

CITY OF TUSCALOOSA PHASE II STORMWATER PROGRAM

PERMIT YEAR FOUR ANNUAL REPORT MARCH 2006-MARCH 2007



William Tinker - District 7 City of Tuscaloosa

Department of Transportation

Alvin P. DuPont, P.E. Mayor

Joseph A. Robinson, P.E. Director of Transportation/City Engineer **Council Members**

Bobby Howard - District 1 Harrison Taylor - District 2 Cynthia Almond - District 3 Lee Garrison - District 4 Kip Tyner - District 5 Bob Lundell - District 6 William Tinker - District 7

1000 28th Avenue, Tuscaloosa, Al. 35401 (205)349-0240 Fax (205)349-0341 E-mail cchristi@ci.tuscaloosa.al.us

3/23/07

Alabama Department of Environmental Management Post Office Box 301463 Montgomery, AL 36130-1463 ATTN: Ms. Vernetta Palmer

RE:

City of Tuscaloosa Phase II Stormwater Permit

Annual Report

Dear Ms. Palmer:

Enclosed please find the Fourth Annual Report for the City of Tuscaloosa Stormwater Phase II NPDES Permit. We have continued our Public Education and Outreach efforts by mailing out 77,727 brochures to reach every household within Tuscaloosa County. This was a joint project undertaken with the City of Northport and Fuscaloosa County and demonstrates growing local cooperation to meet Phase II goals. I have included several copies of the brochure for your records. In addition, we are participating in a stormwater treatment research study with the University of Alabama which is outlined in the Appendix. We will continue to map outfalls and plan to initiate a storm drain marker program this summer. Please note that we are again requesting a few amendments to our NOI to allow additional time to train employees and finalize our Pollution Prevention Plan.

To avoid repetition of old material, I have only provided documentation in "Appendix D" that pertains to the efforts of the most recent permit year. Therefore, any documents referenced to be in the "Appendix" are contained in previous Appendices and are not duplicated in this volume. Feel free to contact me with any questions or if you should need additional information.

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Chad P. Christian, P.E. Storm Drainage Engineer

Date Prepared: 03/30/2007

For questions regarding this report contact:

Chad Christian 1000 28th Avenue

Tuscaloosa, AL 35401

| | Stormwater | Program Permit Information | |
|---|--------------|----------------------------|--|
| 1. Permitting Authority: | ADEM | | |
| 2. Permit Number: Unknown 3. Permit Type: General | | | |
| 4. Permit Name: Tuscaloo | sa Small MS4 | | |
| 5. Date Issue: 03/10/2 | 2003 | 6. Date Expire: 03/09/2008 | |

| | General Informati | ion for MS4 Op | perator | | |
|---------------------------|----------------------|----------------|-----------------|--|--|
| 1. Operator Name: | Walt Maddox | <u> </u> | <u> </u> | | |
| 2. Operator Title: | Mayor | | | | |
| 3. Represented Entity: | : City of Tuscaloosa | | | | |
| 4. Mailing Address: | 1000 28th Avenue | | | | |
| 5. Mail City, State, Zip: | Tuscaloosa, AL 35401 | | | | |
| 6. Phone Number: | | | | | |
| 7. E-Mail Address: | | | | | |
| 8. Co-Permitting With: | | | | | |
| 9. Population: 80,000 | Households: | 0 | Area (sq mi): 0 | | |
| 10. Official Website: | | | | | |

| | General Information for Primary Contact Person |
|--------------------|--|
| 1. Name: | Chad Christian |
| 2. Title: | Storm Drainage Engineer |
| 3. Phone Number | (205) 349-0240 |
| 4. E-Mail Address: | |

| General Information for Secondary Contact Person | | | | |
|--|--|--|--|--|
| 1. Name: | | | | |
| 2. Title: | | | | |
| 3. Phone Number | | | | |
| 4. E-Mail Address: | | | | |

Plan Contents Summary

The Stormwater Management Plan consists of the following Minimum Control Measures and BMPs:

| Minimum Control Measure | s and BMPs |
|--|----------------------------|
| Public Education and Ou | ıtreach |
| Advertise Stormwater Hotline | |
| | 03/10/2003 03/10/2004 |
| Conduct Public Education | |
| | 03/10/2003 03/10/2004 |
| Develop Educational Resources | |
| | 03/10/2003 03/10/2004 |
| Expand Educational Resources | |
| Clare Drain Chandillan | 03/10/2005 03/10/2006 |
| Storm Drain Stenciling | |
| | 03/10/2004 03/10/2007 |
| Public Participation/Involution | vement |
| Continuity Clean-Ops | 03/09/2007 03/10/2008 |
| Establish Citizen Volunteer Organization | 03/09/2007 03/10/2008 |
| 20tabion Onzon Volunteer Organization | 03/10/2003 03/10/2004 |
| Establish Citizen Watch Groups | 03/10/2003 03/10/2004 |
| | 03/10/2006 03/10/2007 |
| Finalize Citizen Panel Recommendations | 7 00,101 2000 700,107,200. |
| | 03/10/2004 03/10/2005 |
| Public Awareness - Radio Media/Television | |
| | 03/10/2004 03/10/2005 |
| Public Meetings - Print Media | |
| | 03/10/2003 03/10/2004 |
| Illicit Discharge Detection and | Elimination |
| Illicit Discharge Detection and Elimination | |
| | 03/10/2004 03/10/2007 |
| Illicit Discharge Employee Training | |
| | 03/10/2003 03/10/2008 |
| Implement Illicit Discharge Tracking System | |
| | 03/10/2003 03/10/2004 |
| Ordinance/Regulatory Mechanism Evaluation | |
| Panulia Danas | 03/10/2003 03/10/2006 |
| Recycling Program | Lauranaa lauranaa |
| Source System Man | 03/10/2003 03/10/2005 |
| Sewer System Map | 2040,0000 40,0000 |
| On the state of th | 03/10/2003 12/09/2006 |
| Construction Site Runoff C | Control |

| Statewide Program Established | | |
|---|--------------|---------------|
| | | |
| Post-Construction Runo | ff Control | |
| Identification of BMP's | | |
| | 03/10/2003 | 03/10/2004 |
| Ordinance Evaluation | | |
| | 03/10/2004 | 03/10/2006 |
| Publication of BMP's | | |
| | 03/10/2004 | 03/10/2005 |
| Statewide Program Established | | |
| | | |
| Pollution Prevention/Good F | łousekeeping | |
| Develop Pollution Prevention Plan | | |
| | 03/10/2003 | 03/10/2008 |
| Employee Training Materials | | · · · · · · · |
| | 03/10/2003 | 03/10/2004 |
| Implement Information Management System | | |
| | 03/10/2003 | 03/10/2004 |
| Pollution Prevention/Housekeeping Effectiveness | | - |
| | 03/10/2004 | 03/10/2008 |
| Train Employees | | |
| | 03/10/2004 | 03/10/2008 |

Public Education and Outreach

Descriptive Text:

To satisfy this minimum control measure, the operator of a regulated small MS4 needs to:

- 1. Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of storm water discharges on local waterbodies and the steps that can be taken to reduce storm water pollution; and
- 2. Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

An informed and knowledgeable community is crucial to the success of a storm water management program since it helps to ensure the following:

- 1. Greater support for the program as the public gains a greater understanding of the reasons why it is necessary and important. Public support is particularly beneficial when operators of small MS4s attempt to institute new funding initiatives for the program or seek volunteers to help implement the program; and
- 2. Greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters.

Number of BMPs associated with control measure:

5

Important Dates:

Earliest Start Date: 03/10/2003

End Date:

03/10/2007

Details of BMPs and Work Performed for Them

Advertise Stormwater Hotline

Responsible Party: Unknown, Unknown

Start Date: 03/10/2003 End Date: 03/10/2004

Permits Years during which activities are scheduled:

Year 1 X Year 2 Year 2

Year 3 Year 4

Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Advertise the Stormwater Hotline once established. This will promote citizen interest and participation in the stormwater management plan and establish a direct link from the community and stakeholders to the program.

Has Goal Been Accomplished: YES

Work Performed

Date: 03/11/2005 Responsible Party: Chad Christian, Storm Drainage Engineer

3rd Year Distribution of Phase II Brochure

Approximately 500 additional copies of existing Phase II brochure distributed during permit year 3 at various small public meetings and speaking engagements. Refer to Appendix B of Permit Year 2 Annual Report for sample copy.

Date: 03/11/2006 Responsible Party:

4th Year Advertisement of Hotline

Distributed Countywide brochure containing Stormwater Hotline information to 77,727 households. A copy of the brochure is included in Appendix D.

Date: 03/11/2004 Responsible Party: Chad Christian, Storm Drainage Engineer

Continued Distribution of Phase II Brochure

Approximately 1000 additional copies of existing Phase II brochure distributed during permit year 2 at various small public meetings and speaking engagements. Refer to Appendix B of Permit Year 2 Annual Report for sample copy.

Date: 07/02/2003 Responsible Party: Chad Christian, Unknown

Started Distribution of Phase II Brochure

Began distribution of Tuscaloosa stormwater brochure with contact information and telephone number. Approximately 1000 copies distributed to date at numerous small public meetings and speaking engagements as well as the major presentations listed.

Conduct Public Education

Responsible Party: Unknown, Unknown

Start Date: 03/10/2003 End Date: 03/10/2004

Permits Years during which activities are scheduled:

Year 1 X Year 2 X Year 3 X Year 4 X Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Speak at seminars and public meetings to raise awareness of the City's Phase II program and begin education of the public concerning BMP's. Distribute brochures and other educational materials.

Has Goal Been Accomplished: NO

Work Performed

Date: 03/09/2005 Responsible Party:

"Our Great Lake" Media Campaign Initiated

A multiyear media campaign has been funded during Permit Year Two to raise public awareness about watershed issues and to protect Lake Tuscaloosa, our local drinking water source. The campaign has entailed radio, newspaper, and billboard advertisement and watershed signs within the Lake Tuscaloosa Watershed. In addition, the website www.ourgreatlake.org was established. Refer to Appendix B for details of this campaign.

Date: 03/11/2005

Responsible Party: Chad Christian, Storm Drainage Engineer

Continue "Our Great Lake" Media Campaign

A multiyear media campaign was been funded during Permit Year Two to raise public awareness about watershed issues and to protect Lake Tuscaloosa, our local drinking water source. The campaign has entailed radio, newspaper, and billboard advertisement and watershed signs within the Lake Tuscaloosa Watershed. In addition, the website www.ourgreatlake.org was established. Refer to Appendix B of Permit Year Two Annual Report for details of this campaign. This campaign continued through Permit Year Three and is still active for upcoming Permit Year Four.

Date: 03/11/2005

Responsible Party: Chad Christian, Storm Drainage Engineer

Continue Stormwater Media Campaign

An \$18,000 "Stormwater Media Campaign" contract was authorized by the Tuscaloosa City Council on 9/23/04. This contract led to the creation and running of stormwater education print, radio, and television advertisement. This contract was completed in Permit Year 3. Please refer to Appendix B of the Permit Year Two Annual Report for examples and details of this campaign. Also please refer to Appendix C of this report for details of the ads run during Permit Year Three. A new larger campaign will be initiated in Permit Year Four to increase media exposure.

Date: 10/10/2003

Responsible Party: Bennett Bearden, Unknown

Legal Aspects of Phase II Speech

Speech conducted and paper presented to ABICLE "What Every Real Estate Lawyer Needs to Know" Conference covering all legal aspects of the EPA Phase II Program as it relates to affected municipalities.

Date: 09/23/2004

Responsible Party: Chad Christian, Storm Drainage Engineer

Media Campaign Initiated

An \$18,000 "Stormwater Media Campaign" contract was authorized by the Tuscaloosa City Council on 9/23/04. This contract has led to the creation and running of stormwater education print, radio, and television advertisement. Please refer to Appendix B for examples and details of this campaign.

Date: 08/27/2003

Responsible Party: Chad Christian, Unknown

NEMO Presentation

Gave NEMO Presentation to Alabama Genernal Contractors Seminar "Employee Training for Inspecting BMPs". Copy of meeting notice included in Appendix.

Date: 06/22/2005

Responsible Party: Chad Christian, Storm Drainage Engineer

Presentation at Weeks Bay Nonpoint Pollution Seminar

A presentation detailing the City of Tuscaloosa's Stormwater Phase II compliance program was given to the 2005 Weeks Bay Nonpoint Source Pollution and Stormwater Workshop at Weeks Bay National Estaurine Reserve. A copy of the program agenda is included in Appendix C.

