



CITY COUNCIL AGENDA ITEM

TO: Mayor & City Council

DATE: October 27, 2010

FROM: John McDonough, City Manager

AGENDA ITEM: Overview of the City of Sandy Springs Stormwater Program

MEETING DATE: For Submission onto the November 2, 2010, City Council Regular Meeting Agenda

BACKGROUND INFORMATION: (Attach additional pages if necessary)

See attached:

Presentation
Additional Materials

APPROVAL BY CITY MANAGER: _____ *APPROVED*

_____ *NOT APPROVED*

PLACED ON AGENDA FOR: _____

CITY ATTORNEY APPROVAL REQUIRED: () *YES* () *NO*

CITY ATTORNEY APPROVAL: _____

REMARKS:



Stormwater Program Update

November 2, 2010

Agenda

- Overview of Regulatory Requirements
- Overview of Development & Building Requirements
- Stormwater System Assessment
 - Stormwater System Inventory Results
 - Recent Floodplain Study Results
 - Hazard Mitigation Grant Program
- Stormwater Request Review Process
- Overview of City Approved Stormwater Budget
- Communication Program and Resources



Overview of Regulatory Requirements

- National Pollutant Discharge Elimination (NPDES) Municipal Separate Storm Sewer System (MS4) Phase II Discharge Permit
 - Minimize pollutants reaching streams
 - Improve water quality
- Metropolitan North Georgia Water Planning District
 - 15 counties and over 90 cities in those counties
 - Protect waters in and downstream of the region
 - Protect water quality and public water supplies
 - Protect recreational values
 - Minimize potential adverse impacts of development



National Pollutant Discharge Elimination System Phase II - Six Compliance Categories

City of Sandy Springs is responsible for these items

- Public Education and Outreach
- Public Participation/ Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post-Construction Stormwater Management in New Development and Redevelopment
- Pollution Prevention/
Good Housekeeping



Metropolitan North Georgia Water Planning District 8 Compliance Categories

- Legal Authority
- Watershed Planning
- Land Development
- Asset Management
- Pollution Prevention
- Watershed Conditions Assessment
- Education and Public Awareness
- Resource-specific Measures



Legal Authority

- Post-Development Stormwater Management Ordinance
- Floodplain Management Ordinance
- Stream Buffer Protection Ordinance
- Illicit Discharge and Illegal Connection Ordinance
- Litter Control Ordinance



Land Development and Building Review

- Background

1. **Prior to Incorporation (pre-12/01/05)**

- Sandy Springs was governed by the Fulton County Stormwater Management Ordinance.
- Stormwater detention for stand alone or in-fill development residential lots, regardless of size was not required.

2. City of Sandy Springs

- Adopted Post Development Stormwater Management Ordinance (Redevelopment) – based on Metropolitan North Georgia Water Planning District Standards
- Adopted Development Ordinance that requires stormwater detention on in-fill residential lots
- Floodplain Management Ordinance, Stream Buffer Protection Ordinance and Illicit Discharge Ordinance also enforced.



Land Development and Building Review

- Benefits of New Procedures
 1. Stormwater storage standard for new houses on individual lots that are not located within subdivisions that have stormwater detention facilities;
 2. Stormwater storage sufficient to capture at least 1.2 inches of runoff from new impervious areas on lots for new houses and for impervious installations equaling or exceeding 5000 square feet;
 3. Requirement that the discharge of the captured stormwater runoff volume shall occur over at least a 24-hour duration.



Land Development and Building Review

- Benefits of New Procedures (continued)
 1. Provided stormwater detention on 74 in-fill (re-development) lots in the COSS since 2007, including lots within Vernon Woods, on Mount Paran Road, and similar locations not previously served by detention;
 2. Adoption of the Georgia Stormwater Manual has increased stormwater detention requirements at new developments such as the Prado, two (2) new CVS locations and residential areas such as Highlands at Sandy Springs;
 3. Increased stormwater detention on redevelopments and additions such as have occurred at the Schenck School and Woodland Elementary School, where inadequate systems existed.



Stormwater System Assessment

■ Inventory and Visual Assessment

- 35,000 structures
- Visual condition assessment

■ Floodplain Study

- 60 miles of streams
- FEMA RISK MAP

■ Hazard Mitigation Program

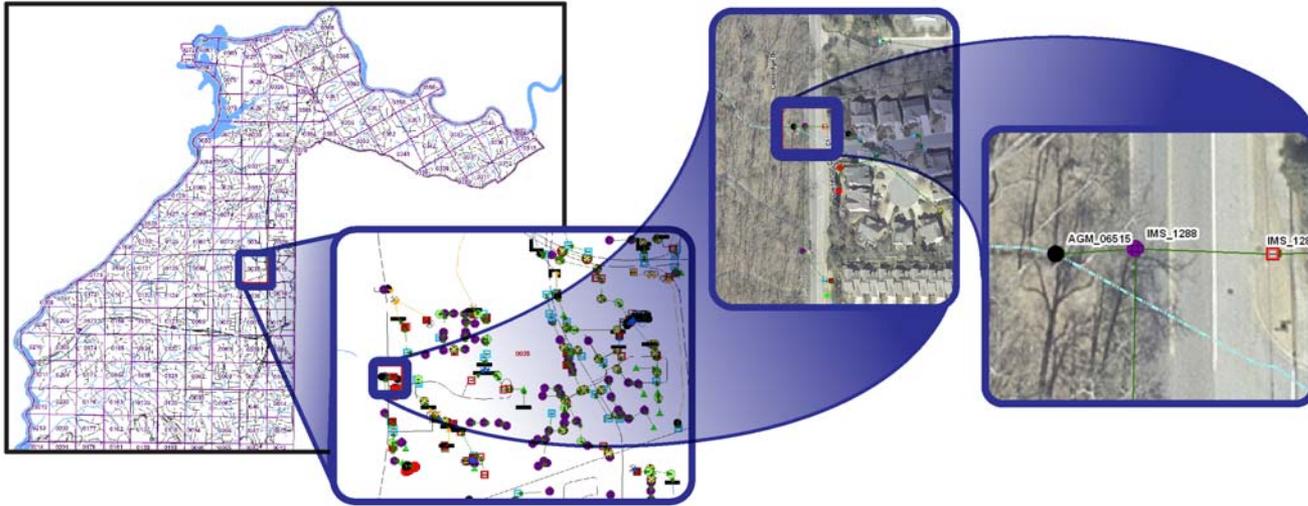
- 6 Substantially damaged homes
- 18 Non- Substantially damaged homes



For additional information see Appendix A



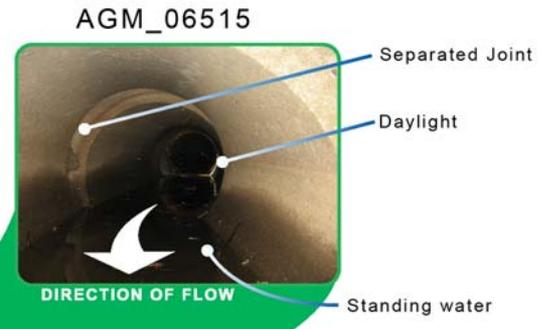
STORMWATER INVENTORY



Structure	Structure
010-04	01041
010-05	01051
010-06	01061
010-07	01071
010-08	01081
010-09	01091
010-10	01101
010-11	01111
010-12	01121
010-13	01131
010-14	01141
010-15	01151
010-16	01161
010-17	01171
010-18	01181
010-19	01191
010-20	01201
010-21	01211
010-22	01221
010-23	01231
010-24	01241
010-25	01251
010-26	01261
010-27	01271
010-28	01281
010-29	01291
010-30	01301
010-31	01311
010-32	01321
010-33	01331
010-34	01341
010-35	01351
010-36	01361
010-37	01371
010-38	01381
010-39	01391
010-40	01401
010-41	01411
010-42	01421
010-43	01431
010-44	01441
010-45	01451
010-46	01461
010-47	01471
010-48	01481
010-49	01491
010-50	01501
010-51	01511
010-52	01521
010-53	01531
010-54	01541
010-55	01551
010-56	01561
010-57	01571
010-58	01581
010-59	01591
010-60	01601
010-61	01611
010-62	01621
010-63	01631
010-64	01641
010-65	01651
010-66	01661
010-67	01671
010-68	01681
010-69	01691
010-70	01701
010-71	01711
010-72	01721
010-73	01731
010-74	01741
010-75	01751
010-76	01761
010-77	01771
010-78	01781
010-79	01791
010-80	01801
010-81	01811
010-82	01821
010-83	01831
010-84	01841
010-85	01851
010-86	01861
010-87	01871
010-88	01881
010-89	01891
010-90	01901
010-91	01911
010-92	01921
010-93	01931
010-94	01941
010-95	01951
010-96	01961
010-97	01971
010-98	01981
010-99	01991
010-100	02001

Structure	Value
010-01	12345
010-02	6789
010-03	1011
010-04	1213
010-05	1415
010-06	1617
010-07	1819
010-08	2021
010-09	2223
010-10	2425
010-11	2627
010-12	2829
010-13	3031
010-14	3233
010-15	3435
010-16	3637
010-17	3839
010-18	4041
010-19	4243
010-20	4445
010-21	4647
010-22	4849
010-23	5051
010-24	5253
010-25	5455
010-26	5657
010-27	5859
010-28	6061
010-29	6263
010-30	6465
010-31	6667
010-32	6869
010-33	7071
010-34	7273
010-35	7475
010-36	7677
010-37	7879
010-38	8081
010-39	8283
010-40	8485
010-41	8687
010-42	8889
010-43	9091
010-44	9293
010-45	9495
010-46	9697
010-47	9899
010-48	10001
010-49	10002
010-50	10003
010-51	10004
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010-91	10044
010-92	10045
010-93	10046
010-94	10047
010-95	10048
010-96	10049
010-97	10050
010-98	10051
010-99	10052
010-100	10053

