

Septage Disposal: Getting Rid of What No One Wants

2010-2011

Environmental Public Health Leadership Institute Fellow:

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EXECUTIVE SUMMARY

Based on census data it is estimated over 10,000 Camden County residences are served by septic systems¹. An essential part of proper septic system maintenance is pumping the tank to remove solid matter (septage) which can clog the drainfield if not removed. On average a septic tank should be pumped every 3-5 years. In Georgia septage can be disposed of at an approved sewage treatment plant or land disposal site.

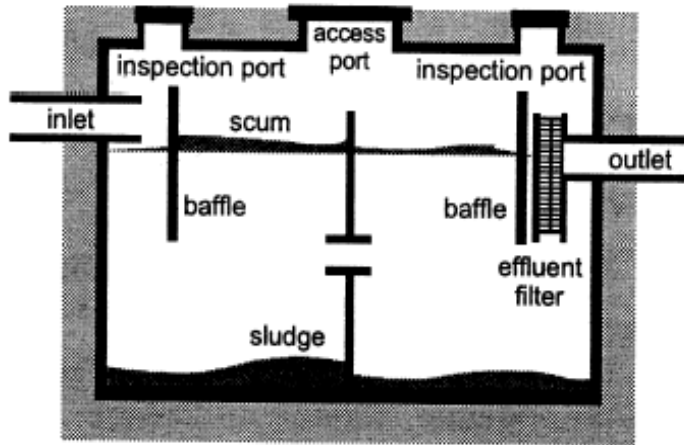
Currently no facility accepts septage for disposal within Camden County. There are no land disposal sites in operation or planned for the future. The three available municipal treatment plants do not accept septage due to concerns over facility upgrade costs and risks of interference with normal sewage treatment. As a result contractors must dispose of septage at a neighboring (Glynn) county's facilities. This increases cost to the residents discouraging them from properly maintaining septic systems. Lack of maintenance leads to increased failure rates and ultimately pollution issues. Also, as costs rise the likelihood of illegal dumping increases. This is a shifting the burden approach which not only increases costs but sets the county up for major problems if Glynn County discontinues accepting Camden septage.

One of the 10 essential environmental public health services is to, "Link people to needed environmental health services." Working to develop a local septage disposal option does just that, link people to needed services. To that end meetings have been held with local authorities and the local river management group. Ongoing meetings are planned to educate the public on the need for septage disposal and to explore all available treatment options. Georgia EPD is simplifying the land application permitting process and any proposals for land disposal will be seriously considered. Septage disposal is an issue for more than just Camden County. Lessons learned locally may help other municipalities with their disposal needs.

INTRODUCTION/BACKGROUND:

On-site sewage management (septic) systems provide a safe means for wastewater disposal when municipal sewer is not available. Once looked at as a temporary solution until sewer could be installed, septic systems are often the best disposal option particularly in rural areas. For this reason septic systems are here to stay. Properly maintained septic systems pose little to no danger to public health or the environment.

A septic system consists of two basic components: the septic tank and drainfield. The purpose of the septic tank is to separate solid and liquid waste so only liquids are sent to the drainfield. The drainfield allows the waste to be broken down by aerobic bacteria in the soil and the water to be absorbed into the ground. Over time solid materials build up in the tank. If not pumped out, these solids can clog pipes and the drainfield leading to premature septic system malfunction and failure. It is recommended a septic tank be pumped out every 3-5 years depending upon usage.



