



Helping America's Small Communities Protect Their Source Water

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Case Studies

Alternative Wastewater Treatment for Individual Lots

University of Rhode Island Cooperative Extension Water Quality Program

There are many options and factors to consider when selecting the appropriate treatment system. This manual discusses real-world case studies where unique site constraints and specific treatment objectives were considered when selecting the appropriate system. Advanced treatment technologies for each of these case studies were selected to protect coastal waters, groundwater supplies, or support pedestrian-friendly neighborhoods where conventional systems were not feasible or would have required widespread and expensive site disturbance. (All)

WWBLC28/Booklet: 20 pp. (2005)

Chepachet Village Decentralized Wastewater Demonstration Project

University of Rhode Island

The Chepachet Village Decentralized Wastewater Demonstration Project (CVDWDP) began when the Rhode Island Department of Environmental Management (RIDEM) performed a shoreline inspection that discovered a number of homes in need of repair and maintenance to their septic systems. Many homes had difficulty with the repairs due to small lots, surface drainage problems, land slopes, and shallow groundwater. RIDEM began working in conjunction with the University of Rhode Island, Rhode Island Independent Contractors and Associates, and non-profit agencies to begin using alternative onsite wastewater technologies to repair failing septic systems and developed a conceptual plan for village wastewater management using computer-generated maps. This booklet summarizes the results of CVDWDP and offers one approach other New England communities can adopt to meet pressing wastewater treatment needs, while protecting public health and environmental quality. (Public Health Officials, State Regulatory Agencies, Engineers, Researchers, Contractors/Developers, Planners, Managers)

WWBLC26/Book: 44 pp. (2005)

Finance and Management

Buttermilk Bay Coliform Control Project: Demonstrating Practical Tools for Watershed Management Through the National Estuary Program

US Environmental Protection Agency

Located at the north end of Buzzard's Bay, is Buttermilk Bay, a recreational, tidal embayment where many residents and visitors sun bathe, boat and fish. This fact sheet features the Buttermilk Bay Demonstration Project that was designed to control the discharge of fecal coliform into the bay. Project objectives included identifying sources of fecal coliform, employing Best Management Practices (BMPs) to control runoff, and implementing local regulations to control coliform. Results of the project are detailed along with several lessons learned during the implantation phases of the project. (General Public, Local Officials, Public Health Officials, Managers, Planners, State Officials, State Regulatory Agencies)

WWFSMG28/Fact Sheet: 4 pp. (1995)

Buzzards Bay "SepTrack" Initiative: Demonstrating Practical Tools for Watershed Management Through the National Estuary Program

US Environmental Protection Agency

The Buzzard's Bay Watershed includes 432 square miles and a population of nearly 236,000. Approximately half the homes utilize onsite systems to treat wastewater. Problematic onsite systems have led to the contamination of waters resulting in the closure of shellfish beds and other water-contact recreation activities. Local boards of health typically lack the ability to efficiently and effectively monitor septic system permits, inspection, and maintenance information due to insufficient staffing and information-processing equipment and systems.

The SepTrack Demonstration Project provided computers and specialized software to communities to allow them to better manage information related to onsite systems, thereby freeing staff time for better design review and enforcement and to identify patterns of failure. Success stories along with lessons learned from the project are included in this overview of the Buzzards Bay "SepTrack" Initiative. This product could be useful to anyone involved with the management of septic systems. (General Public, Local Officials, Public Health Officials, State Regulatory Agencies, Managers, State Officials)
WWFSMG29/Fact Sheet: 4 pp. (1997)

Community Onsite Options and Approaches to Onsite Management Videos on DVD

National Environmental Services Center

This 17-minute video discusses the need for an implementation of onsite management systems (OMS) in five communities. Wastewater professionals from each of the communities explain why their community instituted an OMS, the approach they took, how it is administered, and its benefits. Ongoing, competent maintenance, monitoring, and management are emphasized, as well as discussion of advanced treatment systems, such as aerobic treatment units, sand filters, and cluster systems. (All)
DPDVMG56/DVD (2003)

Community Readiness Indicators

National Onsite Demonstration Program

The NODP developed this CD to support communities in their efforts to develop and maintain innovative wastewater management systems. It is intended as a checkpoint for community project team members and the NODP staff to assess the extent to which the community has built capacity, accessed resources, and built consent to achieve project goals. The 35-question Community Readiness Indicator (CRI) tool kit provides project team members the opportunity to evaluate their efforts and engage the NODP staff in a discussion of additional activities for project implementation and long-term management of their onsite wastewater system. The CRI takes an average of 40-50 minutes to complete. This tool could be especially helpful to members of a community's steering committee or an appointed community visioning facilitator. (Local Officials, General Public, Managers, Planners, Public Health Officials)
DPCDMG06/CD-ROM (2003)

Community Self Assessment

National Onsite Demonstration Program

The Community Self-Assessment process helps a community collect information that can serve as a basis for the improvement of local wastewater management strategies. The objective of this interactive CD-ROM is to provide information to community leaders, local officials, and other interested parties to help them understand the community's existing situation. This initial community review process generates the profile that acts as the objective point of departure for

constructive dialogue on relevant environmental and public health issues. The CD takes the viewer through five sections: Common Environmental Characteristics, Socioeconomic and Land Use Characteristics, Onsite Wastewater Management Characteristics, Public Health Characteristics, and Outreach and Education. Each section contains a set of questions to be answered by the viewer. When the assessment is completed, these answers appear in a single document of the community's profile. This tool is primarily for use by community environmental and public health officials, selected community professionals, and other related community professionals and associated staff possessing the appropriate expertise and knowledge to complete the assessment process. (Local Officials, Managers, Planners, Public Health Officials, State Officials, Finance Officers)
DPCDMG03/CD-ROM (2002)

Customer Incentives for Water Conservation: A Guide

U.S. Environmental Protection Agency

As political, economic and environmental pressures mount against finding new sources of supply, water utilities are increasing turning to conservation to reduce demand. One of the biggest challenges is how to motivate customers to conserve. This handbook, produced by the California Urban Water Agencies and the USEPA, helps water agencies to design effective conservation programs. Included are case studies from Los Angeles and Seattle detailing their ongoing programs. (All Audiences)
DWBKMG106/Book: 148pp. (1994)

