

2014

PRIDE BRANCH WATERSHED MANAGEMENT PLAN



**Developed by:
Southern Georgia Regional
Commission
327 West Savannah Avenue
Valdosta, GA 31601**

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1.0 SUMMARY

This document describes an interim framework for the implementation of Total Maximum Daily Loads (TMDLs). This interim Framework is intended to guide and document the evolving local policies and procedures for advancing consistency with water quality standards. This documentation will promote internal coordination among local, state, and federal agencies and help inform the general public and commercial interests.

For waters that do not meet water quality standards due to an excessive pollutant load, the State must conduct a scientific study to determine the maximum amount of the pollutant that can be introduced to a waterbody and still meet standards. That maximum amount of pollutant is called a Total Maximum Daily Load (TMDL). A TMDL may provide the means for recommending controls needed to meet water quality standards. These standards are set by the state and determines how much of a pollutant can be present in a waterbody. If the pollutant is over the set limit, a water quality violation has occurred. There cannot be any new additions (or “loadings”) of the pollutant into the stream until a TMDL is developed. Pollutants can come from point source and non-point source pollution. Point Source Pollution – wastewater treatment plant discharges and Non-point Source Pollution – runoff from urban, agricultural, and forested area such as animal waste, litter, antifreeze, gasoline, motor oil, pesticides, metals, and sediment. The purpose of developing an extended revision of Pride Branch is to provide a tool that demonstrates a holistic approach to water quality management.

The Pride Branch Total Maximum Daily Load (TMDL) Management Plan defines the approach to planning, implementing, and evaluating the effectiveness of best management practices (BMPs) with the goal to achieve the TMDL’s for fecal coliform (FC) and restore the beneficial uses of the Pride Branch Watershed (Figure 1).

Revisions require the development of a process to prepare and implement a plan document for the purpose of: 1) creating the local network of partners; 2) identifying and securing the resources needed to fund and install the management practices and activities that would best achieve the pollutant load reductions needed to meet the TMDL and restore water quality; 3) verifying major sources or impairment; 4) developing a TMDL Implementation Plan that would address USEPA’s 9-Key Elements of Watershed Planning; and 5) providing the information needed to support applications for funding (such as EQIP, Section 319(h), GEFA, or others), or identifying existing funding sources such as utility fees, SPLOST, or others.

2.0 SEGMENT AND WATERSHED DESCRIPTION

One of the first steps in understanding a watershed is through the discovery of its general and natural history. This section presents an overview and characterization of the Pride Branch Watershed.

The Pride Branch Watershed and is located in Brooks County. It is within the Middle South Soil & Water Conservation District which is a nine – county district established in 1937. Pride Branch Watershed is also part of the Suwannee River Basin which occupies an area of approximately 10,000 square miles with approximately 5,560 square miles of the basin within

Georgia. The basin lies within the Coastal Plain physiographic province, which extends throughout the southeastern United States.

Pride Branch is located in the 12 – digit hydrologic unit code (HUC) 031102030703. This stream, approximately 9 miles of impairment, is located from the headwaters to the intersection of Piscola Creek, south of the City of Quitman. Political jurisdictions of this segment of Pride Branch are Brooks County and the City of Quitman.

The physical landscape is fairly homogenous with no outstanding physical features with the streams flowing generally southward. Pride Branch Watershed encompasses 41,657.28 acres currently composed primarily of agricultural land (84.2%) with some residential (8.7%) and transportation use (3.2%). The remaining land uses includes 3.1% public, < 1% commercial, and <1% parks and recreation.

Brooks County's climate is classified as humid subtropical (Cfa) according to the Köppen climate classification system. Winters are cool and short with periodic cold spells moderating in 1-2 days. Summers are hot and humid. Annual precipitation typically ranges from 45 to 50 inches and is spread evenly throughout the year (2-5 inches each month). Measurable snowfalls are very rare with a less than 5% probability each year. When they occur, snowfall amounts are most always less than one inch and melt quickly. In winter, the average minimum daily temperature is 39 degrees. In summer, the average maximum daily temperature is 90 degrees. Brooks County's growing season ranges from 8-9 months with an average of 250 days that have daily minimum temperatures greater than 32 degrees. The first winter freeze typically occurs in early November and the last freeze typically occurs in mid-March.