Date: 05/10/2006

Responsible Party:

Produce and Distribute Countywide Brochure

A joint funding agreement was executed with Tuscaloosa County and the City of Northport to produce and distribute an educational brochure to every household within the County. A total of 77,727 brochures were mailed out in January and February 2007. A copy of the brochure is included in Appendix D.

Date: 03/02/2004 Res

Responsible Party: Joe Robinson, Unknown

Speech to Local Realtor's Meeting

Delivered talk to Tuscaloosa Realtor's group and distributed ordinance and brochures.

Date: 06/25/2003

Responsible Party: Chad Christian, Unknown

Tuscaloosa Phase II Presentation

Delivered Model Community presentation on details of the City of Tuscaloosa Phase II Program. Copy of meeting notice included in Appendix.

Date: 02/11/2004

Responsible Party: Chad Christian, Unknown

WaterQuest Presentation

Conducted presentation on the Tuscaloosa Phase II Program at WaterQuest Nonpoint Source Watershed Forum and distributed ordinance, brochures, legal paper, and outfall mapping requirements. Copy of meeting notice included in Appendix.

Develop Educational Resources

Responsible Party: Unknown, Unknown

Start Date: 03/10/2003

End Date: 03/10/2004

Permits Years during which activities are scheduled:

Year 1 X

Year 2

Year 3

Year 4

Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Develop or collect existing brochures, fact sheets, print advertisements, radio and television media, and other educational materials to build a stormwater toolbox. Identify volunteer educators to be used for public education programs.

Has Goal Been Accomplished: YES

Work Performed

Date: 10/10/2003

Responsible Party: Bennett Bearden, Unknown

Created Educational Paper on Legal Aspects of Phase II

Paper written for educational effort covering the legal aspects of the Phase II program. Presented originally to real estate seminar and subsequently distibuted at WaterQuest 2004. Copy included in Appendix B of Permit Year Two Annual Report.

Date: 07/02/2003

Responsible Party: Chad Christian, Unknown

Created Tuscaloosa Phase II Brochure

Printed first run of City of Tuscaloosa Stormwater brochures. Brochure was created based on an EPA example brochure. Sample copy included in Appendix B of Permit Year Two Annual Report.

Expand Educational Resources

Responsible Party: Unknown, Unknown

Start Date: 03/10/2005

End Date: 03/10/2006

Permits Years during which activities are scheduled:

Year 1

Year 2

Year 3 X

Year 4

Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Develop a school curricula to educate students about stormwater issues. Create an informational website describing the City of Tuscaloosa Stormwater Management Plan.

Has Goal Been Accomplished: YES

Work Performed

Date: 09/23/2004 Responsible Party: Chad Christian, Storm Drainage Engineer

Developed Additional Print, Radio and TV Ads and Logos

New logos and a series of new radio, print, and television ads were developed as part of a graphic design and media campaign contract with Southern Digital Design. Some ads were based on materials previously obtained from the ADEM OEO and some work was designed specifically for the City of Tuscaloosa. One major television ad was used with the permission of Salt Lake County, Utah, who originated the ad. Refer to Appendix B of Permit Year Two Annual Report for examples.

Date: 06/01/2004 Responsible Party: Chad Christian, Storm Drainage Engineer

Obtained Grade School Educational Materials

City Engineer Joe Robinson obtained Stormwater educational materials for school children through Patti Hurley with the ADEM Office of Education and Outreach.

Storm Drain Stenciling

Responsible Party: Unknown, Unknown

Start Date: 03/10/2004 End Date: 03/10/2007

Permits Years during which activities are scheduled:

Year 1 Year 2 X Year 3 X Year 4 X Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Stencil storm drain tops with messages like "Do Not Dump - Drains to River". Utilize volunteer groups to help accomplish this task.

Has Goal Been Accomplished: NO

Work Performed

Date: 03/06/2005 Responsible Party: Chad Christian, Storm Drainage Engineer

Storm Drain Lids Cast with Permanent "NO DUMPING" Message

Obtained specifications for storm drain lids with "No Dumping - Drains to Waterways" message permanently cast in center. Several City projects have already utilized these new manhole covers - example and specifications in Appendix B of Year Two Annual Report. The subdivision regulations will be amended during Permit Year Four to require these inlet/junction box tops on all City projects and possibly all construction projects within the City Planning Jurisdiction.

Public Participation/Involvement

Descriptive Text:

To satisfy this minimum control measure, the operator of a regulated small MS4 must:

- 1. Comply with applicable State, Tribal, and local public notice requirements; and
- 2. Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

EPA believes that the public can provide valuable input and assistance to a regulated small MS4's municipal storm water management program and, therefore, suggests that the public be given opportunities to play an active role in both the development and implementation of the program. An active and involved community is crucial to the success of a storm water management program because it allows for:

- 1. Broader public support since citizens who participate in the development and decision making process are partially responsible for the program and, therefore, may be less likely to raise legal challenges to the program and more likely to take an active role in its implementation;
- 2. Shorter implementation schedules due to fewer obstacles in the form of public and legal challenges and increased sources in the form of citizen volunteers:
- 3. A broader base of expertise and economic benefits since the community can be a valuable, and free, intellectual resource: and
- 4. A conduit to other programs as citizens involved in the storm water program development process provide important cross-connections and relationships with other community and government programs. This benefit is particularly valuable when trying to implement a storm water program on a watershed basis, as encouraged by EPA.

Number of BMPs associated with control measure:

Important Dates:

Earliest Start Date: 03/10/2003

End Date:

03/10/2008

Details of BMPs and Work Performed for Them Community Clean-Ups Responsible Party: Unknown, Unknown Start Date: 03/09/2007 End Date: 03/10/2008 Permits Years during which activities are scheduled: Year 1 Year 2 Year 3 Year 4 Year 5 X Name of Separate Implementing Entity: Unknown BMP Description: Plan and schedule community clean-ups for ordinary citizens to gain hands-on experience while cleaning stream segments of trash and debris. Coordinate through the Citizen Panel. Has Goal Been Accomplished: NO Work Performed Date: 03/11/2007 Responsible Party: Chad Christian, Storm Drainage Engineer Amend NOI to Move Goal to Permit Year Five We would like to move this Goal to Permit Year Five and coordinate Cleanups through TDOT rather than a Citizen Panel. Establish Citizen Volunteer Organization Responsible Party: Unknown, Unknown Start Date: 03/10/2003 End Date: 03/10/2004 Permits Years during which activities are scheduled: Year 1 Year 2 Year 3 X Year 4 Year 5 Name of Separate Implementing Entity: Unknown BMP Description: Create a citizen group to provide input from various viewpoints concerning storm water management policies and BMPs. Use the group to assist with water quality monitoring and location of outfalls, identifying illicit discharges, and stenciling storm drains. Has Goal Been Accomplished: NO **Work Performed** Date: 03/08/2005 Responsible Party: Chad Christian, Unknown Amend NOI to Move Goal to Permit Year Three We have not accomplished this task and wish to move this goal to Permit Year Three. Date: 03/11/2006 Responsible Party: Chad Christian, Storm Drainage Engineer Amend NOI to Remove Goal We have not gained traction with this effort and believe that focusing on broad advertisement of the Stormwater Hotline and expanding the Public Awareness Media Campaign will achieve acceptable Public Participation and Involvement. Establish Citizen Watch Groups Responsible Party: Unknown, Unknown Start Date: 03/10/2006 End Date: 03/10/2007 Permits Years during which activities are scheduled: Year 1 Year 2 Year 3 Year 4 X Year 5

Name of Separate Implementing Entity:
Unknown

BMP Description:
Establish citizen watch groups and/or work with existing groups to monitor watersheds for potential and existing impacts to water quality.

Has Goal Been Accomplished: NO

Work Performed

Date: 03/29/2007 Responsible Party:

Amend NOI to Move Goal to Permit Year Five
We have established working relationships with active local watershed groups. We will form a broader citizen-based group as we continue our Outreach efforts.

Finalize Citizen Panel Recommendations

Responsible Party: Unknown, Unknown

Start Date: 03/10/2004 End Date: 03/10/2005

Permits Years during which activities are scheduled:

Year 1 Year 2 Year 3 X Year 4 Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Compile the final recommendations of the Citizen Panel and publish the results. Make copies of the report freely available to the citizens.

Has Goal Been Accomplished: NO

Work Performed

Date: 03/08/2005 Responsible Party:

Amend NOI to Move Goal to Permit Year Three

We have not accomplished this task and wish to move this goal to Permit Year Three.

Date: 03/11/2006 Responsible Party: Chad Christian, Storm Drainage Engineer

Amend NOI to Remove Goal

We have not gained traction with this effort and believe that focusing on broad advertisement of the Stormwater Hotline and expanding the Public Awareness Media Campaign will achieve acceptable Public Participation and Involvement.

Public Awareness - Radio Media/Television

Responsible Party: Unknown, Unknown

Permits Years during which activities are scheduled:

Year 1 Year 2 X Year 3 Year 4 Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Radio and television spots promoting personal responsibility for compliance with the stormwater program and/or informing the public about the construction permit process.

Has Goal Been Accomplished: YES

Work Performed

Date: 03/11/2006 Responsible Party: Chad Christian, Storm Drainage Engineer

Continue Stormwater Media Campaign

An \$18,000 "Stormwater Media Campaign" contract was authorized by the Tuscaloosa City Council on 9/23/04. This contract led to the creation and running of stormwater education print, radio, and television advertisement. This contract was completed in Permit Year 3. Please refer to Appendix B of the Permit Year Two Annual Report for examples and details of this campaign. Also please refer to Appendix C of this report for details of the ads run during Permit Year Three. A new larger campaign will be initiated in Permit Year Four to increase media exposure.

Date: 09/23/2004 Responsible Party: Chad Christian, Storm Drainage Engineer

Media Campaign Initiated

An \$18,000 "Stormwater Media Campaign" contract was authorized by the Tuscaloosa City Council on 9/23/04. This contract has led to the creation and running of stormwater education print, radio, and television advertisement. Please refer to Appendix B for examples and details of this campaign.

Public Meetings - Print Media

Responsible Party: Unknown, Unknown

Start Date: 03/10/2003 End Date: 03/10/2004

Permits Years during which activities are scheduled:

Year 1 Year 2 Year 3 X Year 4

4 Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Notify citizens of public meetings in several different print media.

Has Goal Been Accomplished: NO

Work Performed

Date: 03/08/2005 Responsible Party: Chad Christian, Unknown

Amend NOI to Move Goal to Permit Year Three

We have not accomplished this task and wish to move this goal to Permit Year Three.

Date: 03/11/2006 Responsible Party: Chad Christian, Storm Drainage Engineer

Amend NOI to Remove Goal

We have not gained traction with this effort and believe that focusing on broad advertisement of the Stormwater Hotline and expanding the Public Awareness Media Campaign will achieve acceptable Public Participation and Involvement.

Illicit Discharge Detection and Elimination

Descriptive Text:

Recognizing the adverse effects illicit discharges can have on receiving waters, the final rule requires an operator of a regulated small MS4 to develop, implement and enforce an illicit discharge detection and elimination program. This program must include the following:

- 1. A storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;
- 2. Through an ordinance, or other regulatory mechanism, a prohibition (to the extent allowable under State, Tribal, or local law) on non-storm water discharges into the MS4, and appropriate enforcement procedures and actions;
- 3. A plan to detect and address non-storm water discharges, including illegal dumping, into the MS4;

- 4. The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and
- 5. The determination of appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

Discharges from MS4s often include wastes and wastewater from non-storm water sources. A study conducted in 1987 in Sacramento, California, found that almost one-half of the water discharged from a local MS4 was not directly attributable to precipitation runoff. A significant portion of these dry weather flows were from illicit and/or inappropriate discharges and connections to the MS4. Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving waterbodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

Number of BMPs associated with control measure:

Important Dates:

Earliest Start Date: 03/10/2003

End Date:

03/10/2008

Details of BMPs and Work Performed for Them

Illicit Discharge Detection and Elimination

Responsible Party: Unknown, Unknown

Permits Years during which activities are scheduled:

Year 1

Year 2 X

Year 3 X

Year 4 X

Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Utilizing the System Map and Illicit Discharge Information Management System, begin systematic inspection of outfall lines to identify potential problems. After identifying actual illicit connections, take steps to eliminate them and report the action taken and results.

Has Goal Been Accomplished: NO

Work Performed

Date: 03/10/2005 Responsible Party: Chad Christian, Storm Drainage Engineer

Continued Inspection and Enforcement

Inspection and Enforcement efforts were increased during Permit Year Three.