Enabling Mechanisms: Options for community onsite management

National Onsite Demonstration Program

Onsite or alternative wastewater treatment systems are an important aspect of sewage treatment, providing wastewater treatment and disposal for approximately one in every four housing units across America. However, noncompliant, malfunctioning, failing and/or dysfunctional onsite wastewater treatment and disposal systems are one of the largest contributors to water pollution nationwide. This CD addresses enabling legal mechanisms and offers insights into different ways that your community may institutionally approach the oversight and management of onsite wastewater treatment systems to protect the environment and residents' health. This material explains the interrelationship between federal, state, and local laws and regulations which may be useful in assisting the development of ordinances, rules, and other enabling legal mechanisms regarding onsite wastewater management. These materials provide a broad overview of the ways in which the laws and regulations work and specific information about the advantages and disadvantages of particular kinds of ordinances regarding onsite wastewater management. The CD also provides examples of onsite wastewater management systems at work in communities across the country. It is especially helpful for use by members of the community's steering committee or appointed community-visioning facilitator. In clear and simple language, the entire visioning process is mapped out with specific recommendations for ensuring successful community visioning efforts. (Local Officials, General Public, Managers, Planners, Public Health Officials, Engineers, Researchers)
DPCDMG05/CD-ROM (2003)

Envisioning Your Community's Future

National Onsite Demonstration Program

A community's vision is a mental image, expressed in words, of the future that members of that community crystallize through the visioning process. This interactive CD-ROM provides guiding ideas, core concepts, exercises, and related resources for the community visioning process. In clear and simple language, the entire visioning is mapped out with specific recommendations for

ensuring a community's successful visioning efforts. A step-by-step tool, divided into six sections including a series of tasks and exercises, this product is especially helpful for members of the community's steering committee or an appointed community visioning facilitator. The sections include information on topics like groundwork, getting ready, setting the stage, visioning exercise, worksheets, and next steps. (Local Officials, General Public, Planners, Managers, Public Health Officials)
DPCDMG04/CD-ROM (2003)

Financing Your Community's Onsite Management System

National Onsite Demonstration Program

The objective of this interactive CD-ROM is to provide information on the various types of funding streams that may be available to your community through various agencies and organizations to finance your community onsite wastewater management efforts. From a main menu, a click on a financing source icon brings up a brief overview of the agency or organization, and it also includes additional options such as who can apply for funding, key features, key points, and contact information. The agencies and organizations listed in the CD include:

- Administration for Native Americans
- Appalachian Regional Commission
- Clean Water State Revolving Fund
- Community Development Block Grant Program
- Community Self-Help
- Economic Development Administration
- EPA General Assistance Program
- EPA Indian Set-Aside Program
- EPA Section 319 Program
- Indian Community Development Block Grant
- Program for Colonias
- Private Sources of Support
- Rural Housing Service
- Rural Utilities Service
- Sanitation Facilities Program
- State Funding Programs
- Additional Resources

(Local Officials, General Public, Planners, Managers, State Officials, Public Health Officials, Finance Officers)
DPCDFN01/CD-ROM (2002)

Insights into Community Onsite Management Systems: A National Overview

National Onsite Demonstration Program

Small communities increasingly address public health and water quality issues by installing community onsite management systems (OMSs) that minimize the overall impact onsite/decentralized wastewater systems have on their community environment. This 18-page booklet shows characteristics, commonalities, and effective onsite/decentralized wastewater management in communities operating, maintaining, and managing effective OMSs across America. This report is the result of a survey of environmental and public health professionals, along with practitioners from 60 communities across 17 states. The survey defines how a community manages its onsite system, the methodology used in OMSs, discusses survey

findings, and concludes with recommendations for communities considering OMSs. The findings section is well documented with statistical tables, graphs, and analyzed data. (Engineers, Researchers, Local Officials, General Public, Managers, Planners, Public Health Officials, Contractors/Developers, State Regulatory Agencies, State Officials)
DPBLMG10/Booklet: 18 pp. (2002)

Managing Onsite Wastewater Treatment Systems Adds Value

National Onsite Demonstration Program

Onsite (septic) wastewater systems are often the most practical and economical way to treat and dispose of household wastewater in suburban and rural areas. This brochure emphasizes the value of onsite systems as well as how to properly operate and maintain them. Also, the economic and environmental benefits of proper management are summarized for individual homeowners and small communities. Centralized onsite management for communities is also explored. (Local Officials, General Public, Contractors/Developers, Public Health Officials)
DPBRMG08/Brochure: 2 pp. (2002)

NDWRCDP Resource DVD: A Compilation of Reports on Decentralized Wastewater Topics

National Decentralized Water Resources Capacity Development Project

The NDWRDP was formed in 1996 to coordinate and implement a national training, research, and development agenda in decentralized water resources. This DVD contains materials produced by the NDWRCDP. These research reports and analysis would be valuable to those in the field as well as the general public. (Researchers, State Regulatory Agencies, Local and State Officials, Public Health Officials, Engineers, Planners, Managers, Operators, Contractors, Developers, General Public)
DWDVMG54/DVD: (2005)

Promoting the National Source Water Collaborative's Call to Action: Your Water Your Decision

Source Water Collaborative

The Source Water Collaborative, a group of federal, state and local entities, has united to protect America's drinking water at the source—specifically the lakes, rivers, streams and aquifers used for drinking purposes. This guide gives local decision-makers a look at their options for protecting sources of their water. These actions vary from development restrictions to budgeting considerations. (All Audiences)
DWFSMG109/Fact Sheet: 4pp. (N/A)

Protecting Sources of Drinking Water: Selected Case Studies in Watershed Management

US Environmental Protection Agency

Drinking water utilities across the country are engaged in innovative and successful source water protection programs. This publication presents case studies of 17 water systems that have worked with local watershed management initiatives to restore and protect aquatic ecosystems. Though diverse in their watershed management experiences, the common thread among all the water systems is the importance of cross-program coordination. (Local Officials, Outreach, Planners, Researchers, Managers)
DWBLMG33/Booklet: 46 pp. (1999)