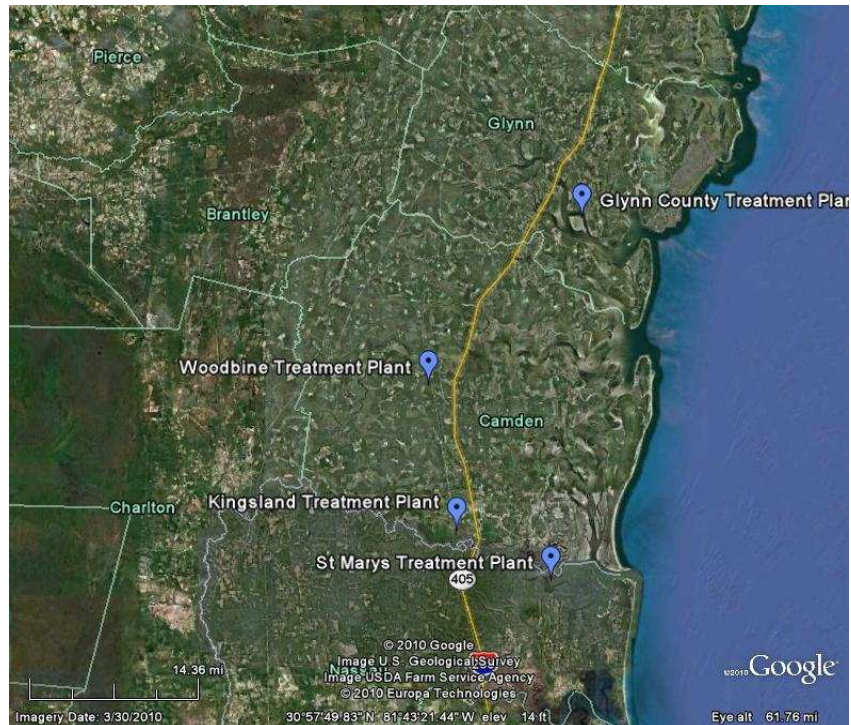
Cross-section of a two-compartment septic tank

Source: A Homeowner's Guide to On-Site Sewage Management Systems²

facilities, or direct land application.”³ There are no separate seepage handling facilities available to Camden County therefore the only approved disposal options are disposal at a sewage treatment plant or land disposal.

This project deals with the lack of a local disposal option for seepage in Camden County. Currently septic tank pumpers travel to Glynn County for disposal; extra 30 miles or more each way. This adds cost to the consumer, and leads to dependence on neighboring municipality. Added costs discourage property owners from having their tanks pumped regularly thereby lessening operational lifespan of the system. Illegal dumping also increases as costs increase. In the end if Glynn County stops accepting out of county seepage there is no reasonably close disposal option.

Solids pumped from a septic tank are referred to as seepage and must be disposed of in an approved manner. According to the Rules of the Department of Community Health (DCH), Public Health Chapter 290-5-26 On-Site Sewage Management Systems: “Approved methods of pumping and disposal of seepage from on-site sewage management systems shall be: discharge to a public or community sewage treatment system for treatment in treatment plant, treatment at separate seepage handling



Google Earth Map of Treatment Plant Locations.⁴

Land application is an available option. However, Camden is a coastal county with high seasonal water table over much of the county. Georgia's Environmental Protection Division (EPD) and DCH both require minimum 42" depth to the water table.⁵ In addition the application process for a land disposal site is lengthy and permits are difficult to obtain. Currently EPD is working on simplifying the permitting process to allow for more land application sites. Due to water table and permitting issues disposal at a sewage treatment plant is a more practical option for Camden County.

There are three municipal treatment plants in Camden County serving the cities of Woodbine, Kingsland, and St. Marys. They do not accept septage because of the cost of additional equipment and manpower, and the potential for damage to the plant if not properly monitored and received. Kingsland accepted septage in the past but did not monitor it and a pumping company dumped diesel fuel into plant costing tens of thousands in repair costs. As a result plant operators are scared of accepting septage, but if properly monitored it can be safely accepted.

Most of the septic systems are in unincorporated areas of the county. Camden County officials do not support addition of water and sewer infrastructure in the unincorporated areas due to cost. In the end the cities say it is a county problem and the county says it doesn't have the resources the cities have.

