A Multi-Agency Approach to Septic System Complaints

2010 - 2011

Environmental Public Health Leadership Institute Fellow:

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EXECUTIVE SUMMARY:

According to the Environmental Protection Agency, an estimated 60 million people in the United States rely on decentralized systems (septic systems) to treat their wastewater. In the future, these systems will play an even greater role because they are often more affordable than conventional centralized sewage treatment plants and can be designed to perform under a variety of specific site conditions. In Missouri, nearly 30% of homes depend on septic systems to properly treat their wastewater. The University of Missouri Extension estimates 70% or 150,000 of these systems are not functioning properly and have a 30-50% failure rate due to backups causing, surface or ground water contamination and risks to public health.

This project focused on improving coordination among five major government entities in St. Louis County that directly respond to complaints of septic system failures, which would better protect public health and water resources. A systems thinking approach was applied to examine the conditions, factors, variables, and mental models that contributed to the repetitive cycle of implementing short-term fixes instead of long-term, sustainable solutions.

The St. Louis County Phase II Storm Water Management Plan formulated a goal to address illicit discharges stemming from septic systems. St. Louis County and the sewer district assembled a work group of community partners to identify the current reality of activities, applicable regulations and available resources to address proper onsite sewage disposal. Using a logic model, the project developed a strategic plan for addressing septic system malfunctions and distributed copies of the plan among the agencies involved for implementation.

The project applied systems thinking to current practices to assemble a workgroup, develop a strategic plan, and apply the 10 Essential Environmental Health Services. Success indicators and measures include: increased coordination between agencies, improved efficiency of staff resources, clarification of agency roles, development of flowcharts and shared complaint tracking.

INTRODUCTION/BACKGROUND:

Saint Louis County Department of Health (DOH) receives less than 100 sewage complaints annually. Complaints are received primarily from citizens to the Division of Environmental Protection but often time referrals are received by other governmental agencies with regulatory responsibility for waste water disposal in the county. The citizens complain about the discharge of sewage from failing septic systems and they demand abatement of the unsanitary, environmental hazard. Notably, there has been increased pressure from the community concerning failing septic systems adjacent to area creeks and rising E. coli levels.

In Saint Louis County, several government agencies share regulatory oversight and implementation of waste water disposal. Recently, these stakeholders have voiced concern over the uncertainty of staff when responding to a sewage complaint and making agency referrals. Frequently staff ask, “Who has regulatory authority and what is our role?” In addition, there has

been misperception expressed by some community stakeholders of the Department of Health's (DOH) authority to respond to sewage complaints county-wide. Thus resulting in increased confusion amongst the stakeholders and doubting if we can adequately, protect public health and the environment with existing regulations.

Community stakeholders with regulatory oversight in waste water disposal consist of five (5) major players. Their roles and responsibilities include the following:

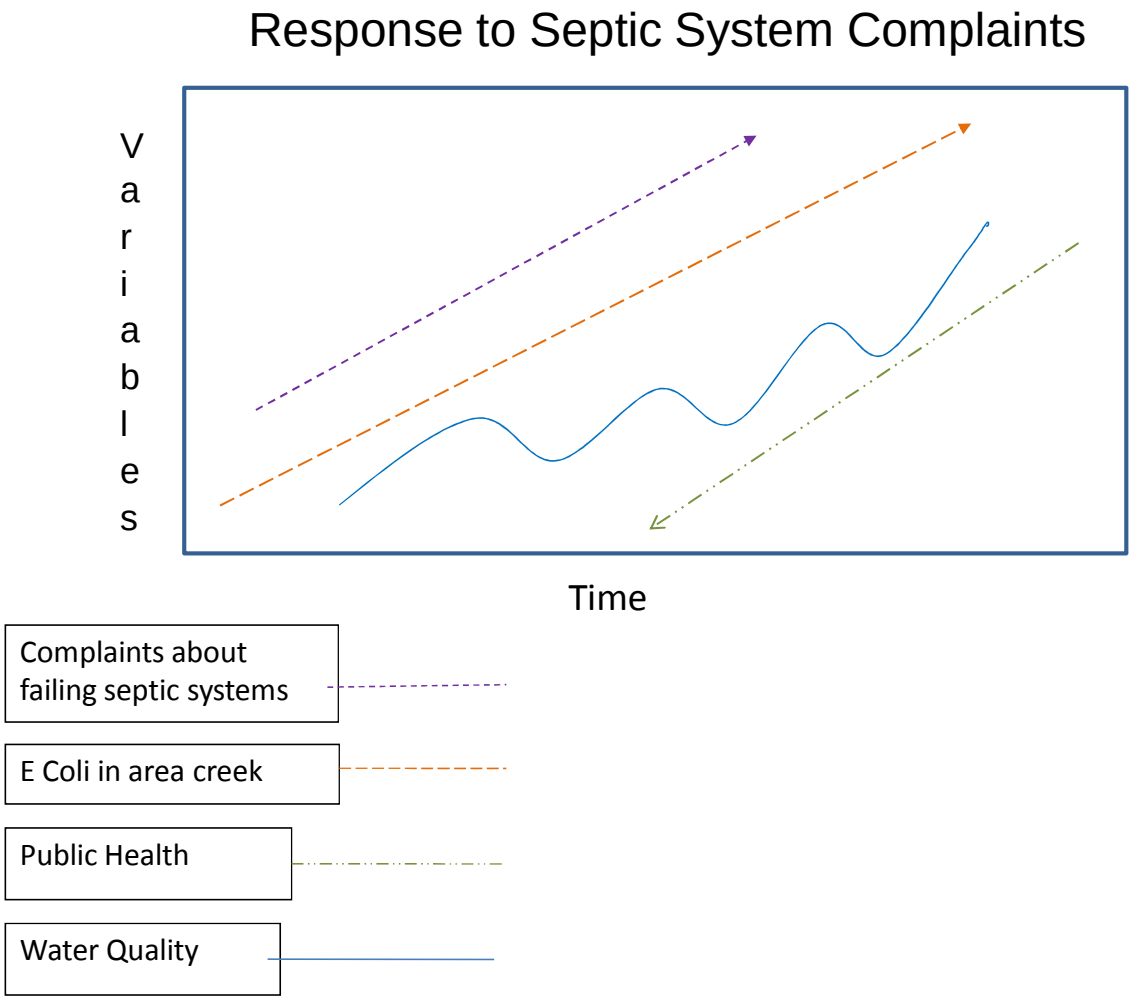
- *Metropolitan St. Louis Sewer District (MSD)* provides sanitary sewer and storm water drainage services throughout the St. Louis metropolitan area. County ordinance requires connection to the sanitary sewer when a sewer line is deemed available within 200' of any part of a property.
- *St. Louis County DOH* in accordance with the county ordinance has limited regulatory authority for proper sewage disposal only within the unincorporated areas of the county. The Missouri Department of Health and Senior Services (MDHSS) contracts with the DOH to respond to sewage complaints and monitor their response under the Core Public Health Functions contract. The DOH is given authority to enforce state law within incorporated cities in the county with this grant. In addition, the MDHSS provides guidance to the DOH through the Environmental Health Operational Guideline (EHOG) manual which details their role and responsibility for fulfilling the contract obligations.
- *St. Louis County Public Works (PW)* is responsible for issuing onsite sewage permits for new and repair systems in unincorporated areas of the county and local municipalities that contract with them for plumbing code enforcement services. The number of municipalities that contract with PW for services vary annually. There are 91 municipalities in St. Louis County.
- *Municipalities* – some municipalities are responsible for enforcing their local codes in response to sewage complaints. The City of Sunset Hills and Wildwood are examples of municipalities with limited authority.

In addition to providing sanitary sewer and storm water drainage services, MSD serves as the coordinating authority under the St. Louis County Storm Water Management Plan (SWMP). Saint Louis County, MSD, and fifty-nine (59) municipalities are co-permittees under the SWMP. The co-permittees have developed a goal under Minimum Control Measure (MCM) #3 – Illicit Discharge Detection and Elimination, to form a work group to discuss strategies for septic systems to minimize their impact on water quality. A work group convened in the fall of 2010 and is in the process of forming subcommittees to address this initiative.

