



Services for Communities & SMART about WATER

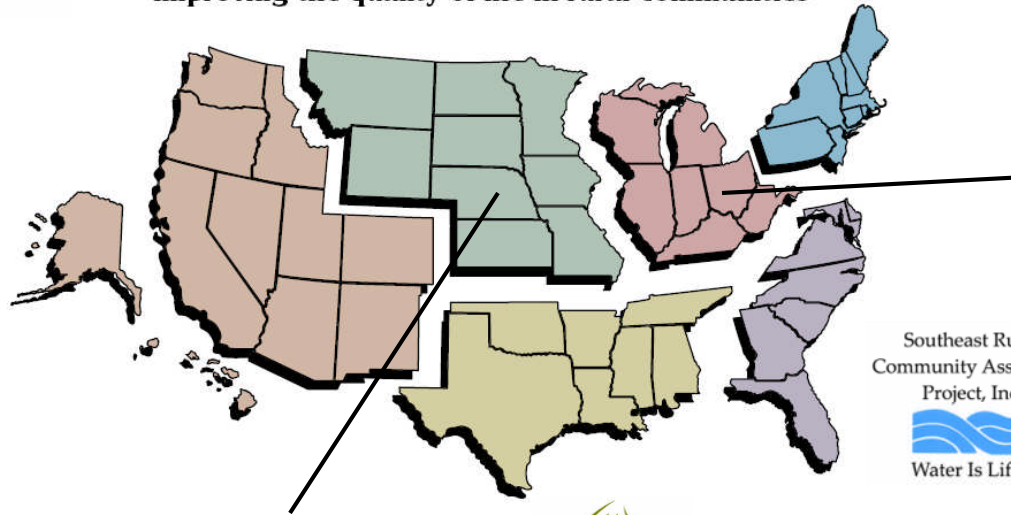
Presented by Catherine Rapose
Community Development Specialist for RCAP Solutions