Soils are considered to be a region's most basic and fragile natural resource, combined with such variable resources as air and water. In 1979, the United States Department of Agriculture Soil Conservation Service published the Soil Survey of Brooks and Thomas Counties, Georgia in cooperation with the University of Georgia, College of Agriculture – Agricultural Experiment Stations, and Brooks County. Table 1 depicts the *Pride Branch Watershed Generalized Soil Associations* provides a general description of the 7 soil associations found in the Pride Branch Watershed.

TABLE 1 SOIL ASSOCIATIONS

Soil Association	Soil Description
Tifton – Alapaha– Dothan (61.98%)	Deep, well drained soils that have formed in loamy marine sediments, found on uplands of coast plains.
Dothan – Fuquay- Nankin (15.99%)	Deep, well drained soils with moderate permeability in the top soils and moderately slow permeability in the bottom. Formed in loamy marine sediments, found on uplands of coastal plain.
Osier – Pelham - Rains (13.22%)	Deep, poorly drained, rapidly permeable soils that are formed in sandy alluvial sediments. Found on the bottom lands of coastal plain and are flooded for brief periods.
Orangeburg – Fuquay - Lucy (4.66%)	Deep, well drained, moderately permeable soils formed in loamy marine sediments.

Leefield – Alapaha – Fuquay (2.71%)	Deep, somewhat poorly drained, low lying soils in the uplands of the Coastal Plain.
Tifton – Carnegie – Alapaha (1.17%)	Deep, well drained soils that have formed in loamy marine sediments, found on uplands of coast plains.
Alapaha - Mascotte (0.27%)	Deep, poorly drained soils that are moderately slowly permeable formed in sandy and loamy marine sediments, in drainageways within the Coastal Plain.

3.0 WATER QUALITY IMPAIRMENTS AND TOTAL MAXIMUM DAILY LOADS (TMDLS)

The Georgia 2012 305(b)/303(d) list of waters was prepared as a part of the Georgia assessment of water quality prepared in accordance with Sections 305(b) and 303(d) of the Federal Clean Water Act and guidance from the U.S. Environmental Protection Agency. Assessed water bodies are classified according to a comparison of water quality monitoring results to water quality standards and other pertinent information. Table 2 depicts the 2012 list of impaired streams located within the Pride Branch Watershed.

TABLES 2 PRIDE BRANCH WATERSHED 2012 305(B)/303(D) LIST

Waterbody Name	Location	County(s)	Impairment	Miles Impacted	Percent Load Reduction
Pride Branch	Headwaters to Pisco Creek, Quitman	Brooks	FC, pH	9	87%
Pisco Creek	Downstream Whitlock Branch @ Ozell Road to Okapilco Creek near Boston	Thomas, Brooks	FC, DO	25	73%

Source: Georgia Department of Natural Resources, Environmental Protection Division, 2006

Pride Branch from the headwaters to Pisco Creek (9 miles) was placed on the Section 303(d) list by the GA EPD in 2012 for violating the state standards for fecal coliform (FC) and pH. Also within the watershed, Pisco Creek (25 miles) located south from Pride Branch is impaired for FC and DO. Georgia's standard specifies that fecal coliform concentration in the stream water shall not exceed the 30 – day geometric mean of 200 cfu/100 ml for the months of May and October, and 1,000 cfu/100 ml with no single sample greater than 4,000 for the months of November through April.

This TMDL has an implicit margin of safety embodied in the endpoint identification. Units of percent can be used to quantify the standard TMDL equation: Load Allocation (LA) + Waste Load Allocation (LA) = TMDL. This equation describes both the allocation of allowable loading and the allocation of responsibility for reducing loading to the extent necessary to achieve the endpoint. Using the data set resulting in the violation and associated modeling,

suggests that a load reduction of approximately 87 percent in Pride Branch and 73% in Piscola Creek would result in attainment of the standard.

As a result of the water quality impairment, Pride Branch was assessed as “not supporting” the Clean Water Act’s fishing use support goal. In order to remedy the water quality impairment pertaining to fecal coliform, a TMDL was developed, taking into account all sources of fecal coliform. Upon implementation, the TMDL Plan for Pride Branch shall ensure that the water quality standard relating to fecal coliform will be in compliance with the geometric mean standard.

4.0 VISUAL SURVEYS AND TARGETED MONITORING

The purpose of a visual survey is to determine if there are observable problems on the river and to characterize the environment the river flows through. The visual survey helped pinpoint areas that may be the source of water quality impairments and helped to determine the overall condition of the river.