- Legend**
- Structure Type**
- Inlet
 - Unclassified Structure
 - Washout (No/Part Top)
 - All-Weather Inlet
 - T-Type Headout
 - Straight Headout
 - U-Type Headout
 - Headout/Trapped
 - Manhole
 - Drop Inlet
 - Left and Right Wing Catchbasins
 - Double Winged Catchbasin
 - Flared End Section
 - Junction Box
 - Best Management Practice (BMP)
 - Bridge
 - Boxed Junction Box
 - Catch Interceptor
 - Flange
 - Plain Pipe End
 - Spring Box
 - Trench Drain Inlet
- Conduit Type**
- Open
 - Dry Open Channel
 - Enclosed Open Pipe
 - Force Main
 - Lateral Line
 - Wet Open Channel



Inventory is **Online**

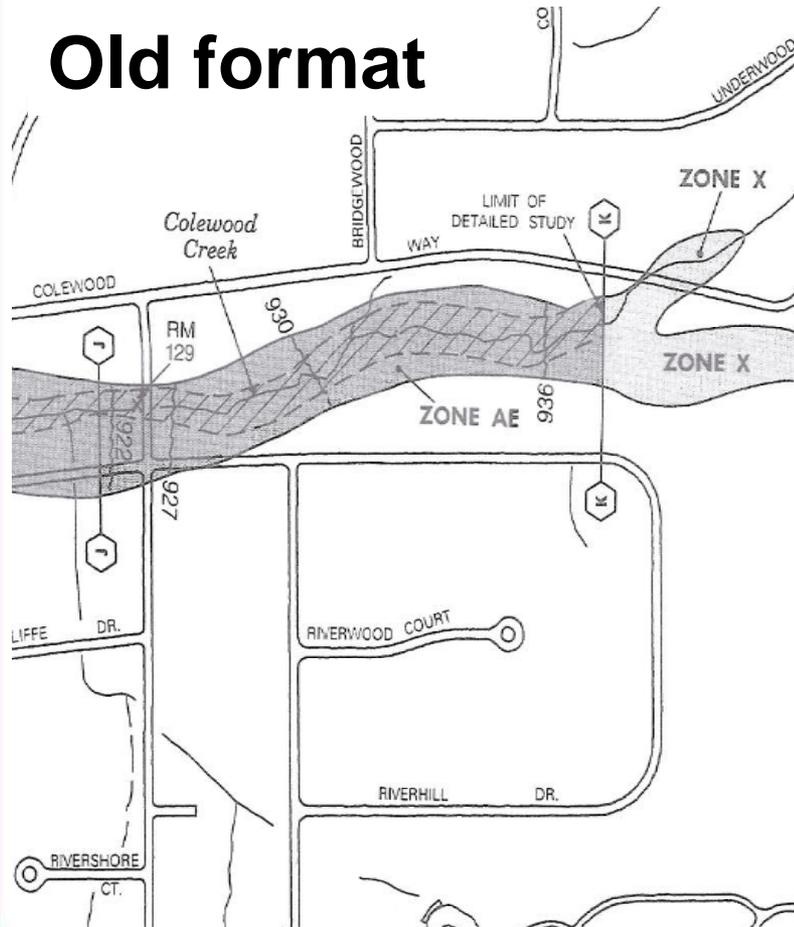
<http://mnqg-web-ga01/GeoCityCOSS/WebPages/Map/MapViewer.aspx>



Floodplain Study

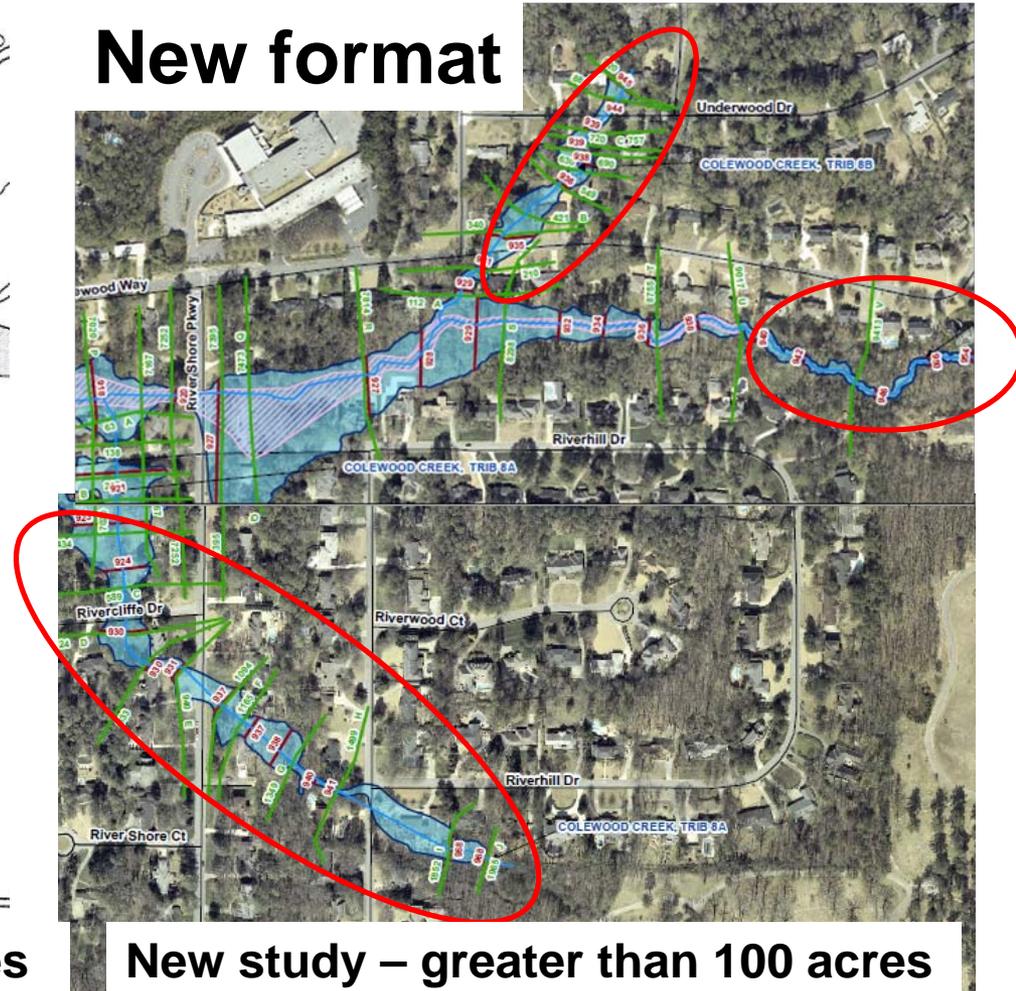
Current Data + New Models = **Better Maps**

Old format



Old study – greater than 640 acres

New format



New study – greater than 100 acres



Floodplain Issues

- New preliminary FEMA maps expected June 2011
 - MAPS kickoff meeting held 4/15/10
 - Public Involvement
- 579 properties citywide located in floodplain
 - Federal Resources Available
 - Flood Insurance
 - Hazard Mitigation Grant Program
 - Flood proofing assistance through FEMA
 - Enlarge system
 - Potential downstream impacts



FEMA Hazard Mitigation Grant Program

- Federal Emergency Management Agency (FEMA) program administered by Georgia Emergency Management Agency (GEMA)
- Waiting for grant from GEMA
 - 6 Substantial Damaged (SD)
 - 18 compete based on benefit-cost analysis
- Impact of Fulton Hazard Mitigation Plan expiration
 - SD Grant must be completed within 1 year vs. 3 years
 - Non-SD applications will not be reviewed until the HMP is approved
- Meeting with GEMA 10/28/10
- Cash flow implications



Stormwater Request Review Process - Policy

City of Sandy Springs Stormwater Policy

Department of Public Works
Stormwater Services Division
770-730-5600

Adopted by the Mayor and City Council
February 20, 2007
Resolution No. 2007-02-15

Goal

The goal of the stormwater policy is to improve the City's stormwater infrastructure to meet community standards. A long-term planning project is required in order to meet this goal given limited resources and staff require that such a policy must be established and implemented through a systematic approach.

The first step in this process is to provide a policy to handle requests on a short-term basis. This policy is designed to serve that purpose until another system with additional funding is established. The policy will establish the division of responsibility for maintenance and establish categories to prioritize City implementation.

City Responsibilities

There are two types of infrastructure:

- Infrastructure that is City responsibility, and
- Infrastructure that is not City responsibility.

Determination of City responsibility will be determined on a case-by-case basis and will include, but is not limited to, the following factors:

- Project located in or adjacent to City right-of-way,
- Project located in an easement dedicated to the City or previous governmental entity,
- Project located in drainage easement not specifically dedicated to the City or previous governmental entity,
- Drainage systems as approved on recorded plats, and
- Changes made to drainage systems.

The City Attorney will provide an opinion to determine the City's responsibility on a case-by-case basis.