RCAP Network



The Rural Community Assistance Partnership

Improving the quality of life in rural communities

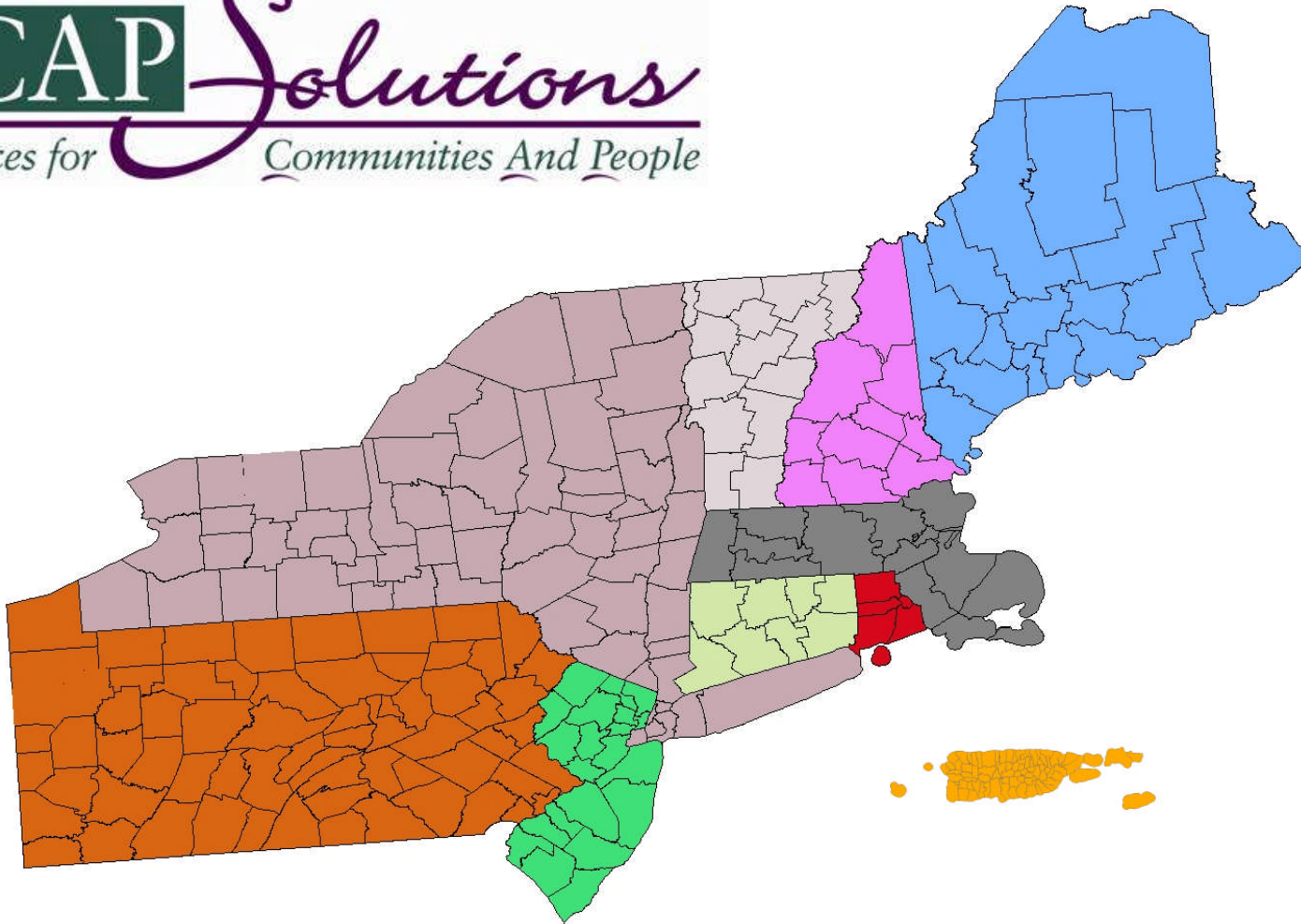




RCAP Network of:

- Certified treatment plant operators
- Professional engineers and scientists
- Finance, management, and administrative specialists
- Safety and security specialists

RCAP *Solutions*
Resources for *Communities And People*



www.rcapsolutions.org



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- Financial Reporting
- Rate analyses and restructuring
- Accounting and administrative assistance
- Vulnerability Assessments (VA)
- Asset Management
- Emergency Response Planning (ERP)
- Business Planning (BP) and Self-Assessments
- Income Surveys
- Request For Proposals (RFP)
- Interviews for consultant/engineer selection

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- Working with Regulators, Funders Consultants and Technical Assistance Providers
- Asset Management for Small Systems
- Water Supply Basic Operations
- Responsibilities of Governing Bodies
- GIS for Small Systems
- Water Supply System Basic Operations
- The Safe Drinking Water Act
- Basics of Accounting & Finance for Small Systems
- Budgeting & Capital Improvements

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RCAP Solutions Services

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RCAP *Solutions*
Resources for *Communities And People*



The SMART about Water Program

***A Cooperative effort by USEPA, NESC, and
The RCAP Network to promote voluntary
Source Water Protection Planning***



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AGENDA

Intro to the SMART about Water Program
Source Water Assessments
Source Water Protection Planning
On-Site Wastewater Disposal Basics
Technical Assistance/Resources
Q+A, Discussion



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Framing the Approach: The Overriding Principles In SMART

The principles of the SMART approach:

1. **Community Resilience:** the ability to withstand, prevent or protect against threats and restore services, minimizing disruptions to life and economy. Safe and secure sources of drinking water foster this.
2. **Interrelatedness** between drinking water and waste water requires that activities in one area be conducted in recognition of the other.
3. **Interdependency** between safe drinking water, health and economics exists, in that; economy, quality of life and health depends on the safety of the water supply which depends on the local economy.
4. **Social Marketing** requires all sectors or audiences within the community to actively engage in the source water protection planning process for the planning and implementation to be viable. “Buy in” is critical to success and innovative use of limited resources.
5. **Financial Capacity** of small community drinking water and waste- water systems is limited, while they are the most expensive to operate per capita. This has led to compliance issues and local inability to implement source water protection programs .





Primary Goal and Objectives

- **The SMART Goal** is to stimulate voluntary planning activities among small and very small Community and Non Community public water supplies focusing on untreated wastewater from failing septic and sewer systems.
- **The Rationale:** By focusing on the greatest drinking water threat first, a basis for action consistent with State Source Water Assessment Plans is created.
- **The 3 Objectives** of SMART are :
 1. To build an understanding of the beneficial connection between effective wastewater treatment and source water protection.
 2. Address the lack of human and financial resources by facilitating partnerships with volunteer groups.
 3. Prepare operators and local officials for the need to develop contingency plans for supplying safe drinking water in emergencies.