Where watershed – wide monitoring has not been conducted, a targeted monitoring plan was developed to geographically isolate the major sources of impairment(s). In order to offer a “better” picture of water quality conditions, target monitoring has been scheduled for *E. coli* once every week from March 2013 – February 2014. The sampling schedule is for one (1) sample, bi - weekly, per stream throughout the specified period. Funding and other resources can be better used in areas of the watershed that show the greatest need for attention. This can help open the door for projects that target areas of the watershed to receive funding to implement best management practices (BMPs) that are recommended to address water quality violations.

TABLE 3 PRIDE BRANCH WATER QUALITY RESULTS (E. COLI)

Site Location (Road names)	Season 1 (04.10.13)	Season 2 (06.18.13)	Season 3 (09.12.13)	Season 4 (01.14.14)
Old Madison	266	33	166	166
Bethlehem	333	33	NA (stagnant)	100
Emerson	100	66	NA (stagnant)	33
Dixie	133	66	NA (stagnant)	66
HWY 84	33	0	NA (stagnant)	66

5.0 IDENTIFICATION AND RANKING OF SIGNIFICANT SOURCES OF IMPLEMENTATION

The nonpoint sources of fecal coliform are mainly agricultural, such as, land-applied animal waste and manure deposited on pastures by cattle. A significant fecal coliform load comes from cattle directly depositing in streams. Wildlife also contributes to fecal coliform loadings on pasture, forest, and in-stream. Other nonpoint sources of fecal coliform loadings include failing septic systems stormwater runoff, and pet waste.

TABLE 4 SOURCES OF IMPLEMENTATION

Source	Extent (Miles, acres, etc.)	Permitted (Y/N)	Estimated Contribution (Rank 1 – 5)	Stakeholder Opinion (1 – 5)	Comments
Agricultural Runoff	22,759 AC	N	5	5	Agricultural animals can be an important source of fecal coliform loading to streams, through both runoff from pastureland and cattle in streams.
Wildlife	NA	N	5	4	Wildlife deposit fecal coliform bacteria with their feces onto land surfaces where it can be transported during storm events to nearby streams. The bacteria load from wildlife could be a contribution due to the rural acreage in this watershed.

Failing Septic Systems	NA	Y	3	4	Failing septic systems are not always easy to identify especially if the failure involves untreated sewage entering a stream via groundwater. Water quality sampling should be collected in the Pride Branch watershed. Education outreach should be implemented with the local Health Departments.
Stormwater Runoff	1,708 AC	N	3	4	Stormwater runoff primary sources of fecal coliform bacteria include pet waste, wildlife, septic systems, illicit discharges,
Domestic Animals	NA	N	1	2	Recent research has shown that much of the fecal coliform bacteria contamination from urban areas may come from domestic pets.
Landfills	24.44 AC	Y	2	2	NA
Wastewater Pollution Control Plant	41.82 AC	Y	2	2	NA

6.0 IDENTIFICATION OF APPLICABLE EXISTING MANAGEMENT MEASURES

Management measures are “economically achievable measures for the control of the addition of pollutants from existing and new categories and classes of nonpoint and stormwater sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint and stormwater source pollution control practices, technologies, processes, citing criteria, operating methods, or other alternatives” (USEPA, 1993).

Descriptions of existing management measures for the Pride Branch watershed are summarized below in Table 5. These measures are effective, practical, structural or nonstructural methods which prevent or reduce the movement of sediment, nutrients, pesticides and other pollutants

from the land to surface or ground water, or which otherwise protect water quality from potential adverse effects. These practices are developed to achieve water quality protection within natural and economic limitations.