Wastewater Management in Unsewered Areas

University of Wisconsin-Madison, Small Scale Waste Management Program

This public information video begins by describing the conventional septic tank/soil absorption system (ST/SAS) and main reason for failure—using sites not conducive to onsite treatment by conventional means. The video discusses alternatives to ST/SAS, such as sand mounds, recirculating sand filters, and cluster soil absorption systems. Topics include onsite system management, site evaluations, water conservation, and inspection. The video presents six case studies, explaining how a family of six cut water use by 71 percent; how Oregon passed a statewide site evaluation and permit program that led to acceptance of experimental systems; and how Stinson Beach, California, formed an onsite management program to inspect systems regularly, monitor nearby waterways, review plans, and work with homeowners faced with failing systems. (General Public, Contractors/Developers, Local Officials, Managers, Planners)
FMVTMG01/Video: 25 min (1982)

Your Water. Your Decision.

Source Water Collaborative

This pamphlet lists some efforts your community can consider in the areas of development patterns, budgeting and rate setting, and stewardship to protect your drinking water source. (Managers, Local Officials, Planners, Government Officials)
DWFSMG107/Fact Sheet: 2pp. (N/A)

Your Water. Your Decision. Toolkit

Source Water Collaborative

This CD offers two brochures and two post cards for local officials to download, print and distribute to help in their campaign to protect sources of drinking water. (Managers, Local and State Officials)
DWCDMG108/CD-ROM: 0pp. (N/A)

General Information

Community Involvement in Drinking Water Source Assessments

US Environmental Protection Agency

By working with their state's source water protection program, community groups can help identify potential threats to their drinking water. They can also help local officials develop and implement a plan of action to prevent water quality problems. This fact sheet explains the four steps of source water assessments and how communities can participate in the process. It also describes how communities can use assessment information to protect local water sources. (General Public, Health officials, Local Officials, and Managers)
DWFSGN53/Fact Sheet: 4 pp. (2000)

Compendium of Tools for Watershed Assessment and TMDL Development

US Environmental Protection Agency

This book summarizes various models and tools that can be used in water quality planning and pollution control to support watershed assessment and to develop total maximum daily loads (TMDLs). Three major categories of models are discussed: watershed loading, receiving water, and ecological assessment. The book includes a wide range of tools and offers selection criteria to assist the user in choosing the model(s) appropriate for a particular application. (Local Officials, Planners, State Officials, State Regulatory Agencies)
WWBKGN96/Book: 229 pp. (1997)

Cuyahoga Board of Health Coastal Nonpoint Pollution Control Program Grant

Cuyahoga County Board of Health

In April 2002, The Cuyahoga County Board of Health began work on a grant from Ohio's Department of Natural Resources. The goal of this project was to reduce the contamination within the Lake Erie watershed that emanates from inadequate household sewage treatment systems and to help assess water quality in the Chagrin river and surrounding watershed. The project consisted of sampling for fecal coliform, macro invertebrates and water quality. Educational outreach and dissemination of results were also part of the project. This brochure summarizes the grant project. (Local Officials, Planners, Managers, General Public, State Officials, State Regulatory Agencies, Public Health Officials)
WWBLGN267/Booklet: 12 pp. (N/A)

Demonstration of Innovative Treatment and Disposal Systems in the Former Coal-Mining Town of Burnett, Washington

National Onsite Demonstration Program; WOSSA

This report outlines NODP activities in Burnett, Washington. With a grant from the NODP II, Washington State Department of Health, as well as substantial volunteer efforts and donations, 14 malfunctioning systems were rebuilt using alternative wastewater technologies, including:

- septic tank with recirculating gravel filter and drip irrigation;
- submerged, fixed-film bioreactor treatment unit with drip disposal;
- aerobic treatment unit with raised media bed disposal;
- septic tank with aerobic biofilter and gravity soil absorption field;
- septic tank with submerged fixed-media activated bioreactor, peat biofilter, and gravity soil absorption field;
- septic tank with modified mound;
- septic tank with recirculating textile filter and absorption field;
- septic tank with dose/equalization tank and drip disposal;
- septic tank with gravity at-grade absorption field;
- septic tank with pressure distribution soil absorption field;
- septic tank with constructed wetlands and gravity soil absorption field;
- septic tank with stratified sand filter; and
- septic tank with an upflow biofilter.

Each system summary discusses the site, system installation, key treatment objectives, operation and maintenance, monitoring, and cost, and includes a diagram of the system. The report also summarizes public education efforts, lessons learned from the program, and the ordinances passed. (Engineers, Researchers, State Regulatory Agencies, Local Officials, General Public, Planners, Managers, Public Health Officials, Finance Officers, Contractors/Developers)
DPBLGN06/Booklet: 18 pp. (2001)

Demonstration of Innovative Treatment and Disposal Technologies in Environmentally Sensitive Karst Terrain Near Rock Bridge Memorial State Park, Missouri

National Onsite Demonstration Program, University of Missouri Biological and Agricultural Engineering

This report outlines activities of a Rock Bridge, Missouri, project funded by an NODP II grant. Based on site limitations and needs, five failing conventional systems in the area were retrofitted with alternative technologies, including:

- septic tank with drip irrigation system,
- aerobic treatment unit with drip irrigation system, and
- septic tank with low-pressure pipe system.

Each system summary discusses the site, system installation, key treatment objectives, operation and maintenance, monitoring, and cost, and includes a diagram of the system. The report also summarizes public education efforts, lessons learned from the program, and the ordinances that were passed. (Engineers, Local Officials, General Public, Finance Officers, Contractors/Developers, Researchers, State Regulatory Agencies, Planners, Public Health Officials)

DPBLGN04/Booklet: 10 pp. (2001)

Demonstration of Innovative Onsite Wastewater Systems in the Green Hill Pond Watershed of Rhode Island

National Onsite Demonstration Program; University of Rhode Island; and RI Onsite Wastewater Training Program

This report outlines the activities of Green Hill Pond watershed, one of six communities that participated in NODP II. With a grant from the NODP II and other partners, seven failing systems were retrofitted with alternative wastewater technologies, including:

- septic tank with recirculating trickling filter and sand filter;
- septic tank with recirculating trickling filter;
- septic tank with drip irrigation system and sand-lined trenches;
- septic tank with single-pass sand filter and shallow, narrow drainfield;
- septic tank with recirculating textile filter and shallow, narrow drainfield;
- septic tank with single-pass peat filter, UV disinfection unit, and shallow; narrow drainfield; and
- fixed-film bioreactor treatment unit with shallow, narrow drainfield.