Emergency Maintenance

The City may conduct emergency maintenance operations within drainage easements in order to protect the common good. Emergency maintenance includes maintenance necessary to remedy a condition which is potentially damaging to life, property, or public roads. Such emergency maintenance, conducted for the common good, shall not be construed as constituting accepting a continuing maintenance obligation by the City, nor prevent the City from seeking reimbursement for expenses from the property owner(s) of the land that generated the condition.

Categorizing Project Requests

There are currently more projects than the City can address at one time. The order of response to these projects will be determined by the category of the request. Requests for projects will be categorized as:

- Category I: Posing an immediate danger or threat to public safety,
- Category II: Rapidly degrading to a dangerous condition, or
- Category III: Maintenance or cosmetic repair.

Projects in Category I will receive priority.

City Public Works staff will review project requests and will perform the initial project categorization. Public Works staff will periodically monitor the conditions at the project location, prior to repair/maintenance, and will modify the categorization when needed.

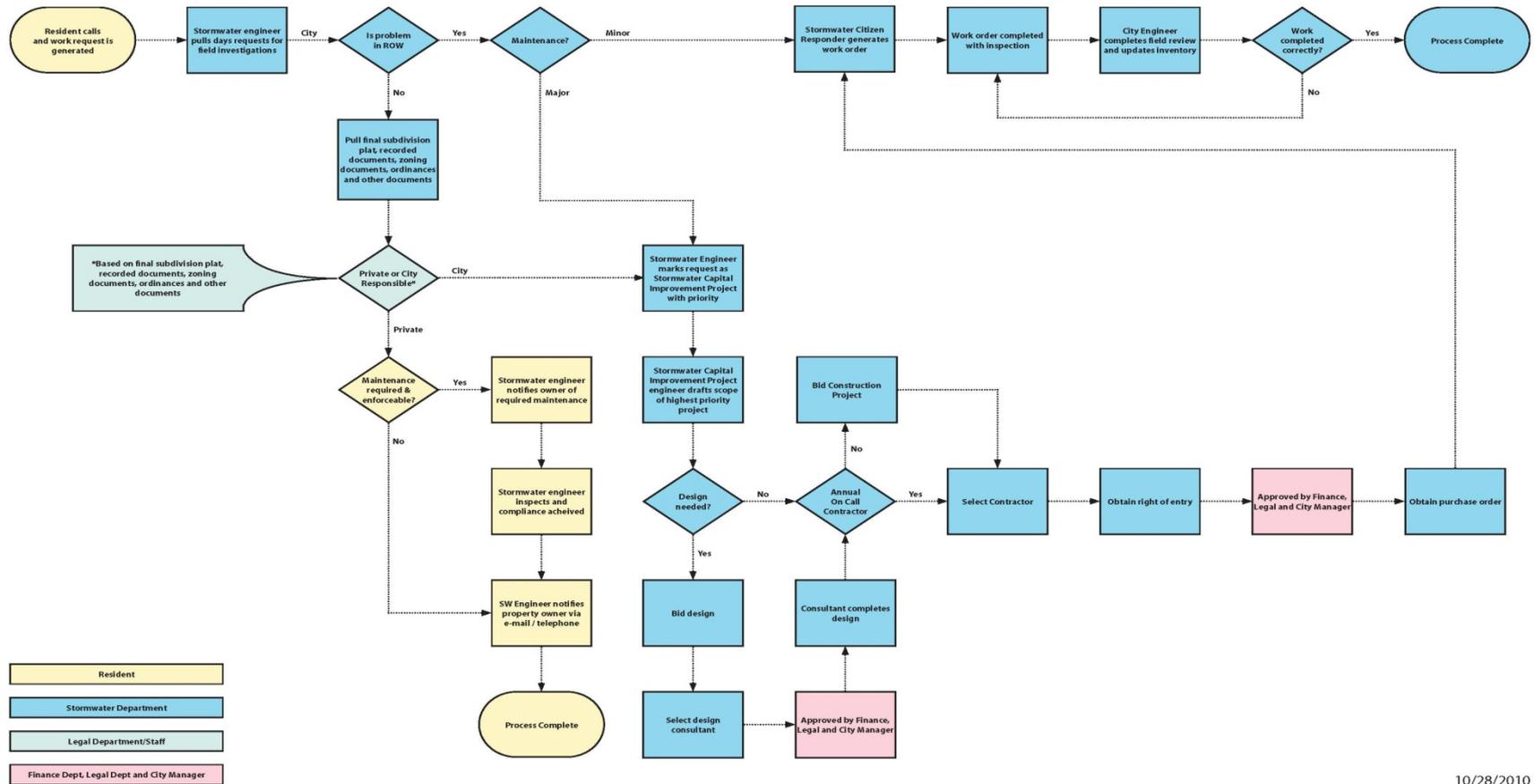
Funding Issues (Set Funding Allocated in Budget)

The Mayor and City Council may allocate funding for stormwater projects during each budget cycle. Projects will be recommended for implementation based on the determination of City responsibility, by Category, and by approved funding level.



Stormwater Request Process

Sandy Springs Stormwater Request Review Process



10/28/2010



Examples of Stormwater Requests

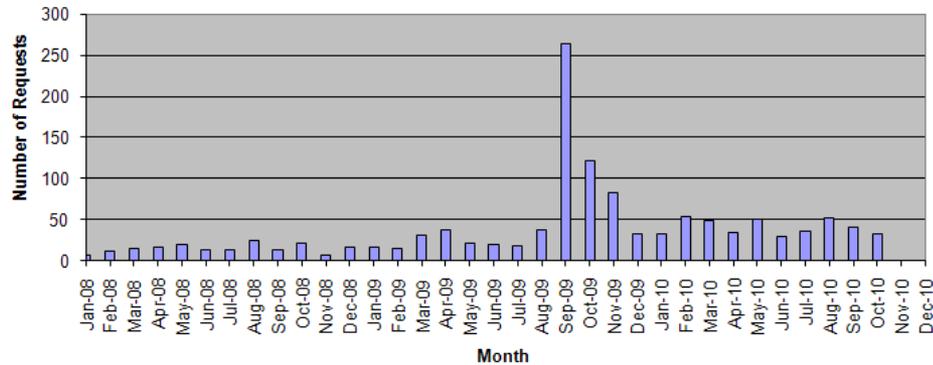
- Plat with no drainage shown
- Plat with easements and private extensions
- Plat with covenants



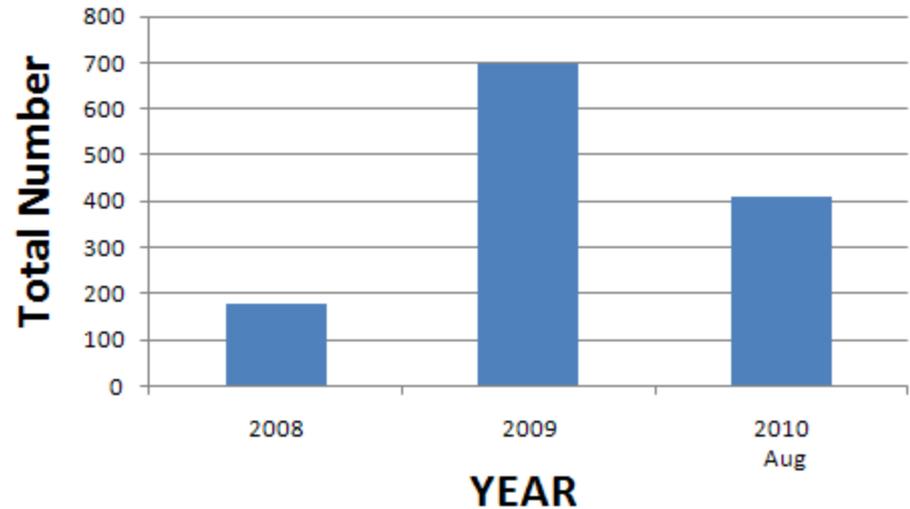
Stormwater Request Review Process

Drainage Requests

Stormwater Work Requests



Total Stormwater Requests



Stormwater Maintenance Budget Update

- FY11 Budget - \$ 2,775,872 (including carryover)
 - \$ 991,295 Committed
 - \$ 1,784,577 Available
 - \$ 500,000 Design Complete/Ready to Bid
- On Call Contractors (3)
- FEMA
 - 45 Stormwater Projects Approved (\$677,000 total)
 - \$515,000 FEMA payment to City
 - 9 Projects to Complete (4 under contract)
 - 18 Months to complete remainder (March, 2011)



Stormwater Maintenance Program

■ On Call Contractors 2011

- Contracts finalized in February with 3 firms (ITB out for more)
- Contracts set with pre-determined fixed unit costs
- Work protected with “floating” \$75k performance bonds