Date: 03/11/2006 Responsible Party:

Continued Inspection and Enforcement Increased

Inspection and enforcement efforts were ramped up again in Permit Year Four. At this point most builders and contractors are aware of BMP requirements and are actively complying.

Date: 03/11/2004 Responsible Party: Chad Christian, Storm Drainage Engineer

Inspection and Enforcement Activities Increased

A core group of TDOT employees were trained during Permit Year Two to increase our inspection and enforcement activities. Subdivision, homebuilding, and site development activities are monitored and the correction of BMP deficiencies is required as identified. Tips or complaints recieved through the stormwater hotline are acted on accordingly. We plan to train additional employees and continue to ramp up inspection and enforcement activity during Permit Year Three.

Illicit Discharge Employee Training

Responsible Party: Unknown, Unknown

Start Date: 03/10/2003 End Date: 03/10/2008

Permits Years during which activities are scheduled:

Year 1 X

Year 2 X

Year 3 X

Year 4 X

Year 5 X

Name of Separate Implementing Entity:

Unknown

BMP Description:

Design and administer a training program for employees to teach them to recognize and document potential illicit discharges.

Has Goal Been Accomplished: NO

Work Performed

Date: 01/03/2005 Responsible Party: Chad Christian, Storm Drainage Engineer

Initiated Employee Training

A core group of employees has been trained and consequently our inspection and enforcement activities have been ramped up during Permit Year Two. Additional employees were trained during Permit Year Three and Four to expand these efforts. We will continue this training throughout Permit

Year Five and therefore need to amend our NOI to reflect this continued training activity. Implement Illicit Discharge Tracking System Responsible Party: Unknown, Unknown Start Date: 03/10/2003 End Date: 03/10/2004 Permits Years during which activities are scheduled: Year 1 X Year 2 Year 3 Year 4 Year 5 Name of Separate Implementing Entity: Unknown BMP Description: Implement an information management system to gather and document all information concerning illicit discharge detention and elimination. Summarize results including outfalls screened, number of illicit discharges discovered through screening or complaints, and illicit discharges resolved. Has Goal Been Accomplished: YES Work Performed Date: 01/01/2003 Responsible Party: Chad Christian, Unknown ASIST Software Implemented ASIST Software Suite purchased and implemented. Description of software capabilities included in Appendix of Year One Annual Report. Ordinance/Regulatory Mechanism Evaluation Responsible Party: Unknown, Unknown Start Date: 03/10/2003 End Date: 03/10/2006 Permits Years during which activities are scheduled: Year 1 X Year 2 X Year 3 X Year 4 Year 5 Name of Separate Implementing Entity: Unknown BMP Description: March 2004 Evaluate existing ordinances/regulations Prepare draft of revised ordinances/regulations March 2005 Gather stakeholder comments and other input March 2006 Revise and enact new ordinances and regulations Has Goal Been Accomplished: YES Work Performed Date: 02/03/2004 Responsible Party: Tuscaloosa City Council, Unknown Ordinance Adopted A new ordinance was written with input from various stakeholder groups. It evolved over 9 drafts and assimilated concerns of the stakeholders. The final version of the Tuscaloosa Phase II ordinance was adopted by the City Council on February 3, 2004. A copy of the ordinance as adopted is included in the Appendix of Permit Year One Annual Report.

End Date: 03/10/2005 Permits Years during which activities are scheduled:

Recycling Program

Start Date: 03/10/2003

Responsible Party: Unknown, Unknown

Year 1 X Year 2 X Year 3 Year 4 Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Initiate or publicize an existing recycling program to collect commonly dumped wastes such as antifreeze, motor oil, paint, and pesticides.

Has Goal Been Accomplished: YES

Work Performed

Date: 03/11/2004 Responsible Party:

Continued Growth of Recycling Program

The Environmental Services Department of the City of Tuscaloosa has expanded the Recycling Program during Permit Year Two as follows:

The program currently serves 6000 residences and will add another 2000 in April 2005. To promote recycling, three different radio and television ads are run throughout the year and an educational brochure is distributed. Additional outreach is performed by speaking at public meetings and an educational program is presented to grades K-12 in the local schools. Please refer to Appendix B for additional details and sample educational materials.

Sewer System Map

Responsible Party: Unknown, Unknown

Start Date: 03/10/2003 End Date: 12/09/2006

Permits Years during which activities are scheduled:

Year 1 X Year 2 X Year 3 X Year 4 X Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

20% of system mapped March 2004

50% of system mapped March 2005

80% of system mapped March 2006

100% of system mapped November 2006

Has Goal Been Accomplished: NO

Work Performed

Date: 03/11/2006 Responsible Party:

Additional Mapping in Permit Year Four

Additional GPS outfall mapping was performed in Permit Year Four and is reflected in the System Map Submitted at the end of 2006. We will continue mapping in Permit Year Five to gather all Outfall data as required.

Date: 08/05/2003 Responsible Party: Chad Christian, Unknown

Began Outfall Mapping

Tuscaloosa City Council authorizes contract with local engineering firm to undertake GPS mapping of outfalls. Copy of Council action and description of data collected for each outfall is included in the Appendix. 275 outfalls have been surveyed to date; this represents approximately 20% of the total number of outfalls that will eventually be identified. The contract will be amended to continue in the 2004 permit year.

Date: 03/11/2004 Responsible Party: Chad Christian, Storm Drainage Engineer

Continued System Mapping

The existing Engineering Contract was extended to continue mapping efforts in Permit Year Two and beyond. During Permit Year Three we plan to generate the first map for showing outfall locations.

Date: 03/10/2005 Responsible Party: Chad Christian, Storm Drainage Engineer

Further System Mapping

During Permit Year Three mapping was continued. For Permit Year Four we plan to add GIS functionality for our outfall maps.

Construction Site Runoff Control

Descriptive Text:

The Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement, and enforce a program to reduce pollutants in storm water runoff to their MS4 from construction activities that result in a land disturbance of greater than or equal to one acre.

The small MS4 operator is required to:

- 1. Have an ordinance or other regulatory mechanism requiring the implementation of proper erosion and sediment controls, and controls for other wastes, on applicable construction sites;
- 2. Have procedures for site plan review of construction plans that consider potential water quality impacts;
- 3. Have procedures for site inspection and enforcement of control measures;
- 4. Have sanctions to ensure compliance (established in the ordinance or other regulatory mechanism);
- 5. Establish procedures for the receipt and consideration of information submitted by the public; and
- Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

Polluted storm water runoff from construction sites often flows to MS4s and ultimately is discharged into local rivers and streams. Of the pollutants listed in Table 1, sediment is usually the main pollutant of concern. Sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation, and the contribution of other pollutants from construction sites, can cause physical, chemical, and biological harm to our nation's waters. For example, excess sediment can quickly fill rivers and lakes, requiring dredging and destroying aquatic habitats.

Table 1
Pollutants Commonly Discharged From Construction Sites

Sediment
Solid and sanitary wastes
Phosphorous (fertilizer)
Nitrogen (fertilizer)
Pesticides
Oil and grease
Concrete truck washout

Number of BMPs associated with control measure:

Important Dates:

Earliest Start Date:

End Date:

Post-Construction Runoff Control

Descriptive Text:

The Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement, and enforce a program to reduce pollutants in post-construction runoff to their MS4 from new development and redevelopment projects that result in the land disturbance of greater than or equal to 1 acre. The small MS4 operator is required to:

- 1. Develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs);
- 2. Have an ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls to the extent allowable under State, Tribal or local law,
- 3. Ensure adequate long-term operation and maintenance of controls;
- 4. Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

Post-construction storm water management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly effect receiving waterbodies. Many studies indicate that prior planning and design for the minimization of pollutants in post-construction storm water discharges is the most cost-effective approach to storm water quality management.

There are generally two forms of substantial impacts of post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in storm water runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans. The second kind of post-construction runoff impact occurs by increasing the quantity of water delivered to the waterbody during storms. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include streambank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

Number of BMPs associated with control measure:

3

Important Dates:

Earliest Start Date: 03/10/2003

End Date: 03/10/2006

Details of BMPs and Work Performed for Them

Identification of BMP's

Responsible Party: Unknown, Unknown

Start Date: 03/10/2003 End Date: 03/10/2004

Permits Years during which activities are scheduled:

Year 1 X Year 2

Year 3

Year 4

Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Identify and catalog a mix of effective BMPs tailored to the geography and rainfall patterns of Tuscaloosa. Utilize existing manuals or guidance available from regulatory bodies when possible.

Has Goal Been Accomplished: YES

Work Performed

Date: 02/03/2004 Responsible Party: Tuscaloosa City Council, Unknown

BMP Manual Adopted

Tuscaloosa City Council adopted Alabama Handbook for Erosion Control, Sediment Control, and Storm Water Management on Construction Sites and Urban Areas.

Ordinance Evaluation

Responsible Party: Unknown, Unknown

Start Date: 03/10/2004 End Date: 03/10/2006

Permits Years during which activities are scheduled:

Year 1 X

Year 2 X

Year 3 X

Year 4

Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

March 2004

Evaluate existing ordinances/regulations

Prepare draft of revised ordinances/regulations

March 2005

Gather stakeholder comments and other input

March 2006

Revise and enact new ordinances and regulations

Has Goal Been Accomplished: YES

Work Performed

Date: 02/03/2004 Responsible Party: Tuscaloosa City Council, Unknown

Ordinance Adopted

A new ordinance was written with input from various stakeholder groups. It evolved over 9 drafts and assimilated concerns of the stakeholders. The final version of the Tuscaloosa Phase II ordinance was adopted by the City Council on February 3, 2004. A copy of the ordinance as adopted is included in the Appendix.

Publication of BMP's

Responsible Party: Unknown, Unknown

Start Date: 03/10/2004 End Date: 03/10/2005

| Permits Yea | ars during which | n activities are sch | reduled: | | | |
|-----------------------|------------------|----------------------|-----------------|-------------------|-----------------------|-----------|
| | Year 1 | Year 2 X | Year 3 | Year 4 | Year 5 | |
| Name of Se Unknown | eparate Impleme | enting Entity: | | | | |
| BMP Descri | • | | | | | |
| | | | nual to develop | ers, municipal st | aff and interested of | citizens. |
| Has Goal B | een Accomplish | ned: YES | | | | |

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| Date: 01/03/2005 | Responsible Party: Chad Christian, Storm Drainage Engineer | | | |
|---|--|--|--|--|
| Adopted BMP Manual Made Available | | | | |
| Two hard copies of the adopted BMP manual (Alabama Handbook) were made available for public | | | | |
| inspection and use at the Tuscaloosa Department of Transportation office. | | | | |

Pollution Prevention/Good Housekeeping

Descriptive Text:

Recognizing the benefits of pollution prevention practices, the rule requires an operator of a regulated small MS4 to:

- 1. Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the storm sewer system;
- 2. Include employee training on how to incorporate pollution prevention/good housekeeping techniques into municipal operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. To minimize duplication of effort and conserve resources, the MS4 operator can use training materials that are available from EPA, their State or Tribe, or relevant organizations;
- 3. Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

The Pollution Prevention/Good Housekeeping for municipal operations minimum control measure is a key element of the small MS4 storm water management program. This measure requires the small MS4 operator to examine and subsequently alter their own actions to help ensure a reduction in the amount and type of pollution that: (1) collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways; and (2) results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems. While this measure is meant primarily to improve or protect receiving water quality by altering municipal or facility operations, it also can result in a cost savings for the small MS4 operator, since proper and timely maintenance of storm sewer systems can help avoid repair costs from damage caused by age and neglect.

Number of BMPs associated with control measure:

Important Dates:

Earliest Start Date: 03/10/2003

End Date:

03/10/2008

Details of BMPs and Work Performed for Them

Develop Pollution Prevention Plan

Responsible Party: Unknown, Unknown

Start Date: 03/10/2003 End Date: 03/10/2008

Permits Years during which activities are scheduled:

Year 1 X Year 2 X Year 3 X Year 4 X Year 5 X

Name of Separate Implementing Entity:

Unknown

BMP Description:

Develop a comprehensive Pollution Prevention Plan that identifies the following: BMP's, Management Practices and Maintenance Schedules, Recycling Efforts, Waste Disposal Guidelines, and Areas of Concern.

Has Goal Been Accomplished: NO

Work Performed

Date: 02/03/2004 Responsible Party: Chad Christian, Unknown

BMPs Identified

BMP menu identified with the adoption of the Alabama Handbook for Erosion Control, Sediment Control, and Storm Water Management on Construction Sites and Urban Areas.

