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# National Decentralized Water Resources Capacity Development Project

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## Executive Summary



## Creative Community Design and Wastewater Management

University of Rhode Island Cooperative Extension  
Kingston, Rhode Island

March 2004

# **Creative Community Design and Wastewater Management**

**Submitted by the  
University of Rhode Island  
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Kingston, RI**

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These are all functioning systems in regular use located on private residential or commercial property. We recognize the extra care and attention taken to design and construct these innovative wastewater treatment systems by the members of the RI Independent Contractors and Associates. We also thank the RI Coastal Resource Management Council and the RI Department of Environmental Management for their cooperation in demonstration system permitting and for their support for use of decentralized wastewater treatment systems to protect water resources and promote sustainable development.

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## ABSTRACT

This manual demonstrates how advanced decentralized wastewater treatment systems can be used to support more compact land use patterns that would otherwise be infeasible with conventional wastewater treatment systems. Without rigid design restrictions and often with smaller land area requirements, alternative wastewater treatment systems can free land use planners and engineers to let land use goals and resource protection needs guide land development design. Properly managed alternative and cluster systems enable communities to remediate failing or substandard systems, revitalize traditional development, and direct investment to new growth centers. Perhaps most importantly, these approaches offer a practical alternative to conventional sewers, which enables communities to avoid the three most commonly associated pitfalls: high cost of sewers, loss of control over land use with intensified development pressures, and associated environmental impacts of urbanization, including dramatic increases in stormwater runoff and loss of groundwater recharge.


Written for planners and local officials, this guide is designed to show how decentralized technologies can be powerful tools in directing sustainable community development while protecting local water resources. Developers, wastewater treatment system designers and installers, and homeowners will also find ideas on fitting septic systems into landscapes in a way that retains natural features and unique architectural elements of a community and adds value to property.

This manual builds on the *South County Design Manual*, a handbook on applying conservation development techniques to southern New England landscapes developed for the Rhode Island Department of Environmental Management. This companion publication uses artists' renderings to help local officials better visualize how a parcel of land might appear if developed using conventional versus alternative and more flexible ordinances.

Here the authors carry the design process a step further to illustrate realistic decentralized wastewater treatment options that can be used to accommodate future growth scenarios. This next step is critical since many of the alternative land development patterns simply cannot be built using only conventional septic systems. For each design alternative, we have identified and illustrated practical wastewater treatment options using a range of technologies. Supporting technical information on decentralized wastewater treatment options is included, along with numerous case studies illustrating practical use of alternative systems to achieve the goals of better land use design, sustainable development, and improved water resource protection.



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