TABLE 5 EXISTING MANAGEMENT MEASURES

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description
Local Wetlands Policy Ordinance	BrooksCounty City of Quitman	Water Resource District Ordinance applies to the Georgia Planning Act Part V: Environmental Criteria.
Protected River Corridor Plan Ordinance	Brooks County City of Quitman	Water Resource District Ordinance applies to the Georgia Planning Act Part V: Environmental Criteria.
Suwannee River Basin Management Plan	Georgia DNR	Comprehensive Statewide Water Management Plan to replace the Suwannee River Basin Management Plan.
Farm Service Agency	USDA - FSA	Requires producers to comply with conservation plans for the farm, wetland provisions, planting flexibility provisions, as well as to keep the land in agricultural use.
Conservation Reserve Program (CRP)	USDA - FSA	Ongoing financial and technical assistance to encourage farmers to convert erodible cropland to vegetative cover.
Environmental Quality Incentives Program (EQIP)	USDA - FSA	Ongoing financial and technical assistance to install /implement structural and management practices on eligible agricultural land and/or for commodity operations.
Soil Testing	Landowner with assistance from UGA - Cooperative Extension and/or licensed contractor	Applies to soil sampling taken on a regular basis to minimize impacts of fertilizers, pesticides, and herbicides in waterways.
Erosion & Sedimentation Ordinance	BrooksCounty	Adopted and enforced.
Illicit Discharge Ordinance	Brooks County	Adopted and enforced.

Section 319 FY 2015 Grant	SGRC	Partners with various organizations to coordinate activities within the Suwannee Basin that promote education/outreach opportunities and implementation of BMPs for non-point source pollution from municipalities and the agriculture.
Cover Crop, Critical Area Planting, Fence, Heavy Use Area Protection, Irrigation System - Sprinkler, Pasture and Hay Planting,	USDA - NRCS and landowner in Brooks County	Between 2002 – 2006, USDA – NRCS entered into 37 separate landowner contracts totaling \$165,657 and 3,508 acres in Lowndes County for BMP installation. Of those contracts, 11 are complete and 26 are active.
Groundwater Recharge Development Ordinance	Brooks County City of Quitman	Water Resource District Ordinance applies to the Georgia Planning Act Part V: Environmental Criteria.
Storm water detention/retention standards	Brooks County City of Quitman	Adopt and enforced
Manure Management Plan	Landowner with assistance from NRCS, UGA - Cooperative Extension, and/or licensed contractor	Applies to keeping records of manure applications and continuous soil sampling.
Section 319(h) Grant – Well and Septic Tank and Online Referencing Mapping (WelSTROM) System	SGRC	Approved by GA EPD and began work in 2007. This provides a tool for local governments and regional agencies to guide future decisions, such as development, infrastructure expansions, TMDL development and implementation, and education outreach on all new septic systems.

7.0 RECOMMENDATIONS FOR ADDITIONAL MANAGEMENT MEASURES

Development of effective management measures depends on accurate source assessment. Coliform bacteria are contributed to the environment from a number of categories of sources including human, domestic or captive animals, agricultural practices, and wildlife. Coliform bacteria from these sources can reach waterbodies directly, through overland runoff, or through sewage or stormwater conveyance facilities. Each potential source will respond to one or more management strategies designed to eliminate or reduce that source of coliform bacteria. Each management strategy has one or more entities that can take lead responsibility to effect the strategy.

Because the Pride Branch watershed contains a combination of rural, suburban, and urban land uses, implementation actions consist of a variety of management practices to address human impacts arising from these various land uses. Proposed actions include agricultural BMPs, stream channel BMPs, stormwater management BMPs, sanitary sewer system improvements, and urban/residential education components.

Education is the key to a successful watershed management program. The overall goal of the Information and Education Strategy component of the watershed improvement plan is to provide educational information to local officials, residents, contractors and developers, school children and the general public, enabling them to make decisions that will enhance the protection of the

Pride Branch watershed. Informed citizens can greatly affect the outcome of a watershed protection program. Table 6 lists the information and education strategies that will be directed towards a specific target audience.

TABLE 6 IMPLEMENTATION/EDUCATION STRATEGIES

Information/Education Strategy			
Source	Target Audience	Message	Delivery Mechanism
Streambank erosion, land clearing/construction practices	Riparian landowners, builders, contractors	Encourage landowners to leave a conservation buffer, provide attractive landscaping for natural vegetation.	Information material disseminated and implement BMPs.
Cattle/livestock access	Agriculture managers, landowners	Control livestock access, establish fencing, create proper stream crossings, provide alternate funding sources	With NRCS and Conservation Districts, and other partners provide information at fairs, field days, and events, implement BMPs.
Failing septic systems	Homeowners	Properly maintain your septic system to prevent water quality degradation.	Information material, repair failing systems. disseminated to local Health Departments and landowners.
Agriculture practices	Agriculture managers, landowners	By reducing livestock access to surface water you are protecting a resource that is very valuable to everyone.	Implement BMPs and hold field days/workshops.
Cropland	Agriculture managers, landowners	By reducing erosion access to surface water you are protecting a resource that is very valuable to everyone.	Implement BMPs and hold field days/workshops.
Stormwater runoff	Local officials, residents	Protect the waterways by reducing the amount of pollutants entering the river, make public aware of where stormwater goes.	Drain markers, informative seminars for local officials, brochures for the public, tours of model stormwater site, implement appropriate BMPs.