Date: 01/13/2004 Responsible Party: Natural Resources Subcommittee, Unknown

City of Tuscaloosa Comprehensive Plan Input

The City of Tuscaloosa Comprehensive Plan is being updated currently. A Stormwater/Watershed Task Force was formed from members of the Comprehensive Plan Natural Resources Subcommittee to submit goals and guidelines for inclusion in the new Comprehensive Plan. A summary of the recommendations made is included in the Appendix.

Date: 03/11/2004 Responsible Party: Chad Christian, Storm Drainage Engineer

Continued Development of Plan

An additional street sweeping route has been started to focus on residential neighborhoods. We now have three street sweeping routes in regular implementation. Our NOI needs to be amended to reflect the completion of our Pollution Prevention Plan in Permit Year Five.

Employee Training Materials

Responsible Party: Unknown, Unknown

Start Date: 03/10/2003 End Date: 03/10/2004

Permits Years during which activities are scheduled:

Year 1 X Year 2 Year 3 Year 4 Year 5

Name of Separate Implementing Entity:

Unknown

BMP Description:

Develop and collect training materials to educate staff about pollution prevention and good housekeeping. Some items will need to be specifically tailored to Tuscaloosa while others are available from EPA and other external sources.

Has Goal Been Accomplished: YES

Work Performed

Implement Information Management System

Responsible Party: Unknown, Unknown Start Date: 03/10/2003 a: 03/10/2004 Permits Years during which activities ar Year 1 X Year 2 Year 5 Year 4 Name of Separate Implementing Entity: Unknown BMP Description: Implement an information management ventory of stormwater facilities and outfalls. Use system to schedule and pe document and report any actions taken. Has Goal Been Accomplished: YES Date: 01/01/2003 Responsible P Unknown **ASIST Software Implemented** ASIST Software Suite purchased and in in of software capabilities included in Appendix. Pollution Prevention/Housekeeping Responsible Party: Unknown, Unknown Start Date: 03/10/2004 ate: 03/10/2008 Permits Years during which activities ar Year 1 Year 2 Year 4 X Year 5 X Name of Separate Implementing Entity: Unknown BMP Description: Generate reports that summarize the following the quantity of floatables and other pollutants intercepted, list of facilities an components maintained, report of overall compliance and explanation of discrepa Has Goal Been Accomplished: NO Train Employees Responsible Party: Unknown, Unknown Start Date: 03/10/2004 ≘: 03/10/2008 Permits Years during which activities as Year 1 Year 2 Year 5 X Year 4 X Name of Separate Implementing Entity: Unknown

| 4 1 1 1 1 1 1 1 1 1 | Marties and the only on the second | |
|---------------------|------------------------------------|----------------|
| Date: | 03/11/2004 | Responsible Pa |
| Core | Group of Employe | es Trained |

Utilizing the Employee Training Toolbox

Has Goal Been Accomplished: NO

BMP Description:

housekeeping measures.

train staff on pollution prevention and good

A core group of employees has been trained during Permit Year Two. Additional employees were trained during Permit Year Three and Four. Our NOI should be amended to reflect the completion of employee training in Permit Year Five.



APPENDIX D





EDUCATION AND OUTREACH





COUNTYWIDE BROCHURE MAILOUT



FORM PREPARED BY: City of Tuscaloosa Thomas D. Bobitt, II Associate City Attorney Office of the City Attorney

STATE OF ALABAMA)
TUSCALOOSA COUNTY)
CITY OF TUSCALOOSA)

JOINT FUNDING AGREEMENT FOR A PUBLIC EDUCATION CAMPAIGN ON STORMWATER MANAGEMENT

WHEREAS, stormwater run off is a major concern to all residents of Tuscaloosa County which contributes to flooding, pollution of ground water, and the adverse effects to the watershed and lakes; and,

WHEREAS, to educate the public as to the dangers, hazards and adverse effects of stormwater run off, the City of Tuscaloosa (City), City of Northport and Tuscaloosa County (Northport and Tuscaloosa County) desire to enter into a joint agreement to fund a public education campaign regarding stormwater management by providing information to the public to reduce the amount of polluted run off from entering the watershed, lakes and groundwater; and,

WHEREAS, the City and Northport and Tuscaloosa County wish to enter into an agreement whereby the parties will share in the cost of the public education campaign subject to certain terms and conditions.

W-I-T-N-E-S-S-E-T-H:

THIS AGREEMENT is made and entered into by and between the City and Northport and Tuscaloosa County on this the 10th day of MAY, 2006, for and in consideration of the sums herein stated and other good and valuable mutual consideration moving between the parties and as more particularly set forth herein, as follows:

Section 1. Authority

The City and Northport and Tuscaloosa County are acting in regard to this agreement according to the rights, duties and authorities granted to them pursuant to the provisions as set forth in Ala. Code § 41-16-50(b) (1975).

Section 2. Scope of Campaign

The City, Northport and Tuscaloosa County shall agree to jointly fund the campaign which will consist of the design, printing and mailing of stormwater management information to approximately 77,917.00 residents in Tuscaloosa County

Section 3. Funding and Appropriation

The City, Northport and Tuscaloosa County shall to agree to jointly expend an amount not to exceed \$25,330.35 for said campaign in the percentages and amounts as follows:

\$14,387.64 Tuscaloosa County: 56.8%

City of Tuscaloosa: 32.8% \$ 8,308.35

City of Northport: 10.4% \$ 2,634.36

\$25,330.35

Section 4. Termination

Should one party to this agreement fail to obtain approval of its governing body to fund this agreement, the remaining parties shall have the right to proceed with the funding of this agreement in such amounts or percentages as may be agreed upon. In the event one of the remaining parties does not wish to proceed with the agreement, the agreement shall be declared null and void and all parties are relieved of their respective obligations and any funds paid will be refunded accordingly.

Section 5. Time

Time is of the essence for the performance of the respective obligations of each party to this agreement. If a time period is not stated, then a party shall perform as expeditiously as possible within a reasonable amount of time including obtaining such respective resolutions from each governing body as required assenting to the funding of this agreement

Section 6. Open Meetings and Public Records

As the City, Northport and Tuscaloosa County are utilizing public funds and/or other things of public value, use of City or County employees and/or equipment from the City and County pursuant to this agreement, all parties agree hereto:

- 1. To the same and like extent as is applicable to the City, Northport or Tuscaloosa County, all meetings of the governing or controlling body or any committee or subcommittee thereof shall be open to the public when any issue or matter involving or relating directly or indirectly to this agreement is discussed or considered and when there is any discussion or consideration of the use of public funds or things of value provided pursuant to this agreement.
- 2. Public Records. To the same and like extent as is applicable to the City, Northport or Tuscaloosa County pursuant to State law, all records, documents, letters, minutes, memoranda, etc., shall be open to public inspection and copying when the same pertain to any issue or matter involving or relating directly or indirectly to the performance of this agreement or the use of public funds or other things of value provided pursuant to this agreement.

Section 7. Notices

All notices provided herein or which need to be given in connection with the performance of any obligation or condition of this agreement shall be in writing and shall be delivered by personal delivery, certified mail, return receipt requested, overnight delivery to the following:

City of Tuscaloosa: Chad Christian

Tuscalogsa Department of Transportation

1000 28th Avenue

Tuscaloosa, Alabama 35401

Tuscaloosa County: Bob Tolbert

Tuscaloosa County Public Works Department

2810 35th Street

Tuscaloosa, Alabama 35401

City of Northport:

Richard Powell City Engineer

City of Northport City Hall 3500 McFarland Boulevard Northport, Alabama 35476

Section 8. Miscellaneous

Capacity: Each Party to this Agreement represents and warrants to the other as follows:

- A. That it is an individual of the age of majority or otherwise a legal entity duly organized and in good standing pursuant to all applicable laws, rules and regulations.
- B. That each has full power and capacity to enter into this Agreement, to perform and to conclude the same including the capacity, to the extent applicable, to grant, convey and/or transfer; areas, assets, facilities, properties, (both real and personal), permits, consents and authorizations and/or the full power and right to acquire and accept the same.
- C. That to the extent required, each Party has obtained the necessary approval of its governing body or board and a resolution or other binding act has been duly and properly enacted by such governing body or board authorizing this Agreement and said approval has been reduced to writing and certified or attested by the appropriate official of the Party.
- D. That each Party has duly authorized and empowered a representative to execute this Agreement on their respective behalf and the execution of this Agreement by such representative fully and completely binds the Party to the terms and conditions hereof.
- E. That absent fraud, the execution of this Agreement by a representative of the party shall constitute a certification that all such authorizations for execution exist and have been performed and the other Party shall be entitled to rely upon the same. To the extent a Party is a partnership, limited liability company or joint venture, the execution of this Agreement by any member thereof shall bind the Party and to the extent that the execution of Agreement is limited to a manager, managing partner or specific member then the person so executing this Agreement is duly authorized to act in such capacity for the Party.
- F. That each party represents and warrants to the other that there is no litigation, claim or administrative action threatened or pending or other proceedings to its knowledge against it which would have an adverse impact upon this transaction or upon either's ability to conclude the transaction or perform pursuant to the terms and conditions of this Agreement.
- G. That each party has obtained any and all required permits, approvals and/or authorizations from third parties to enable it to fully perform pursuant to this Agreement.

<u>Final Integration</u>: This Agreement, together with any amendments, constitutes the entire agreement of the parties, as a complete and final integration thereof with respect to its subject matter. In the event of a direct conflict between the provisions hereof and any prior agreement or amendment, the latter shall supersede the former. All written or oral understandings and agreements heretofore had between and among the parties are merged into this Agreement, which alone fully and completely expresses their understandings. No representation, warranty, or covenant made by any party which is not contained in this Agreement or expressly referred to herein has been relied on by any party in entering into this Agreement.

Force Majeure: Neither party to this Agreement shall hold the other party responsible for damages or delay in performance caused by acts of God, strikes, lockouts or other circumstances beyond the reasonable control of the other or the other party's employees, agents or contractors.

<u>Amendment in Writing</u>: This Agreement may not be amended, modified, altered, changed, terminated, or waived in any respect whatsoever, except by a further agreement in writing, properly executed by all of the parties.

Binding Effect: This Agreement shall bind the parties and their respective personal representatives, heirs, next of kin, legatees, distributees, successors, and assigns. If any provision in this Agreement shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

<u>Captions</u>: The captions of this Agreement are for convenience and reference only, are not a part of this Agreement, and in no way define, describe, extend, or limit the scope or intent of this Agreement.

<u>Construction</u>: This Agreement shall be construed in its entirety according to its plain meaning and shall not be construed against the party who provided or drafted it.

<u>Mandatory and Permissive</u>: "Shall", "will", and "agrees" are mandatory; "may" is permissive.

Governing Laws: The laws of the State of Alabama shall govern the validity of this Agreement, the construction of its terms, the interpretation of the rights, the duties of the parties, the enforcement of its terms, and all other matters relating to this Agreement.

<u>Prohibition on Assignment and Delegation</u>: No party to this Agreement may assign or delegate its interests or obligations hereunder without the written consent of all other parties hereto obtained in advance of any such assignment or delegation. No such assignment or delegation shall in any manner whatsoever relieve any party from its obligations and duties hereunder and such assigning or delegating party shall in all respects remain liable hereunder irrespective of such assignment or delegation.

<u>Waiver</u>: Non enforcement of any provision of this Agreement by either party shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remaining terms and conditions of the Agreement.

Ownership of Contract Documents: The Contract Documents, and copies of parts thereof, are furnished and owned by the City. All portions of the Contract Document, and copies of parts thereof, are the instruments of serve for this project. They are not to be used on other work and are to be returned to the City on request at the completion of the work. Any reuse of these materials without specific written verification or adaptation by the City will be at the risk of the user and without liability or legal expense to the City. Such user shall hold the City harmless from any and all damages, including reasonable attorneys' fees, from any and all claims arising from any such reuse. Any such verification and adoption shall entitle the City to further compensation at rates to be agreed upon by the user and the City.

<u>Fines and Penalties</u>: The Contractor shall be solely liable for any and all fines or penalties which may be levied by any governmental authority against the Owner and/or Contractor which are related to the Contractor's operations. The Owner shall deduct the amount of the levied fine or penalty from the Contract amount.

Agreement Date/Counterparts: The date of this Agreement is intended as and for a date for the convenient identification of this Agreement and is not intended to indicate that this Agreement was necessarily executed and delivered on said date. This instrument may be executed in any number of counterparts, each of which so executed shall be deemed an original, but all such counterparts shall together constitute but one and the same instrument.