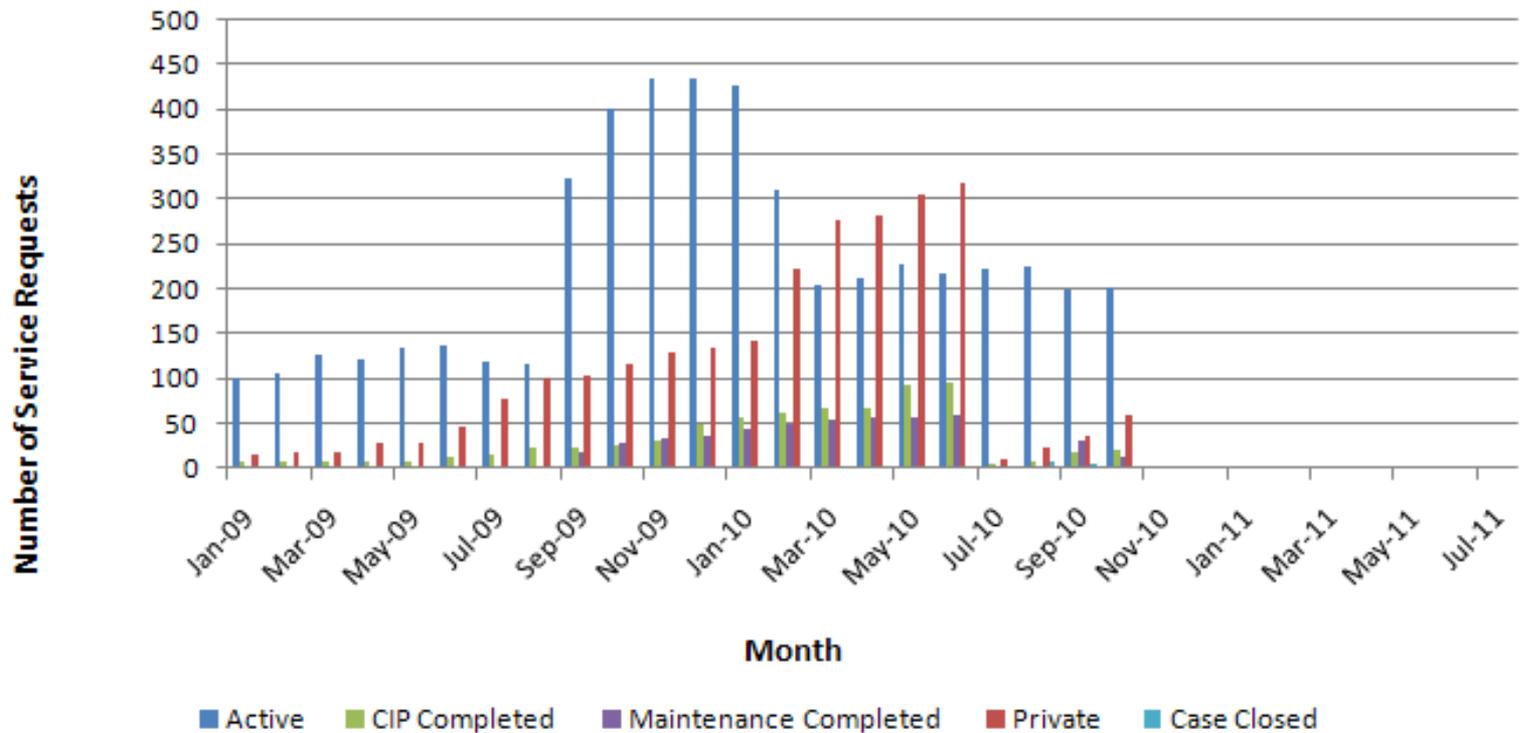
■ Project Development

- Identification/legal
- Design/Scope preparation
- Easements
- Cost estimate and award of project (PO)
- Construction



Status of Service Requests

Stormwater Program Status
Maintenance, System Repair and Capital Projects



	Active	CIP Completed	Maintenance Completed	Private	Case Closed
FY2011	202	20	13	58	16
FY2010		86	60	279	



Stormwater Budget

CH2M Hill Value Added

Item	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total
Floodplain				\$126,610	\$123,390		\$250,000
Watershed				\$222,000	\$174,000		\$396,000
Inventory				\$405,774	\$500,000		\$905,774
Monitoring					\$3,570		\$3,570
FEMA HMGP					\$56,000		\$56,000
Maintenance	\$650,000	\$1,235,000	\$1,495,000	\$1,755,000	\$1,755,000	\$1,755,000	\$8,645,000
Capital Projects			\$250,000	\$1,800,000	\$500,000	\$1,800,000	\$4,350,000
City Total	\$650,000	\$1,235,000	\$1,745,000	\$4,309,384	\$3,111,960	\$3,555,000	\$14,606,344
FHWA - Bridges					\$1,909,000		\$1,909,000
FEMA Reimbursement					\$515,000		\$515,000
FEMA HMGP					\$1,875,000*	\$5,250,000*	\$7,125,000*
GEMA HMGP					\$250,000*	\$700,000*	\$950,000*
FEMA RISK MAP					\$186,000		\$186,000
Outside Funding					\$4,735,000	\$5,950,000	\$10,685,000
Total Funding	\$650,000	\$1,235,000	\$1,745,000	\$4,309,384	\$7,846,960	\$9,505,000	\$25,291,344

* HMGP Funds are estimated and have not been granted



Communication Program and Resources



When It Rains

SANDY SPRINGS
GEORGIA

Household Solutions for Preventing Water Pollution from Hazardous Wastes
"Be A Solution to Water Pollution"

City of Sandy Springs
7840 Roswell Road, Building 500
Sandy Springs, GA 30350

770.730.5600
ANSWERING CALLS 24 HOURS A DAY, SEVEN DAYS A WEEK
WWW.SANDYSPRINGSGA.ORG

SANDY SPRINGS
GEORGIA

Introduction to Stream Buffer Management
What Can You Do to Care for Stream Buffers?

City of Sandy Springs
7840 Roswell Road, Building 500
Sandy Springs, GA 30350

770.730.5600
ANSWERING CALLS 24 HOURS A DAY, SEVEN DAYS A WEEK
WWW.SANDYSPRINGSGA.ORG

SANDY SPRINGS
GEORGIA

FOG
FATS OIL GREASE
Residential Program

City of Sandy Springs
7840 Roswell Road, Building 500
Sandy Springs, GA 30350

770.730.5600
ANSWERING CALLS 24 HOURS A DAY, SEVEN DAYS A WEEK
WWW.SANDYSPRINGSGA.ORG



It Pollutes!



Questions

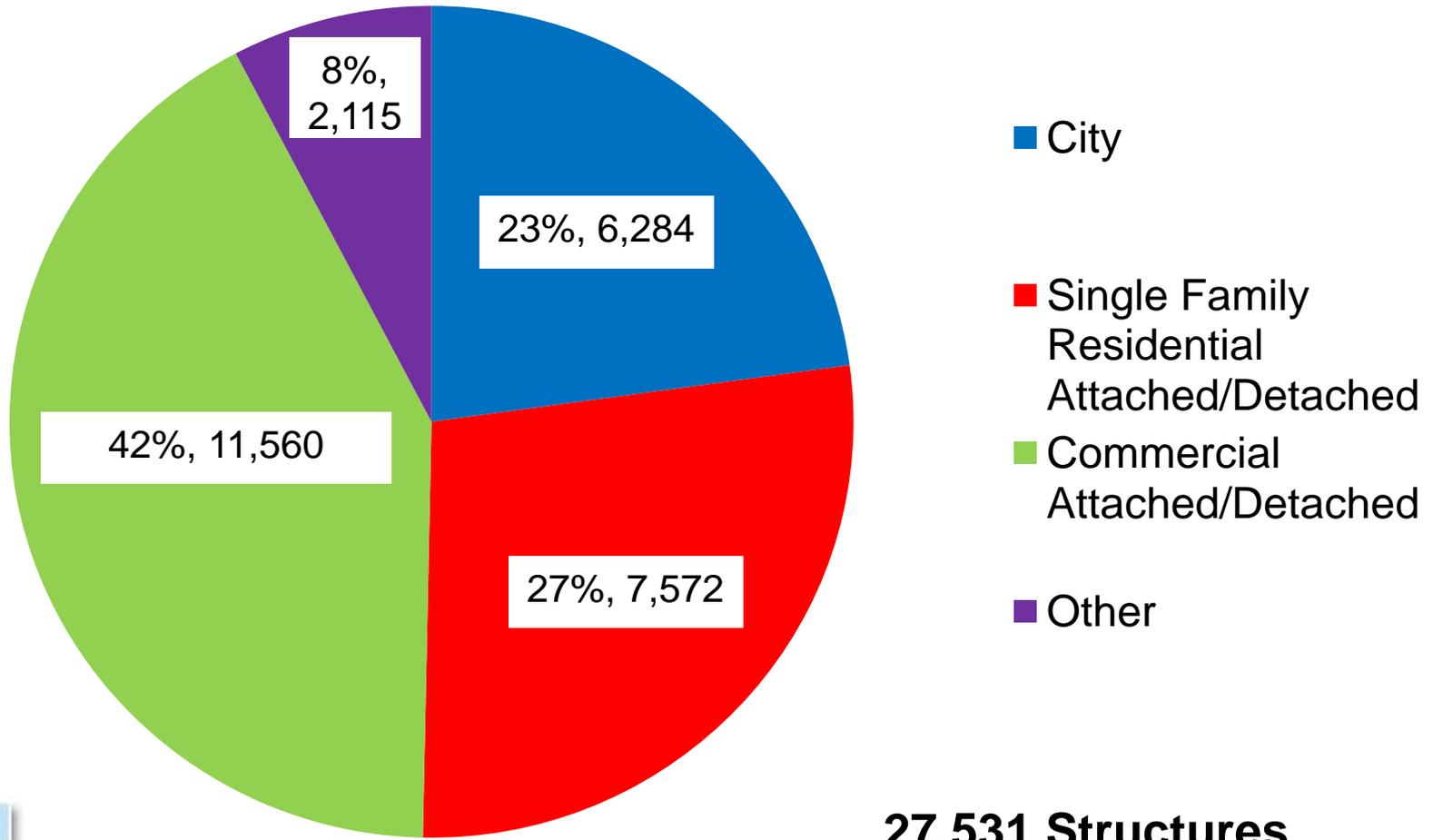


Winner of the ASCE 2010 Outstanding Civil Engineering Achievement Award – Natural Environment Project