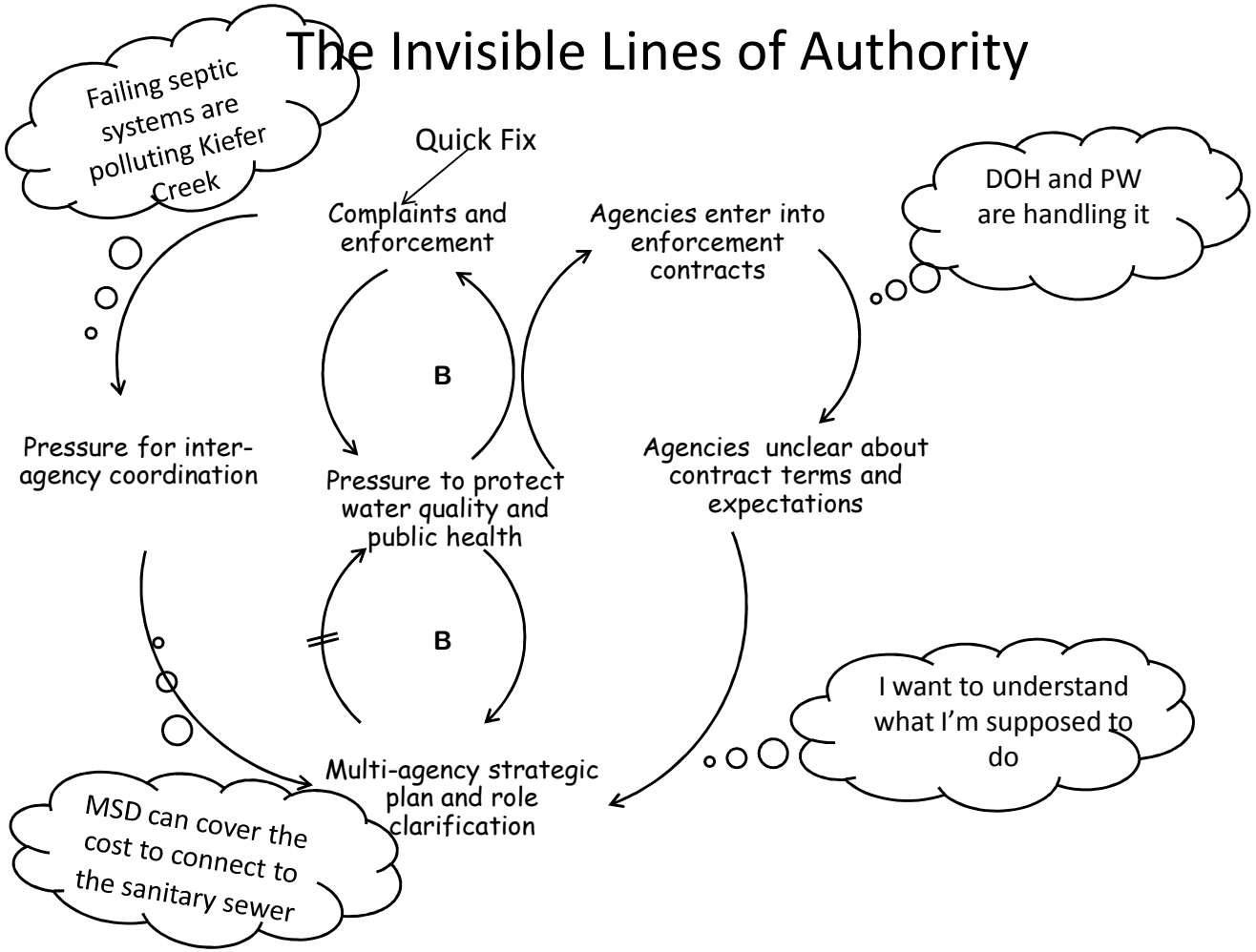
Problem Statement:

Why are we unable to coordinate a response to septic systems malfunctions despite our existing multi-agency efforts to address them?