<u>Use of Words and Phrases</u>: The following words and phrases, where used in this document, shall be given the following and respective interpretations: "Herein," "hereby," "hereunder," "hereof," and other equivalent words refer to this document as an entirety and not solely to the particular portion hereof in which any such word is used.

The definitions set forth in any portion of this Agreement unless the text or context indicates differently shall be deemed applicable whether the words defined are herein used in the singular or the plural. Wherever used herein any pronoun or pronouns shall be deemed to include both singular and plural and to cover all genders.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and date first set forth above.

ATTEST: Stan McCracken, City Clerk TUSCALOOSA ÇOUNTY W. Hardy McCollum, Probate Judge and County Commission Chairman ATTEST: CITY OF NORTHPORT Harvey Enetwell, Mayor ATTEST:

CITY OF TUSCALOOSA, a municipal corporation

City Clerk

SYNOPSIS TUSCALOOSA CITY COUNCIL MEETING MARCH 9, 2005

CONVENED: 6:00 p.m.

MEMBERS PRESENT

Mayor Maddox

President Pro Tem Taylor

Councilmembers Howard, Almond, Garrison, Tyner, Lundell, and Tinker

BUSINESS CONDUCTED: All votes are unanimous unless otherwise indicated.

Approved minutes of previous meeting (T/H)

Authorized execution of an amendment to the contract with KPS Group, Inc., regarding specific land use and development plans for Alberta and West End areas: increase of \$10,000.00 (

Approved items a through c on the consent agenda. (T/H)

- a. Authorized re-bid of three underhood air compressors.
- b. Authorized payment of travel expenses: \$2,000.00.
- c. Authorized an adjustment and refund of deposit to WAUGH Properties, LLC, for installation of water mains and services at Riverchase, Phase #11, Section #3: \$8,240.06.

Adopted Amendment No. 1046 to the text of the Zoning Ordinance pertaining to "Sections 24-122(a), Off-street parking requirement, Minimum Requirement" (introduced 02-02-06) (G/H). Planning Director Bill Snowden presented a report to the Council. No one else spoke in favor of or in opposition to the amendment.

President Pro Tem Taylor left the meeting and did not return.

Approved ABC license application 06-005a for Long Ziang, Inc., to hold an on premises retail beer license at Buffet City, 1747 Skyland Boulevard E. (G/Ty). Vincent Brown of the Revenue Department and Police Captain Rodney Gilliam each presented departmental reports. The applicant responded to questions from the Council.

Authorized reimbursement of ad valorem property taxes to Virgil Truman Smith under terms of the lease agreement for the Alberta police substation: \$1,545.00. (Ty/L)

Tentatively awarded a contract to DRM Utilities, LLC, for the Alberta Park public improvement project: \$275,000.00. (H/Ty)

Adopted a resolution encumbering proceeds from the Alabama Trust Fund for fiscal years 2006-2009 as the City's share of its contribution to the Tuscaloosa Housing Authority HOPE VI McKenzie Court Project. (H/L)

Authorized execution of a joint funding agreement with Tuscaloosa County and the City of Northport for a public education campaign regarding storm water management: (\$8,308.35 City's share). (G/H)

The resolution authorizing the execution of an agreement with Caldwell Mason Marketing & Design for a public education campaign on storm water management was withdrawn from the agenda and not considered.

Authorized execution of a consulting agreement with James Duncan and Associates. Inc., to revise and update the City's sign ordinance: \$4,800.00 maximum. (G/L)

Adopted resolution expressing intent of the Council regarding use of eminent domain powers as it relates to the Downtown Urban Renewal and Redevelopment Plan. (G/L). Andy Graham, owner of Central Supply Company addressed the Council with concerns about procedures for acquisition of property in the DURRP area. City Attorney Bob Ennis responded to procedural questions raised by Mr. Graham.

Adopted an ordinance amending various provisions of Chapter 2 of the Code of Tuscaloosa pertaining to budgetary and financial procedure concerning matching funds. (introduction L/H; unanimous H/G)

Introduced ordinance amending the text of the zoning ordinance pertaining to Section 24-220(e) (building height limitations in certain districts) and Section 24-220(j)h (certification standards to permit up to 5 unrelated persons to live in a single dwelling unit in certain districts)-Zoning Amendment No. 1049. (Ty/L)

Fixed April 13, 2006, as the date for a public hearing to consider adoption of Zoning Amendment 1049. (L/H)

Authorized payment of bills: TOTAL \$65.72. (H/G)

OTHER MATTERS BROUGHT BEFORE THE COUNCIL

Mayor Maddox presented the following proclamations:

• Proclamation: March 19, 2006, "Emily Baker Day"

• Proclamation: March 12 - 18, 2006, "Brain Awareness Week"

Lou Wiggins spoke in favor of the Downtown Urban Renewal and Redevelopment Plan.

Ethel Whitt of 3305 Moody Street addressed the Council concerning litter and drainage problems in her neighborhood.

POLICY IMPLEMENTATION BY MAYOR: "Subject to the exercise of mayoral veto on ordinances of a general nature or permanent operation, all applicable departments are hereby ordered to otherwise implement council policy this date enacted."

ADJOURNED: 6:54 p.m. (G/Ty)

Stan E. McCracken City Clerk

Following each item of business are the initials of the councilmember who introduced the item and the councilmember who seconded the matter: H-Howard, T-Taylor, A-Almond, G-Garrison, Ty-Tyner, L-Lundell, Ti-Tinker.

CALDWELL MASON marketing & design

Caidwell Mason 2702 Saratoga Lane

Tuscaloosa, AL 35406 Phone: 205-523-0133

Toll-Free: 1-866-215-1626

INVOICE

Invoice #STORMWATEROS

CUSTOMER:

DATE: 07/21/08

City of Tuscaloosa Department of Transportation P.O. Box 2089
Tuscaloosa, AL 35401-2089

ATTENTION: Mr. Chad Christian

DESCRIPTION

FEES

PRINTING and DESIGN Project Name: Brochures

Design: Full color using provided copy and stock/local images and logos

Quantity: 79,000 Pieces
Product: 8.5 x 11 Brochures
Paper: 100# Gloss Text
Ink: 4-Color/4-Color
Folding: Tri Fold

ADDRESS DATABASE and MAILING

Address Database: 77,917 addresses for all carrier routes in Tuscaloosa County

Price includes postage for each piece, service charge for labeling, etc, and a 1.5 cent charge per piece for use of the database.

Total printing, design and melling:

\$25,395.50 \$ 8,830

DUE UPON RECEIPT

\$ 8,830.35 M8/15/06

*NOTE: Please make checks payable to Caldwell Mason Marketing and Design

Please most payment to: Cathrell Militon Marketing & Design P.O. Box 2536 Tuscalobos, AL 36403

Contact Jon Mason

Thank you for your business!

To be completed by the Manager in charge of the named project.

| Project Name | PHASE II PUBLIC EDUCATION MAILOUT |
|-----------------------------------|-----------------------------------|
| Company/Engineer Name | Caldwell Mason |
| Pay Request # 1 | |
| Total Project Cost | (25,330.35 |
| Amount of Previous Payments | 9.00 |
| Amount of This Payment | 8,830.35 |
| Remaining Amount Left in Contract | 16,500.00 |

| Project Description | : Stormwater Phase | II Public | Education Brochure | and Mailout |
|----------------------------|--------------------|-----------|--------------------|-------------|
|----------------------------|--------------------|-----------|--------------------|-------------|

| Legal | Department | File | Number: | A06-0163 |
|-------|------------|------|---------|----------|

Special Project Account Number: 0101-7007-3100

I have checked the above amounts and to the best of my knowledge the amounts are correct. I recommend the City pay the amount on the accompanying invoice

Manager's Signature

08/15/2006

Date

INV: 1-A06.0163

08/15/2001 Date

#- 60875

City of Tuscaloosa **Clearing Account** P.O. Box 2089 Tuscaloosa, AL 35403 (205) 349-2010

203184

Check Date

Check Number 08/18/2006 0164915

10,991.88

Pay Ten Thousand Nine Hundred Ninety One DOLLARS and 88 cents ******

To The CALDWELL MASON
Order Of C/O SOUTHERN DIGITAL DESIGN
P. O. BOX 2536
TUSCALOOSA, AL 35403-0000

FILE COPY NON NEGOTIABLE

City of Tuscaloosa, Clearing Account

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| 2006-14 | 60138010 | 0529 | 1 | 870.20 | | 870.20 1,291.33 |
| 2006-16 A06-0163 | 60138010 10107007 | 0529 3100 | 60875 | 1,291.33 8,830.35 | | 8,830.35 |
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| 203184 | | CALDW | YELL MASON | 0164915 | 08/18/2006 | 10,991.88 |

CALDWELLMASON marketing & design

Caldwell Mason 2702 Saratoga Lane Tuscaloosa, AL 35406 Phone: 205-523-0133 Toll-Free: 1-868-215-1626

。2018年代 1918年 191

CUSTOMER:

City of Tuscaloosa Department of Transportation P.O. Box 2089 Tuscalcosa, AL 35401-2089

ATTENTION: Mr. Chad Christian DATE: 11/29/08

DESCRIPTION

FEE8

DEC 0 5 2008

ADDRESS DATABASE and MAILING

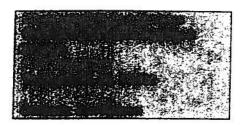
Address Database: 77,917 addresses for all carrier routes in Tuscaloosa County Price includes postage for each piece, service charge for labeling, etc, and a 1.5 cent charge per piece for use of the database.

Total mailing fees:

\$16,600,00

DUE UPON RECEIPT

*NOTE: Please make checks payable to Caldwell Mason Marketing and Design



Thank you for your business!

To be completed by the Manager in charge of the named project.

| To be completed by a | ic manager in | DEC 0 5 2008 |
|----------------------|---------------|-----------------------------------|
| Project Name | | PHASE II PUBLIC EDUCATION MAILOUT |
| Company/Engineer N | ame | Caldwell Mason |
| | FINAL | |
| Total Project Cost | | 25,330.35 |
| Amount of Previous P | avments | 8,830.35 |
| Amount of This Payme | | 16,500.00 |
| Remaining Amount Le | | 0.00 |

Project Description: Stormwater Phase II Public Education Brochure and Mailout

Z-A06-0163 F

Legal Department File Number: A06-0163

PO# 60875

Special Project Account Number: 0101-7007-3100

I have checked the above amounts and to the best of my knowledge the amounts are correct. I recommend the City pay the amount on the accompanying invoice.

Manager's Signature

12/04/2006

Date

Panatment Head's Signature

Date

19/2/ar

City of Tuscaloosa Clearing Account P.O. Box 2089 Tuscaloosa, AL 35403 (205) 349-2010

Vendor Number 203184 Check Date

Check Number 12/08/2006 0167608

16,500.00

Pay Sixteen Thousand Five Hundred DOLLARS and 00 cents ******

To The CALDWELL MASON
Order Of C/O SOUTHERN DIGITAL DESIGN
P. O. BOX 2536
TUSCALOOSA, AL 35403-0000

FILE COPY NON NEGOTIABLE

City of Tuscaloosa, Clearing Account

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| 203184 | CALDV | VELL MASON | 0167608 | 12/08/2006 | 16,500.00 |

Thank you for ordering from PrintingForLess.com!

Your Order Number 180907081 has been completed.

This is the final invoice for your order, and includes any in-process changes that may have been made through 12/05/2006 6:55:41 AM. Please save this email, as it is the only invoice you will receive.

Order Number: 180907081 Project Name: Brochures Quote Number: 125076 Quote Price: 6,573.05 Quote Quantity: 79000

Description: 79000 8.5 x 11 brochures, 4-Color/4-Color,

No Inside Ink, No Coating, 100# Gloss Text, No Inside Paper, Tri Fold,

No Pages

ORDERED BY: Jon Mason Caldwell Mason Marketing

BILLED TO: 2702 Saratoga Lane

Tuscaloosa AL 35406 USA

SUMMARY OF CHARGES

| ======= | ======================================= | ======= | |
|---------------------|---|------------|--|
| 10/12/2006 | Original Printing Subtotal | \$6,919.00 | Qty: 79000 |
| 10/17/2006 | Printing Fee Decrease | -\$345.95 | High Volume Discount |
| 10/18/2006 | High Volume Discount | -\$424.95 | High Volume Discount |
| 10/18/2006 quote | Printing Fee Increase | \$790.00 | Adding charge for folding that wasn't in the |
| | | | |

| ************************************** | |
|--|------------|
| TOTAL PRICE | \$6,938.10 |
| | |

SUMMARY OF DISCOUNTS AND PAYMENTS

10/18/2006 Coupon Discount misquote and funding process.

