



## City of Dunwoody, Georgia

# Monitoring and Implementation Plan 2024 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. In adherence to the updated bacteria criteria, Dunwoody began sampling for E. coli in place of fecal coliform starting the fourth quarter of the 2022 reporting period.

Results for the individual past fecal coliform and the E. coli samples are logged in spreadsheets and the quarterly geometric means are calculated for each site. Graphs and tables are generated from the logged data; the results for years 2019 through 2024 are summarized in the following pages and are used to support findings in the analysis. Complete documentation is provided in the City 2024 MS4 Annual Report attachments.

The City also utilizes sanitary sewer overflow (SSO) reports and precipitation data to complete its assessment of the water quality results. 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.

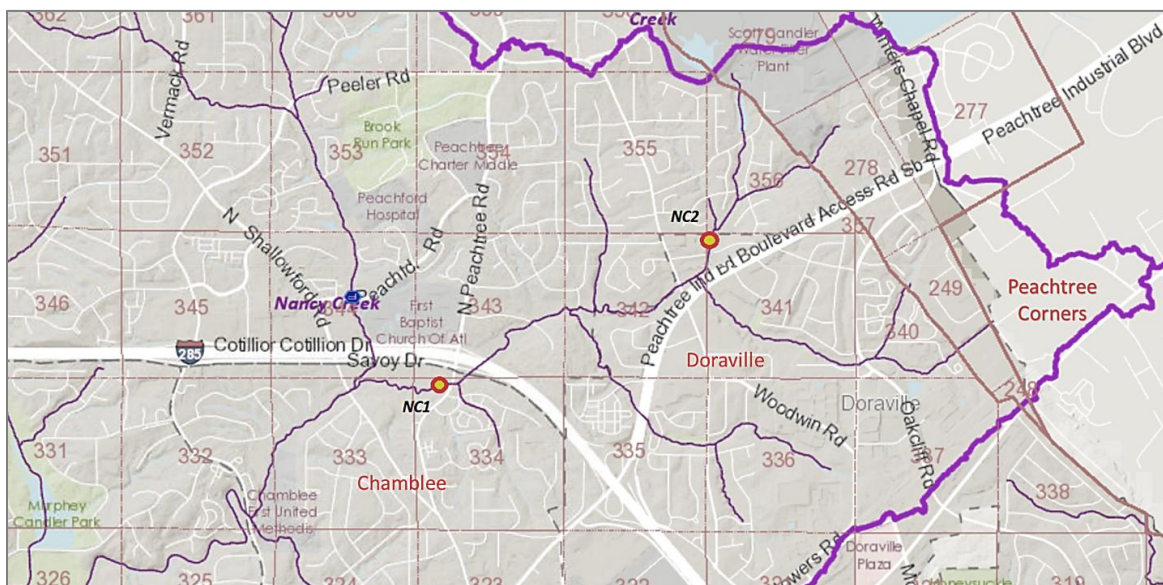


Figure 1 - DeKalb County Basins Map, Nancy Creek Watershed Contributing Municipalities; City of Dunwoody IWP Sampling Sites "NC1" and "NC2".

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 2** 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. Up until 2023, the data trend for Dunwoody indicated increases in bacteria levels could be expected after the area received 0.5 inches or more of rain over a 24-hour period.

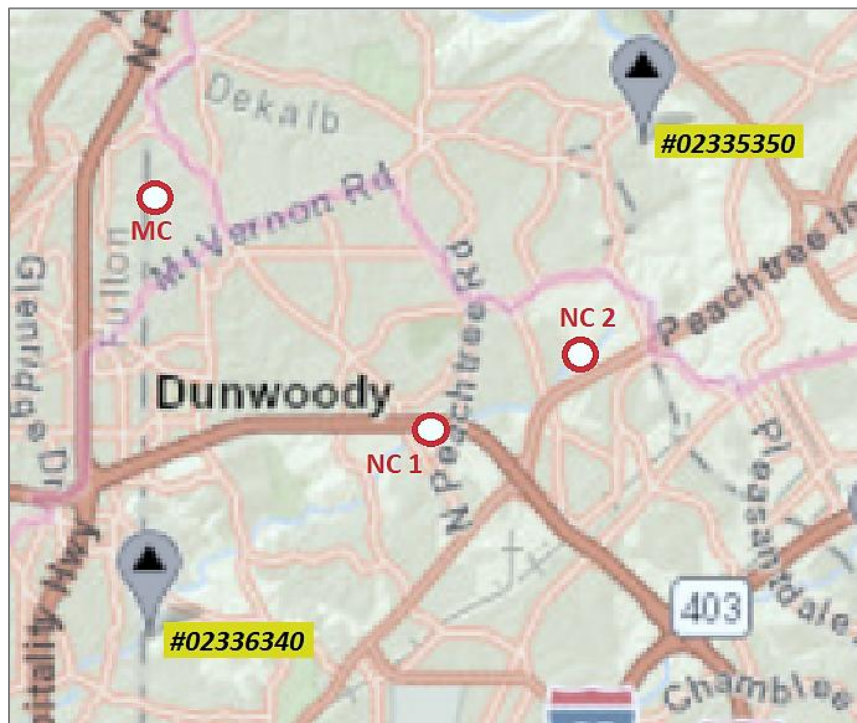


Figure 2 - USGS - NWIS: Mapper <https://maps.waterdata.usgs.gov/mapper/index.html>