Behavior Over Time Graph:



Causal Loop Diagrams and applicable Archetypes:



10 Essential Environmental Health Services:

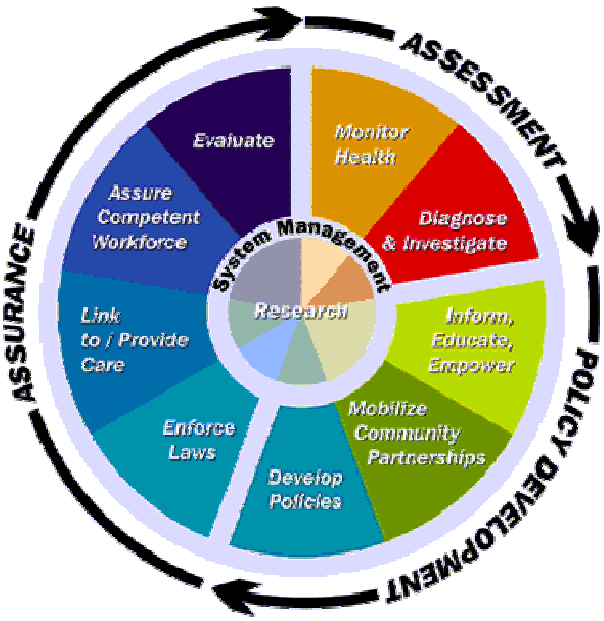


Figure 1: Reprinted from CDC's "National Strategy to Revitalize Environmental Public Health Services"

The table below describes how the development of a coordinated multi-agency approach to septic system complaints in St. Louis County will fulfill areas of the *10 Essential Environmental Public Health Services*.

Core Public Health Function:	Essential Environmental Health Service:	How this project is enhancing this service:
Assessment	**Monitor** environmental and health status to identify and solve community environmental health problems.	The coordination and scheduling of a meeting with community stakeholders will serve as a platform to identify and help with solutions to onsite sewage problem areas that effect public health and safety.
Policy Development	**Develop policies and plans** that support individual and community environmental health efforts.	Formation of a work group to develop a strategic plan to address septic system malfunctions through a collaborative effort comprised of industry, community and regulatory representatives.
Assurance	**Develop policies and plans** that support individual and community environmental health efforts.	Development of a multi-agency strategic plan to protect public health and water resources and enhance role clarification.

National Goals Supported

Healthy People 2020 Objectives

This project strives to support the Department of Health and Human Services Healthy People 2020, Environmental Health Objective-Surface and Ground Water Quality theme, by reducing point source pollution from improperly operating sewage disposal systems and minimizing the impact on water resources.