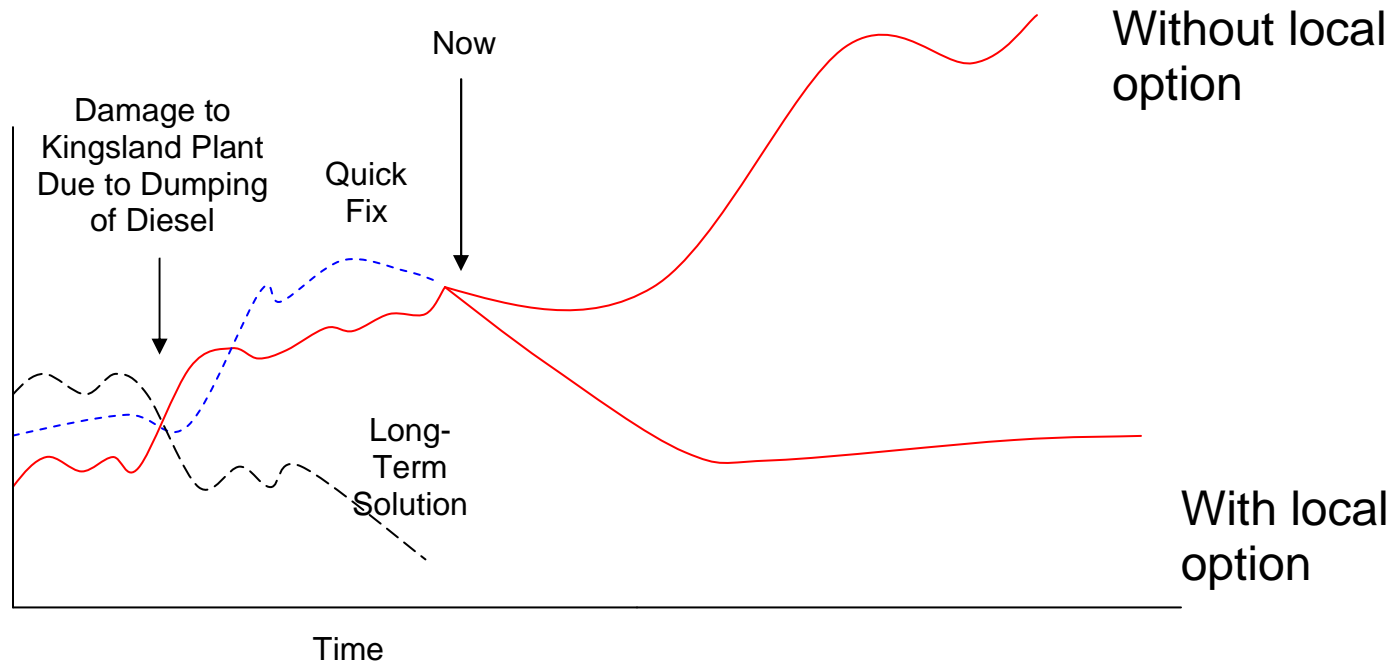
Other counties in our district and throughout the state are in the same situation. The state does not require counties to provide a disposal option; however, pumpers are required to dispose of septage at an approved facility. Chris Kumnick, Program Director for DCH's Land Use program, summarized the problem in a letter to EPD dated September 17, 2010:

The Georgia Division of Public Health, Environmental Health Section believes there is a critical need to provide additional disposal facilities for the treatment of domestic septage. There are approximately 2 million active septic tank systems in Georgia. Each onsite septic system is dependent on the proper maintenance and operation which protects public health and the waters of state. These systems require that septic tanks be pumped every three to five years. Failure to pump the accumulated septage directly leads to premature malfunctions. A primary contributor to non-point source pollution around the state is failing septic systems. However, the proper disposal of septage is equally important. There is a very real shortage of approved septage disposal facilities across Georgia.⁶

Limited septage disposal options are not just a problem for Camden County. Hopefully lessons learned in seeking to increase disposal options in Camden can be used to address this issue elsewhere.

Problem Statement: Why doesn't Camden County, and/or the cities within, provide a disposal method for septage.