In 2024, DWM notified the City of 11 separate SSOs. Unlike in previous years, there were no instances in 2024 where elevated E. coli levels corresponded to a reported SSO or to wet weather. However, there are multiple areas upstream of the City's 2 sampling sites on Nancy Creek where SSOs are documented to happen repeatedly. This indicates that the sanitary sewer network in these areas is in poor condition and repairs that are being made when SSOs do occur are possibly too limited in their scope (only the immediate problem is addressed by jetting or rodding the lines, cutting roots, replacing short lengths of broken sewer mains). Examples of such locations include Bernard Halpern Park (4150 Tilly Mill Rd, Doraville) and several properties along Peachtree Industrial Boulevard. In 2023, known SSOs in these areas were linked to elevated levels of E. coli at the 2 Nancy Creek sites monitored by the City. It is likely that there are ongoing issues in these areas which are causing pervasively high bacteria conditions within Nancy Creek.

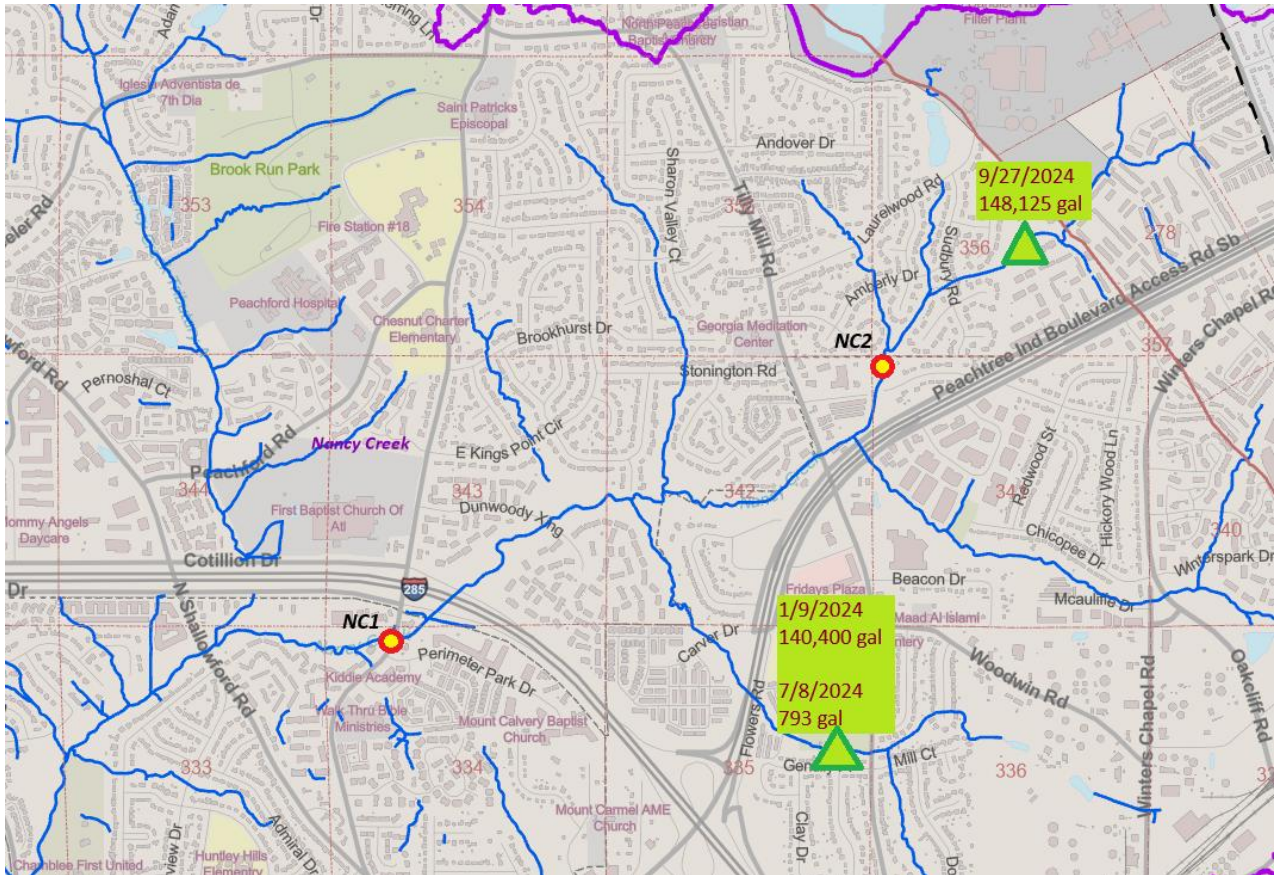


Figure 3 - Locations of SSOs in 2024 at Peachtree Industrial Boulevard (northeast triangle) and Bernard Halpern Park (south-most triangle).

Overall, the geometric means calculated in 2024 were higher than those obtained in previous years.