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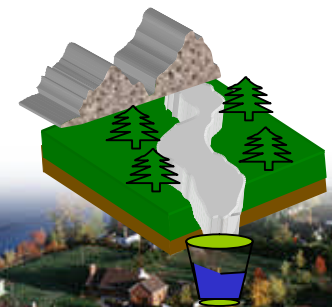
Source Water Assessment Programs

- Required through Safe Drinking Water Acts Section 1453, 1996 Amendments
- Comprehensive assessment / prioritization of potential threats for every Public Water Supply System (PWS)
- All States developed programs for EPA approval
 - Required extensive public involvement in program design
 - Wellhead Protection Programs cornerstone of SWP Programs
 - Funded through Drinking Water State Revolving Fund
 - Diversity from State to State/system type by system type

PA SWAP Website:

<http://www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm>

- Challenges
 - No requirement for protection
 - Resources
 - Numbers of systems change



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Source Water Protection Planning

Why You Can't
Afford *Not* to
Develop a Source
Water Protection
Plan



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Why do source water protection planning?

- If source water is contaminated, it threatens public health
- The better the water is when it reaches the treatment plant, the easier and cheaper it is to treat.
- Costs of planning very low compared with costs of remediation. The cost of dealing with contaminated groundwater ranges from 30 to 200 times the cost of wellhead protection.
- Studies show that the public places a high value on safe drinking water
- Clean water and healthy ecosystems are vital in terms of quality of life for both humans and animals.



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Costs of Contamination

Direct costs include:

- Cost of obtaining temporary source
- Soil and water investigations cost
- Cleanup and remediation costs
- Legal fees
- Development of new water source
- Consulting fees

Indirect costs include:

- Loss of customer confidence in water supply
 - Increased monitoring costs
 - Real estate devaluation
 - Potential loss of jobs
 - Potential lawsuits from real or alleged consumption of contaminated water





The Planning Process



- Review/Revise Contingency Plan
- Identify Need for Monitoring Program
- Develop Continuing Public Education & Involvement Strategies
- Complete Action Plan
- Implement The Plan



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Working with Watershed Groups

- If there is a watershed group in your SWAP area that is already active, meet with them first
 - Is there a watershed action plan?
 - Can it be modified to include source water protection?
 - Easier to merge with established group





Form Stakeholder Committee

•Diverse Interests

Public Water Supplier

Watershed Group

Business Owners

Local Officials/CIC

Extension Agents

Concerned Citizens

Representatives of any potential contaminant sources

Educators

Farmers/SWCD

Health Department

Civic Groups

Septic Professionals

Homeowners





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Courtesy of Anish Jantrania, VA Dept. of Health, 2000

Onsite Wastewater Systems

- Non-point-source systems for dispersal or recycle/reuse of adequately treated effluent at or near the source
- More emphasis on treatment of wastewater and dispersal of effluent than on collection: collection costs < 30% of total costs
- Wastewater is managed in small quantities, typically less than 0.1 MGD



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Onsite Wastewater Treatment Benefits...