-\$365.05 covering additional cost for folding due to

11/02/2006 Payment Check# 5140

-\$6,573.05 Via check #5140

TOTAL DISCOUNTS AND PAYMENTS -\$6,938.10

\$0.00

SHIPPING INFORMATION:

Shipment 1
David Crawford
Maxx Mailing
1010 26th Ave.
Suite A
North Port AL 35476 USA
205-345-6833
Shipped Via: ABF Trucking
Date Shipped: 12/04/2006
Quantity: 79000

0• * 0• * 10,238. + 41,922 + 8,869. + 7,161. + 773• + 8,764. + 006

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| Feedback | Personal Profile | Logout |

Restricted Information

| Transactions > Postage Standard Mail - Permit I | e Statement Processing Comprint Receipt | | Today's Date: 02/09/20 |
|---|---|---|---|
| 3602 | STATEMENT OF MAIL | OSTAL SERVICE LING/3807 WEIGHING AND DISPATCH CERTIFICATE | TRANS # 200704007493136M1 |
| Postage Statement: 36125560 | Mailer's Job#: | | |
| MMS PO BOX 1457 TUSCALOOSA A | L 35403-1457 | | FINANCE NUMBER: 018250 |
| STATION OR UNIT: | TUSCALOOSA (0733 | SA) | DEDMIT NO. 200 |
| DATE OF MAILING 02/08/2007 | CLASS Standard Mail | PROC CAT Letter | PERMIT NO: 200 TYPE - PI |
| WEIGHT OF SINGLE PIECE (LBS) 0.0197 | TOTAL PIECES 10238 | TOTAL POUNDS 202.2008 | Customer Reference ID |
| AILED FOR: | | | CAPS Acct No: |
| ERMIT NO. 83943 AME: TORMWATER OMMITTEE CONTAINERS | | | |
| 21 | | AMOUNT FROM TRUST: \$1,453 | 80 |
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| SIGNATURE OF WEIGHER | GEH DATA PROCESSED BY | RECEIVED FOR PR | OCESSING DV |
| MMENTS: | 2.7 | | BEGINNING BALANCE: \$1,565.26 ENDING BALANCE: \$111.46 |
| | . Copyright © 19 | Feedback Logout 99-2007 USPS, All Rights Reserved | |

1000 28th Are Christian.

35401

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| Postage Statement - | Standard I | Mail | | Fosi Oifine: Hoi | ie Mail Arrival Date & Tir: |
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| The mailer's signature certifies acceptance agent signs this form, the agent certifies that agrees to pay any deficiencies. In addition, a The mailer hereby certifies that all information comply with all postal standards and that the law or postal regulation. I understand that any he subject to criminal and/or civil penalting. | agents may be liable for on furnished on this for o mailing qualifies for the | or any deficiencies resulting is accurate, truthful, and he rates and fees claimed also or mislearling information prisonment. | righter, and that the marging members, and that the mailing r.; and that the mailing r.; finn on this form or who | aller is pound by th their responsibility, all and the support loes not contain an n omits information | e grafification and knowledge, or control ing documentation by matter probibilited by technical on this form. |
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andard Mail — Letters and Flats

Part C ECR Rates — Letters and Flats - 3.3 oz. (0.2063 lb.) or Less

Check box at left if rates are populated in this section

| E | intry C1 | Rate Category | Rate | | Number of Pieces | | | | |
|-------------|---|---------------------|--------|-----|--------------------|----------|-----------|-------|--------------|
| | | Saturation Letter | .160 | × | redition of Pieces | | | Total | |
| | C2 | High Density Letter | .173 | X | | = | - | | |
| | C3 C4 | Basic Letter | .204 | X | | | <u> </u> | | |
| NONE | | Basic Auto Letter | .180 | × | | = | \$ | | • |
| Ş | C5 | Saturation Flat | .169 | X | | = | <u> </u> | | |
| _ | C6 C7 | High Density Fiat | .178 | X | | = | <u>\$</u> | | |
| ···•···· | C8 | Basic Flat | .204 | X | | = | \$ | | |
| | | Saturation Letter | .138 | Χ | | <u>.</u> | | | |
| | C10 | High Density Letter | .151 | × | | = | \$ | | |
| UBMC | | Basic Letter | .182 | X | | = | \$ | | |
| ž | | Basic Auto Letter | .158 | X | | = | \$ | ^ | · . |
| _ | | Saturation Fiat- | .147 | × | | = | \$ | | • |
| | | High Density Flat | .156 | × | | = | \$ | | |
| • • • • • • | ************ | Basic Flat | .182 | × | | = | \$ | | |
| | 015 3 | Saturation Letter | .133 | X | . // | | \$ | | |
| | C16 F | ligh Density Letter | .146 | × | | = | \$ | | |
| ; | _ | lasic Letter | .177 | X | | = | \$ | | |
| | | asic Auto Letter | .153 | × | | = | \$ | | |
| | | aturation Flat | .142 | × | 101238 | = | 3 | - E | |
| | • • • | igh Density Flat | .151 | X | 1 | _ = | | | 1453,796 |
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Part D

Check box at left if rates are populated in this section .

| | | etters and Flats More | e Than 3.: | 3 oz. (0.2063 | lb) Not Sub | iect to Surc | haroe | | | | ONECA DO | x at len it rate | es are populated in this secti |
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| | D. | | .036 | X | rieces | Subtotal | .64: | ale | | | Subtotal | TOTAL | For affixed postage |
| | D2 D3 | 5 | | <u>. </u> | | | .640 | | | | <u>:</u> | | mailings as described |
| NONE | D4 | | .071 | X | | | .643 | | | - | · <u>{</u> | | In DMM 243, 343 and 443, compute and |
| 2 | D5 | | .121 | × . | | | .746 | | | - | | | enter the rate for |
| | D6 | Basic Automation 3/5 Presort | | X | | | .746 | | | _ | | | each pieca in the |
| | D7 | | .150 | x | | | .746 | | 8 | - | <u> </u> | | amount affixed column |
| ••••• | D8 | Basic Presort | .209 | X | - | | .748 | x | | _ | \$ | | multiply by number of |
| | .D0 | Saturation ECR | .036 _ | X | 10 | | .538 | <u>x</u> | | | | | pieces and complete the total column. |
| | D10 | High Density ECR | | X _ | | | .538 | â | | - | <u> </u> | | ore letar column. |
| DBMC | D11 | | .071 | `x | | | .538 | x | | - | <u> </u> | | |
| <u></u> | D12 | 3/5 Automation | .121 | × - | | | .641 | â | | | | | |
| _ | D13 | Basic Automation | .162 | x | | | .641 | x | | <u>.</u> | | | |
| | • | 3/5 Presort | .150 _ | x _ | | | .641 | x. | | Ţ- | <u>:</u> | | |
| ········ | D14 | Basic Presort | .209 | x | | | .641 | x. | 30 | | <u> </u> | | |
| | D15 | Saturation ECR | .036 | X | = | | *********** | ********* | | · = | | | |
| | D16 | High Density ECR | .045 | x _ | | | .511 | 1 | 5 | <u>-</u> | | | |
| بيا | D17 | Basic ECR | .071 | _x _ | | | .511 | X - | P. | • | \$ | | |
| USCF | D18 | 3/5 Automation | .121 | x _ | | | .511 | X _ | | • | | | |
| ⊐ | D19 | | .162 | — _x – | | | .614 | :X _ | | | | 90 | |
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| m 3 | 602-R | 3, January 2006 (Pa | age 3 of 6 |) PS | N 7530-07-0 | | | | | | <u></u> | | |
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| 35404 TUSCALOOSA | | 6-Dec 6-Dec | 342 | |
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| 35406 TUSCALOOSA | C051 | 6 Dec | 357 | |
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| 35473 NORTHPORT | C007~ | G-Dec | 694 | |
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| Feedback | Personal Profile | Logout |

Restricted Information

| Standard Mail - Permit | mprint Receipt | | Today's Date: 12/26/20 | | |
|---|--------------------------|--|--------------------------|--|--|
| 3602 | STATEMENT OF M. | POSTAL SERVICE AILING/3607 WEIGHING AND DISPATCH CERTIFICATE | TRANS # 200636010105270M | | |
| Postage Statement 34363036 | Mailer's Job#: | | | | |
| MMS PO BOX 1457 TUSCALOOSA A | L 35403-1457 | | FINANCE NUMBER: 018250 | | |
| STATION OR UNIT: | TUSCALOOSA (07: | 33A) | | | |
| DATE OF MAILING 12/20/2006 | CLASS | PROC CAT | PERMIT NO: 200 | | |
| WEIGHT OF SINGLE | Standard Mail | Letter | TYPE PI | | |
| PIECE (LBS) 0.0198 | TOTAL PIECES 41922 | TOTAL POUNDS 829.9000 | Customer Reference ID | | |
| MAILED FOR: | | | CAPS Acct No: | | |
| ERMIT NO. 83943 AME: TORMWATER OMMITTEE | | | | | |
| CONTAINERS 88 | | AMOUNT | | | |
| RIFICATION SUMMARY verification errors. | | AMOUNT FROM TRUST: \$5,570. | 99 | | |
| | | | | | |
| SIGNATURE OF WEIGHER | GEH DATA PROCESSED BY | PEOPLE | | | |
| MMENTS: | | RECEIVED FOR PROCESSING BY BEGINNING BALANCE: \$6,152.91 | | | |

| Feedback | Logout |
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Terms of Use

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| The mailer's signature certifies acceptance of flability for and agreement to pay any revenue deficiencies agent signs this form, the agent certifies that he or she is authorized to sign on behalf of the mailer, and the agrees to pay any deficiencies, in addition, agents may be table for any deficiencies resulting from matter. | Assessed on this mailing, subject to appeal if an |
| The mailer berefit Cortilles that all information furnished and the | S WITHIN Melf responsibility, knowledge, or control |
| Comply will all postal standards and that the mallers mailers to the | er de mai silo lle suppolito documentation |
| law or postal regulation. I understand that anyone who fundates false or misleading biformation on this for may be subject to culminal and/or civil ponalties, including fines and implicament. | on or who omits information requested on this topo |
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| Crivacy Notice: For Information | angarding our Privacy Policy visit www.uapa.com |
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| 3602-R1 January 2006. (Page 1 of 6). PSN 7530-07-000-6209. This form and mailing standards | available on Postal Explorer at pourspanning |
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Feedback | Personal Profile | Logout |

Restricted Information

Reports > Transaction History Reports > Financial Transaction History > Mailings Summary > Receipt

Today's Date: 01/17/2007

| 3602 | STATEMENT OF MA | POSTAL SERVICE ALLING/3607 WEIGHING AND DISPATCH CERTIFICATE | TRANS # 200701707384301M1 | | |
|--|------------------------|--|---|--|--|
| Postage Statemer 35139777 | Mailer's Job#: | | 1 | | |
| MMS PO BOX 1457 TUSCALOOSA | AL 35403-1457 | | FINANCE NUMBER: 018250 | | |
| STATION OR UNIT: | TUSCALOOSA (07: | 33A) | PERMIT NO: 200 | | |
| DATE OF MAILING 01/12/2007 | CLASS Standard Mail | PROC CAT Letter | TYPE PI | | |
| WEIGHT OF SINGLE PIECE (LBS) 0.0198 | TOTAL PIECES 8869 | TOTAL POUNDS 175.1000 | Customer Reference ID | | |
| MAILED FOR: | | + | CAPS Acct No: | | |
| PERMIT NO. 83943 NAME: STORMWATER COMMITTEE | | | | | |
| CONTÂINÈRS 14 | | AMOUNT FROM TRUST: \$1,259 | 40 | | |
| ERIFICATION SUMMAR | RY: | 7 | .40 | | |
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| SIGNATURE OF WEIGHER | GEH DATA PROCESSED BY | | | | |
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| ////////////////////////////////////// | | | BEGINNING BALANCE: \$4,358.54 ENDING BALANCE: \$3,099.14 | | |

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Terms of Use

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| • | age Statement - Standard Mail | Post Office, Note Mail Aufval Itale & Time |
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| / · | Permit Holder's Name and Address and I alephone I Address of Malling Agent | Organization for Which Mailing is Frequent |
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| | Dun & Bradstreet No. | |
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| | agent signs this form, the agent certifies that he of she is authorized to sign to be a sign to | eatters within their responsibility, knowledge, or coultn't |
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| Feedback | Personal Profile | Logout |