### 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. The same data used to evaluate bacteria results is used in conjunction with data from active land disturbance sites in Dunwoody to evaluate TSS results. Samples were taken for TSS at all three locations on 3/13/2024. The TSS samples were taken during dry weather, under conditions similar to previous years. Typically, TSS is either not detected at any of the 3 sites in a given year, or each site will have some amount of detectable TSS. In 2024, the most downstream sampling site on Nancy Creek (“NC1”) had 4.4 mg/L TSS while the other 2 sites did not have detectable levels of TSS. The bacteria levels on this day did not indicate a sanitary sewer spill and no rain was recorded. This indicate that a localized issue was the cause of the detectable TSS levels at NC1. While there were no large land disturbance projects within Dunwoody upstream of the NC1 location, there is an ongoing development project within Doraville which could be a contributing factor. The 2019-2024 TSS results are provided in a table and chart in the Results section.

### **BMP Effectiveness**

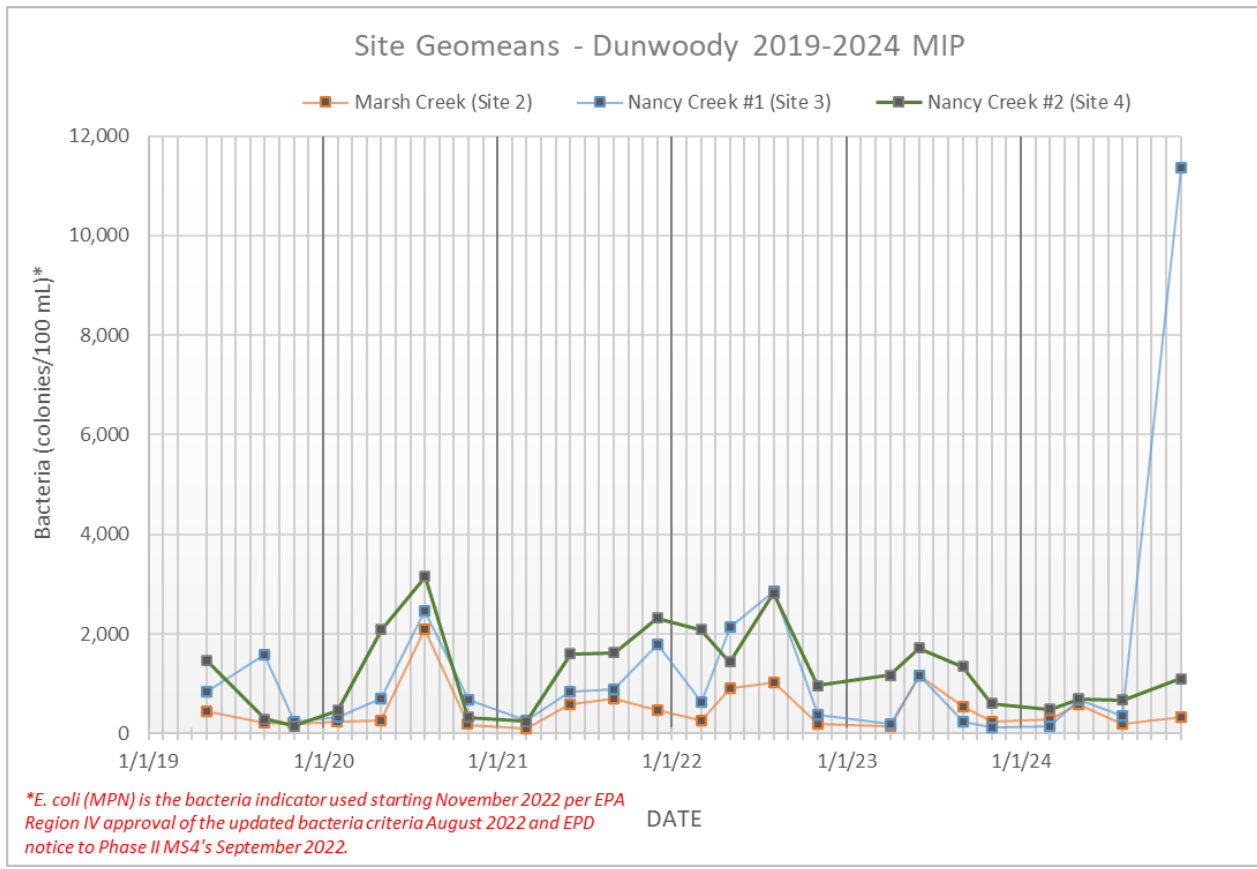
The results generated from the City’s sampling of its impaired streams show that the quality has not deteriorated in any manner that is affected by the City’s MS4 operations. The City considers its current BMP’s to be effective and will continue implementing them per the Impaired Waters Monitoring and 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
2024	1	285.2	155.5	490.0
	2	589.4	688.0	701.2
	3	199.6	350.9	673.9
	4	326.4	11356.3	1103.9