TABLE 7 ADDITIONAL MANAGEMENT MEASURES

BMP	Cost (Per unit)	Est. Total Cost	Impairment Addressed	Load Reduction (%)	Stakeholder Support (1 – 5)	Benefits
Ag Riparian Buffer	NA	NA	FC	50 – 75%	5	Act to intercept sediment, nutrients, pesticides, and other materials in surface runoff and reduce nutrients and other pollutants in shallow subsurface water flow. They also serve to provide habitat and wildlife corridors and can help reduce erosion by providing stream bank stabilization.
Livestock Exclusion Fencing	\$1.80 LF or \$2.50 LF	\$550,000	FC	75%	5	Reduce sediment and possibly nutrient yield from streams draining pastures.
Limited Access Crossing	NA	NA	FC	NA	5	Less erosions and sedimentation in the water.
Streambank Restoration	NA	\$400,000 - \$600,000	FC	NA	4	Helps to improve habitat for the aquatic and semi-aquatic life supported by the stream, serve as a pollutant buffer, and act as a physical buffer against cattle and other animals that may trample or erode the streambank.
Street Sweeping	\$180,000	\$180,000	FC	NA	3	Removing both the large and microscopic pollutants, such as metal particles from vehicles.
Bio-retention Areas	\$12 SF	\$240,000	FC	71 – 90%	2	Removes pollutants through a variety of physical, biological, and chemical treatment processes.

Stormwater Wetlands	\$10 CY	\$250,000	FC	70%	2	Improves water quality, flood control. Enhances wildlife, and removes pollutants through sedimentation and filtration.
Increase E&S Efficiency	NA	NA	FC	75%	5	Helps mitigate increased sediment loads to streams.
Education Outreach	NA	NA	FC	NA	4	Helps to increase awareness on the importance of water quality.
Vegetative Buffers	NA	NA	FC	50 – 80%	5	Highly effective for controlling sedimentation, erosion, and pollution from runoff.
Cover Crops	\$20 AC to \$65 AC	\$400,000	FC	40 – 60%	5	Prevents erosion.
Heavy Use Area Paddocks	\$2.00 SF to \$8 SF	\$120,000	FC	80%	4	Reduces erosion while improving water quality.
Septic System Repairs	\$500 to \$5,000	\$75,000	FC	50 – 75%	4	Reduces fecal coliform from nearby streams.
Pet Receptacles	\$350	\$5,000	FC	NA	2	Helps remove bacteria, pathogens, and nutrients via stormwater runoff.
Filter Strip	\$450 AC	\$50,000	FC	50 – 80%	4	Protects water quality by trapping soil particles, nutrients, and pesticides, they can also improve water infiltration and enhance wildlife habitat.
Promote a naturalized landscape	NA	NA	FC	NA	1	Improves water quality, and reduces erosion.
Grass Waterway	\$5 LF	NA	FC	60 – 80%	2	Provides pretreatment, partial infiltration of runoff in suitable soil conditions, generally less expensive than extruded curb, good for small drainage areas, and relatively low maintenance requirements.

Rain Barrels	\$200	\$10,000	FC	NA	2	Reduces stormwater runoff and acts as an alternative water source.
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In order to determine the overall effectiveness of the implemented management strategies an evaluation process is essential.

The various methods should be considered for evaluation:

- Physical water quality monitoring;
- Chemical water quality monitoring;
- Photographic or visual evidence, before and after photos;
- Documentation of site BMPs installed;
- Pollutant loading measurements;
- Stakeholder surveys, evaluate knowledge or change in behavior; and
- Focus groups, to determine effectiveness of project activities.

