

Oconee County Storm Water Management Program

IMPAIRED WATERS MONITORING & IMPLEMENTATION PLAN:

2018 Annual Evaluation

Impaired Waters

The following waters have been identified as impaired by the latest 305(b)/303(d) List of Waters & are the subject of this plan. In each case, the pollutant of concern is fecal coliform.

- Barber Creek
- Calls Creek
- McNutt Creek
- Middle Oconee River

Monitoring

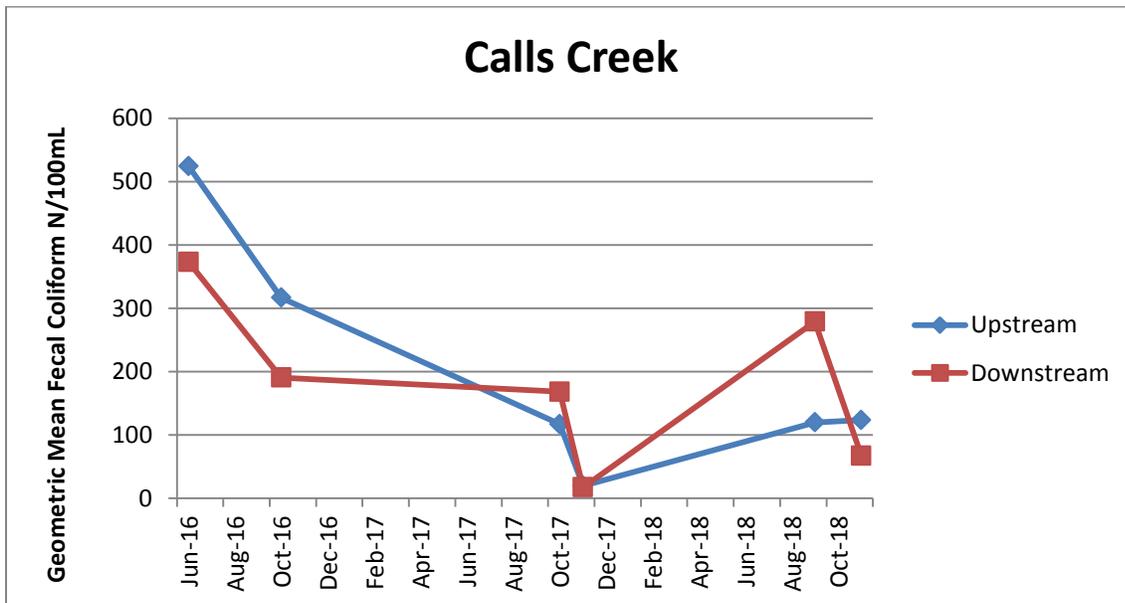
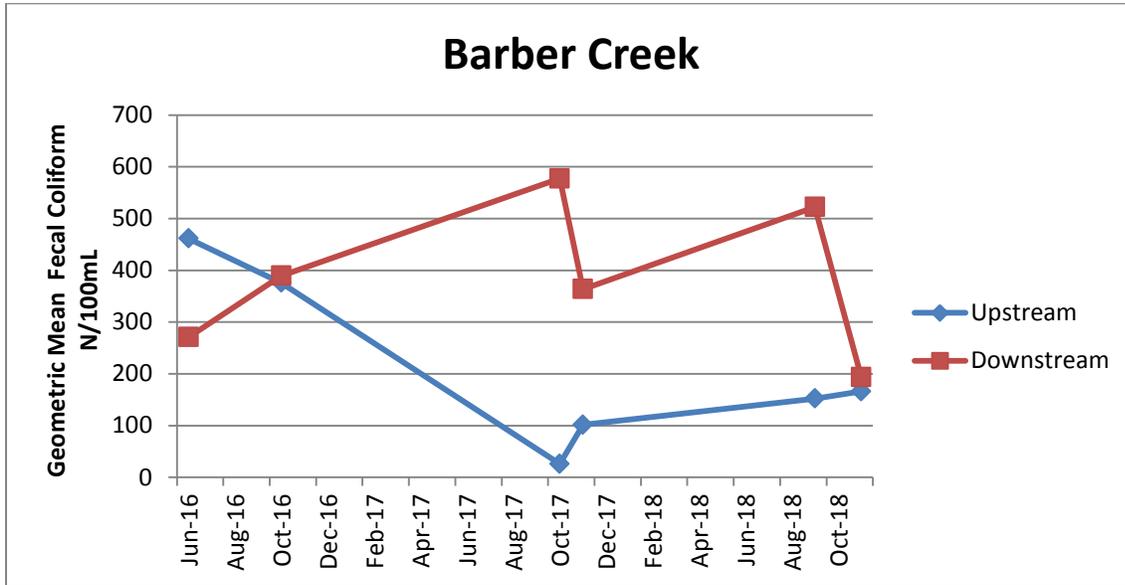
The Oconee County Utility Department performed monitoring according to the approved plan:

- Upstream & downstream samples were collected from each of the impaired waters in order to calculate two geographic means for the year.
 - A minimum of four samples were collected (one week apart) from each sampling site during the months of October & November
 - Laboratory analysis for fecal coliform was conducted & the geometric mean for each site was calculated. The results are shown in the table below:

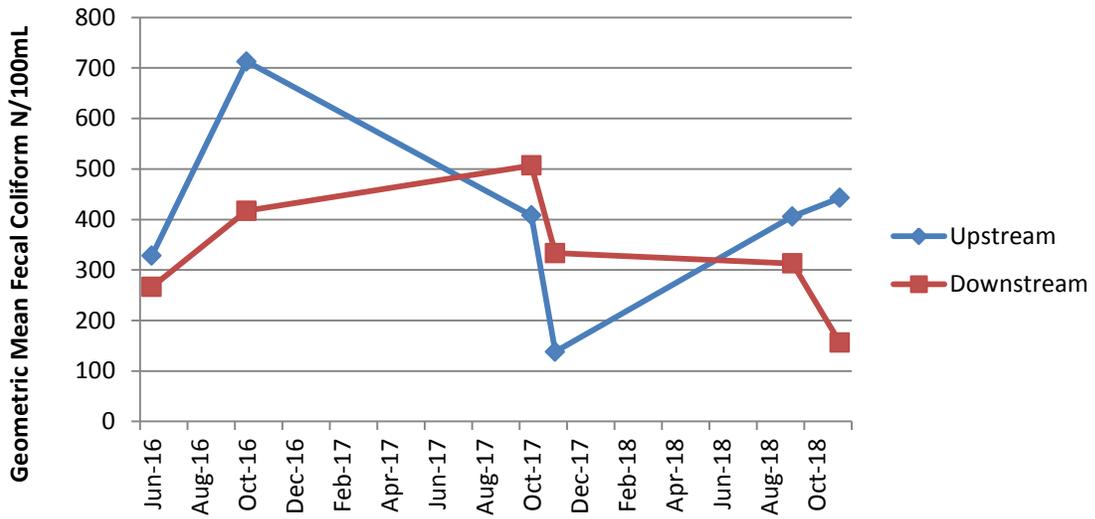
	September – upstream	September – downstream	November – upstream	November - downstream
Barber Creek	152.15	522.17	165.98	193.45
Calls Creek	119.98	279.18	123.74	67.48
McNutt Creek	406.01	312.91	442.73	156.14
Middle Oconee River	293.27	256.73	303.66	720.35