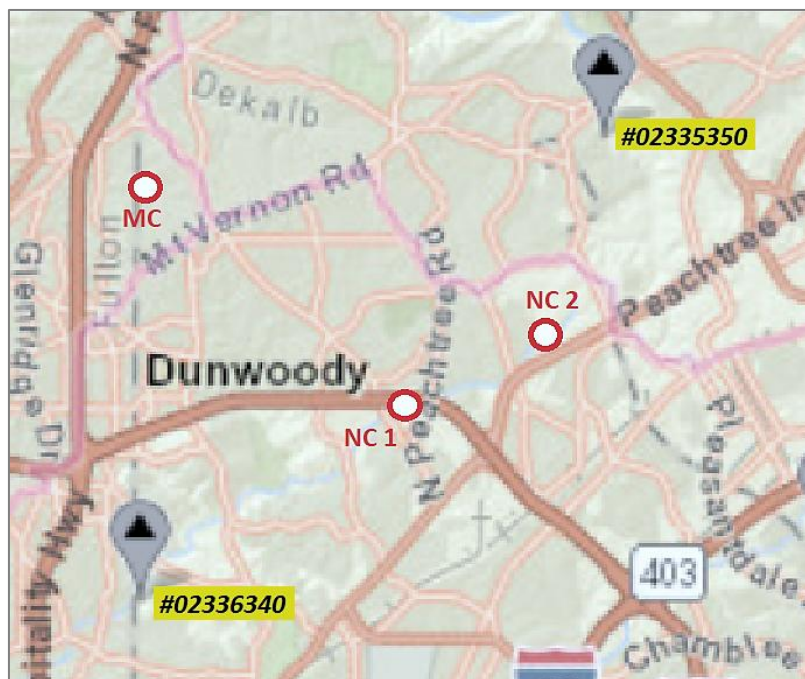
\* Bacteria parameter prior to Quarter 4 2022 is Fecal Coliform (Colonies/100mL); E. coli (MPN) results are in red text.

Bacteria(continued)

- 2024 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	
3/7/2024	2,900	780	220	0.00	2.03	0.00	1.65
3/13/24	150	190	480	0.00	0.00	0.00	0.00
3/19/24	190	180	700	0.00	0.00	0.00	0.00
3/25/24	80	110	780	0.00	0.00	0.00	0.00
5/6/24	810	1,400	1,300	0.00	1.25	0.00	0.87
5/13/24	230	2,900	250	0.04	0.04	0.04	0.04
5/16/24	180	240	2,400	0.00	0.00	0.00	0.06
5/23/24	3,600	230	310	0.00	0.00	0.00	0.00
8/14/24	329	1,094	1,245	0.00	0.00	0.00	0.00
8/20/24	187	402	836	0.00	0.00	0.00	0.00
9/4/24	162	187	711	0.00	0.00	0.00	0.00
9/9/24	160	185	279	0.00	0.00	0.00	0.00
12/4/24	75	14,136	331	0.00	0.00	0.00	0.00
12/9/24	6,488	24,196	8,164	0.40	0.41	0.52	0.53
12/12/24	216	2,324	1,246	0.00	0.44	0.00	0.42
12/19/24	108	20,924	441	0.00	0.00	0.00	0.03

- 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	3/13/2024
2 - Marsh Creek	0.8	BRL (TSS)	1.2	1.2	BRL (TSS)	BRL (TSS)
3 - Nancy Creek #1	2.4	BRL (TSS)	1.2	2.8	BRL (TSS)	4.4
4 - Nancy Creek #2	5.2	BRL (TSS)	2.8	4.4	BRL (TSS)	BRL (TSS)