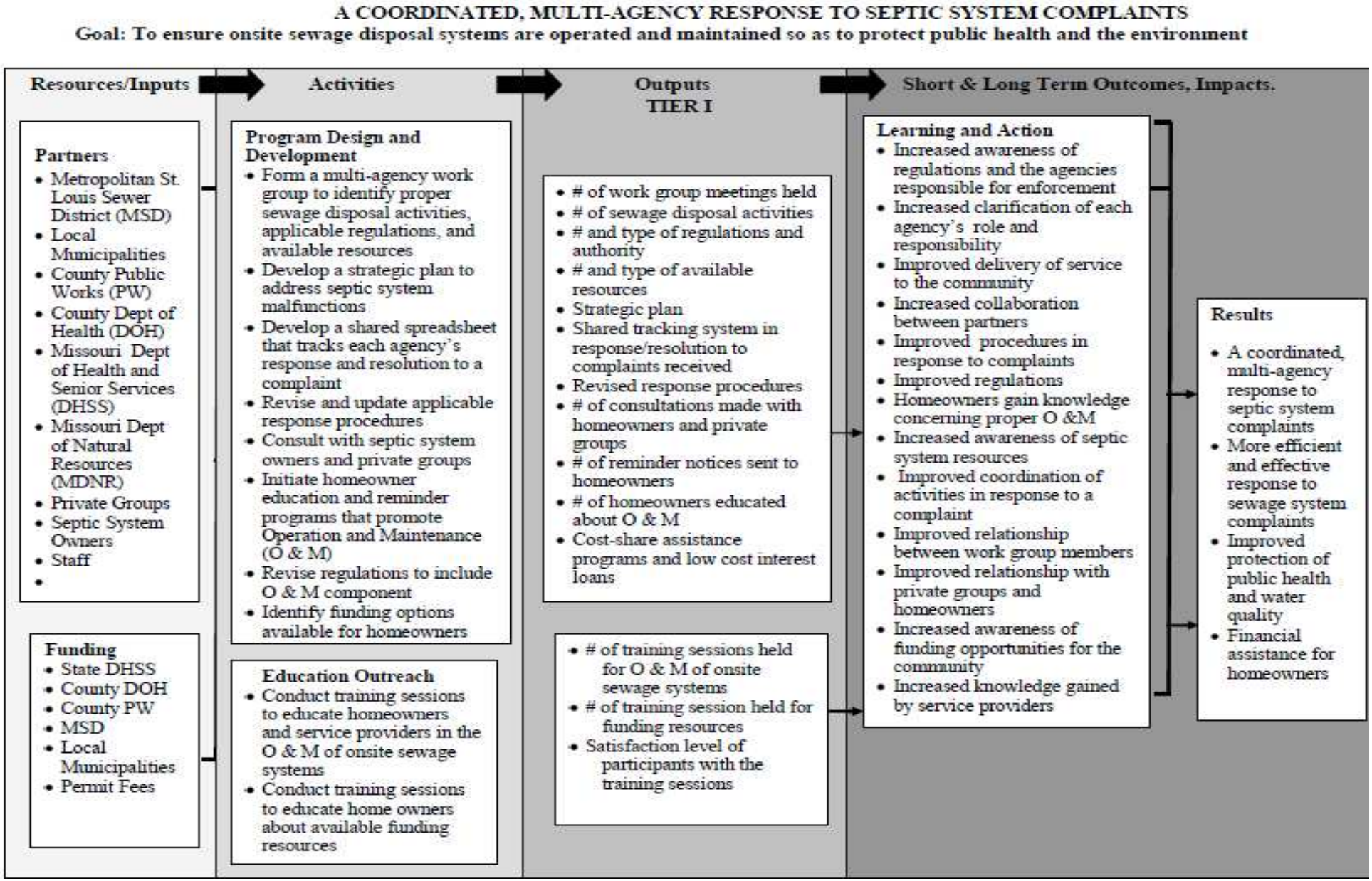
National Strategy to Revitalize Environmental Public Health Services

The National Strategy to Revitalize Environmental Public Health Services goal is to enhance and revitalize environmental public health service to address the broad range of issues facing the state, tribal, territorial, and local levels. This project integrated a system of community partnership through the development of a strategic plan created by community stakeholders. In addition, the project promoted interaction among stakeholders, sharing of ideas, and incorporated models of best practices for implementation.

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

The Environmental Health Competency Project goal is to provide guidelines and recommendations to local public health leaders for the core competencies (non-technical) needed by local environmental health practitioners working in local health departments (LHDs) to strengthen their capacities to anticipate, recognize, and respond to environmental health challenges. The project outlined in this report uses the environmental health practitioner management competency to determine if a septic system is failing and to work in collaboration with community partners to address the public health issue. Communication competency will be required to clearly identify the agency's role and responsibility and to effectively communicate to homeowners, interest groups, and decision-makers on the health risks.

Project Logic Model:



PROJECT OBJECTIVES/DESCRIPTION/DELIVERABLES:

Program Goal: To ensure onsite sewage disposal systems are operated and maintained so as to protect public health and the environment.

Health Problem: Malfunctioning septic systems that adversely impact public health and water quality.

Outcome Objective: By December 31, 2014 complaints due to malfunctioning septic system will be reduced by 10% of the 2010 baseline.

Determinant: The number of complaints received that result from improperly maintained septic systems annually.

Impact Objective: By December 31, 2013 work group members (90%) will implement a strategic plan specific to malfunctioning septic systems and coordination between agencies.

Contributing Factors:

1. Aging onsite septic system, 30+ years.
2. Lack of financial assistance/funding and inability of homeowners to make needed repairs.
3. Lack of regulations that include a routine operation and maintenance component for systems.
4. Lack of awareness of homeowners on the importance and public health rationale for maintaining a proper sewage disposal system.
5. Multi-layered regulatory authority and the inability to identify at times which agency is responsible for enforcement.

Process Objectives:

1. By December 31, 2010, St. Louis County and MSD will form a multi-agency work group to identify proper sewage disposal activities, applicable regulations, and available resources.

