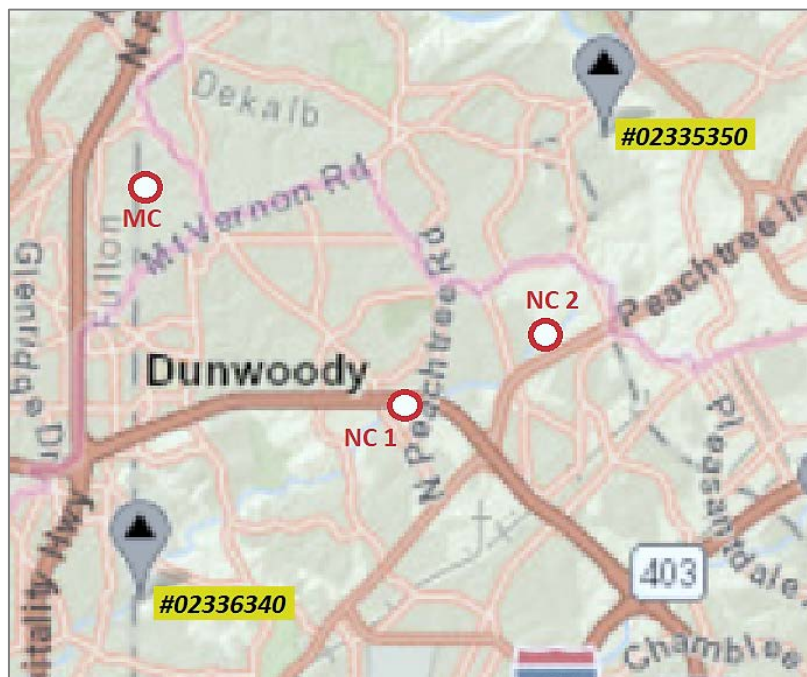
\* *E. coli* results taken in Quarter 4 2022 are in read text.

Fecal Coliform (continued)

- 2022 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	USGS 02335350	USGS 02335350
3/14/22	80	800	1200	0.00	0.00	0.00	0.00
3/17/22	1500	24000	2600	0.00	1.07	0.00	1.15
3/22/22	130	140	1900	0.00	0.00	0.00	0.00
3/29/22	330	60	3200	0.00	0.00	0.00	0.00
5/18/22	290	250	380	0.00	0.00	0.00	0.00
5/26/22	3000	25000	7000	0.24	0.51	0.43	0.67
6/7/22	2500	9000	3900	0.57	1.91	0.35	1.29
6/13/22	310	370	410	0.00	0.00	0.00	0.00
8/10/22	800	2000	100	0.24	0.26	0.18	0.19
8/22/22	900	2800	11000	0.00	0.01	0.00	0.10
8/31/22	1000	2100	1200	0.01	0.17	0.00	0.11
9/6/22	1600	5600	3000	0.01	0.03	0.01	0.43
11/14/22	180	110	370	0.00	0.00	0.00	0.00
11/22/22	240	55	1100	0.00	0.00	0.00	0.00
12/1/22	150	3500	1600	0.00	2.06	0.00	2.06
12/7/22	180	980	1300	0.16	0.46	0.14	0.47

- 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
2 - Marsh Creek	0.8	BRL (TSS)	1.2	1.2
3 - Nancy Creek #1	2.4	BRL (TSS)	1.2	2.8
4 - Nancy Creek #2	5.2	BRL (TSS)	2.8	4.4