Appendix A

Categories of Stormwater Structures



Appendix A

Public and Private Inventory

Condition	City ROW			Residential Attached			Other		
	Structures	Pipes (Number)	Pipe (Miles)	Structures	Pipes (Number)	Pipe (Miles)	Structures	Pipes (Number)	Pipe (Miles)
Excellent	231	178	2.62	191	216	3.04	1,024	1,072	13.17
Very Good	1,354	1,134	16.09	644	735	11.83	3,805	3,255	45.70
Good	2,786	2,552	33.83	1,481	1,934	31.64	6,535	5,712	91.52
Fair	1,680	631	9.26	1,759	685	11.20	4,172	1,691	26.23
Poor	183	93	1.32	264	115	2.01	497	204	2.44
Repair	50	37	0.58	128	41	0.73	227	617	7.73
Sum	6,284	4,625	63.69	4,467	3,726	60.46	16,260	12,551	186.79



Appendix A

Inventory – Public and Private

Condition	City ROW	Residential Attached	Other	Total
Excellent	\$6,886,346	\$7,311,852	\$36,952,947	\$51,151,145
Very Good	\$43,360,975	\$27,830,849	\$125,067,697	\$196,259,521
Good	\$91,516,794	\$73,147,489	\$240,564,328	\$405,228,611
Fair	\$31,846,315	\$27,527,089	\$94,173,182	\$153,546,586
Poor	\$4,242,591	\$4,890,484	\$9,386,897	\$18,519,972
Repair	\$1,559,718	\$2,162,372	\$18,422,861	\$22,144,951
Sum	\$179,412,739	\$142,870,135	\$524,567,912	\$846,850,786





Stormwater Updated Communications Plan
27 October 2010

E-blast

- Info from press release to be included that outlines regional meetings as well as topics to include: how decisions are made, \$\$ spent to date, system maintenance, state and federal compliance, review and oversight.

Web Site

- General announcement on the Web that announces area meetings.
- Post decision making chart.
- Have graphic on homepage that links to stormwater site.
- Update information on stormwater site.

Press Release (Flexible)

- Issue big intro press release on stormwater education series.
- Post on Web site.
- Photo Opps: kick-off with elected officials in logo golf shirts and safety vests by storm drains

Post Card

- Insert post card in Reporter or drop in mail to all residents of CoSS on stormwater education series.

Citizen Response Center

- ✓ Inform CRs of info/schedule for informational purposes.

Public Involvement

- Comm Staff (Dan) to notify HOAs.
- Jason to include in eblast a series of educational meetings as well as info of educational nature.
- Fact Sheet or decision making tree prepared for distribution.

Newsletter

- Dedicate one page of quarterly newsletter to educating citizens on the decision making process for stormwater.

Communications



Frequently Asked Questions:

Q: What conditions must be met before a property would be considered buyable by Federal Emergency Management Agency (FEMA) and turned into green space?

A: The property would have to be eligible to be purchased under the Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program (HMGP). FEMA has historically allocated funds annually under this program. For more information please visit <http://www.fema.gov/government/grant/hmgp/index.shtm>. Properties proposed to be purchased under this program must complete nationally for the funds available every year. A rule of thumb is that the flood waters must be above your finished floor and cause damage at least every five years to have a high enough priority to be considered. You also need to understand that FEMA usually provides 75% of the cost to purchase and demolish the structures on the properties. The City requires the property owner to be responsible for the remaining 25%.

Q: How does the City determine what it will maintain?

A: The Stormwater Policy is posted online at <http://www.sandyspringsga.org/City-Departments/Public-Works/Policies-and-Documents/Public-Works-Policy-Documents>. Drainage structures inside the road Right of Way are maintained by the City. Maintenance responsibility of the drainage system on private property must be determined on a case by case basis. Relevant documents used in this legal determination include final subdivision plats, recorded easements, zoning documents, covenants and ordinances in place at the time the property was developed. A legal determination is made based on these documents as to who has maintenance responsibilities.

Q: Why is the City of Sandy Springs proposing new flood zone maps placing property owners that were never in a flood zone to now be in the proposed flood zone?

A: Sandy Springs is part of the Metropolitan North Georgia Water Planning District. The District is comprised of 15 counties surrounding Atlanta and the over 90 cities located within those counties. Please visit <http://www.northgeorgiawater.com/html/index.htm> for information about the District. One of the three District master plans that the City must comply with is the District-wide Watershed Master Plan. This plan has several mandatory measures.

One of the requirements is that the City adopts and enforces a Floodplain Management Ordinance equivalent to the model ordinance. This ordinance requires that City regulate development in the floodplain on streams with a drainage area of 100 acres or larger. In order to regulate development in these areas, the City must determine what is the floodplain on streams up to 100 acres or larger. The City recommends that properties that are not currently in the effective FEMA floodplain purchase floodplain insurance now because the rates will be cheaper for properties that had flood insurance prior to the new maps becoming effective. In addition, the City has a duty to inform its citizens of potential danger.

Q: Do these proposed flood zone map changes reflect actual, present conditions or future anticipated conditions?

A: The proposed floodplain map changes submitted to Federal Emergency Management Agency (FEMA) reflect actual, present conditions.

Q: What was the method used to determine the new proposed floodplain?

A: The best available data from previous surveys and maps on existing land use, topography, and aerial photography was used. A nationally recognize firm was select to begin the study in January 2009, well before the flood in September 2009. They used Federal Emergency Management Agency (FEMA) approved methods and models to determine the floodplain elevations and map them. The City put an article on the City web page on June 4, 2010 to inform the public about the planned revisions. Please see <http://www.sandyspringsga.org/Newsroom/News/Sandy-Springs-to-Assess-Floodplain-Redraws-Maps>. The article invites the reader to visit www.georgiadfirm.com for additional information about Georgia's map modernization project. For more information about flood insurance, the reader is referred to www.floodsmart.gov.

Q: Was the process used to determine the proposed floodplain done equitably throughout Sandy Springs?

A: Yes. The consultant was hired to study the entire City using the same methodology throughout.

Q: Is someone in the floodplain because they got flooded?

A: The determination of the floodplain is not based on whether people were recently flooded. The study was started in January 2009, well before the flood in September 2009. The flooding that occurred in Sandy Springs was not equivalent to the 100-year flood. For example, there is a stream gage in Nancy Creek just outside the City limits operated by the United States Geological Service. That gage has been in operation for about 50 years. The flood on September 22, 2009 was the fourth highest flood of record. The highest flood of record was 12/1/1970. The lowest recorded flow was 10/2/2007. Who knows what weather the next 50 years will bring? The proposed 100-year floodplain was based on a study of streams with a drainage area greater than 100 acres using standard engineering methods that are approved by Federal Emergency Management Agency (FEMA).

Q: Under what circumstances would the City of Sandy Springs amend their flood zone map submittal to remove and return a non-flood zone property back to this status?

A: A property owner would need to provide data and calculations by a professional engineer that shows that the calculations and mapping by our consultant are not correct. FEMA has a formal appeal process that property owners can follow to provide additional data such as elevations certificates or studies to show that they are not in the floodplain. The formal process will not start until the maps are published for comment which is expected in July of 2011. Prior to that time, the property owner can submit their studies or data to the City for appeal.

Q: How does the city rank Capital Improvement Projects (CIP)/Stormwater Maintenance Projects and what does that mean for the problem that I am experiencing?

A: Projects must first be determined to be the maintenance responsibility of the City. Then projects are ranked by risk. A problem in a high traveled road is a greater risk than one in a local cul-de-sac street. Problems in the street or next to buildings are a higher priority than one in a yard. A problem that does not affect the function or capacity of the drainage structure does not rank as high as one that does. Projects are ranked on a scale of 1 to 10 with 10 being the highest priority. Projects with higher priority are worked on first.

Things you can do to help:

Q: What can I do to help prevent stormwater pollution?

A: There are ten things you can do-

1. Never dump anything on the street, down a storm drain or in a drainage ditch.
2. Scoop up after your pet. Bag the refuse and dispose of it in the trash.
3. Compost grass clippings and leaves or bag them for curbside collection. Do not blow them into the street.
4. Use fertilizers and pesticides sparingly. Do not apply them on paved areas.
5. Check your vehicles for leaks and repair them.
6. Reduce, reuse and recycle cleaning and maintenance chemicals used at home.
7. Recycle motor oil and other vehicle fluids.
8. Put litter in its place.
9. Wash cars at a commercial car wash or on a grassy area and not your driveway.
10. Tell a friend or neighbor about how to prevent stormwater pollution and get involved.

For more information please see our brochure "When it Rains it Pollutes" on our web page under documents at the bottom of the page www.sandyspringsga.org/stormwater.

Q: What can I do to care for the stream on my property?

A: The City does not maintain ditches and streams on private property. However, here are some ideas that will help you care for your stream.