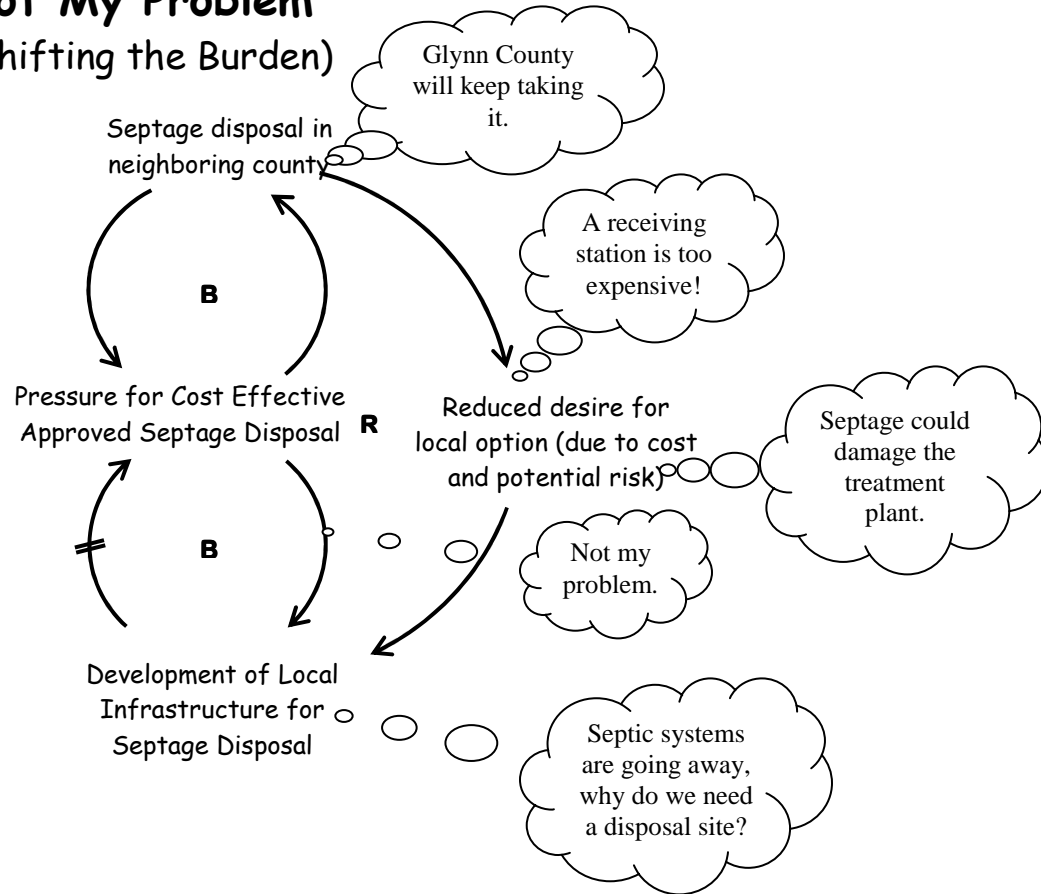
Behavior Over Time Graph:



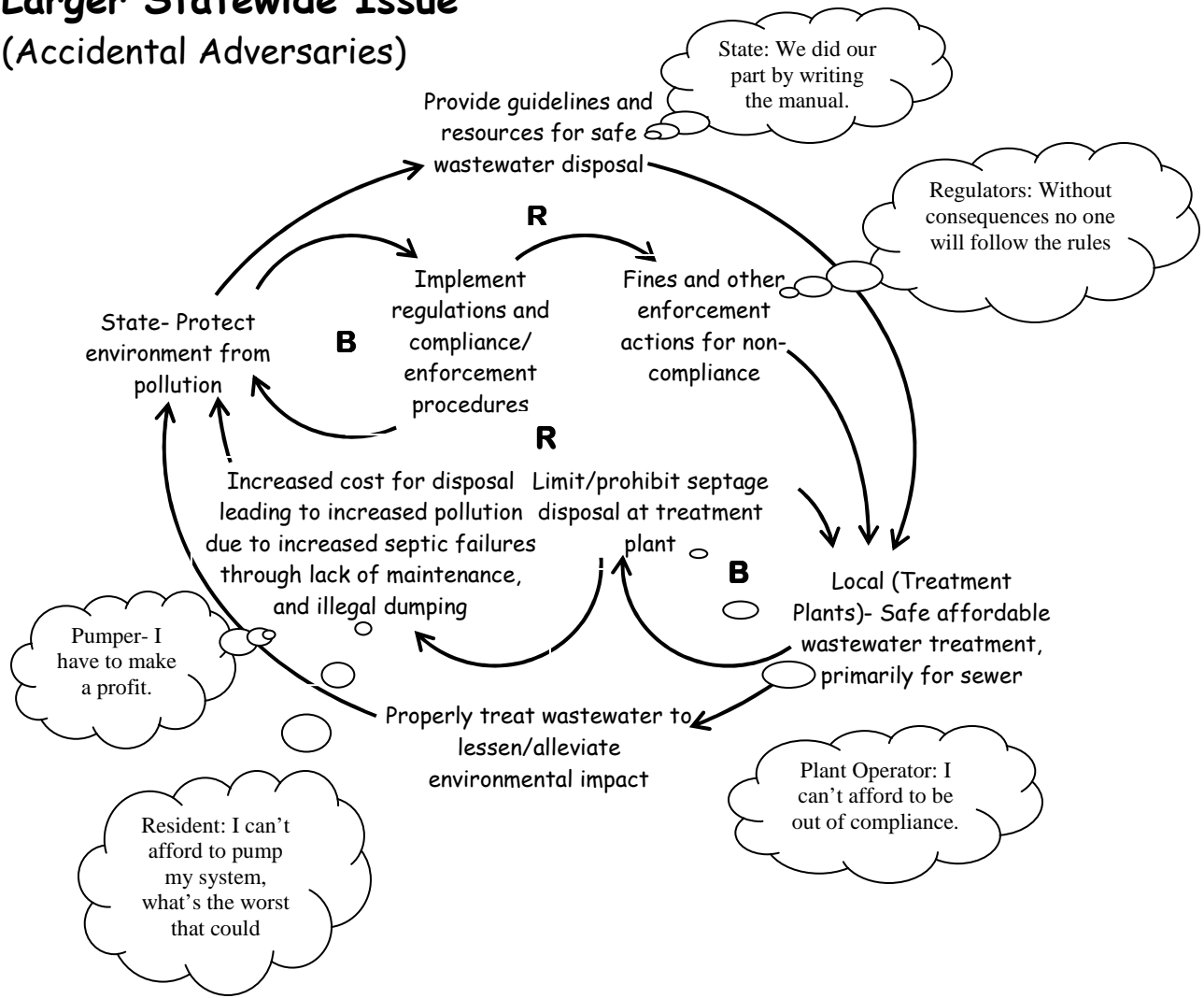
- Disposal Cost- reflects availability of disposal
- - - Dependence on Glynn County Plant
- - - Support of Officials for Local, Long-term Solution

Causal Loop Diagrams and applicable Archetypes:

Not My Problem (Shifting the Burden)



