SANDY SPRINGS STREAM ASSESSMENT PRESENTATION

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REASON FOR STREAM ASSESSMENT

- CITY OF SANDY SPRINGS HAS DEVELOPED A STORMWATER MANAGEMENT PLAN (MS4 PERMIT REQUIREMENT)
- THE STORMWATER MANAGEMENT PLAN INCLUDES MONITORING FOR IMPAIRED STREAMS (MS4 PERMIT REQUIREMENT)
- COSS INCLUDES 32-MILES OF MAIN STEM AND TRIBUTARIES OF IMPAIRED STREAMS THAT CONFLUENCE WITH THE CHATTAHOOCHEE RIVER.
- THESE IMPAIRED STREAMS ARE LISTED ON THE 2016 GEORGIA 305(B)/303(D) REPORT LISTS OF IMPAIRED STREAMS FOR *FECAL COLIFORM* BACTERIA

REASON FOR STREAM ASSESSMENT

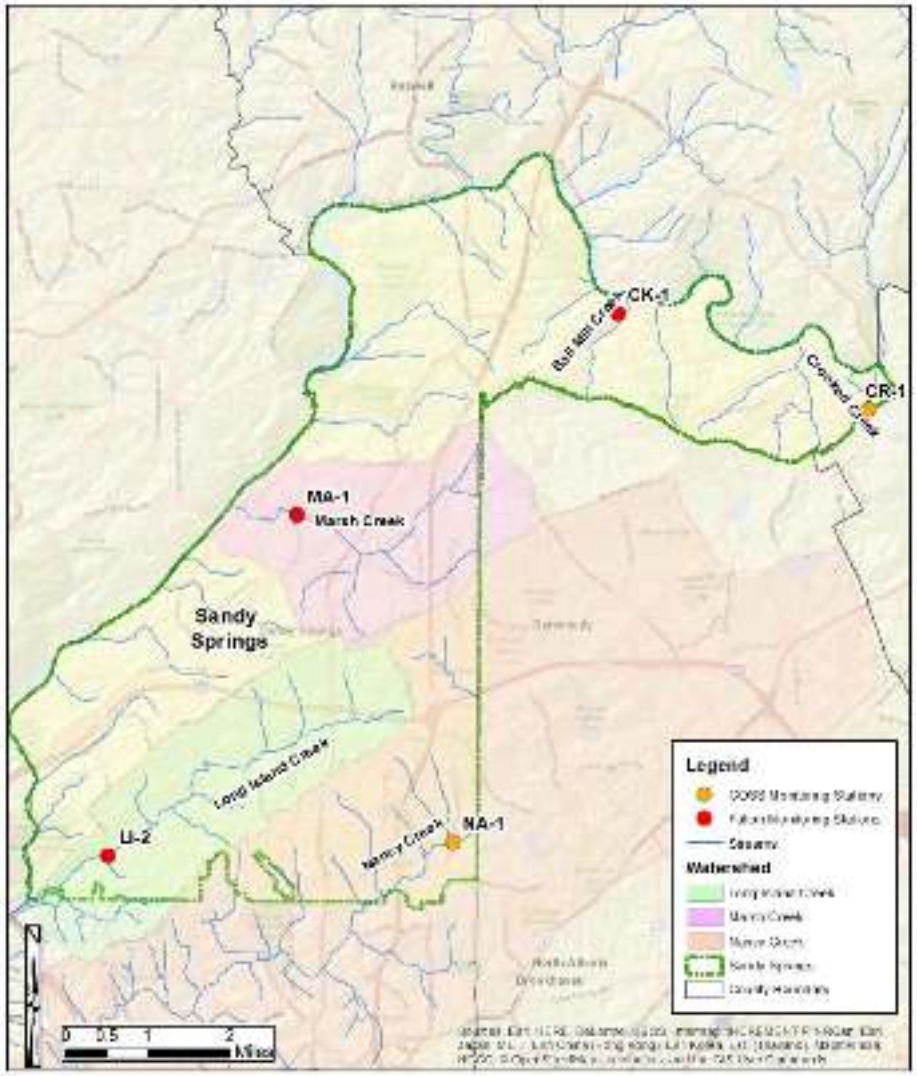
- THE STREAM ASSESSMENT PROVIDES SUPPORTING DATA FOR THE IMPAIRED STREAMS MONITORING PROGRAM (IDENTIFICATION OF ILLICIT DISCHARGE)
- THE STREAM ASSESSMENT DATA CAN BE USED FOR HYDRAULIC MODELING OF STREAM SEGMENTS AND FUTURE STRUCTURAL BEST MANAGEMENT PRACTICES
- IDENTIFIES POTENTIAL MAINTENANCE ISSUES THAT CAN LEAD TO ILLICIT DISCHARGE
- STREAM ASSESSMENTS PROVIDE A FIRSTHAND ACCOUNT OF THE CONDITION OF THE STREAMS AND THE SURROUNDING AREA.