8.0 PARTNER ORGANIZATIONS AND ADVISORY GROUPS

An Advisory Group recruitment from a number of working group partners were prioritized to also serve to provide input for this WMP. Representatives include agriculture, industrial or municipal point source discharge permittees, forest products firms, members of local government, and landowners. The final advisory group of major stakeholders and community participants includes:

TABLE 8 PARTNERS/ADVISORY GROUP

Name	Agency/Organization	Email
Angela Bray	SGRC	abray@sgrc.us
Stan Moore	USDA – NRCS	Stan.moore@ga.usda.gov
Eugene Dyal	7 Rivers RC&D Council	sevenrivers@bellsouth.net
Gary Hawkins	UGA	ghawkins@uga.edu
Justin DeVane	Brooks County	brooksc@windstream.net
James Brown	City of Quitman	cityofquitman@windstream.net
Luke Crossen	GASWCC	lcrossen@gaswcc.org
Tad Williams	Health Department	twilliams@dhr.state.ga.us
Daymond Hughes	USDA Wildlife	Daymond.w.hughes@aphis.usda.gov

The TMDL Advisory Group is a collection of individuals who bring unique knowledge and skills which complement the knowledge and skills of the public in order to more effectively accomplish this revision. The purpose of the TMDL Advisory Group is to provide a forum for the public, partners, etc. to discuss potential concerns and solutions that will impact Pride Branch, and to make recommendations relative to TMDLs.

The Advisory Group’s key responsibilities were to:

- **Advise** on matters of concern to the community;
- **Contribute to the education** of the residents of the watershed on water quality issues;
- **Help identify** contributing pollution sources;
- **Assist** in arriving at equitable pollution reduction allocations among contributors;
- **Recommend specific actions** needed to effectively control sources of pollution; and
- **Help develop** and set in motion an extended plan.

The first meeting of the Advisory Group was held before our public meeting on March 7, 2013 to review the project. A second meeting was held on September 12, 2013 to provide comments for the initial draft. A final set of joint meetings of the Advisory Group and Stakeholders were held on March 20, 2014 to finalize edits in the Plan.

9.0 PUBLIC INVOLVEMENT

Stakeholders are individuals who live or have land management responsibilities in the watershed, including government agencies, businesses, private individuals and special interest groups. Stakeholder participation and support is essential for achieving the goals of this TMDL effort.

TABLE 9 PUBLIC INVOLVEMENT

Name	Phone Number	Email
Justin DeVane	229.263.5561	brooksc@windstream.net
Clint Wortman	229.263.1004	cwortman@windstream.net
Joe Wingate	229.560.2125	jwingate@windstream.net
Willie Cody	229.561.2284	williecody@gmail.com
William Darsey	229.263.4909	William.darsey@ga.usda.gov
Garvie Nichols	229.263.4103	nicholsg@uga.edu
SL Jones	229.263.8725	NA
Johnny Hagan	229.263.2358	haganfarms@yahoo.com
Niewoehner Farms	229.263.1922	niewoehnerfarms@gmail.com
Marvie H. Dickey	229.293.7355	mdickey@jhland.com
Carter McDonald	229.305.7373	NA

Building partnerships was a key component in order to declare input from the Stakeholder perspective in evaluating the extended revision; and to provide an opportunity for Stakeholders to understand how the peer review process contributes to the development of TMDL plans and

results. As a result of their participation, Stakeholders became knowledgeable advocates for the role to help manage or decrease nonpoint source pollution impacts.

Stakeholders' key responsibilities were to:

- **Provide** technical support and assistance;
- **Distribute** and share information;
- **Identify** opportunities and common concerns; and
- **Develop** public support

SGRC staff encouraged public participation in the development of this TMDL Plan by inviting Stakeholders to participate in several meetings throughout the development stages. The objective of these meetings was to obtain feedback from Stakeholders about the concerns and composition of watershed activities. The first kickoff meeting was held on March 7, 2013 to learn about the project, help identify causes and sources of pollutants, and make recommendations for the WMP. A second meeting was held on September 12, 2013 to provide updates and review draft sections of the WMP. A final set of joint meetings of the Advisory Group and Stakeholders were held on March 20, 2014 to finalize edits on the Plan and wrap-up the project.

Examples of Stakeholder recommendations include:

- Additional monitoring to verify effectiveness of measures implemented;
- Review of all existing development codes, ordinances, and policies to identify where revisions could be made to reduce non-point source water pollution;
- Design and implement a citizen education program to make citizens aware of the non-point source water pollution problem and their role in improving the water quality;
- Encourage the continuing formation of volunteer groups to conduct community based stream protection efforts such as restoring vegetative cover within riparian areas, stream clean-up, and reporting of problems;
- Conduct screening level analyses of structural and non-structural BMPs;
- Investigate grant and funding opportunities to fund these efforts;
- Propose best management practices (BMPs) or other ways to correct problems at each location; and
- Evaluate technical assistance needed and how to administer assistance.