Each system summary discusses the site, system installation, key treatment objectives, operation and maintenance, monitoring, and cost, and includes a diagram of the system. The report also summarizes public education efforts, lessons learned from the program, and the ordinances that were passed. (Engineers, Researchers, State Regulatory Agencies, Local Officials, Planners, Public Health Officials, State Officials, Contractors/Developers, General Public, Finance Officers)

DPBLGN02/Booklet: 14 pp. (2001)

Innovative Technology and Management District Demonstration in an Impaired Watershed in Southern Pennsylvania

National Onsite Demonstration Program; and Southern Alleghany Conservancy

This report outlines activities of a Centerville, Pennsylvania, project funded by an NODP II grant. Originally intended to demonstrate one alternative cluster system, this project evolved into a comprehensive wastewater treatment and management plan for the entire town. It included three major activities:

- installing a contour trench system for multiple households,
- constructing a wetland to polish wastewater from the recirculating sand filter, and
- with stakeholder assistance, developing relevant ordinances and plans for forming a management district for the entire township.

Each system summary discusses the site, system installation, key treatment objectives, operation and maintenance, monitoring, and cost, and includes a diagram of the system. The report also summarizes public education efforts, lessons learned from the program, and the ordinances that were passed. (Engineers, Contractors/Developers, General Public, Local Officials, Researchers, State Regulatory Agencies, Managers, Planners, Public Health Officials, Finance Officers)

DPBLGN03/Booklet: 10 pp. (2001)

National Onsite Wastewater Treatment: A NSFC Summary of Onsite Systems in the United States, 1993

National Small Flows Clearinghouse

This book reports on the status of onsite systems in 1993 throughout the U.S. The information was compiled state-by-state from health departments and regulatory agencies dealing with wastewater issues. The book provides data on the reasons for system failure, permit information, cost of various onsite systems, and who has responsibility for onsite system maintenance. (Contractors/Developers, Engineers, General Public, Public Health Officials, State Regulatory Agencies, State Officials, Researchers)

SFBKHD01/Book: 407 pp. (1996)

Nonpoint Pointers: Understanding and Managing Nonpoint Source Pollution in Your Community

US Environmental Protection Agency

This package contains 11 EPA documents that discuss the different types of nonpoint source (NPS) pollution and how to identify and manage them. Also discussed are community involvement activities (volunteer monitoring of rivers, lakes, and coastal waters); federal control programs; and the use of wetlands to manage NPS. (General Public, State Regulatory Agencies, Local Officials, Public Health Officials, State Officials)

WWPKGN86/Package: 22 pp. (1996)

Overview of Onsite Technologies

National Onsite Demonstration Program

The objective of this interactive CD-ROM is to introduce various types of available onsite wastewater technologies. The technologies and topics described here include aeration treatment units, disinfection (chlorine, ozone and ultraviolet), filters (intermittent sand, trickling, and recirculating sand), composting toilet systems, evapotranspiration systems, fine bubble aeration, low-pressure pipe systems, mound systems, septage management, and water efficiency. Tables, diagrams, and illustrations complement the text and can be printed or downloaded. By clicking on a technology category icon, one can read a list of options along with a brief introduction to the particular technology. The list of options provides an overview of the topic with information such as process description, advantages and disadvantages of the system, its performance, application, operation and maintenance, siting and design, and cost. The section on water efficiency discusses conservation, efficiency measure, and engineering and behavioral practices. The information here is non-technical and should be easy to understand by all community audiences, both lay and professional. It should be of particular interest to wastewater professionals interested in educating homeowners about innovative onsite wastewater technologies or homeowners who want to know more about onsite systems. (Local Officials, General Public, Planners, Managers, Public Health Officials, Contractors/Developers)

DPCDGN13/CD-ROM (2002)

Protecting Your Ground Water Supply

West Virginia University

This video highlights the lessons learned by 13 demonstration projects in EPA Region 5. The video discusses ground water or drinking water protection. 80% of all groundwater is used for drinking water.

Common Questions include:

1. Where does the water come from
2. What human activities can contaminate the water source
3. What steps can the community take to prevent groundwater contamination
4. How can a community obtain public support for its wellhead protection

Wellhead protection has four common pieces. These pieces are:

1. Delineation – size and location of area that provides water to the wellhead.
2. Source Inventory – identification of all sources of contamination in the delineated area
3. Wellhead Protection Management
4. Education and Outreach

Common Themes:

1. Involve everyone from the beginning
2. Take advantage of the existing resources
3. Value the community
(Local Officials, Managers)

TRVTGN14/Video: 27 min. (1996)

Repair of Failing Onsite Wastewater Systems

Mississippi State Department of Health, Bureau of General Environmental Services, Division of Onsite Wastewater

In recent years, the potential for groundwater and surface water pollution from individual onsite wastewater disposal systems has emerged as a serious concern in the US. Proper repair of these malfunctioning sewage systems is essential. This resource manual, produced by the Mississippi State Department of Health, is intended to illustrate best management practices. It describes problems and specific malfunctions of existing systems, and recommends repair options used to overcome specific soils and site conditions. (Contractors, Developers, Planners, Local Officials, General Public, Public Health Officials)

WWBKGN275/Book: 61pp. (2002)