IMPAIRED STREAMS IN SANDY SPRINGS WATERSHED

Stream	Reach	Violation	Potential Cause	Stream Length
Nancy Creek	Headwaters to Peachtree Creek	FC, Bio F	UR	16 Miles
Long Island Creek	Headwaters to Chattahoochee River	FC, Bio F	UR	5 Miles
Ball Mill Creek	Headwaters to Chattahoochee River	FC	UR	3 Miles
Crooked Creek	Headwaters to Chattahoochee River	FC, Bio F	UR	2 Miles
Marsh Creek	Headwaters to Chattahoochee River	FC, Bio F	UR	4 Miles

FC – Fecal Coliform, Bio F – Fish Biota, UR - Urban Runoff

STREAM WALK OVERVIEW



City of Sandy Springs
Stream Assessment

STREAM WALK OVERVIEW

- SCIENTISTS AND ENGINEERS COLLECTED FIELD DATA BY WALKING, MEASURING, AND PHOTOGRAPHING CRITICAL AREAS IN THE WATERSHED (I.E. STREAMS, WETLANDS, CONVEYANCE SYSTEMS, AND POTENTIAL POLLUTANT SOURCES).

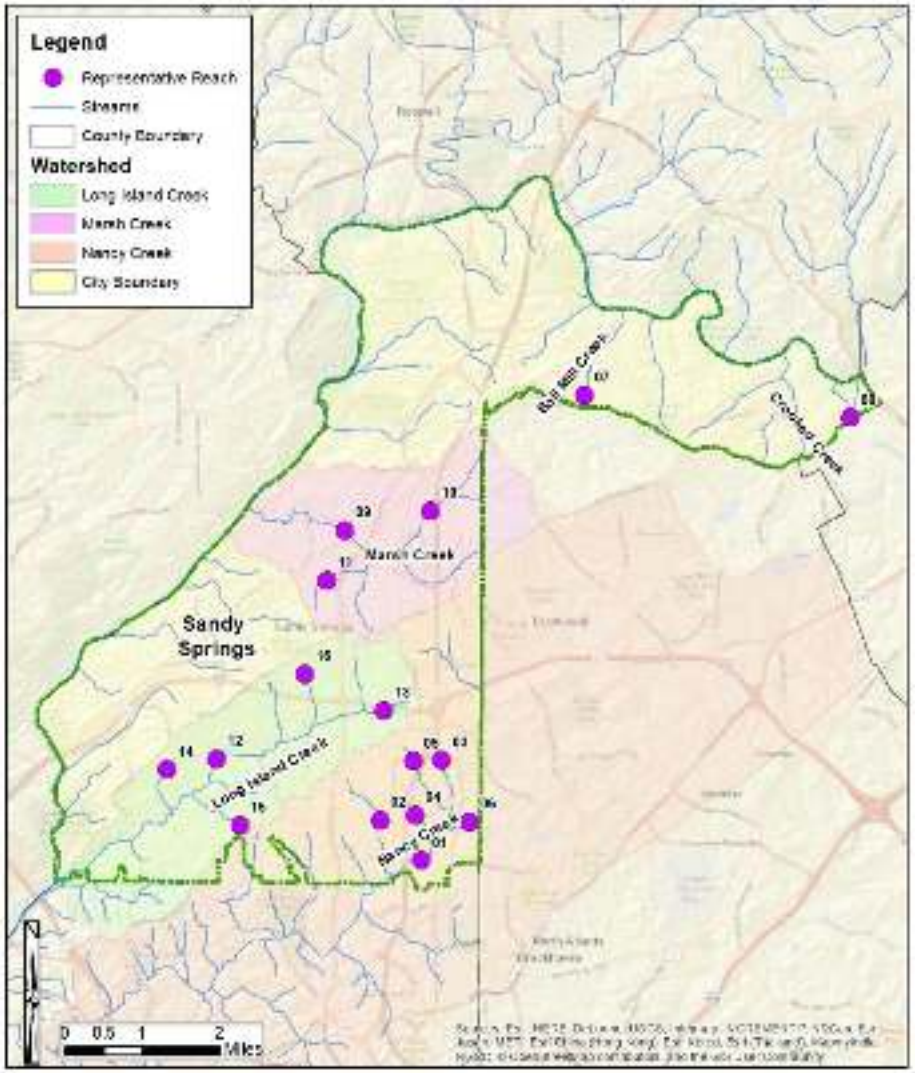
STREAM WALK OVERVIEW

Proposed Stream Miles - Sandy Springs Impaired Streams Stream Walks			
	Impaired Stream Miles	Unincorporated Trib. Miles	Total Project Miles
Marsh Creek	4	4	8
Long Island Creek	7	6	13
Nancy Creek	2	5	7
Ball Mill Creek	2	0	2
Crooked Creek	1	0	1
Total Miles	16	15	31

DATA COLLECTED

- REPRESENTATIVE REACH POINTS (RRP)- ONCE APPROXIMATELY EVERY MILE OR SIGNIFICANT HABITAT CONDITION CHANGE. FILL OUT LOW GRADIENT HABITAT ASSESSMENT FORM.