Restricted Information

| Standard Mail - Permit I | Statement Processing Mprint Receipt | • | Today's Date: 01/23/2 |
|--|-------------------------------------|---|---|
| 3602 | STATEMENT OF MA | POSTAL SERVICE ILING/3607 WEIGHING AND DISPATCH CERTIFICATE | TRANS # 200702307463349M |
| Postage Statement: 35371629 | Mailer's Job#: | | |
| MMS PO BOX 1457 TUSCALOOSA A | L 35403-1457 | | FINANCE NUMBER: 018250 |
| STATION OR UNIT: | TUSCALOOSA (073 | 33A) | PERMIT NO: 200 |
| DATE OF MAILING 01/22/2007 | CLASS Standard Mail | PROC CAT Letter | TYPE P |
| WEIGHT OF SINGLE PIECE (LBS) 0.0199 | TOTAL PIECES 7161 | TOTAL POUNDS 143.3000 | Customer Reference ID |
| MAILED FOR: | | | CAPS Acct No: |
| PERMIT NO. 83943 IAME: STORMWATER COMMITTEE | | | |
| CONTAINERS 11 | | | |
| ERIFÍCATION SUMMARY o verification errors. | · | AMOUNT FROM TRUST: \$1,016 | .86 |
| | | | |
| SIGNATURE OF WEIGHER | GEH DATA PROCESSED BY | RECEIVED FOR PR | OCESSING BY |
| MMENTS: | | | BEGINNING BALANCE: \$1,601.90 ENDING BALANCE: \$585.04 |

| Feedback | Logout | Copyright © 1999-2007 USPS. All Rights Reserved. Terms of Use

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| Postal Service Stateme | | ındard N | Mail | | | | | Arrival Date & Ti | me Sal |
| mmit Holder's Name and Address Email Address, if Any | and Tale | 3-6833 | Neme and Address of Mailing Agent | Teléphone | | Marita and Ad Cinantiation | bi Which I | Viálling la Pr épared | |
| MAXY MAIL | 'wy Scri | ice | (II other then permit holder) | | 300 1000 200 | Storm P.O. Northy | wate Box and, | 101 Cymri 569 141. 554 | tes 76 |
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| Type of Parent Imprint Presence Stamps Metered | Automotion F | lets (DMM 301.3) | Weight of a Single Piece O. | pour | nds | Total Places | 18 | the the | |
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| For Automation Rate Pieces, Enter E Matching and Coding (DMM 708.3. | ate of Address | For Enhanced Ca | rrier Route Rate Pieces, Ent and Coding (DMM 708.3.3 | er Date of | For Enhance | ed Carrier Rout | | eces, Enter Date of 6/345/445,8.10.1) | |
| nits Completed (Select all that app. | ly) | | S dc □0 □ • □1 | F 🗆 O 🗆 H | | | M | □ 9· | |
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| Philipping Blo | End | Printe | d Name of Master or Agent S | igning Form | المستحديد والأ | | Telepho | 345-68. | 33 |
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PAH C ECR Refés — Lettère and Flate - 3.3 oz. (0.2063 lb.) or Lèss

Check box at left if rales are populated in this section.

| 7 | Entry | Palace 4 | | _ | | | | - 1/160 |
|----------|----------|---|--------------|-----|---|-------------|---------|------------|
| 1 | C1 C2 | Rate Calegory Saturation Letter High Density Letter | Rate .160 | × | Number of Places | | Total | |
| | C3 | Basic Letter | .173 | X | | | \$ | |
| u | , C4 | Basic Auto Letter | .204 | X | | | \$ | _ |
| NON | C5 | Saturation Flat | .180 | X | | | \$ | - |
| ž | Cf | High Density Flat | .169 | X | | = . | 1 | - |
| 944 | C7 | Basic Fiel | .178 | X | | ₹ . | 1 | • |
| 95. | C8 | Saturation Letter | 204 | Х | *************************************** | = | \$ | • |
| | C9 | High Density Letter | .138 | Χ | ···· | 200 | | • |
| ပ | C10 | Basic Letter | . 151 | X | | = 1 | | • |
| DBMC | C11 | Basic Auto Letter | .182 | X | | ₩ _1 | | |
| ద | C12 | Saluration Flat | .158 | X | | <u>.</u> | | |
| | C13 | High Density Fiat | .147 | X | 9 | <u> </u> | | |
| | C14 | Basic Fiat | .156 | X | | 3 | | |
| | | Saturation Letter | .182 | X | | 3 | | |
| | C16 1 | High Density Letter | .133 | X | | | | |
| LL. | C17 E | Basic Letter | .148 | X | | | | |
| DSCF | | Basic Auto Letter | .177 | X | | <u>, i</u> | | |
| ă | C19 S | aturation Flat | 153 | X | | | | |
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| 370400-4 | | aturation Letter | .177 | X | | | | |
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| 000 | | sic Auto Letter | .171 | X - | | • • | | |
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| | C28 Bas | ic Flat | .145 | x ~ | | * \$ | | |
| | Ja: | rio riot | .171 | x - | | - 5 | | 1016. |

Total

Letters and Flats More Than 3.3 oz. (0.2063 lb) Not Subject to Surcharge

Chack box at left if rates are populated in this section .

| | | | | 3 10/ 14UL 201 | oject to Surcharge | | r - Poidied III (III)S section |
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| ritry | Rale Calegory | Plece Rate | Or Amt. x | No. of = | Pleces + Lb. x Poun | nds = Pound = TOTAL | |
| D1 | SOLDI BIOLI ECH | .036 | x | 1 16083 | Subtotal Rate | ods Pound TOTAL Subloisi | |
| D2 | High Density ECR | .045 | | | .643 X | COCIOISI | For affixed postage |
| D3 | Basic ECR | .071 | | | 643 X | - <u> </u> | Mailings as described |
| D4 | 3/5 Automation | .121 | ^ | | 643 X | <u></u> | In DMM 243, 343 and 443, compute and |
| D5 | Basic Automation | .162 | ^ | | 746 X | | enter the rate for |
| D6 | 3/5 Presort | .150 ~ | | | 746 X | - <u> </u> | each piece in the |
| D7 | Basic Presort | .209 | | | 746 X | - <u>:</u> | amount affixed column |
| D8 | Saturation ECR | .036 | | | 746 X | - <u>- </u> | mulliply by number of |
| D9 | High Density ECR | .045 | x - | | 538 X | | pieces and complete the lotal column. |
| D10 | Basic ECR | .071 | | | 538 X | | Total Column. |
| D11 | 3/5 Automation | .121 - | × - | | 538 X | | |
| D12 | Street A. A | .162 - | | | .641 X | | |
| D13 | 2/8 Barre 4 | .150 | | . | .641 X | | |
| D14 | Basis Burns | 209 — | (;́ | . | .641 X | | |
| D15 | Calmatt - For | ****** | X | | .641 X | | |
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| D20 3 | IR Process | 50 | — <u> </u> | | 614 X | | |
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| 123 H | sturation ECR .03 | | X | 27 | | | Part D Total |
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| '2-R3, | January 2008 (Page | e 3 of 6) | DOL | | .477 X | | - 1 |
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| 35404 TUSCALOOSA | | C001 | 6.000 | 0.45 | |
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| 35404 TUSCALOOSA | . 1 | C018 | 6-Dec | 692 | |
| 35404 TUSCALOOSA | 1 | • | 6-Dec | 948 | |
| 35404 TUSCALOOSA | ` | C019 | 6-Dec | 877 | |
| 35404 TUSCALOOSA | 1 | C020 | 6-Dec | 530 | |
| 35404 TUSCALOOSA | 1 | C022 | 6-Dec | 598 | |
| 35404 TUSCALOOSA | 1 | C028 | 6-Dec | 753 | |
| 35404 TUSCALOOSA | } | C031 | 6-Dec | 743 | |
| 35404 TUSCALOOSA | | C035 | 6-Dec | 871 | |
| 35404 TUSCALOOSA | | C041 | 6-Dec | 130 | 7161 |
| 35405 TUSCALOOSA | 7 | C054 | 6-Dec | 677 | // |
| 35405 TUSCALOOSA | 1 | C017 | 6-Dec | 551 | |
| 35405 TUSCALOOSA | | C024 | 6-Dec | 754 | |
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| 35405 TUSCALOOSA |] | C026 | 6-Dec | 615 | |
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| 35405 TUSCALOOSA | 121 | C047/, 2 | 6-Dec | 420 | |
| 35405 TUSCALOOSA | 111 | C048 | 6-Dec | 1596 | |
| 35405 TUSCALOOSA | • | C055/ | 6-Dec | 624 | |
| 35405 TUSCALOOSA | | C057 // | | 417 | |
| 35406 TUSCALOOSA | | C040 | 6-Dec | 246 | |
| 35406 TUSCALOOSA | | C044 | 6-Dec | 331 | |
| 35406 TUSCALOOSA | | C044 C | 6-Dec | 343 | |
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| 35406 TUSCALOOSA | | C046 / | 6-Dec | 748 | |
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| 35406 TUSCALOOSA | | C056 | 6-Dec | 235 | |
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| 35473 NORTHPORT | | C058 | (6-Dec | 120 | |
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| 35473 NORTHPORT | | C010 - | 6-Dec | 509 | |
| 35476 NORTHPORT | | C012 | 6-Dec | 654 | |
| 35476 NORTHPORT | | C001 - | 6-Dec | 690 | |
| 35476 NORTHPORT | | C002 | 6-Dec | 687 | |
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| Feedback | Personal Profile | Logout |

Restocted Information

| Transactions > Postage Standard Mail - Permit In | Statement Processing • | ' \$ | Today's Date: 02/16/20 |
|--|--------------------------|---|---|
| 3602 | STATEMENT OF MA | POSTAL SERVICE ILING/3607 WEIGHING AND DISPATCH CERTIFICATE | TRANS # 200704707450504M |
| Postage Statement: 36394750 | Mailer's Job# | | |
| MMS PO BOX 1457 TUSCALOOSA AL | 35403-1457 | | FINANCE NUMBER: 018250 |
| STATION OR UNIT: | TUSCALOOSA (073 | 3A) | PERMIT NO: 200 |
| DATE OF MAILING 02/15/2007 | CLASS Standard Mail | PROC CAT Letter | TYPE Pl |
| WEIGHT OF SINGLE PIECE (LBS) 0.0197 | TOTAL PIECES 773 | TOTAL POUNDS 15.3069 | Customer Reference ID |
| MAILED FOR: | | | CAPS Acct No: |
| PERMIT NO. 83943 NAME: STORMWATER COMMITTEE | | | |
| CONTAINERS 2 | | AMOUNT FROM THE COOK | |
| ERIFICATION SUMMARY: | | AMOUNT FROM TRUST: \$98.1 | 17 |
| v. | | | |
| SIGNATURE OF WEIGHER | GEH DATA PROCESSED BY | RECEIVED FOR PR | ROCESSING BY |
| OMMENTS: | | | BEGINNING BALANCE: \$522 66 ENDING BALANCE: \$424.49 |

| Feedback | Logout | Copyright © 1999-2007 USPS, All Rights Reserved, Terms of Use

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Age Statement - Standard Mail