Sanitary Situation Survey: Individual Housing Unit Response Form

National Onsite Demonstration Program

This survey form is part of a broader community assessment program to determine wastewater treatment needs. To help determine these needs, it asks questions pertinent to home ownership, dwelling size, drinking water source, and type of sewage disposal system. Local officials and others who might be involved in a community-wide assessment of water and wastewater needs could use the form to gather this information. There is another survey, Sanitary Situation Survey: Individual Lot Assessment, item # DPFSGN15, which could be used in conjunction with this form. (Local Officials, General Public, Planners, Managers, Public Health Officials)

DPFSGN14/Fact Sheet: 1 pp. (2003)

Sanitary Situation Survey: Individual Lot Assessment

National Onsite Demonstration Program

This survey form is part of a broader community assessment to determine wastewater treatment needs. To help determine these needs, it asks questions pertinent to dwelling size, topography, hydrogeology and soils, and water usage. Local officials and others who might be involved in a community-wide assessment of water and wastewater needs could use the form to gather this information. The Sanitary Situation Survey: Individual Housing Unit Responses Form, item # DPFSGN14, could be used in conjunction with this form. (Local Officials, General Public, Planners, Managers, Public Health Officials)
DPFSGN15/Fact Sheet: 2 pp. (2003)

Septic Systems, Soils, and Groundwater Protection

Cornell Cooperative Extension

This booklet discusses basic background information about septic systems and their environmental effects. The characteristics of raw sewage and septic tank effluent are discussed in detail along with potential public or environmental health concerns. (General Public, Planners, Managers, Local Officials, State Officials, Public Health Officials, Contractors/Developers)
WWBLGN261/Booklet: 16 pp. (N/A)

Wellhead Protection: An ounce of prevention...

Wisconsin Department of Natural Resources

Wellhead protection planning is one way to ensure your community has a long-term source of clean water. This illustrated brochure outlines a four-step wellhead protection strategy and the reasons for taking this preventive action before problems with groundwater may occur. (Public Health Officials, Local Officials, General Public, Health officials, Commissioners, Planners, Managers)
DWBRGN57/Brochure: 2 pp. (1999)

Why Do Septic Systems Malfunction?

The Ohio State University Extension

This fact sheet discusses the signs of septic system malfunction and makes a distinction between malfunction and failure (i.e., failure is when a system cannot be fixed to bring it back into compliance). Three reasons for system failure are noted, along with ways the property owner can avoid system failure. This fact sheet could be a good tool for community or public education. (Researchers, Local Officials, General Public, Planners, Managers, Public Health Officials, Contractors/Developers)
WWFSGN205/Fact Sheet: 2 pp. (2000)

NESC Publications

Drainfield Rehabilitation

National Environmental Services Center

Failure of soil absorption systems occurs for many reasons, ranging from improper siting, design, or construction to overuse of water. It is important to determine the exact cause of failure before attempting to remediate or repair the onsite system. This issue of Pipeline will discuss the process for correcting system failure, including gathering information about the system, determining the cause of failure, and designing the corrective action. (General Public, Local Officials, Planners, Managers, Public Health Officials, State Regulatory Agencies, State Officials, Contractors/Developers)
SFPLNL40/Booklet: 8 pp. (2005)

Soil Characteristics - Demystifying Dirt

National Small Flows Clearinghouse

This issue of Pipeline focuses on soil characteristics, conditions, and components. Soil evaluation procedures are outlined, and textural properties (feeling and appearance) of mineral soils are explained. Dispersal selection methods are noted under various site constraints. A case study in Indiana describes how Wells and Allen Counties evaluated soils to correct failing systems. This information is accessible to the general public, and could be useful as part of a homeowner or community education program. (Local Officials, General Public, Public Health Officials, Contractors/Developers)
SFPLNL29/Newsletter: 8 pp. (2002)

Operation Maintenance and Management

Drinking Water Protection Series: Effectiveness of Nitrogen BMPs—Irrigated Sands

Minnesota Department of Agriculture

High nitrate concentrations are a relatively common problem in Minnesota aquifers. This fact sheet, produced by the Minnesota Department of Agriculture, summarizes a collection of studies, presenting the Best Management Practices (BMPs) for agricultural fields and the associated water quality impacts. (All Audiences)

DWFSOM111/Fact Sheet: 2pp. (N/A)

Drinking Water Protection Series: Nitrogen Basics for Wellhead Protection Teams

Minnesota Department of Agriculture

Found in both groundwater and surface water supplies, nitrate contamination is almost always introduced by man's activities. This fact sheet, produced by the Minnesota Department of Agriculture, provides the reader with a brief description of the nitrogen cycle and some of the key sources typically encountered in source water protection areas. (All Audiences)

DWFSOM112/Fact Sheet: 2pp. (N/A)

Drinking Water Protection—Wellhead Protection in Minnesota Three Case Studies

Minnesota Department of Agriculture

These fact sheets, developed cooperatively between the Minnesota Department of Agriculture and Minnesota Department of Health, present the successful action steps being taken to protect the wellheads for three different cities. (All Audiences)

DWFSOM113/Fact Sheet: 6pp. (N/A)

Geospatial Technology and Source Water Protection Measures for Small Public Water Systems

Mississippi State University; Southeast Regional Small Drinking Water Systems Technical Assistance Center

Various surface geology conditions and soil associations can be potentially hazardous to small water system wells and their wellhead protection areas. By using geographic information systems (GIS) layers, it is possible to determine these potential hazards. This report summarizes such a study in a small area of the state of Mississippi and details the GIS data layers that were obtained, the agency that created the layers, and the ways in which the layers were analyzed. (All Audiences)

DWBLOM115/Booklet: 19pp. (2005)

Protecting Your Drinking Water Through a Source Water Assessment and Protection Plan: A “How to” Workbook for Small Water Systems

U.S. Environmental Protection Agency

Source water protection is achieved through identifying the various components, influences and possible contamination areas. This workbook, developed by the USEPA and Spotts, Stevens and McCoy, Inc., is a guide for communities and water shed groups interested in developing and implementing an assessment and protection plan for watersheds. (Consultants, Engineers, Assistance Providers, Environmental Trainers, Managers, Operators, Regulatory Agencies, Technical Community, State Officials)

DWBLOM116/Booklet: 30pp. (N/A)