- MAINTENANCE POINTS (MP)- MAINTENANCE POINTS ARE COLLECTED ON STORM SEWER AND SEWER INFRASTRUCTURE AND STREAM BANK CONDITIONS TO IDENTIFY POTENTIAL AREAS FOR MAINTENANCE.
- STREAM POINT ID (SPID) – COLLECTED EVERY 500 TO 1000 FEET TO DOCUMENT STREAM CONDITIONS.

REPRESENTATIVE REACH POINTS



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REPRESENTATIVE REACH POINTS

	Nancy Creek						Crooked Creek	Ball Mill Creek
Habitat Parameters	ID (1)	ID (2)	ID (3)	ID (4)	ID (5)	ID (6)	ID (7)	ID (8)
1 Epifaunal Substrate/Available Cover	7	10	11	7	9	5	15	2
2 Embeddedness	6	8	8	8	6	8	12	2
3 Velocity /Depth Regime	11	9	7	5	11	11	11	12
4 Sediment Deposition	6	7	13	5	12	5	14	2
5 Channel Flow Status	5	6	6	6	5	6	8	4
6 Channel Alteration	6	4	5	8	7	6	7	9
7 Frequency of Riffles	4	4	4	5	6	4	3	4
8 Bank Stability Left Bank	2	5	4	4	3	1	5	0
8 Bank Stability Right Bank	2	4	3	3	3	1	5	0
9 Vegetative Protection Left Bank	3	1	2	1	3	2	1	2
9 Vegetative Protection Right Bank	3	1	2	1	3	2	1	2
10 Riparian Vegetative Zone Width LB	1	1	2	1	3	2	1	3
10 Riparian Vegetative Zone Width RB	1	1	1	1	3	2	1	3
Total Score	57	61	68	55	74	55	84	45
Condition Categories	Marginal - Poor	Marginal	Marginal	Marginal - Poor	Marginal	Marginal - Poor	Marginal	Marginal - Poor