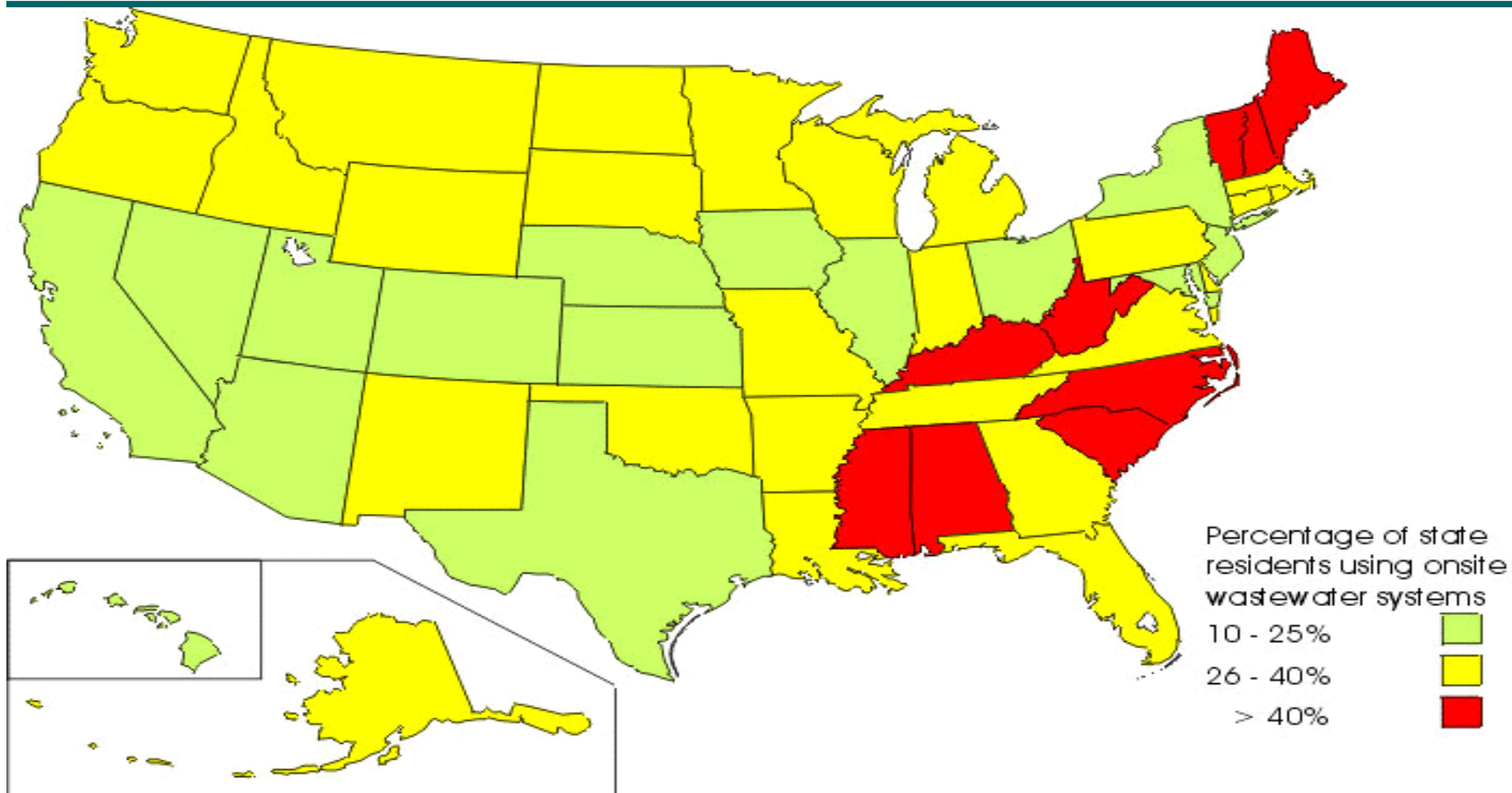
- Onsite wastewater treatment uses cost efficient, effective on-lot technological approaches to meet wastewater treatment objectives:
 - protect public health
 - enhance environmental quality
 - avoid nuisance conditions