Septic Tank and Drainfield Operation and Maintenance

Montana State University Extension Service

This fact sheet provides information on the operation and maintenance of a conventional gravity-flow septic system. Tips for using a septic system are also provided as well as information about when to pump the tank, why systems fail, and if additives are the right choice for your septic system. (Assistance Providers, Consultants, Contractors/Developers, Engineers, General Public, Local Officials, Managers, Planners, Regulatory Agencies, Researchers, Technical Assistance Providers, Technical Community, Trainers, Environmental Trainer, Commissioners)

WWFSOM53/Fact Sheet: 4 pp. (2002)

Septic Tank Inspection and Trouble-Shooting

Montana State University Extension Service

Evaluating a septic system prior to sale or purchase of property protects both the buyer and seller. A properly functioning system can also be a good selling point and enhance the value of the house. This fact sheet discusses what is involved with an evaluation, why a system fails, and information on when to pump the septic tank. Troubleshooting septic system problems is also discussed in a symptom/causal relationship. (Assistance Providers, Consultants, Contractors/Developers, Engineers, Environmental Trainer, General Public, Local Officials, Managers, Outreach, Planners, Public Health Officials, Researchers, Technical Assistance Providers, Technical Community, Trainers)

WWFSOM54/Fact Sheet: 4 pp. (2003)

Tech Brief: Water Quality in Distribution Systems

National Drinking Water Clearinghouse

A variety of factors can degrade water quality as it travels through a distribution system. Taste and odor problems can occur, but research also suggests that degraded water quality increases the risk of gastrointestinal illnesses. This Tech Brief discusses several ways water quality can be compromised, including structural and operational issues, and suggests methods to retain the high quality water has when it leaves the plant. (Local Officials, Managers, Operators, Technical Community)

DWFSOM25/Fact Sheet: 4 pp. (2002)

Public Education

Alternative Household Cleaning Solutions

National Small Flows Clearinghouse

This fact sheet provides less-toxic alternatives for several cleaning and home improvement jobs around the house. (General Public, Public Health Officials, Contractors, Developers)

GNFSPE109/Fact Sheet: 4pp. (2005)

The Care and Feeding of Your Septic System

National Small Flows Clearinghouse

Second in a series of three brochures, this describes how to prolong the life of your septic system. The brochure includes schematic diagrams of septic systems and discusses what should and should not be put into the system. Tank sizes are carted according to household size. The brochure discusses absorption fields and recommended pumping frequency. (General Public, Public Health Officials, Local and State Officials)

WWBRPE18/Brochure: 2pp. (1995)

Conventional On-Site Sewage Disposal System: Your Septic System, What it is and how to take care of it

Anne Arundel County Department of Health, Maryland

This video is one in a series of three produced by the Anne Arundel County Department of Health. The video discusses conventional septic system components, using computer enhancement to show how water goes through the system. Wastewater professionals (a sanitarian, an inspector, and a pumper/hauler) explain what they do and why it is important. The video begins with a discussion of ways in which people use water and create wastewater. Throughout the video, regular care, monitoring, and maintenance are emphasized, explaining how money spent on maintenance is generally much less than the cost of repairing or replacing a failed system. The video shows a system being installed as a new house is built. (Local Officials, General Public, Contractors/Developers, Managers, Public Health Officials, Planners, State Officials)

WWVTPE61/Video: 17 min. (1998)

Dollars Down the Drain: Caring for Your Septic Tank

Friends of the Crooked River, Akron, Ohio

This video highlights each component of a standard septic tank/soil absorption system and the routine maintenance required to ensure that the system functions properly. The video identifies family household procedures that can extend the life of the system, such as conserving water and restricting substances washed down the drain. Economic, health, and environmental benefits of proper septic system care are emphasized. The video also discusses problems that could arise when proper use and maintenance are neglected. (General Public, Local Officials, Public Health Officials)

WWVTPE42/Video: 22 min. (1997)

WWDVPE100/DVD

Down the Drain: Septic System Sense

Pennsylvania Department of Environmental Protection

This video presents good maintenance practices by documenting one family's septic system failure. As the narrator discusses how a septic system works, animated graphics and diagrams illustrate the basic design and soil absorption and treatment processes. The video emphasizes the need for maintenance and management, including regular inspection and pumping of the

septic tank. Important do's and don'ts are discussed, such as water conservation; avoiding garbage disposals, additives, and chemicals; locating the system; and proper landscaping. The video shows trouble signs to look for, such as slow drains, a bad smell, and backed-up sewage. Although the tape mentions Pennsylvania, any wastewater professional could use this short video as a tool to educate homeowners about sound management of their onsite septic systems. (Local Officials, General Public, Public Health Officials, Contractors/Developers)
WWVTPE67/Video: 12 min. (2001)

Drinking Water Protection Series: Nitrate Contamination—What is the cost?

Minnesota Department of Agriculture

Groundwater is a highly prized natural resource that quenches the thirst of over 70% of Minnesota's 5 million residents. But these shallow aquifers are vulnerable to impacts from land use activities, especially nitrogen contamination. This fact sheet, produced by the Minnesota Department of Agriculture, describes some corrective actions used by communities to mitigate nitrate contamination and their associated costs. (All Audiences)

WWFSPE347/Fact Sheet: 2pp. (N/A)

Everyone Shares a Watershed

Water Environment Federation

This brochure details watershed management and why it's the best approach to protecting our water supplies. Questions answered in this brochure include who is affected, how to get started, and how individuals can participate in a watershed management program. (General Public, Public Health Officials, Local Officials, Managers, Planners)

GNBRPE02/Brochure: 2 pp. (1994)

Everything You Always Wanted To Know About Septic Systems. . . But Didn't Know Who To Ask! HomeOwner Version 1.0

Environmental Health, Volusia County Health Department

This interactive CD ROM educates homeowners about conventional onsite systems. The CD is divided into six main sections, including:

- the history of the modern septic system,
- public health issues,
- effluent characteristics,
- failures and repairs,
- frequently asked questions, and
- Web sites for additional information.