REPRESENTATIVE REACH POINTS

	Marsh Creek			Long Island Creek				
Habitat Parameters	ID (9)	ID (10)	ID (11)	ID (12)	ID (13)	ID (14)	ID (15)	ID (16)
1 Epifaunal Substrate/Available Cover	14	12	14	12	11	14	14	14
2 Embeddedness	17	11	14	12	14	11	11	14
3 Velocity /Depth Regime	13	13	7	13	7	3	4	7
4 Sediment Deposition	11	12	14	14	14	13	14	13
5 Channel Flow Status	6	8	6	8	8	9	6	9
6 Channel Alteration	7	7	8	8	7	7	7	7
7 Frequency of Riffles	3	3	5	6	4	6	7	6
8 Bank Stability Left Bank	3	3	4	3	3	4	3	4
8 Bank Stability Right Bank	4	4	5	2	3	4	3	5
9 Vegetative Protection Left Bank	2	3	2	2	1	2	1	1
9 Vegetative Protection Right Bank	2	3	2	2	1	2	1	1
10 Riparian Vegetative Zone Width LB	2	2	3	1	1	2	5	2
10 Riparian Vegetative Zone Width RB	2	2	3	1	1	2	5	2
Total Score	86	83	87	84	75	79	81	85
Condition Categories	Marginal	Marginal	Marginal	Marginal	Marginal	Marginal	Marginal	Marginal

* Number in parenthesis represents the Representative Reach Point ID

**Optimal 200-166, Sub-Optimal 153-113, Marginal 100-60, Poor 44-0 Source: Georgia DNR 2007 Standard Operating Procedures

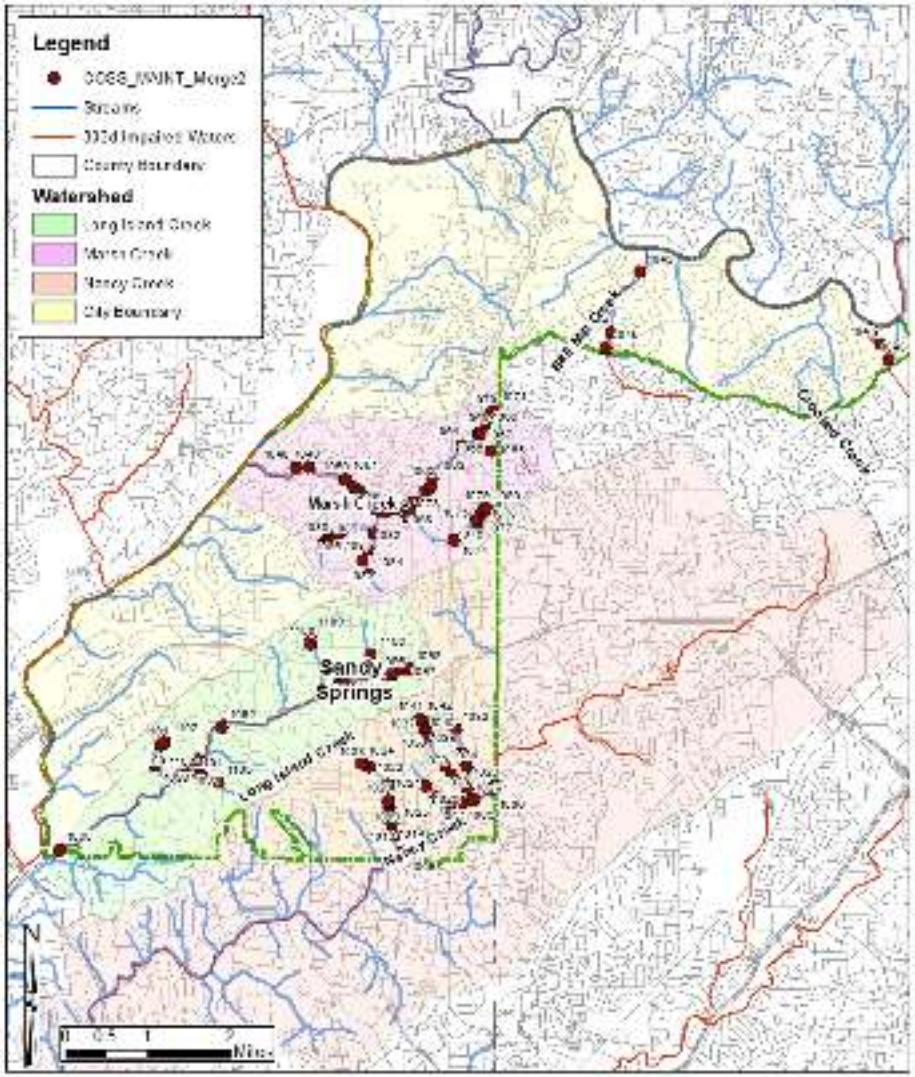
REPRESENTATIVE REACH POINT 8 (LOWEST HABITAT SCORE)