1. Never mow to the edge of a stream or lake; let the buffer develop naturally.
2. Plant appropriate native vegetation and cuttings in the buffer zone.
3. Don't dump anything in a stream, including grass clippings and other yard waste. Try home composting instead.
4. Keep the water body clean by removing trash...
5. Leave natural woody debris in a stream. It provides habitat and food for aquatic communities.
6. Use pesticides and fertilizers sparingly in your yard and not at all in the buffer.
7. Keep septic systems in good working order to prevent contaminated runoff.
8. Don't change the course of a stream or try to use rocks or other materials to stop stream bank erosion yourself. You can do more harm than good.

For more information please see our brochure "Stream Buffer Management" on our web page under documents at the bottom of the page www.sandyspringsga.org/stormwater.

Q: How do I dispose of hazardous household wastes?

A: There are two primary ways to reduce household hazardous wastes:

1. Think Prevention First!
2. Then, Recycle and Dispose of Wastes Properly!

For more information please see our brochure "Prevent Water Pollution from Hazardous Wastes" on our web page under documents at the bottom of the page www.sandyspringsga.org/stormwater.

Q: How do I keep my sanitary sewers from getting clogged?

A: Fats, Oils and Grease (FOG) are by-products of many foods and they need to be disposed of properly to avoid clogs in our sanitary sewers. Think of FOG as "hardening of the arteries." When cholesterol builds up in the human bloodstream, it causes a heart attack. When FOG hardens in the sewer it causes a sanitary system overflow. The easiest way to prevent clogs is don't pour FOG down the drain, dispose of it properly.

For more information please see our brochure "FOG - Fats, Oils and Grease" on our web page under documents at the bottom of the page www.sandyspringsga.org/stormwater.



ENVIRONMENTAL IMPACTS OF FOG

Sanitary sewer overflows not only cost residents financially, they also have a negative impact on the environment through the contamination of natural waterways. Overflowed sewage flows into storm drains and on into ponds, streams and rivers. This can destroy aquatic life and cause health risk concerns for residents using these waterways for recreational activities. Backed-up sewage and accumulated food residue are perfect breeding grounds for bacteria, insects and other vermin.

For more information on Clean Water practices and Stormwater management, please refer to:

City of Sandy Springs

Public Works

Stormwater Division

770-730-5600

sandyspringsga.org/stormwater



REPORTING A SEWER OVERFLOW

To report a sewer overflow, contact Fulton County.

Fulton County

Public Works Department

Water Services Division

North Fulton Office – 770-640-3040

South Fulton Office – 770-995-2976

For more information about the **FOG** program and education outreach opportunities, contact:

Fernell Patterson

404-612-8110

fernell.patterson@fultoncountyga.gov

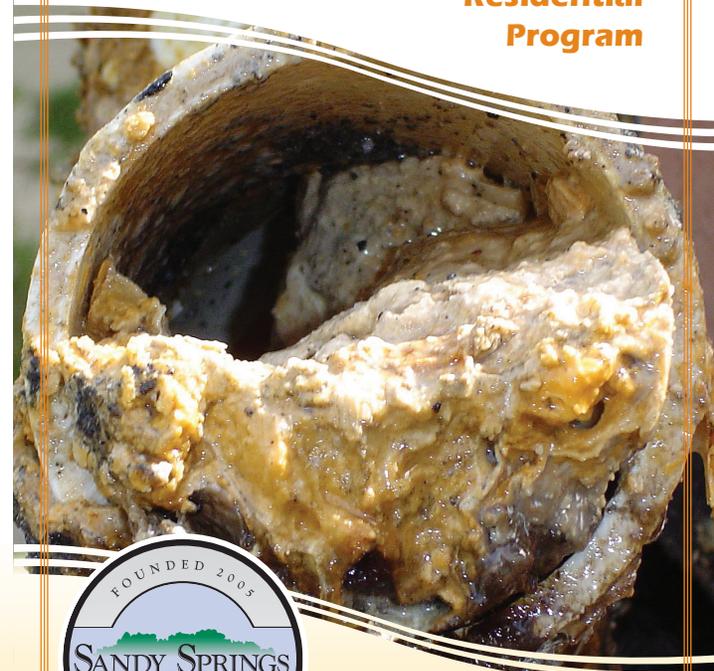
or

The Georgia **FOG** Alliance website:

www.georgiafog.com



Residential Program



City of Sandy Springs

7840 Roswell Road, Building 500
Sandy Springs, GA 30350

770.730.5600

ANSWERING CALLS 24 HOURS A DAY, SEVEN DAYS A WEEK

WWW.SANDYSPRINGSGA.ORG



A PUBLIC-PRIVATE PARTNERSHIP

The City of Sandy Springs needs your help to control **FOG**.

FOG, or fats, oils and grease **cost Sandy Springs taxpayers thousands of dollars every year** because of the damage caused to sanitary sewer lines. The impacted lines cause sanitary sewer manhole overflows and sewage back-ups in both residential and commercial areas. Sewer back-ups damage City infrastructure, create health hazards and threaten the natural environment. Ultimately, it is the residents of Sandy Springs that end up bearing the unnecessary cost of cleanup and repair.

WHERE DOES FOG COME FROM?

Fats, oils, and grease are by-products of many foods and are used in the cooking of food. Grease is the common term for animal fats and vegetable oil. Grease can be found in such foods as:

- ◆ Meats
- ◆ Sauces
- ◆ Marinades
- ◆ Salad dressings
- ◆ Mayonnaise
- ◆ Gravy
- ◆ Cooking Oils
- ◆ Cookies & pastries
- ◆ Cheese
- ◆ Butter & Margarine
- ◆ Shortening
- ◆ Ice cream

PREVENT FOG DAMAGE TO THE SEWER SYSTEM

FOG enters your plumbing system through home garbage disposals, kitchen sinks and dishwashers. **FOG** coats the inside of your plumbing drain pipes. It then empties into the Fulton County sewer system.



Think of **FOG** as “hardening of the arteries.” When cholesterol builds up in the human bloodstream, it causes a heart attack. When **FOG** hardens in the sewer, it causes a sanitary system overflow.



DON'T POUR FOG DOWN THE DRAIN

Fats, oils and grease entering the sewer system increase the cost of maintaining and operating water and sewer services. **The increased cost is ultimately passed on to you, the consumer.**

Follow These Easy Steps For Disposal:

- ◆ Allow **FOG** to cool and place in a sealed container. Place container in garbage.
- ◆ Wipe and scrape excess **FOG** from plates, pots, pans, utensils and cooking surfaces before washing.
- ◆ Put greasy paper towels in the garbage.
- ◆ Don't flush grease down drains with hot water.
- ◆ Don't unnecessarily dispose of foods in garbage disposals



Stop and Think, Not Down the Sink!



The household hazardous wastes in and around your home can affect your family and pets and can be toxic to fish and wildlife. An average Georgia household generates an estimated 20 pounds of household hazardous wastes each year. That's a total of 62 million pounds – enough to fill 1,550 tractor trailers every year!

Preventing a generation of leftovers is the best way to solve the problem. Sharing the tips in this brochure with your friends to help them prevent household hazardous products from becoming wastes and potential pollutants in our streams is key.

Hazardous products include such items as:

- Paints, stains and sealers
- Used motor oil and antifreeze
- Paint strippers and paint thinners
- Cleaning agents and solvents
- Drain and oven cleaners
- Fertilizers and pesticides
- Gasoline, kerosene and propane
- Batteries
- Mercury thermometers, thermostats and fluorescent lamps
- Pool chemicals



This brochure is one of a series dedicated to raising awareness of pollution prevention. This brochure was created through a partnership between the Clean Water Campaign and the Pollution Prevention Assistance Division (P2AD) of the Georgia Department of Natural Resources.

The disposal recommendations in this brochure do not apply to wastes generated by businesses.



7 Martin Luther King, Jr. Drive Suite, 450
Atlanta, Georgia 30334
www.p2ad.org

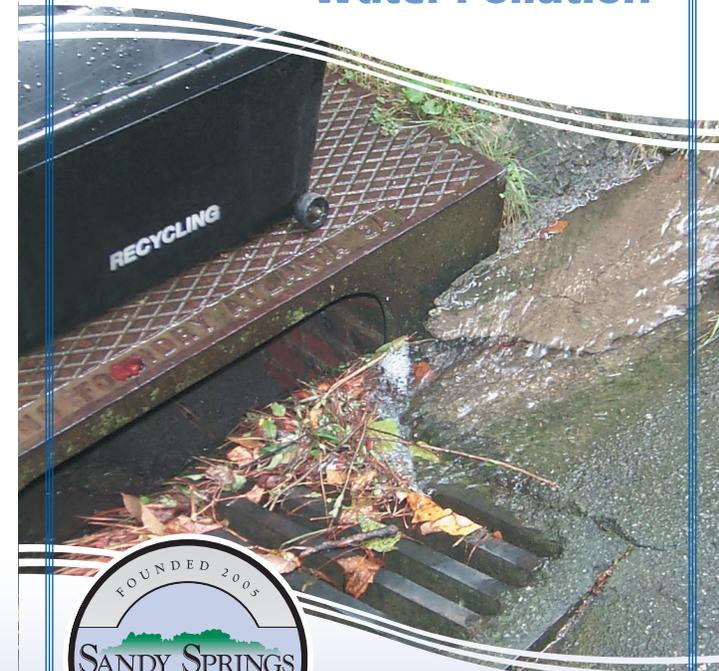


Clean Water Campaign
40 Courtland Street, NE
Atlanta, Georgia 30303
www.cleanwatercampaign.com



Household Solutions for Preventing Water Pollution from Hazardous Wastes

“Be A Solution to Water Pollution”



City of Sandy Springs
7840 Roswell Road, Building 500
Sandy Springs, GA 30350

770.730.5600

ANSWERING CALLS 24 HOURS A DAY, SEVEN DAYS A WEEK

WWW.SANDYSPRINGSGA.ORG



Follow and share these tips for reducing, recycling and disposing of different types of hazardous materials in your home.