   Event: Convene a meeting of the work group. **Completed**
   Activities:
   Send invitation to stakeholders requesting them to attend meeting and become a member of the work group
   Develop a list of agencies responsible for regulatory enforcement of onsite sewage disposal
   Develop a list of community groups with interest in onsite sewage disposal
   Select a facilitator and prepare an agenda

2. By June 30, 2012 the work group will develop a strategic plan to address failing septic systems and the coordination between agencies.

   Event: Development of the strategic plan
   Activities:
   Research best practices for managing onsite (decentralized) sewage systems
   Identify and review current onsite sewage regulations
   Clarify applicable agency roles and responsibilities
   Develop a flowchart outlining agencies response to septic system complaints

Update procedures in response to complaints
Identify problem areas in the county and approximate age of system
Review water quality data

3. A. By December 31, 2013, offer at least two funding assistance workshops for owners of onsite sewage systems.

Event: Funding assistance workshops are developed and offered.
Activities:
Identify the available funding resources in the community
Identify instructors in the community that can facilitate the workshop
Coordinate with the state to provide representation to discuss grant opportunities
Advertise and market the workshops in the community
Develop a workshop agenda and registration process

B. By December 31, 2013 offer at least two educational workshops for homeowners and service providers that promote operation and maintenance of onsite sewage systems.

Event: Educational workshops are developed and offered
Activities:
Collaborate with Missouri Small Flows organization to offer their workshops in St. Louis County for homeowners and a continuing education workshop for service providers
Identify area instructors to supplement Missouri Small Flows organization workshops
Develop agenda and registration process
Advertise and market the workshops in the community

4. By June 30, 2013, county legislative body will consider and hopefully pass revised regulations governing onsite sewage disposal.

Event: Approval of revised onsite sewage regulations and implementation
Activities:
Research best practices for onsite sewage regulations
Incorporate an operation and maintenance component
Consult with Missouri Small Flows Organizations for technical input
Engage industry in code development
Draft regulations
Hold a public hearing

NEXT STEPS:

Several steps still need to be initiated before completion of this project. A proposed action plan was developed in conjunction with this project that provides a list of steps to be completed. The action plan includes deadlines that will take us into 2014.

EXPECTED OUTCOMES:

By achieving the primary objective(s) of the plan to develop a multi-agency strategic plan to address failing septic systems and improve coordination among agencies we will protect public health and our environment. Success outcomes and measures may include not limited to: enhanced community partnerships, increased public awareness, clarification of agency roles, enhanced communication and information sharing, improved efficiency of staff resources, and a shared complaint tracking system.

LEADERSHIP DEVELOPMENT OPPORTUNITIES:

Joyce Theard

What a valuable training opportunity! The EPHLI has provided me with the tools and resources needed to address issues we face daily as environmental health practitioners. The Institute promotes critical thinking, collaboration and finding solutions to problems. The open dialogue during sessions with the instructors, faculty, mentors and fellows I found to be enlightening in preparing us for public health challenges in the future. This experience has been rewarding and I have grown both personally and professionally from attending. I thank EPHLI for the opportunity and for assisting me in enhancing my skills as an environmental health leader.

ABOUT THE EPHLI FELLOW(s)

Joyce Theard is the Environmental Administrator for the Division of Environmental Protection, Food and Environmental Health Laboratory Branch at Saint Louis County Department of Health. She has worked in the environmental/public health field for over 24 years. She is responsible for overseeing environmental health programs including the environmental health laboratory, supervising professional/technical subordinates and support staff.

Prior to working for the Department of Health, Joyce spent a brief tenure with the Metropolitan St. Louis Sewer District, Environmental Compliance Division as an Environmental Engineer/Specialist. In this role she administered and updated the Saint Louis County Storm Water Management Plan, coordinated compliance with Phase II permit requirements, supervised staff and provided community outreach.

Joyce relocated to the Midwest after spending 17 years in the San Francisco bay area working for public agencies. Her experience in the environmental health field includes both consumer protection and hazardous materials programs. Ms. Theard combined positions have given her experience establishing and maintaining effective working relationships with members of the public, community organizations, local, state and federal government agencies.

Joyce has a Bachelor of Science degree in Health Education from Truman State University. She holds a Masters in Public Administration from California State University East Bay. She is a Registered Environmental Health Specialist and is a member of the National Environmental Health Association.

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