Crooked Creek

REPRESENTATIVE REACH POINT 11 (HIGHEST HABITAT SCORE)

Marsh Creek Tributary

MAINTENANCE POINTS



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MAINTENANCE POINT 1066

Eroded Infrastructure Support near Hunters Branch Drive (Private Property) Marsh Creek

MAINTENANCE POINT 1077

SEPARATED STORM DRAIN HEADWALL NEAR VERNON GLEN COURT (PRIVATE PROPERTY)

MARSH CREEK

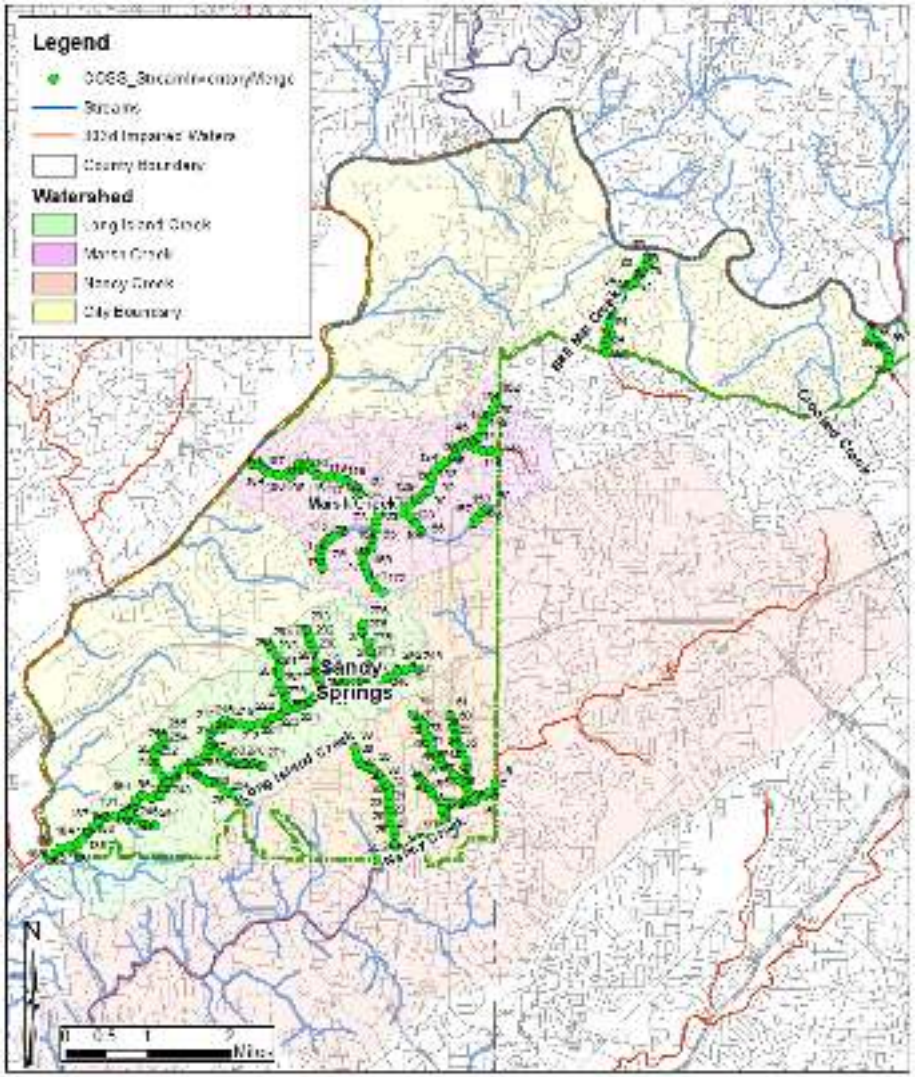
MAINTENANCE POINT 1046

Eroded stream banks – Crooked Creek at the confluence with Chattahoochee River (Private Property)