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Where OWTS Are Used





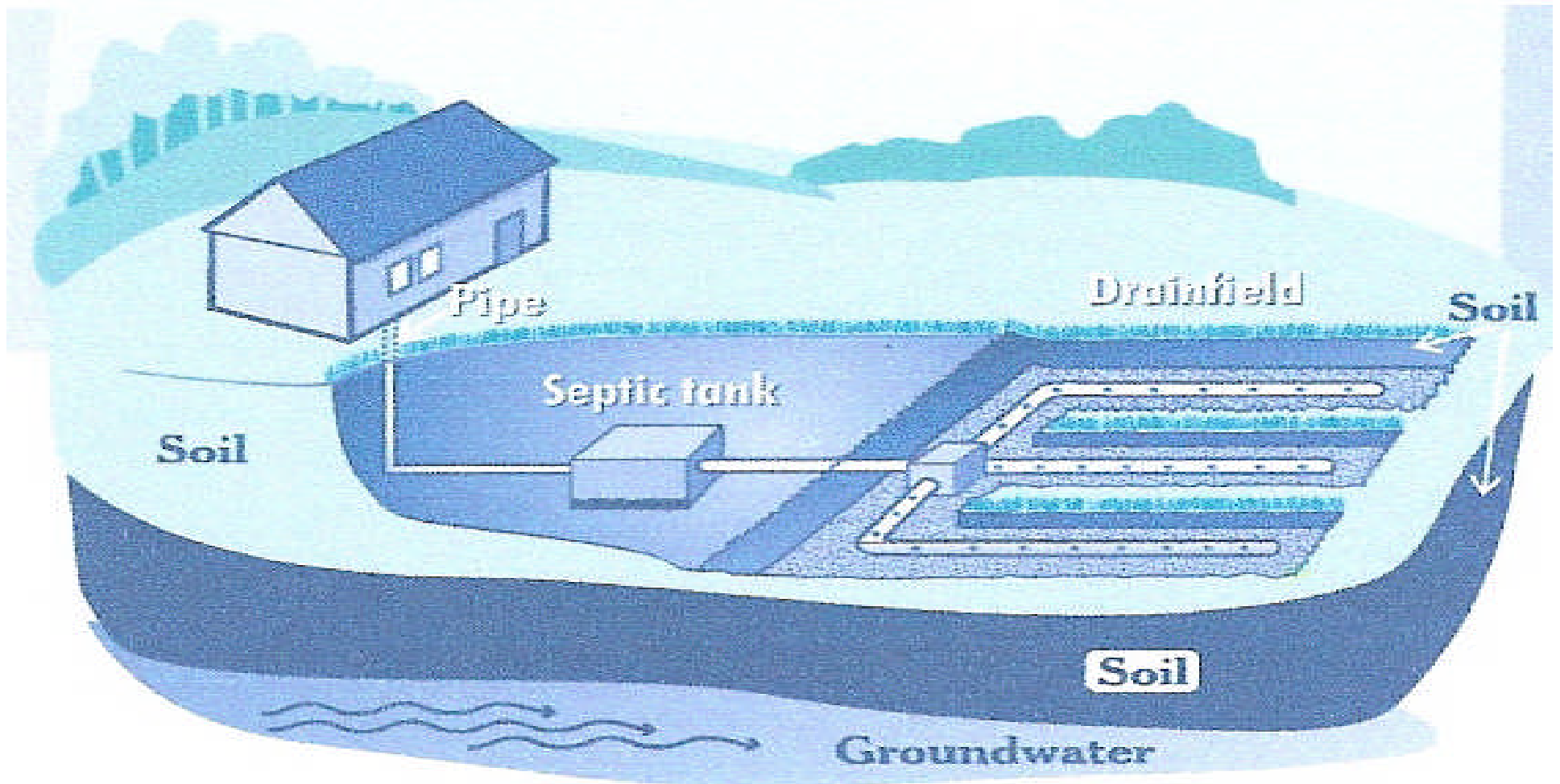
Use of Onsite Wastewater Treatment

- 25% of all US households
- 33% of all new house construction
- More than 90% are “traditional”
(conventional)



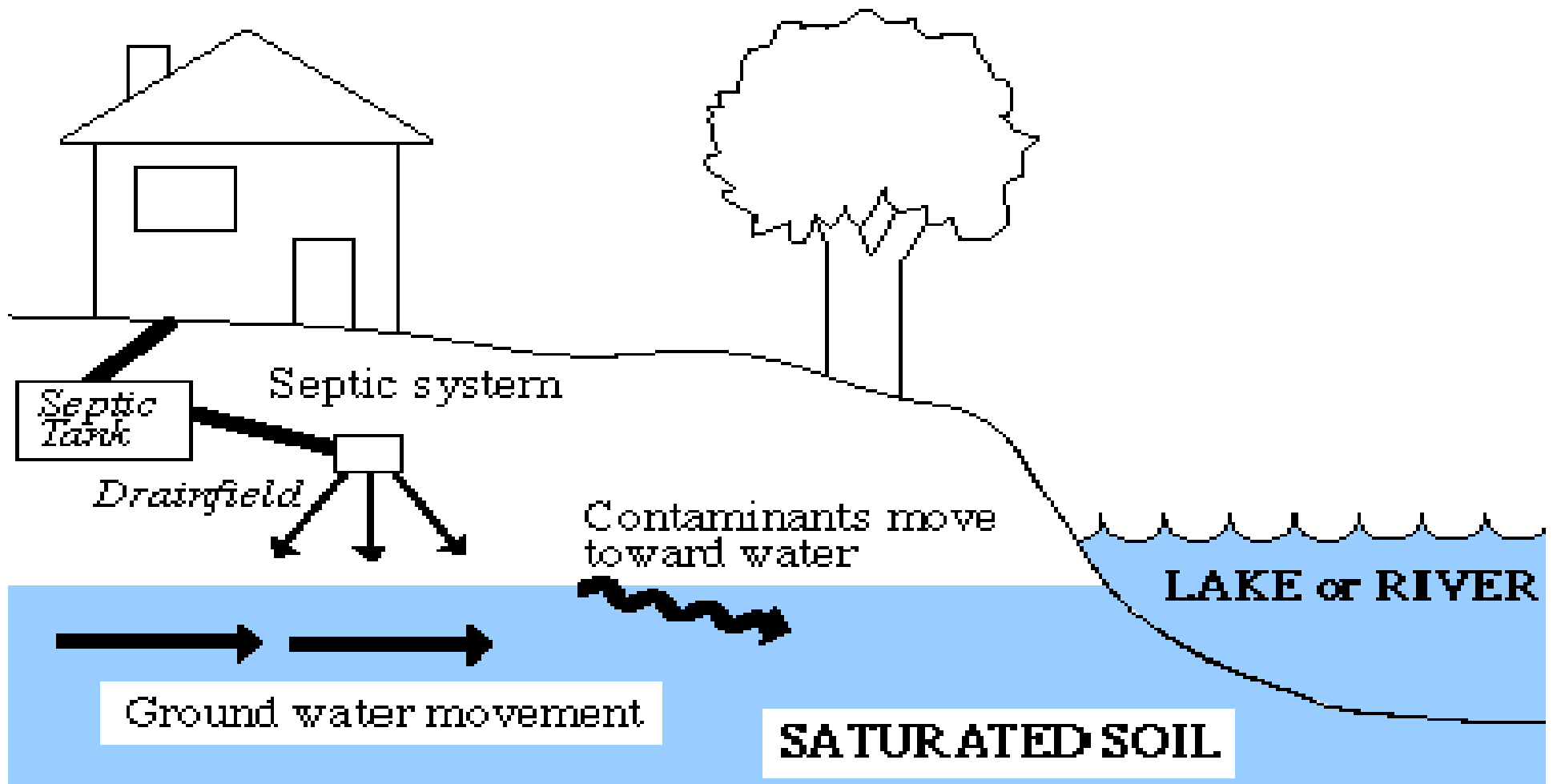
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Typical septic system