Trend in Water Quality

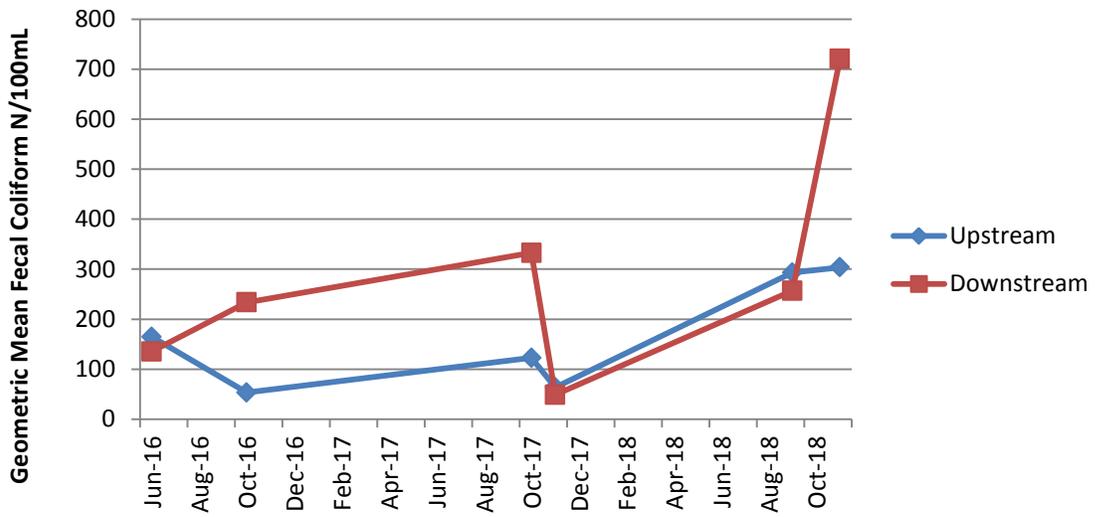
Following are line graphs comparing data results over time for each of the four impaired waters:



McNutt Creek



Middle Oconee River



Evaluation

BMPs included from the County's SWMP:

1. Public Education & Outreach BMP #2: website
2. Public Education & Outreach BMP #3: social media program
3. Public Education & Outreach BMP #4: distribution of educational material at events attended by Keep Oconee Beautiful
4. Illicit Discharge Detection & Elimination BMP #1: ordinance to prohibit illicit discharges to the storm drain system
5. Illicit Discharge Detection & Elimination BMP #3: dry weather screenings

Additional BMPs:

6. Pet waste stations at public parks
7. Inspection priority of areas upstream of impaired waters

All of the waters addressed in this plan enter into Oconee County already impaired, but the downstream sampling does indicate a higher level of the pollutant in some cases. It is difficult to perform a trend analysis without several years of data; however, the BMPs for public education can be targeted more specifically to address the source of impairment (fecal coliform) in order to try to further reduce the pollutant. It is possible that failing septic tanks could be a contributor. In the future, proper care and maintenance of septic systems will be included in our public educational outreach.

Tracking

The data collected by the Utility Department during sampling is attached to this evaluation report.

Fecal Coliform-Membrane Filter
Stormwater Testing
Standard Methods
19th Edition Method 9222D, P.9-60

Sample Date	Collected By	Sample Location/Time	Sample Identity	Sample Dilution %	Time Placed in Bath	Analysis Date & Time	Incubation Time	Colony Count	Fecal Coliform N/100 mL	Temp of Incubator °C	Analyst Initials
9/4/18	JJ/SM	Lab/Blank 11:45	Blank 100 mL	100%	10:52pm	9/5/18 1:15	24hr	0	NEG	44.3	RSP
↓	↓	Barber/ 9:08	SW-1Up 1 mL	100%	↓	↓	↓	0		↓	↓
		Barber/ ..	SW-1Up 5 mL	100%				17	340	170	
		Barber/ 10:48	SW-1Dn 1 mL	100%				3	300		
		Barber/ ..	SW-1Dn 5 mL	100%				28	560	430	
		Calls/ 9:41	SW-2Up 1mL	100%				1	100		
		Calls/ ..	SW-2Up 5mL	100%				13	260	180	
		Calls/ 10:18	SW-2Dn 1mL	100%				6	600		
		Calls/ ..	SW-2Dn 5mL	100%				11	220	470	
		McNutt/ 8:52	SW-3Up 1mL	100%				3	300	44.4	
		McNutt/ ..	SW-3Up 5mL	100%				17	340	320	
		McNutt/ 10:46	SW-3Dn 1mL	100%				5	500	490	
		McNutt/ ..	SW-3Dn 5mL	100%				24	480		
		Middle/ 10:27	SW-4Up 1mL	100%				2	200		
		Middle/ ..	SW-4Up 5mL	100%				5	100	150	
		Middle/ 10:00	SW-4Dn 1mL	100%				1	100		
		Middle/ ..	SW-4Dn 5mL	100%				4	80	90	
		Lab/POS 9:00	INF 0.1mL	100%				TNTC	POS		