The septic tank and drainfield are further detailed through an extensive video/slide show that covers such topics as septic tank requirements, use of dosing tanks, types of tanks to use, aerobic treatment units, drainfield location, what aggregate and lateral pipe to use, and alternative soil absorption systems. Although some sections are based upon Florida regulations, this CD can be edited to reflect regulations and requirements specific to any state or local jurisdiction. (General Public, Public Health Officials, State Officials, State Regulatory Agencies)

WWCDPE76/CD-ROM (2002)

Getting in Step: Engaging and Involving Stakeholders in Your Watershed

US Environmental Protection Agency

Effective stakeholder involvement provides a method for identifying public concerns and values, developing consensus among affected parties, and producing effective and efficient solutions through an open, inclusive process. This guide provides the tools needed to effectively engage stakeholders to restore and maintain healthy environmental conditions through community support and cooperative action. Tips for working effectively with stakeholders in protecting water quality are also included, as well as resource information, case studies, Web sites, and other how-to guides related to watershed protection. (Local Officials, General Public, Government Officials, Managers, Outreach, Planners, Regulatory Agencies, Researchers, State Officials, State Regulatory Agencies, Technical Assistance Providers)
WWBKPE106/Book: 79 pp. (1999)

Ground Water A Source of Wonder: Drinking Water From Wells

American Ground Water Trust

More than half of all drinking water in the U.S. comes from groundwater wells. This illustrated booklet explains the hydrologic cycle and describes and defines groundwater and its associated terms. Plus, simple water well construction diagrams show how wells are built and operated. (Public Health Officials, Health officials, General Public, Local Officials, Outreach, Contractors/Developers)
DWBLPE151/Booklet: 14 pp. (2003)

Groundwater Protection and Your Septic System

National Small Flows Clearinghouse

Third in a series of three brochures, this focuses on groundwater and drinking water sources in relation to septic systems. Along with ways to prevent contaminants from reaching the groundwater, this brochure discusses groundwater protection based upon proper septic system sizing and location. Various schematic diagrams are provided. (General Public, Public Health Officials, Local and State Officials)
WWBRPE21/Brochure: 2pp. (1995)

Homeowner Onsite Record Keeping Folder

National Small Flows Clearinghouse

This folder provides a place to record and store information about your septic system and its maintenance. On the cover are sections for permit and local health department information. Inside are tips for locating your system, a safety checklist, and a section for recording the names, addresses, and certification numbers of your systems designer, installer, and pumper. (Local and State Officials, Public Health Officials, General Public)
WWBLPE37/Folder: 4pp. (2008)

Homeowner's Septic Tank Information Package

National Small Flows Clearinghouse

This package includes:

- a recordkeeping folder for storing documents such as the septic system permit, site drawings, and maintenance and repair information (Item # WWBLPE37)
- several brochures about septic system maintenance and how to recognize potential problems (item #'s WWBRPE18, WWBRPE20, and WWBRPE21)
- four issues of the *Pipeline* newsletter that focus on septic system management, inspections, and source water protection (Item #'s SFPLNL13, SFPLNL38, SFPLNL39, SFPLNL48, and SFPLNL49)

- a fact sheet about various household cleaning solutions that offer safe alternative over chemical cleansers (Item # GNFSPE109)
(General Public, Contractors, Developers, Local and State Officials)
WWPKPE28/Package: 54 pp. (2008)

How to Conduct an Inventory in Your Wellhead Protection Area

University of Idaho

This training manual is designed to help community volunteers conduct wellhead protection inventories in their local watershed. The manual takes a user step-by-step through the process for training volunteers. (General Public, Local Officials, Operators)
DWBKPE95/Book: 117 pp. (1993)

Inspections Equal Preventative Care for Onsite Systems

National Small Flows Clearinghouse

The Spring 1998 *Pipeline* focuses on the advantages of having regular onsite wastewater system inspections. It explains what occurs during an inspection, when and how often systems should be inspected, and how to locate a qualified inspector. The newsletter lists questions homeowners may be asked about their systems and discusses the homeowner's role in the process. A Delaware inspector shares his experiences and offers advice to homeowners. (General Public, Contractors, Developers, Local and State Officials)
SFPLNL13/Newsletter: 8pp. (1998)

Keeping Our Shores/Protecting Minnesota Waters: Shoreland Best Management Practices

Minnesota Extension Service, University of Minnesota

This video demonstrates practices that can be easily adopted to protect both water quality and property values in shore land areas. It highlights filter strips, septic system maintenance, best management practices for recreation, and the importance of working together as a community to solve problems and protect the surrounding environment. A packet of 18 fact sheets accompanies this video. Topics include reducing runoff and erosion and caring for lawns and gardens, to name a few. The fact sheets come in a folder with a section for recording information about your septic system and drinking water well. (Contractors/Developers, General Public, Local Officials, Planners, State Officials)
WWVTPE34/Package: 69 pp. (1996)

Living on Karst: A Reference Guide for Landowners in Limestone Regions

Cave Conservancy of the Virginias

This booklet explains the link between karst topography and drinking water sources and supplies. It educates landowners about the significance of living in a karst environment and how day-to-day activities affect the groundwater and fragile ecosystems in karst regions. The booklet discusses septic systems in karst areas, problems with stormwater and runoff, pollution and well protection, and household wastes and water conservation. (Local Officials, General Public, Engineers, Contractors/Developers, Managers, Planners, State Officials, Public Health Officials, Researchers)
WWBLPE46/Booklet: 27 pp. (1997)

Maintaining Your Septic System: A Guide for Homeowners

National Small Flows Clearinghouse

This updated reprint of the Fall 1995 *Pipeline* focuses on educating homeowners about proper septic system operation and maintenance. Topics include groundwater pollution, system

inspections, and the use of additives and cleaners. The newsletter includes a handy list of important septic system do's and don'ts. (General Public, Contractors, Developers, Local and State Officials)
SFPLNL39/Newsletter: 8p (2004)

The Multiple Barrier Approach to Public Health Protection

US Environmental Protection Agency

This publication from USEPA looks at the multiple barrier approach to public health protection. The 1996 safe Drinking water act Amendments created a coordinated set of programs and requirements to help water systems make sure the public has a safe supply of drinking water. These programs and requirements form the multiple barriers in protecting the public health. (All)
DWFSPE342/Fact Sheet: 4 pp. (2006)