Post Office: Note Mail Arrival Date & Time

| | [5 | | | V. | | |
|---------------|--|---|---|--|--|---|
| | | 43-6833 | Name and Address of Mailing Agent (If other than pomit bolder) | Telephone | Organization | ldress of Individual or for Which Mailing Is Prepared pennil holder) |
| Valler | Matt Mailin | 9 | | | 111 | ndater |
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| Mailing | I Permit Imprisi Postage Permit Imprisi Post | Tals (DAM 301 1) | Mailing Date J-JS-07 Weight of a Single Piece 0 1988 Periodicale Media Mail Paccel Post | Priunds Il Sacked, Based ou | Total Pieces Total Weight | 2-/went ton 2-776 Che fire Delacted Address Labor |
| | Lix Automation Rate Pieces, Enter Date of Address Matching and Coding (DMM 708.3.3) | Cor Enhanced Car | rier Brute Bate Pieces, En and Coding (DMM 708.3.2 | lei Dale of For F Caule | uhanced Canier Ron | TOMM 245/345/445 5 10 1) |
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| | Postmaster: Report Total Postage in AIC 130 (Permit Imprint Only) | | Total Adjusted | | | |
| OCI UIICAUOII | The mailer's signature certifies acceptance of lia agent signs this form, the agent certifies that he agrees to pay any deficiencies. In addition, ager The mailer hereby certifies that all information for comply with all postal standards and that the mailaw or postal regulation. I understand that anyon may he subject to criminal and/or civil penalties, | nts may be liable umished on this for its formula distribution of the state of the | for any deficiencies resulting any deficiencies resulting in accurate, truthful, the rates and fees claim false or misleading information imprisonment. | the mailer, and that tall althing from matters w and complete; that t ed; and that the mai mation on this form o | he mailer is bound ithin their responsi he mail and the su ling does not conli or who omits inforr | I by the certification and ibility, knowledge, or control apporting documentation |
| 5 | Signalure of Mailer of Agent | • Printed | Name of Mailer or Agent S | | | Telephone |
| 4 | Veight of a Sunga Piece | ma 1 | IHXX / | 14/1/11 | 6 | 395-6837 |
| | pounds | Are postage figui mailers entries? | res al left àdjusted from if "Yes" stale reason. | Yes | No | · |
| Ţ | otal Pieces Total Weight | 1 | | | | |
| T | olal Postage | 1 | | | Roc | and Slamp (Required) |
| E | Presort Verification Performed as Scheduled | | | | | |
| (2 (3 | CERTIFY that this mailing has been inspected inceming: (1) eligibility for postage rates claimed; proper preparation (and present where required); proper completion of postage statement; and payment of annual fee (if required). | Date Mailer Notific | ed Contact | By (Initials | , | |
| Ve | rifying Employee's Signature | Print Verifying Emp | ployee's Name | Time | AM | |
| | | | | | PM | |
| orn | n 3602-R1 January 2006 (Page 1 of 6) PSN | 7530-07-000-620 | 9 This form and | mailing slandards av | vailable on Postal | Explorer al pe usps com |



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ENDING BALANCE: \$166.83

Restricted Information

| Transactions > Postage : Standard Mail - Permit Im | Statement Processing | 9 0 | Today's Date: 02/16/20 |
|--|--------------------------|--|--------------------------------------|
| 3602 | STATEMENT OF MAI | POSTAL SERVICE LING/3607 WEIGHING AND DISPATCH CERTIFICATE | TRANS # 200704711234442M1 |
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STORMWATER TREATMENT RESEARCH STUDY



Field Verification Report for the Up-FloTM Filter

by

Robert Pitt and Uday Khambhammettu

Department of Civil, Construction, and Environmental Engineering The University of Alabama Tuscaloosa, AL 35487

April 2006

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1.0 INTRODUCTION

1.1 History and Background

Most stormwater requires treatment to prevent harm either to surface or ground waters. Stormwater from "critical source areas" such as paved parking and storage areas has been observed to be contaminated with higher-than-average concentrations of many critical pollutants (Bannerman, et al. 1993; Pitt, et al. 1995; Claytor and Schueler 1996). One approach is to treat the runoff from critical source areas before it mixes with the runoff from less polluted areas. The general features of a "critical source area" appear to be large paved areas, heavy vehicular traffic, and outdoor use or storage of problem pollutants.

Numerous proprietary devices have been manufactured to treat stormwater runoff. Many of these devices have been designed to treat one or more of the common stormwater pollutants – solids, metals, oils and grease, nutrients, and bacteria. Few have been designed to treat a broad range of pollutants with a single device. In addition, several of these devices provide inconsistent performance from one installation to another. Treatment of runoff from critical source areas requires a device with robust removal capabilities and the capability of operating in a situation having grossly contaminated waters containing large amounts of debris and floatable materials. There are a wide range of stormwater control practices, but all are not suitable in every situation. It is important to understand which controls are suitable for the site conditions and can also achieve the required treatment objectives.

Upflow filtration for stormwater treatment applications was examined during Phase I research of a Small Business Innovative Research (SBIR) project. Upflow filtration was examined mainly because downflow filters quickly clog, reducing their treatment flow rate and overall treatment capacity.

This research was conducted as part of a Phase II US EPA Small Business Innovative Research (SBIR) project. The scope of this Phase II research included the design, fabrication and field installation and field testing of a prototype upflow filtration device, the Up-FloTM Filter, designed to treat stormwater runoff from critical source areas.

1.2 Objectives

The objective of this monitoring program was to determine the hydraulic capacity and the pollutant removal capabilities of a prototype upflow filtration device, the Up-FloTM Filter, in a field installation under both controlled and actual runoff conditions.

2.0 TECHNOLOGY DESCRIPTION

2.1 Description of the Treatment System

The Up-FloTM Filter is a compact stormwater quality treatment system that integrates multiple components of a treatment train into a single, small-footprint device. Pollutant removal mechanisms in the Up-FloTM Filter include several processes:

- Buoyant trash is captured by flotation in the chamber and retained by the floatables baffle during highflow bypassing
- Coarse solids and debris are removed by sedimentation and settle into the sump
- Capture of intermediate solids by sedimentation in sump resulting from controlled discharge rates
- Neutrally buoyant materials are screened out by the angled screens
- Fine solids are captured in the filtration media
- Dissolved pollutants are removed by sorption and ion-exchange in the filtration media

The basic removal of solids is dependent on physical sedimentation in the sump, and by filtration in the filter media. The following discusses these primary removal processes. Figure 2-1 is a schematic showing the main components of the Up-FloTM Filter prototype used in this field monitoring program and the treatment flow path through the unit.

2.1.2 Sediment Capture in Catchbasin Sump

As noted above, coarse grit and debris will be removed from stormwater runoff by sedimentation. These particles settle out of influent water into the sump. Sediment particles in the <30 micron range are generally deemed unsettleable, meaning the time required for these particles to settle out is far longer than the typical residence time in catch basins even at very low flows.

Phase I SBIR research by Pitt showed that the incorporation of a sump increases the efficacy of an upflow filter. Coarse grit and debris settle out in the sump before influent waters enter the filtration media. The result is less frequent clogging and a longer life of the filtration media compared to an upflow filtration device that incorporates no pre-settling sump.

2.1.3 Filtration and Ion Exchange in Filter Media

Filtration is defined as an interaction between a suspension and a filter material (Ives 1990). Pollutants are removed from the solution when they become attached to the media or to previously captured particles. In general, the three key properties of a filter are surface area, depth and profile. Filtration media that is polar (has a high cation-exchange capacity) typically has a high specific adsorption capacity for pollutants of concern and will remove those pollutants of concern from stormwater runoff by the principles of ion-exchange. Whereas the filtering of solids is dependent on physical properties such as grain size and pore size, removal of pollutants by ion-exchange is highly dependent on the length of contact time between the pollutant and the filtration media.

2.2 Up-FloTM Filter Prototype

A schematic of the Up-FloTM Filter prototype used in this monitoring program is shown in Figure 2-1. The prototype Up-FloTM Filter was constructed to fit in the modified inlet at the City Hall parking lot in Tuscaloosa, AL. Figure 2-2 through 2-8 are photographs of the prototype Up-FloTM Filter, and the media being installed for the field tests.

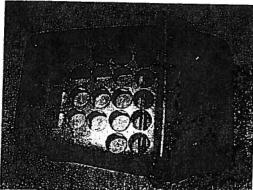


Figure 2-2: Bottom of Up-Flo™ Filter prototype shown without angled screen - at left, the large holes serve as an inlet to the filtration chamber and at right, a finer screen sits over weep hole tubes for blockage protection.

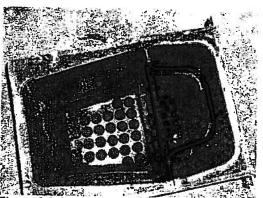


Figure 2-3: Looking down Into Up-Flo™ Filter, with main filtration chamber to the left, the dividing wall with weir, the secondary filter chamber and overflow chamber.

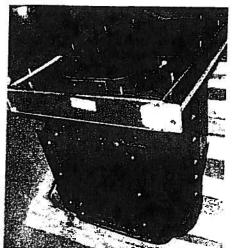


Figure 2-4: Front view of Up-Flo™ chamber.

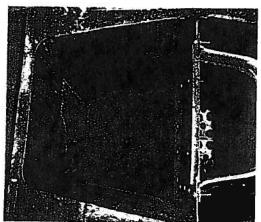


Figure 2-5: Bottom layer of flow distributing media placed in filtration chamber.

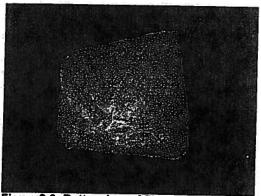


Figure 2-6: Bottom bag of filter balls placed in filtration chamber to fill excess space.

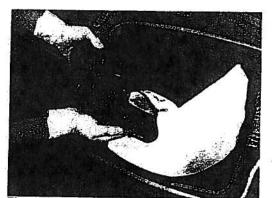


Figure 2-7: Filter bag being filled with CPZ Mix™

3.0 TEST SITE DESCRIPTION

3.1 Location and Land Use

The test site was a catch basin located in the parking lot of the Tuscaloosa City Hall, Alabama. The catch basin receives flows from the 0.9 acre drainage area within the red border shown in Figure 3-1. The grated inlet to the catch basin is denoted by the blue dot. The site is comprised of parking, roofs, and adjacent storage areas (Figure 3-2 to 3-6).

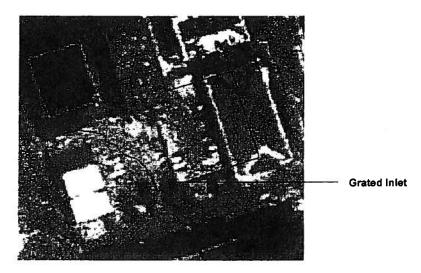


Figure 3-1: Drainage area for the test catch basin shown on an enlarged aerial photo (blue dot denotes inlet location).

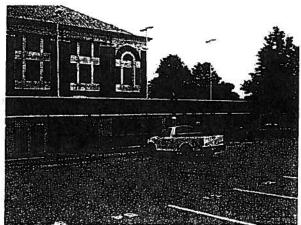


Figure 3-2: Elevated parking and city hall roof with roof drains to test area.

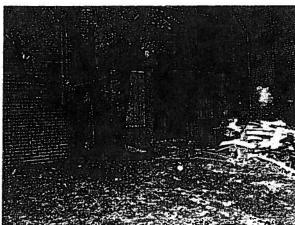


Figure 3-3: One area of building debris storage in small drainage area.

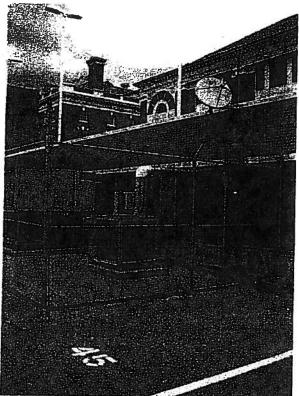


Figure 3-4: Impervious areas of the drainage site

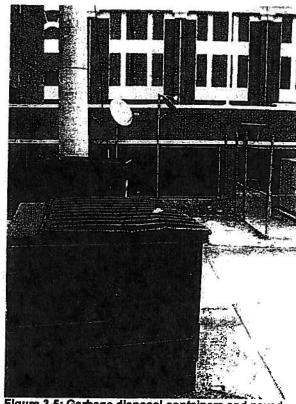


Figure 3-5: Garbage disposal containers and paved area of the drainage area

The depth of the catch basin system was 5-ft, rendering it adequate for a retrofit installation of the Up-FloTM Filter prototype. A 3-in thick baffle wall was retrofitted to divide the catch basin into a filtration chamber and an effluent chamber (Figure 3-6). After the installation of the baffle wall, the Up-FloTM Filter prototype was retrofitted onto the baffle wall in the filtration chamber. After retrofit installation, the filtration chamber had a sump depth (the depth between the inlet to the filtration media and the floor of the filtration chamber) of 2.5 ft. A full-size inlet grating was installed to allow access to the entire inlet area to the filtration chamber (Figure 3-7).

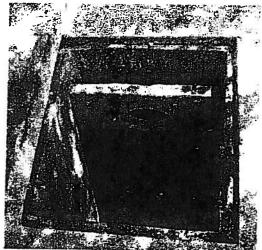


Figure 3-6: Inlet box with forms removed from baffle divider showing main outlet.

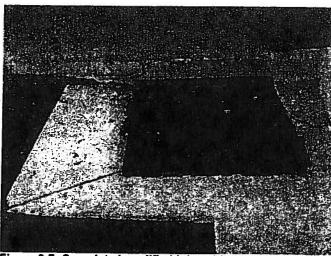


Figure 3-7: Completed modified inlet with new inlet grating.