Ground & Surface Water Contamination





Objective

- To treat and disperse of wastewater in such a way that risk to public health and environmental quality is minimal



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Courtesy of Anish Jantrania, VA Dept. of Health, 2000

Basic Rules

- Performance of any wastewater system must not be taken for granted
- All wastewater systems must be operated, maintained and monitored
- Wastewater systems do not “fail”, they just go out of compliance when not adequately managed
- Must define what constitutes “out-of-compliance” status



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Courtesy of Anish Jantrania, VA Dept. of Health, 2000

Basic Rules

- Onsite systems may go “out-of-compliance” due to operational issues and/or treatment issues (operational/ treatment failure)
- Operational issues: back-up in the house, odor, surfacing, noise, etc
- Treatment issues – effluent quality, subsurface water quality, environmental health degradation, public health degradation



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Malfunction Consequences

- Untreated wastewater leaks or is discharged into the groundwater and /or surface water
- Untreated wastewater surfaces on ground
- Public health threat and environmental contamination:
 - disease-causing bacteria and other microbes
 - nitrates and phosphates
 - metals
 - toxics
 - salts



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KEY POINT TO REMEMBER!

BIOLOGICAL ACTIVITY IS FUNDAMENTAL TO WASTEWATER TREATMENT....

WITHOUT IT, TREATMENT IS NOT EFFECTIVE.

Nearly all onsite and near-site wastewater treatment depends upon natural biological processes to treat the waste before returning the water back to the environment.



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Technical Assistance

- Available from PA DEP
- USEPA Publications
- SMART about Water CD Set
- RCAP Solutions 1-800 488-1969
- Rural Water Association
- National Environmental Service Center



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Technical Assistance in PA

Source Water Assessment and Source Protection Resources on the Internet

For more information about SWAP and Drinking Water Source Protection visit these resources:

PA SWAP Website: <http://www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm>

EPA SWAP website: <http://www.epa.gov/safewater/protect/assessment.html>

EPA Drinking Water Source Protection website: <http://www.epa.gov/safewater/protect.html>

EPA Source Protection Practices website: <http://www.epa.gov/safewater/protect/swpbull.html>

EPA Drinking Water Info For Where you Live website: <http://www.epa.gov/safewater/whereyoulive.html>

National NEMO Network website: http://nemonet.uconn.edu/about_network/about.htm

Pennsylvania Water Science Center website: <http://pa.water.usgs.gov/>

PA Department of Environmental Protection <http://www.depweb.state.pa.us/dep/site/default.asp>

Know Your Watershed – Purdue University <http://www.ctic.purdue.edu/KYW/kyw.html>

The Groundwater Foundation <http://www.groundwater.org>

The Center for Watershed Protection <http://www.cwp.org>



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