10.0 INTERIM MILESTONES

The ultimate goal of this implementation plan is to bring Pride Branch into compliance with water quality standards, which will result in its being listed as supporting from the 303(d) list of impaired waters. This goal will be measured by the concentration of fecal coliform and E. coli in samples, but milestones along the way will include both water quality measurements, the implementation of BMPs and load reductions for each BMP. The construction of BMPs will be dependent on opportunities presented, while milestones may be tailored to the resources available.

In order to achieve the TMDL it is recommended that there be a load reduction of 87% of FC in Pride Branch and 73% in Piscola Creek. Although the type of source is known, there is very limited data available on the effectiveness of existing and/or potential management measures

available to address the sources. Furthermore, there are also limited financial resources available to stakeholders and local governments to address nonpoint sources. A list of management measures and other general actions to be implemented during the first 3 years of the plan around the Pride Branch watershed is shown in Section 12.0 Plan Implementation, Table 10.

In order to bring Pride Branch to compliance, sub – goals and objectives are listed below. These address the watershed issues outlined in the previous sections of this report:

GOAL #1: Implement cost – shared best management practices (BMPs) to achieve targeted agricultural reductions.

Objective: Educate targeted landowners in funding available and procedures for implementing BMPs on their properties.

Objective: Install appropriate BMPs such as, but not limited to, exclusion fencing, riparian buffers, cover crops, and stream crossings on pastures.

GOAL #2: Reduce inputs in urban and residential areas through education.

Objective: Encourage installation of urban streamside forest buffers, where possible.

Objective: Encourage installation of homeowner Low Impact Development (LID) measures.

Objective: Educate homeowners in funding available for forested buffers.

Objective: Include education about water quality and stewardship in local school curricula.

Objective: Offer educational programs and literature through homeowners' associations and other neighborhood or civic organizations.

Objective: Expand the state Adopt-a-Stream program in the watershed.

GOAL #3: Implement stormwater management practices to reduce inputs from public works.

Objective: Install and monitor demonstration Low Impact Development (LID) sites.

Objective: Improve enforcement of Erosion and Sediment Control regulations.

Objective: Improve efficiency of street sweeping practices.

Objective: Seek opportunities for remediation and increased stormwater infiltration with redevelopment and new construction.

Objective: Reduce sanitary sewer overflows.

Objective: Prevent infiltration/exfiltration from sanitary sewers.

GOAL #4: Through planning activities, identify and prioritize opportunities for stream protection and restoration, and ensure that codes and design standards are “water quality friendly.”

Objective: Revise as necessary, plans and action lists for watershed.

Objective: Review and adopt codes and design standards as needed.

Objective: Encourage future development using smart development guidelines.

Objective: Encourage stream restoration other suitable infiltration practices in areas of redevelopment.

GOAL #5: Reduce urban and residential inputs by performing inspection, monitoring and maintenance activities to eliminate illicit discharges, ensure proper stormwater system performance and prevent pollution.

Objective: Inspect all stormwater outfalls.

Objective: Detect and address non – storm water/illicit discharges.

Objective: Maintain and repair stormwater structures.

Objective: Provide guidelines to downtown businesses regarding acceptable wastewater disposal procedures.

11.0 RECOMMENDATIONS FOR MONITORING AND CRITERIA FOR MEASURING SUCCESS

The largest data gap for the Pride Branch watershed is lack of monitoring data. The City of Quitman, Brooks County, or Partners should conduct sampling each year as BMPs are being implemented to show effectiveness. This information will help verify which BMP projects are most beneficial. This information will be used not only in determining how to proceed or revised the management plan, but also in other nearby watersheds.

According to EPA standards, monitoring is recommended at rotation sites throughout the watershed as well as biological and habitat assessments every two years. The monitoring program to assess implementation progress may also be based on a volunteer monitoring program such as Adopt – A – Stream. GAEPD will provide assistance, upon request, with setting up, designing, and implementing monitoring programs.