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9/11/18	RE/SM	Lab/Blank	Blank 100 mL	100%	11:50	9/12/18 1:50	24hr	0	NEG	44.4	RSP
↓	↓	Barber/ 8:25	SW-1Up 1 mL	100%	↓	↓	↓	6	600	↓	↓
		Barber/ ..	SW-1Up 5 mL	100%				16	320	460	
		Barber/ 9:50	SW-1Dn 1 mL	100%				6	600		
		Barber/ ..	SW-1Dn 5 mL	100%				28	560	580	
		Calls/ 8:44	SW-2Up 1mL	100%				0	0		
		Calls/ ..	SW-2Up 5mL	100%				5	100	50	
		Calls/ 9:28	SW-2Dn 1mL	100%				4	400		
		Calls/ ..	SW-2Dn 5mL	100%				7	140	270	
		McNutt/ 8:12	SW-3Up 1mL	100%				5	500	444	
		McNutt/ ..	SW-3Up 5mL	100%				39	780	640	
		McNutt/ 9:50	SW-3Dn 1mL	100%				8	300		
		McNutt/ ..	SW-3Dn 5mL	100%				22	420	620	
		Middle/ 9:31	SW-4Up 1mL	100%				10	1000		
		Middle/ ..	SW-4Up 5mL	100%				30	600	800	
		Middle/ 8:59	SW-4Dn 1mL	100%				13	1300		
		Middle/ ..	SW-4Dn 5mL	100%				45	900	1100	
		Lab/POS	INF 0.1mL	100%				TNTC	POS		

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9/18/18	SC/JH	Lab/Blank 11:35	Blank 100 mL	100%	12:30	9/19/18 1pm	24.5 hrs	0	NEG	44.6	RBB
↓	↓	Barber/ 8:49	SW-1Up 1 mL	100%	↓	↓	↓	5	500	↓	↓
		Barber/ ..	SW-1Up 5 mL	100%				11	220	↓	
		Barber/ 10:10	SW-1Dn 1 mL	100%				17	1700	↓	
		Barber/ ..	SW-1Dn 5 mL	100%				45	900	↓	
		Calls/ 9:07	SW-2Up 1mL	100%				2	200	↓	
		Calls/ ..	SW-2Up 5mL	100%				4	80	↓	
		Calls/ 9:47	SW-2Dn 1mL	100%				4	400	↓	
		Calls/ ..	SW-2Dn 5mL	100%				6	120	↓	
		McNutt/ 8:35	SW-3Up 1mL	100%				7	700	↓	
		McNutt/ ..	SW-3Up 5mL	100%				17	340	↓	
		McNutt/ 10:12	SW-3Dn 1mL	100%				1	100	↓	
		McNutt/ ..	SW-3Dn 5mL	100%				8	160	↓	
		Middle/ 9:53	SW-4Up 1mL	100%				3	300	↓	
		Middle/ ..	SW-4Up 5mL	100%				19	380	↓	
		Middle/ 9:24	SW-4Dn 1mL	100%				2	200	↓	
		Middle/ ..	SW-4Dn 5mL	100%				9	180	↓	
		Lab/POS 9:15	INF 0.1mL	100%				TNTC	POS		