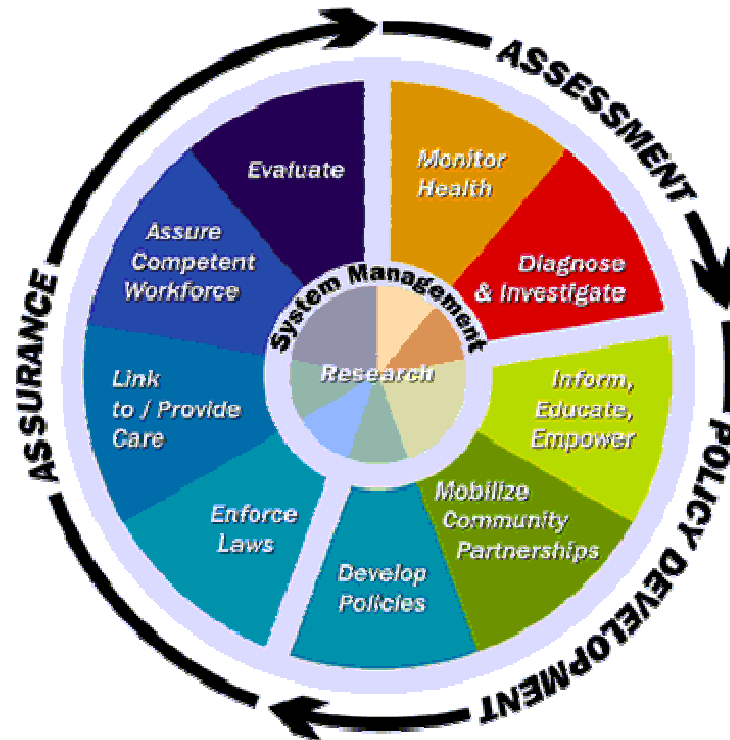
Larger Statewide Issue (Accidental Adversaries)



Cost-Benefit Analysis

	Changing	Not Changing
Benefits	<ul style="list-style-type: none"> • Decreased cost to consumer leading to increased maintenance. • Decreased potential for pollution. • Additional revenue source for treatment plant. 	<ul style="list-style-type: none"> • No additional expense for infrastructure. • No need for additional staff. • Easier to maintain compliant treatment.
Costs	<ul style="list-style-type: none"> • Expense of adding infrastructure. • Added manpower for monitoring. • Potential for interfering with treatment and/or damaging plant. 	<ul style="list-style-type: none"> • Increased maintenance cost to consumers. • Increased potential for pollution. • Dependence on outside source for services.

10 Essential Environmental Health Services:



Essential Services Addressed:

- 1. Link people to needed environmental health services and assure the provision of environmental health services when otherwise unavailable.** Assuring that a vital environmental health service is available is the focus of this project. Increasing available septage disposal options will link people to services.
- 2. Inform, educate, and empower people about environmental health issues.** In order to increase support for a local disposal option it will be necessary to inform and educate people on proper septic tank operation and maintenance.
- 3. Mobilize community partnerships to identify and solve environmental health problems.** The implementation of local disposal option will require partnerships between contractors, municipal utilities, and possible local environmental groups. One of the next steps is to work with local groups (river management, etc.) to educate and advocate for more disposal options.

National Goals Supported

1. Healthy People 2020: EH-24: Reduce the global burden of disease due to poor water quality, sanitation, and insufficient hygiene.

Increasing disposal options and decreasing costs to residents will lead to better septic system maintenance. Better maintenance will decrease system malfunctions and the resulting water quality and sanitation issues.

2. National Strategy to Revitalize Environmental Public Health Services Goal I. Build Capacity: Strengthen and support environmental public health services at the state, tribal, territorial, and local levels.

Adding a local disposal option increases availability of EH services, thereby building EPH capacity.

3. Environmental Health Competency Project: Recommendation for Core Competencies for Local Environmental Health Practitioners

Assessment: The first step in utilizing a local treatment plant will be assessing the facility and determining if there is capacity and how best to receive septage. Initial correspondence with EPD indicates that all three plants have more than adequate capacity to receive septage. Researching methods used by other facilities and visiting neighboring plants will help assess what modifications are needed to safely accept septage.

Management: Accepting septage at a local treatment plant will require getting buy-in from a variety of stakeholders, particularly government officials and employees. Properly planning and managing the logistics (fees, monitoring activities, ordinances, etc.) will be critical in gaining and maintaining support. Past experience has shown that not planning ahead will quickly derail efforts to use local treatment plants.

Communication: Communicating the need for septage disposal is vital to increasing disposal sites. The typical view of septic systems is “out of sight, out of mind”. Environmental health deals with these systems on a regular basis and so is primarily responsible for explaining and advocating adequate disposal.