12.0 PLAN IMPLEMENTATION

The objective of TMDL implementation is to restore impaired water quality to meet water quality standards. From a broader perspective, Georgia’s water quality management strategy addresses three things:

1. Protection: Prevent the degradation of healthy waters.
2. Restoration: Develop and execute plans to eliminate impairments.
3. Maintaining Restored Waters: Institutionalize technical and administrative procedures to prevent or offset new pollutants.

A list of management measures and other general actions to be implemented during the first 3 years is shown in Table 10.

TABLE 10 IMPLEMENTATION SCHEDULE

2014	
Measurable Milestone	Party Responsible
Complete WMP.	SGRC
Contact Stakeholder and Advisory Groups to present and discuss funding options and future goals.	SGRC
Apply for a Section 319(h) Grant.	SGRC, EPD
2015	
Measurable Milestone	Party Responsible

Execute contract with EPD	SGRC, EPD
Employ a watershed coordinator.	SGRC
Coordination and Liaison with Watershed Citizens, Stakeholders, and Advisory Groups.	SGRC
Present a community educational workshop.	SGRC
Implement BMPs.	SGRC
Create website.	SGRC
2016	
Measurable Milestone	Party Responsible
Coordination and Liason with Watershed Citizens, Stakeholders, and Adivsory Groups.	SGRC
Submit a SQAP and begin water monitoring bi-weekly.	
Implement BMPs.	SGRC, Landowners
Create brochure.	SGRC
Update website.	SGRC
Present a rural/urban educational workshop/field day.	SGRC
Submit Quarterly Reports and Load Reductions.	SGRC
2017	
Measurable Milestone	Party Responsible
Coordination and Liason with Watershed Citizens, Stakeholders, and Adivsory Groups.	SGRC
Implement BMPs	SGRC, Landowners
Continue to monitor bi-weekly	
Update website.	SGRC
Hold Adopt - A - Stream workshop.	SGRC, EPD
Present a rural/urban educational workshop/field day.	SGRC
Submit Quarterly Reports and Load Reductions.	SGRC
2018	
Measurable Milestone	Party Responsible
Coordination and Liaison with Watershed Citizens, Stakeholders, and Advisory Groups.	SGRC
Implement BMPs.	SGRC, Landowners
Update website.	SGRC
Present a rural/urban educational workshop/field day.	SGRC
Submit final project close - out report to EPD for review and approval.	SGRC
Annually	
Measurable Milestone	Party Responsible
Education Outreach (website, media, workshops/field days, etc).	SGRC
Encourage and install appropriate BMPs.	SGRC, Brooks County
Expand the Adopt - A - Stream Program.	SGRC, EPD
Improve enforcement of Erosion and Sediment Control regulations.	SGRC, Brooks County
Submit Quarterly Reports and Load Reductions.	SGRC

During each semi – annual evaluation of implementation on Pride Branch a reassessment of implementation priorities will be made by the Advisory Group to readjust and fine – tune the targeting approach in concert with the staged implementation approach. If reasonable progress toward implementing the management practices is not demonstrated, the Advisory Group will consider additional implementation actions.

If it is demonstrated that reasonable and feasible management measures have been implemented for a sufficient period of time and TMDL targets are still not being met, additional measuring may be needed. If after three years the Advisory Group determines that load reductions are being achieved as management measures are implemented, then the recommended appropriate course of action would be to continue management measure implementation and compliance oversight. If it is determined that all proposed control measures have been implemented, yet the TMDL is not achieved, further investigations will be made to determine whether: 1) the control measures are not effective; 2) fecal coliform loads are due to sources not previously addressed; or 3) the TMDL is unattainable.

As with all programs, funding is an integral component in making a program not only happen, but a success. There are numerous funding opportunities for local governments, non-profits, and individuals from federal, state, and local sources. Opportunities may include, but not limited to: U.S. Environmental Protection Agency, GA Environmental Protection Division, U.S. Department of Agriculture – Natural Resource Conservation Service, U.S. Fish and Wildlife Programs, and GA Environmental Facilities Authority. These are only a few of the many funding sources available. It is important to note that funding sources and opportunities change on a yearly basis, so always check for the most up-to-date information.

13.0 REFERENCES

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14.0 PLAN APPENDICES

- A. NINE (9) – KEY ELEMENT SUMMARY**
- B. WATERSHED MAPS (HUC) #031102030703**
- C. LAND USE MAP: CURRENT**
- D. PICTURES**
- E. COPIES OF PUBLIC NOTICES**
- F. MEETING MINUTES & ATTENDEES**