Also remember that fertilizers, pesticides, oil and other pollutants from your yard and driveway can be washed into a storm drain and carried to a nearby stream or lake.

AUTOMOBILE



- ✦ Never dump vehicle fluids on pavement, the ground or down the storm drain. Collect and recycle motor oil, oil filters and other automobile fluids at vehicle service centers or parts stores listed at 1-800-CLEANUP and Earth911.com.
- ✦ Wash your vehicle at a professional car wash facility. This way the wastewater will be treated instead of possibly becoming a pollutant in a nearby stream. If you decide to wash your car at home, use a low or non-phosphate soap and wash your vehicle in a grassy area instead of on pavement.
- ✦ Regularly tune your car and fix leaks.

BATTERIES & MERCURY CONTAINING PRODUCTS



- ✦ Use rechargeable batteries instead of alkaline disposables. Recycle rechargeable batteries at the sites listed at 1-800-8BATTERY.
- ✦ Buy digital thermometers instead of mercury thermometers.
- ✦ Replace a mercury thermostat with a programmable, digital thermostat.

LIMITING HAZARDS FROM YOUR HOUSEHOLD



- ✦ Purchase non-hazardous or the least hazardous products for the job. As a general rule, a product with “CAUTION” on the label will be less hazardous than a product labeled “WARNING.” The most potentially hazardous product is labeled “DANGER” or “POISON.”
- ✦ Don’t be tempted by a “buy one get one free” deal. It will probably result in having to manage twice as much hazardous waste.



LAWN CARE

- ✦ Use electric-powered lawn equipment instead of gas-powered whenever possible.
- ✦ Since it’s easy to create leftovers by overestimating the gasoline necessary for a mowing season, plan to make a second purchase of a lesser amount to finish the season.
- ✦ Help fertilize your lawn by mowing 1/3 of the total grass height only and leaving the clippings on the lawn (mulching mowers and mowers with sharp blades work best).
- ✦ Use pesticides and herbicides sparingly and only when all else fails.
 - Plant native plants since they can survive without extra fertilizers, pesticides and water.
 - Pull weeds by hand or with a weeding tool.
 - If pesticides are necessary, spot treat weeds instead of applying to the whole area.
 - Pesticides/fungicides/herbicides: Use as directed and dispose of leftovers properly by donating it to a local gardening club or taking it to a collection site. As a last resort, stir into concrete mix until solid and dispose of in the trash.

PAINT



- ✦ Use latex paint instead of oil-based paint. This also eliminates the need for paint thinner.
- ✦ When painting a large area, buy a little less than you think you will need. Once the job is well underway, you will have a better idea of how much more is required. This way you can plan to have enough for touch ups, but avoid gallons of leftover paint.
- ✦ Instead of buying methyl ethyl ketone (MEK) or xylene for stripping paint, do as much as possible with sandpaper, and buy citrus oil stripper if needed.

Did you know Georgia households waste approximately four million gallons of paint each year?

- ✦ Paint/stain/varnish/sealer: If you have leftovers, find someone who will use them or take them to a collection site (if available). As a last resort, make the leftovers into a solid by mixing them with equal parts cat box litter and dispose of it in the trash.
- ✦ When preparing your house for painting, collect paint chips and dispose of them in the trash. If left on the ground, they may wash into a storm drain and be carried to a nearby stream.

THERE ARE TWO PRIMARY WAYS TO REDUCE HOUSEHOLD HAZARDOUS WASTES:

- 1. Think Prevention First!**
- 2. Then, Recycle and Dispose of Wastes Properly!**

For more information on HAZARDOUS WASTES, a list of recycling sites and local contacts, call 1-800-CLEANUP or go to Earth911.com. More resources can also be found at www.p2ad.org and www.cleanwatercampaign.com.



RECAP: HOW CAN I PROTECT BUFFER ZONES AND STREAM HEALTH ON MY PROPERTY?

- * Never mow to the edge of a stream or lake; let the buffer develop naturally.
- * Plant appropriate native vegetation and cuttings in the buffer zone.
- * Don't dump anything in a stream, including grass clippings and other yard waste. Try home composting instead.
- * Keep the water body clean by removing trash.
- * Leave natural woody debris in a stream. It provides habitat and food for aquatic communities.
- * Use pesticides and fertilizers sparingly in your yard and not at all in the buffer.
- * Keep septic systems in good working order to prevent contaminated runoff.
- * Don't change the course of a stream or try to use rocks or other materials to stop stream bank erosion yourself. You can do more harm than good.



INCREASED PROPERTY VALUE

HOW DOES MAINTAINING OR IMPROVING A STREAM INCREASE PROPERTY VALUE?

Studies have shown that:

The appraisal value of houses with natural streams is three times higher than those with channelized streams.

The closer a property is to a natural area, the higher the value.

Sixty percent of suburban residents enjoy wildlife viewing and are willing to pay a higher price for properties that are attractive to wildlife.

WHO IS RESPONSIBLE FOR WHAT?

Every stream has two components: the water flowing in it and the land beneath and around it.

Private individuals own the land that forms the stream channel on their property. However, because it is considered a "public good," the water in the stream is owned by the State of Georgia, or all of us! This means that property owners can use the water, but not in ways that infringe on the rights of others.

What many property owners may not realize is that "using" water properly also depends on what they do on their land. If, for example, a landowner decides to armor the stream bank, culvert the stream in a pipe, remove natural bed materials or fill in a ravine, these land alterations can negatively affect:

- * How the stream water flows;
- * What the water contains;
- * Erosion rates downstream;
- * The value of the property that was "protected" or "improved"; and
- * Whether the stream's inhabitants are healthy, or can even exist.

The landowner is ultimately responsible for any resulting changes downstream.

CONTACTS & REFERENCES

These are great places to start learning more!

RAIN GARDEN & RAIN COLLECTOR INFO:
http://www.lowimpactdevelopment.org/raingarden_design/links.htm

http://www.lowimpactdevelopment.org/raingarden_design/downloads/BuildRainGarden.pdf

STREAM BUFFER STEWARDSHIP:
http://www.cwp.org/Resource_Library/Restoration_and_Watershed_Stewardship/residential.htm#factsheets

http://www.cobbswcd.org/images/reveg_guide_06.pdf

LAND DISTURBANCE PERMITS/ CODES & ORDINANCES:

<http://www.sandyspringsga.org>
(Community Development)

Always secure proper permits prior to beginning your project.

PLEASE PICK UP THAT DOG POOP!

WHAT SHOULD YOU DO WITH THE WASTE YOU PICK UP?

There is no perfect answer, but here are a couple options:

1. Flush it down the toilet.
2. Put it in a plastic bag and throw it in the garbage can (just make sure the bag doesn't have any holes and it is tied tightly.)



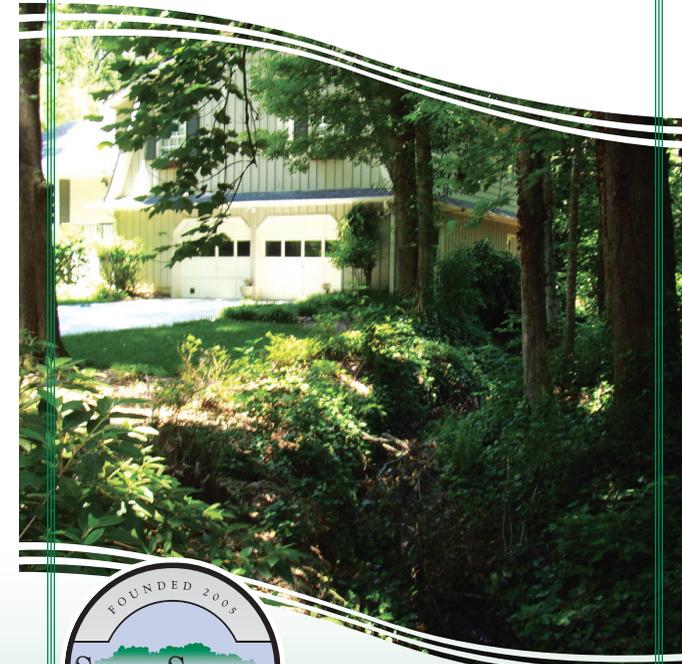
WHY SHOULD YOU PICK IT UP?

Pet waste left behind may be washed into waterways by rain. As the waste decays, it uses oxygen, releases excess nutrients that encourage weed and algae growth and, sometimes, carries disease-causing organisms, that make water unsafe for swimming or drinking.



Introduction to Stream Buffer Management

What Can You Do to Care for Stream Buffers?