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9/20/18	SS/JH	Lab/Blank	Blank 100 mL	100%	4:50	9/27/18 5:05	24 hrs	0	NEG	44.6	RBB
↓	↓	Barber/ 9:42	SW-1Up 1 mL	100%	↓	↓	↓	2	200	↓	↓
↓	↓	Barber/ ..	SW-1Up 5 mL	100%				10	200	↓	
		Barber/ 11:40	SW-1Dn 1 mL	100%				2	200	↓	
		Barber/ ..	SW-1Dn 5 mL	100%				16	320	↓	
		Calls/ 10:15	SW-2Up 1mL	100%				12	1200	↓	
		Calls/ ..	SW-2Up 5mL	100%				43	860	↓	
		Calls/ 11:09	SW-2Dn 1mL	100%				4	400	↓	
		Calls/ ..	SW-2Dn 5mL	100%				13	260	↓	
		McNutt/ 9:27	SW-3Up 1mL	100%				3	300	↓	
		McNutt/ ..	SW-3Up 5mL	100%				13	260	↓	
		McNutt/ 11:35	SW-3Dn 1mL	100%				2	200	↓	
		McNutt/ ..	SW-3Dn 5mL	100%				17	340	↓	
		Middle/ 11:17	SW-4Up 1mL	100%				2	200	↓	
		Middle/ ..	SW-4Up 5mL	100%				10	200	↓	
		Middle/ 10:53	SW-4Dn 1mL	100%				2	200	↓	
		Middle/ ..	SW-4Dn 5mL	100%				14	280	↓	
		Lab/POS	INF 0.1mL	100%				TNTC	POS		

Barber 200 up 260 dn Calls 1030 up 330 dn McNutt 280 up 270 dn Middle 200 up 240 dn

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11/13/18	EC/JH	Lab/Blank	Blank 100 mL	100%	4:30p	11/14/18	24hrs	0	NEG	44.6	EC
		Barber/ 9:08	SW-1Up 1 mL	100%	↓	↓	↓	30	3000	44.0	↓
		Barber/ ..	SW-1Up 5 mL	100%				125	2500	2750	
		Barber/ 10:18	SW-1Dn 1 mL	100%				24	2400		
		Barber/ ..	SW-1Dn 5 mL	100%				95	1900	2150	
		Calls/ 9:52	SW-2Up 1mL	100%				19	1900		
		Calls/ ..	SW-2Up 5mL	100%				41	820	1360	
		Calls/ 10:01	SW-2Dn 1mL	100%				25	2500		
		Calls/ ..	SW-2Dn 5mL	100%				84	1680	290	
		McNutt/ 8:50	SW-3Up 1mL	100%				14	1400		
		McNutt/ ..	SW-3Up 5mL	100%				88	1760	1580	
		McNutt/ 10:31	SW-3Dn 1mL	100%				29	2900		
		McNutt/ ..	SW-3Dn 5mL	100%				94	1880	2390	
		Middle/ 10:08	SW-4Up 1mL	100%				57	5700		
		Middle/ ..	SW-4Up 5mL	100%				242	4840	5270	
		Middle/ 9:42	SW-4Dn 1mL	100%				86	8600		
		Middle/ ..	SW-4Dn 5mL	100%				216	4320	6460	
		Lab/POS	INF 0.1mL	100%				NTC	Pos		

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11/29/18	JH/EC	Lab/Blank	Blank 100 mL	100%	1:55pm	1:55pm	24hrs	0	0	44.4	EC
		Barber/ 8:40am	SW-1Up 1 mL	100%	1:55pm	1:55pm	↓	0	0	44.4	↓
		Barber/ " "	SW-1Up 5 mL	100%				2	(40)	44.4	
		Barber/ 10:14am	SW-1Dn 1 mL	100%				0	(240)		
		Barber/ " "	SW-1Dn 5 mL	100%				12	(240)		
		Calls/ 8:57am	SW-2Up 1mL	100%	2:15pm	2:15pm		7	700	560	
		Calls/ " "	SW-2Up 5mL	100%				21	420	44.5	
		Calls/ 9:49am	SW-2Dn 1mL	100%		11/29/18		0			
		Calls/ " "	SW-2Dn 5mL	100%				8	(160)		
		McNutt/ 8:26am	SW-3Up 1mL	100%	2:15pm	2:15pm		5	500	44.5	
		McNutt/ " "	SW-3Up 5mL	100%	" "	" "		13	260	380	
		McNutt/ 10:14am	SW-3Dn 1mL	100%	2:50pm	" "		0			
		McNutt/ " "	SW-3Dn 5mL	100%	" "	" "		9	(180)		
		Middle/ 9:56am	SW-4Up 1mL	100%	2:50pm			0		44.5	
		Middle/ " "	SW-4Up 5mL	100%				18	(360)		
		Middle/ 9:21am	SW-4Dn 1mL	100%				3	300		
		Middle/ " "	SW-4Dn 5mL	100%				11	220		
		Lab/POS 10:50	INF 0.1mL	100%	1:55pm	1:55pm		NTC	Positive	44.4	