Preventing On-lot Sewage System Malfunctions

Penn State University, Agricultural and Environmental Engineering

For most people living in rural areas, sewage collection, treatment, and disposal must be accomplished onsite. Properly designed and installed onsite sewage systems provide adequate treatment and disposal of liquid household wastes. Still, some onsite systems malfunction for the following four reasons: faulty installation, hydraulic overloading, biological overloading, or lack of maintenance. This fact sheet discusses these malfunctions and suggests potential remedies for each. The fact sheet also includes diagrams of a typical onsite sewage system and a cross-section of a typical two-chamber septic tank. Although intended for Pennsylvania residents, public health officials across the country can use the information in this fact sheet as part of a homeowner education program. (State Regulatory Agencies, Local Officials, General Public, State Officials, Public Health Officials, Contractors/Developers)
WWFSPE70/Fact Sheet: 4 pp. (2002)

Protecting Your Water Quality Through a Farm & Home Assessment

USDA Natural Resource Conservation Service

About 95 percent of the families who live in the country get their drinking water from groundwater or a rainwater collection system. If the water supply equipment or storage facilities are not properly constructed or maintained they can allow your drinking water to become contaminated. This booklet presents an eight-step questionnaire designed to make you aware of conditions on your property that increase the risk of contamination to your drinking water. This booklet was produced by a partnership of the USDA Natural Resource Conservation Service, the USDA Cooperative State Research, Education and Extension Service and the USEPA. (All Audiences)
DWBKPE351/Book: 76pp. (N/A)

Safe Drinking Water Act: Underground Injection Control (UIC) Program-Protecting Public Health and Drinking Water Resources

US Environmental Protection Agency

Your community may have industrial waste disposal wells, storm water drainage wells, or large-capacity septic systems, which are all regulated disposal methods. This full-color poster illustrates the five classes of underground disposal wells for different wastes and notes other types of subsurface disposal that are banned. (Regulatory Agencies, State Regulatory Agencies, Technical Community, Planners, Manufacturers, Health officials, Local Officials)
DWPSPE132/Poster: 1 pp. (2001)

Septic Systems—A Practical Alternative for Small Communities

National Small Flows Clearinghouse

This issue is an update of the Spring 1995 issue of Pipeline and presents basic information on septic tank systems, how they work, and where homeowners and community leaders can find further information and assistance. Discussions on landscaping of septic systems, siphons, and alternating and interlacing drainfields are included, as well as advantages and disadvantages of septic systems. Drawings of a typical residential septic system, pump system, and siphon are given. (General Public, Contractors, Developers, Local and State Officials)
SFPLNL38/Newsletter: 8pp. (2005)

Septic Systems Revealed: Guide to Operation, Care, and Maintenance

Minnesota Extension, University of Minnesota

Septic systems need periodic maintenance and attention. A well maintained septic system is a hidden investment. This video explains each component of a septic system, what purpose each serves (functions). Two basic types of soil absorption systems are detailed (mounds and conventional rock-filled trenches). Hydraulic overloading of a septic system is identified as the number one reason for system failure followed by inadequate or lack of proper care, and improper installation (construction). Threat of disease, contamination, and added cost are characteristic of a failing system. Water conservation, or efficient water use, is focused on in this video as a means of ensuring hydraulic overloading of a system (and possible failure) will not occur. Helpful household tips are detailed on how to use less water and therefore lessening the hydraulic stress on a septic system. Effects of household cleaners and other items typically found around the house on a septic system are discussed. A typical septic tank cleaning period is given as once every 18-30 months; however, this is very dependent upon the amount of water used, the number of residents, and household practices. A demonstration of proper septic tank pumping methods is highlighted. Additives are discouraged from use and should not be used or thought of as a substitute for proper maintenance. (Contractors/Developers, General Public, Local Officials, Public Health Officials)
WWVTPE43/Video: 23 min. (1996)

So. . . Now You Own a Septic System

National Small Flows Clearinghouse

First in a series of three brochures, this introduces the conventional septic tank soil absorption system. The brochure describes how a septic system works and how to keep it functioning properly. Schematic diagrams are provided. (General Public, Contractors, Developers, Local and State Officials)
WWBRPE20/Brochure: 2pp. (1995)

Soil Facts: Why Do Septic Systems Fail?

North Carolina State University Cooperative Extension

This fact sheet lists signs of septic system failure and gives the homeowner useful information for preventing failures and for repairing systems. Although the fact sheet is based on North Carolina code, most of the information can be adapted to other states. (Public Health Officials, General Public, Contractors/Developers)
WWFSPE113
Fact Sheet: 4 pp. (N/A)

Well Water: Keeping It Clean

Clemson University, Cooperative Extension Service

Keeping your well water free of harmful contaminants is a top priority – for your health and for the environment. This booklet, produced as part of South Carolina's Home-A-Syst program, helps homeowners understand good well management and how activities on or near the well can affect water quality. (All Audiences)

DWBLPE350/Booklet: 21pp. (2001)

Wellhead Protection: Keeping Our Drinking Water Safe

Alabama Cooperative Extension System

Over 95 percent of the liquid fresh water on earth is not found within surface lakes and streams, but beneath the land surface as groundwater. We know that groundwater can become polluted just like surface water. This fact sheet produced by the experts at the Alabama Cooperative Extension presents basic groundwater facts and information about the Wellhead Protection Program in that state. (All Audiences)

DWFSPE348/Factsheet: 2pp. (1998)

Regulations/Legal Mechanisms

State Source Water Assessment and Protection Programs Guidance (Final Guidance)

US Environmental Protection Agency

This book provides guidance required by the 1996 SDWA Amendments for the Source Water Assessment Program and Source Water Protection Program. It explains EPA's recommendations about what to include in a Source Water Protection Program and gives an overview of how source water assessment and protection integrate with other SDWA programs. (Government Officials, Managers, State Officials)

DWBKRG46/Book: 138 pp. (1997)



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