City of Sandy Springs
7840 Roswell Road, Building 500
Sandy Springs, GA 30350

770.730.5600

ANSWERING CALLS 24 HOURS A DAY, SEVEN DAYS A WEEK

WWW.SANDYSPRINGSGA.ORG



BENEFITS OF STREAM BUFFERS

Do you know why stream buffers are so important? Stream buffers, also known as riparian buffers, are bands of vegetation bordering a body of water that play a crucial role in promoting public health by protecting water quality. The type of vegetation in the buffer depends upon the climate and buffers the stream from anything that flows into it – polluted water, eroding soil or toxic chemicals. Many fish species need cool water, and streamside vegetation provides shade to keep streams cool. Leaves falling into the stream provide food for insects that fish eat as well as places for fish to hide from predators. Roots help stabilize stream banks and keep dirt from washing into streams. Plants on stream banks also provide shelter for wildlife as they drink from waterways.

PLANNING AND CREATING A HEALTHY BUFFER ZONE

A minimum buffer width of 75' is required by the City of Sandy Springs. The buffer zone should be thought of in layers moving from the stream to the house and should be ordered: trees, shrubs, ground covers/grasses, then maintained lawn. It is helpful to sketch out a design to determine how many plants are needed. You can start your plan by drawing where you would like to plant grasses, shrubs and trees, without worrying about the exact species at this stage. Do consider the size (at maturity) of the plants you would prefer, however. Generally, you should plant ground covers 1-3' apart, shrubs 3-5' apart, small trees (up to 25' tall at maturity) 15' apart and larger trees 25' apart.



You will want to group some plants together to provide dense vegetation, better habitat and more storm water filtration at maturity. Some trees should be planted near the water's edge, but re-vegetation at the water's edge should be allowed to occur naturally. If you want to provide a path for access to the water, it should be as narrow as practical and covered with mulch or other porous material to minimize erosion.

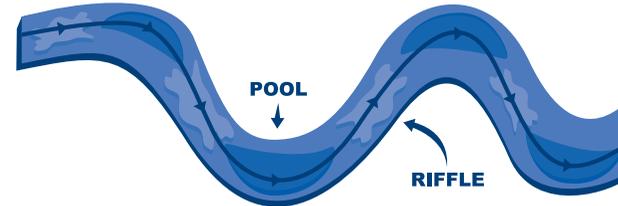
If you want to maintain a view of the water, you can create a "view corridor" of low growing vegetation in a selected area, while still maintaining an effective buffer.



HOW STREAMS WORK

In Sandy Springs, undisturbed streams are composed of alternately spaced, deep and shallow areas called pools and riffles. Pools are deep areas that often contain fine materials such as sand, and these are a perfect resting spot for fish. Riffles are shallow, fast moving areas that often contain larger materials like cobbles and boulders. These areas provide important habitat for small aquatic animals and bugs, as well as areas for fish spawning. Another important component of streams is the floodplain. Active floodplains provide critical functions to the community and are essential for healthy streams because they:

- * Reduce downstream flooding by storing excess storm water;
- * Reduce pollution by allowing sediment, bacteria and fertilizers to settle out and be utilized by plants;
- * Recharge and filter groundwater so streams can maintain flow in dry weather; and
- * Reduce stream bank erosion by relieving energy in the channel.



WHY DO STREAMS MEANDER?

It's a balancing act. All streams transport water along with bed materials like soil and rocks. By meandering, streams can balance the work involved in carrying the bed materials and the energy of transporting the water.

HOW MUCH WILL A STREAM MEANDER?

The size of the meander is related to the slope of the stream and the size of the watershed (area of land draining to the stream). Steep mountain streams hardly meander at all, while large rivers in flat valleys often have large meanders.



Buffer encroachment and bank erosion

WHAT HAPPENS WHEN A STREAM UN-MEANDERS?

Streams are not pipes. When we eliminate natural meanders in streams, and attempt to "nail" the stream into a straight line, the effects are often dramatic. Excessive energy often becomes trapped in the stream channel. Erosion increases as the stream attempts to recreate the missing meanders. Floodplains often become disconnected from the stream, and downstream landowners are at a greater risk of flooding and erosion.

IS STREAM BANK EROSION NATURAL?

Even streams in balance erode, but usually not in a way that degrades the stream. In a healthy stream, the amount of material eroded equals the amount of material deposited. If a stream begins to erode excessively, it may be out of balance. Increased stormwater runoff up-stream may start a downward cutting process, which leads to unstable, eroding stream banks.

PROFESSIONAL HELP

If your stream is already severely eroded and has vertical banks more than a couple of feet tall, your solution will likely involve expert guidance. Major work done improperly on a stream bank can make problems worse or violate local and state laws governing what may or may not be done in the buffer zone. Always contact Community Development (770-730-5600) and apply for necessary permits and, if necessary, submit work plans for review. The permitting program is inexpensive and proper procedures prevent fines from violations.

Find a qualified local civil engineering or landscaping design firm you feel comfortable with to assist in the process of assessing the issue, creating a sound solution, as well as obtaining the proper permitting and permission to complete drastic alterations to the stream bank.

Did You Know?

The quality of metro Atlanta's streams, rivers and lakes is threatened by the daily activities of residents and businesses across the region. More than 1,000 stream miles in the metropolitan Atlanta area are in violation of state water quality standards due to urban stormwater runoff.

The only way to combat the adverse effects of pollution is through knowledge and action. The leading threat to our water quality is stormwater pollution.



10 Things You Can Do to Be a

"Solution To Stormwater Pollution"

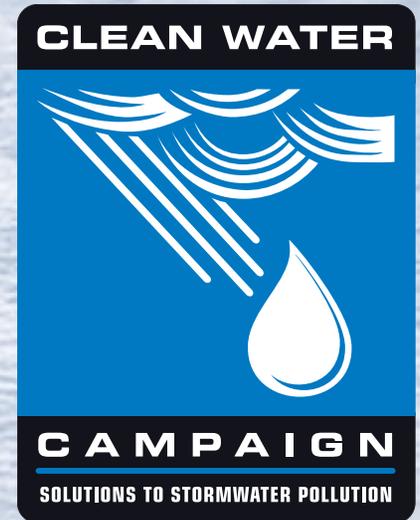
1. Never dump anything on the street, down a storm drain or in a drainage ditch.
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7. Recycle motor oil and other vehicle fluids.
8. Put litter in its place.
9. Wash cars at a commercial car wash or on a grassy area and not your driveway.
10. Tell a friend or neighbor about how to prevent stormwater pollution and get involved.

Clean Water Campaign

40 Courtland Street, NE
Atlanta, GA 30303

www.cleanwatercampaign.com

When It Rains



It Pollutes!

What is the Clean Water Campaign?



The **Clean Water Campaign** is a cooperative, multi-agency public education initiative spearheaded by local governments in metro Atlanta. It is supported by the Metropolitan North Georgia Water Planning District and managed by the Atlanta Regional Commission. Its mission is to build awareness of water quality problems and solutions in the 16-county District.

Why should you care about clean water?

Imagine no longer being able to fish, swim or wade through your favorite stream, river or lake. It might surprise you, but many waters in the metro Atlanta area are degraded due to polluted **stormwater runoff**.

Each time it rains, the resulting stormwater runoff picks up debris such as litter, pesticides, chemicals, motor oil and dirt as it flows across rooftops and lawns, streets and parking lots. These pollutants are deposited, untreated, into our waterways. Increased runoff from developed areas can also cause flooding and erosion of stream banks, which creates even more sediment that enters our streams.

Stormwater pollution can make monitoring and treatment of our drinking water more difficult and costly. In addition, it can hinder the health of the aquatic ecosystem. If polluted stormwater contaminates our water sources, the result can be the closing of our rivers, lakes and streams to the public.

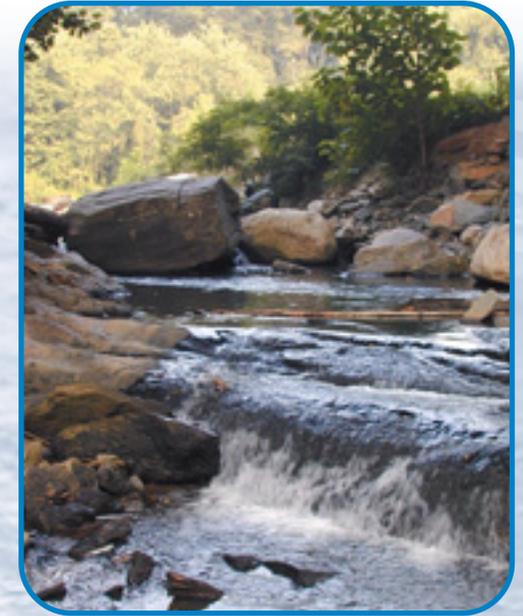
Public Education and Awareness Program

Now there is a way you can help spread the word to your friends, neighbors and local businesses about how all of us can be a solution to stormwater pollution.

The **Clean Water Campaign** hopes to reach Sandy Springs residents through a broad-based public information and education effort that includes:

- A Web site, www.cleanwatercampaign.com
- Storm drain stenciling program
- Fact sheets and brochures
- Corporate partnerships
- Media and public service campaign
- Community workshop program

We need your help to expand this effort and make clean water in Sandy Springs a reality!



How can I get involved?

There are many opportunities for involvement in the **Clean Water Campaign**. Here are just a few:

- Invite a speaker from the Speakers Bureau to your next civic club or neighborhood association meeting.
- Visit www.cleanwatercampaign.com for more detailed information on stormwater pollution prevention.
- Become a volunteer.
- Become a corporate sponsor.

Contact Information

Clean Water Campaign
40 Courtland Street, NE, Atlanta, GA 30303
404.463.3259
www.cleanwatercampaign.com