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11/27/18	JH/EC	Lab/Blank	Blank 100 mL	100%	12:05	11/28/18	24hr	0	NEG	44.5	RSP
↓	↓	Barber/ 9:10	SW-1Up 1 mL	100%	↓	12:08	↓	2	200	140	↓
		Barber/ ..	SW-1Up 5 mL	100%				4	80		
		Barber/ 10:28	SW-1Dn 1 mL	100%				2	200	180	
		Barber/ ..	SW-1Dn 5 mL	100%				8	160		
		Calls/ 9:31	SW-2Up 1 mL	100%				0	0	0	
		Calls/ ..	SW-2Up 5 mL	100%				0	0	0	
		Calls/ 10:01	SW-2Dn 1 mL	100%				0	0	10	
		Calls/ ..	SW-2Dn 5 mL	100%				1	20		
		McNutt/ 8:54	SW-3Up 1 mL	100%				3	300	210	
		McNutt/ ..	SW-3Up 5 mL	100%				6	120		
		McNutt/ 10:27	SW-3Dn 1 mL	100%				1	100	140	
		McNutt/ ..	SW-3Dn 5 mL	100%				9	180		
		Middle/ 10:08	SW-4Up 1 mL	100%				1	100	90	
		Middle/ ..	SW-4Up 5 mL	100%				4	80		
		Middle/ 9:45	SW-4Dn 1 mL	100%				2	200	220	
		Middle/ ..	SW-4Dn 5 mL	100%				12	240		
		Lab/POS	INF 0.1 mL	100%				TNTC	Pos		

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Sample Date	Collected By	Sample Location/Time	Sample Identity	Sample Dilution %	Time Placed in Bath	Analysis Date & Time	Incubation Time	Colony Count	Fecal Coliform N/100 mL	Temp of Incubator °C	Analyst Initials
12/4/18	JH/EC	Lab/Blank	Blank 100 mL	100%	12:30p	12/5/18	24hr	0	NEG	44.5	RSP
↓	↓	Barber/ 8:38	SW-1Up 1 mL	100%	↓	12:30p	↓	3	300	350	↓
		Barber/ ..	SW-1Up 5 mL	100%				20	400		
		Barber/ 9:56	SW-1Dn 1 mL	100%				4	400		
		Barber/ ..	SW-1Dn 5 mL	100%				7	140	270	
		Calls/ 8:55	SW-2Up 1 mL	100%				4	400		
		Calls/ ..	SW-2Up 5 mL	100%				15	300	350	
		Calls/ 9:31	SW-2Dn 1 mL	100%				2	200		
		Calls/ ..	SW-2Dn 5 mL	100%				8	160	180	
		McNutt/ 8:23	SW-3Up 1 mL	100%				4	400		
		McNutt/ ..	SW-3Up 5 mL	100%				16	320	360	
		McNutt/ 9:56	SW-3Dn 1 mL	100%				2	200		
		McNutt/ ..	SW-3Dn 5 mL	100%				5	100	150	
		Middle/ 9:39	SW-4Up 1 mL	100%				13	1300		
		Middle/ ..	SW-4Up 5 mL	100%				35	700	1000	
		Middle/ 9:11	SW-4Dn 1 mL	100%				7	700		
		Middle/ ..	SW-4Dn 5 mL	100%				44	880	790	
		Lab/POS	INF 0.1 mL	100%				TNTC	Pos		