MAINTENANCE POINT 1046

Eroded stream banks – Crooked Creek at the confluence with Chattahoochee River (Private Property)

STREAM INVENTORY DATA POINTS



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CHANNEL EVOLUTION MODEL (CEM) STAGE

Stage	Description
1	Stable/Undisturbed
2	Initial Disturbance
3	Incision
4	Incision and Widening
5	Aggradation
6	Equilibrium

Nancy Creek

POLLUTION SOURCES

POINT SOURCE

- SEWER LINE/SSO
- CHEMICAL DISCHARGE
- ILLICIT STROM WATER DISCHARGE

NON-POINT SOURCE

- LIVESTOCK
- AGRICULTURAL RUNOFF
- PRIVATE PET WASTE IN RESIDENTIAL AREAS

Nancy Creek Tributary

CHANNEL ALTERATIONS

- CHANNELIZED REACH
- PIPED REACH
- RIP-RAP CHANNEL
- GABION BASKETS
- FLOODPLAIN BUILT UP
- CONCRETE CHANNEL

Marsh Creek Tributary (Private Property)

STREAMBANK EROSION

- PERCENT EROSION
- LENGTH OF EROSION
- AVERAGE BANK HEIGHT

Marsh Creek Tributary

STREAM BUFFER ENCROACHMENTS

- ALTERED VEGETATION
- IMPERVIOUS COVER
- LANDSCAPING
- STRUCTURES
- UTILITIES

Marsh Creek (Private Property)

COMMENTS

- INVASIVE SPECIES
- RAIL ROAD/ROAD/PRIVATE DRIVE CROSSINGS
- TRIBUTARY CONFLUENCES
- SEWER LINE CROSSINGS
- STORM WATER OUTFALLS
- BMPS

Marsh Creek Tributary

STREAM POINT 0019

UP STREAM

DOWN STREAM

CEM Stage	**5**
Bed Texture	**Sand**
Bank Texture	**Clay**
Aggradation	**400**
Aggradation Severity	**Heavy**
Insision and Widening	**400**

Nancy Creek at jurisdictional boundary with DeKalb County

STREAM POINT 0019

LEFT BANK

RIGHT BANK

Left Bank Erosion	**50-75%**
Left Bank Length	**350**
Left Bank Height	**11'**
Left Bank Slope	**60-90***
Right Bank Erosion	**75-100%**
Right Bank Length	**250**
Right Bank Height	**10**
Right Bank Slope	**60-90***
Bank Full Height	**3**

Nancy Creek at jurisdictional boundary with DeKalb County

STREAM POINT 0019

BONUS PHOTO 3244

BONUS PHOTO 3249

Nancy Creek at jurisdictional boundary with DeKalb County

BENEFIT OF STREAM ASSESSMENTS

- IDENTIFY POTENTIAL ILLICIT DISCHARGE
- IDENTIFY POTENTIAL MAINTENANCE ISSUES OF INFRASTRUCTURE
- PREVENT FUTURE ILLICIT DISCHARGE BY IDENTIFYING INFRASTRUCTURE APPROACHING CRITICAL FAILURE
- DOCUMENT STREAM CONDITIONS
- IDENTIFY AREAS FOR FUTURE STRUCTURAL BMPS

NEXT STEPS

- COORDINATE FINDINGS WITH LOCAL UTILITIES (FULTON COUNTY, DEKALB COUNTY) AND PRIVATE PROPERTY OWNERS.
- REVIEW POTENTIAL NON-STRUCTURAL AND STRUCTURAL BEST MANAGEMENT PRACTICES FOR IMPLEMENTATION.
- COMPARE COST VS BENEFIT QUALITIES TO EACH MAINTENANCE ISSUE TO DECIDE WHERE YOU CAN MAKE THE BIGGEST IMPACT IN THE WATERSHED.