Project Logic Model:

GOAL: Increase capacity for Camden County to dispose of septage by adding local infrastructure for disposal.

INPUTS	OUTPUTS		OUTCOMES- SHORT TO LONG TERM			
<p>RESOURCES</p> <ul style="list-style-type: none"> • Knowledge able staff • Advocacy group support • Regulatory agencies for reference (EPD, EPA, state EH) • Good working relationship with county 	<p>STAKE-HOLDERS</p> <ul style="list-style-type: none"> • Homeowners • Septic system contractors and pumpers • Local government officials • St. Marys River Management Committee and other environmental groups • Treatment plant operators • Public Health • Georgia EPD and other regulatory agencies • GOWA and other advocacy groups 	<p>ACTIVITIES</p> <ul style="list-style-type: none"> • Contact plant operator in Glynn county to work towards MOU • Visit Glynn county’s dump station to observe operation • Meet with Camden county’s city manager and Glynn county’s joint water and sewer commission to work on MOU for disposal in Glynn • Educate public (articles, public meetings, etc.) on proper maintenance of septic systems; pumping to be part of discussion. • Attend meetings and focus groups conducted by/with St. Marys River Management Committee to make them aware of septage disposal issues. • Support Georgia On-site Wastewater Association’s (GOWA) efforts to have state require each county to provide a means of septage disposal; attend annual GOWA meeting if possible • Make presentation to County Board of Health and Board of Commissioners on septage disposal options and proper septic tank operation and maintenance • Research available grants for plant upgrades • Research alternate disposal options; contact Georgia EPD for requirements 	<p>LEARNING</p> <ul style="list-style-type: none"> • Increase in general public’s understanding of septic systems and need for septage disposal • Increase in government official’s (cities and county) understanding of septic systems and need for septage disposal • Increase in resource sharing between public health and community/ environmental advocacy groups 	<p>SUPPORT</p> <ul style="list-style-type: none"> • Increased public support for septage disposal • Increased environmental groups (ex. river management committee) support for disposal • Increased county commission support for disposal • Decreased resistance from cities on use of treatment plants. • Increase in alternate disposal option ideas. 	<p>GOAL</p> <ul style="list-style-type: none"> • Effective, approved local septage disposal option 	<p>RESULTS</p> <ul style="list-style-type: none"> • Increased septic system maintenance • Less impact on water quality • Capacity to support septic system maintenance program • Assist other counties with similar issue find solution

PROJECT OBJECTIVES/DESCRIPTION/DELIVERABLES:

Program Goal: Increase availability of effective and approved septage options for Camden County.

Health Problem: There is no local option for septage disposal and limited nearby options. Lack of options can lead to increased system failure through lack of maintenance and increased likelihood of illegal disposal. Both increase pollution.

Outcome Objective: By December 31, 2014 Camden County will have a reliable, effective, approved disposal option.

Determinant: Number of available disposal sites.

Impact Objective: By December 31, 2010 have an agreement with Glynn County's treatment plant to continue to accept Camden County septage while local options are explored and developed.

Contributing Factors:

1. Unwillingness of cities within Camden County to accept septage.
 - a. Past bad experiences when plant accepted septage.
 - b. Cost to upgrade plant.
 - c. Potential for damage to plant and/or fines for non-compliance.
2. Lack of requirement from state for municipalities to provide a disposal option.
3. Lack of public awareness on septic systems and the required maintenance to ensure they work correctly
4. Lack of awareness on part of local government on scope of septic issues.

Process Objectives:

1. By December 31, 2010 Camden County will have an agreement/memorandum of understanding (MOU) with Glynn County for the Academy Creek Wastewater Treatment plant to accept Camden County septage while local (within Camden) options are pursued.

Event: MOU agreement developed.

Activities:

Contact Academy Creek plant operator to discuss options for MOU and for recommendations on contacting Glynn County Joint Water and Sewer Commission (JWSC).

Meet with Camden County manager to discuss plans for MOU.

Work with Camden County manager and JWSC to develop and implement septage disposal MOU.

Outcome: After discussions with Camden County's county manager it was determined that best course of action is to not Glynn County JWSC. Academy Creek Treatment Plant is willing to continue accepting Camden septage due to the fees generated. The political climate at the JWSC is unstable and requesting an official MOU could result in the JWSC deciding against accepting Camden septage.

2. By December 31, 2011 develop list of disposal options for Camden County officials to consider.

Event: Research disposal options

Activities:

Contact Georgia EPD Watershed Protection Division for information on land disposal and other alternative disposal options.

Contact land disposal site in Georgia to discuss operation, if possible visit operation.

Meet with Academy Creek Plant operator to discuss operation and tour facility.

3. By December 31, 2011 have the support of St. Marys Water Management Committee and other state and local advocacy groups.

Event: Partnership with advocacy groups.

Activities:

Attend St. Marys River Management Committee meetings.

Take part in future “septic tank-think tank” working group meetings.

Join Georgia On-site Wastewater Association (GOWA), attend annual meeting if funding and time allows.

4. By December 31, 2012 70% of Camden County residents on septic systems shall demonstrate an awareness of proper septic system operation and maintenance. Including need for regular pumping of system and as a result means of septage disposal.

Event: Public awareness/education campaign.

Activities:

Continue distributing septic system fact sheets and DVD with issuance of permits.

Publish public service announcements in local paper and county newsletter.

Conduct at least 2 workshops open to the public on septic tank operation and maintenance.

5. By December 31, 2014 have a reliable, effective, and approved local option for septage disposal in Camden County.

Event: Local infrastructure developed.

Activities:

Meet with local government leaders to coordinate on disposal option.

Research grant opportunities to fund infrastructure improvement for septage disposal

Contact private companies with an interest in septage disposal.

Implement local disposal option.

RESULTS/ACTIONS TO DATE:

1. Met with local officials and treatment plant operators to discuss use of treatment plants for septage disposal. Local plants unwilling at this time to accept septage. Woodbine accepts septage on a very limited basis may be able to increase in future.

2. Discussed limited disposal options with advisors to the St Marys River Management Committee to build support for local disposal option.
3. Submitted letter of support to EPD for standardized land application approval. This would make opening a land disposal site easier.

CONCLUSIONS/NEXT STEPS:

At present municipal treatment plants in Camden County are unwilling to accept septage. Changing this will require increased public support. To that end I will increase participation with local environmental advocacy groups. I will also meet with Woodbine officials to discuss increasing amount of septage they accept. In addition will support any proposed land application site that does not pose a public health risk.

LEADERSHIP DEVELOPMENT OPPORTUNITIES:

Terry Ferrell

My experiences with EPHLI have given me new tools to use in advancing environmental health. Systems thinking provides insight into the interaction of different departments and groups. It is easy to assume those who disagree with you are wrong; a systems thinking outlook has allowed me to see that there is a legitimate reason from another person's perspective. In addition I have gained tools to use in helping change policies.

Meeting with Environmentalists from throughout the country has allowed me to common problems and how others have dealt with them. It is easy to get tunnel vision, EPHLI has motivated me to have a broader perspective. My IDP and development coaching allowed me to focus developing leadership skills.

ABOUT THE EPHLI FELLOW

Terry Ferrell has been the Environmental Health manager for Camden County Georgia for 2 years. As supervisor of a small county office Mr. Ferrell is directly involved with all program areas ranging from restaurant inspections to monitoring on-site sewage management systems to emergency preparedness. Mr. Ferrell began his public health career at the Glynn County Health Department in 2005 primarily as a food safety inspector.

Mr. Ferrell received a BS degree in Biology from the University of North Florida. He is a Registered Sanitarian through the Georgia Board of Registered Environmental Health Professionals and the Georgia Environmental Health Association.

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5. Georgia Department of Community Health Division of Public Health Environmental Health Section. *Rules for the Land Disposal of Domestic Septage*. 2003; 4