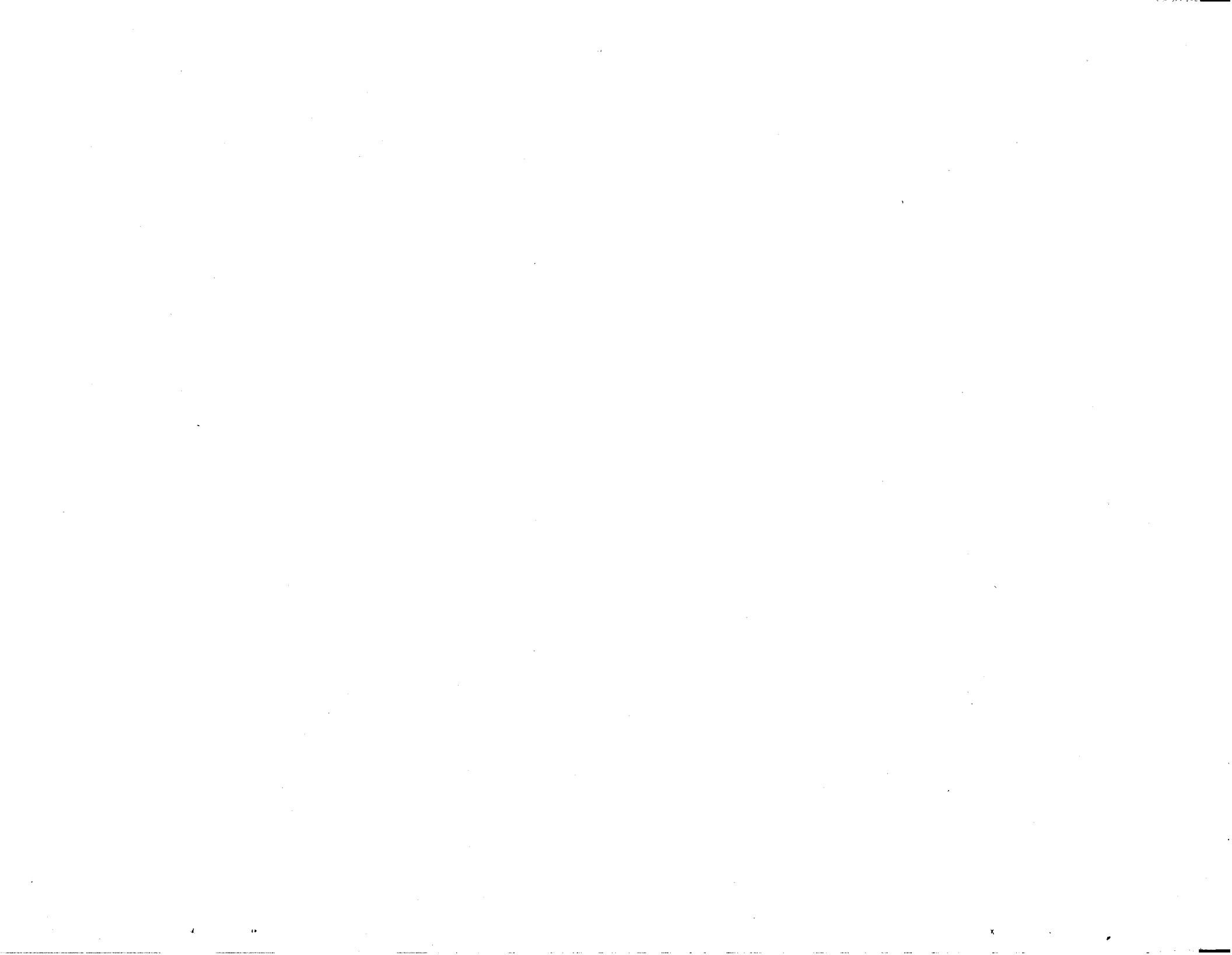


Appendix C

Types of Management Structures for Decentralized Wastewater Systems



Appendix C Types of Management Structures for Decentralized Wastewater Systems

Table C-1. Management Structures

Management Entity	State Agency	County	Municipality	Special District	Improvement District	Public Authority	Public Nonprofit Corp.	Private Nonprofit Corp.	Private For Profit Corp.
Description	Environmental protection agencies, health departments, and public utilities	Most basic political subdivision in a state. Comprised of incorp. munic. and unincorp. areas.	Cities, towns, villages, and townships.	Performs functions prescribed by state-enabling legislation. Provides single or multiple services.	Device used by counties/ munic. to provide services to local gov. jurisdictions.	Authorized to administer a revenue-producing public enterprise. Similar to a special district.	Provides water or wastewater services on behalf of local governments.	Established by the users of a facility to assist in facility financing and operation.	Can design, operate, or maintain sewerage facilities.
Service Area	Program enforcement can be handled on a regional basis.	Provides service throughout its juris. and to defined areas via improvement districts.	Provides service throughout its juris. and to defined areas via improvement districts.	Flexible	One or more as part of a single jurisdiction.	Flexible	Flexible (single community, group of communities, or statewide)	Can include subdivisions, small communities, and rural areas	Flexible (single homeowner to small community)
Governing Body	State legislature. Agencies report to the governor, legislature, or to a board of directors	Includes elected (princ. legislative branch) county board com-mission, council-administrator, council-elected executive.	Mayor-council, commission, and council-manager.	Board of directors (elected, appointed, or existing agency members)	Governing body of the creating unit of government.	Board of directors (elected or members of local government)	Usually municipal or state officials.	Board of directors elected by stockholders or a property owners association.	Private utility has stockholders or investors. Public utility commission (PUC) has jurisdiction.
Responsibilities	Code enforcement of wastewater design, installation, and operation standards; and technical and financial assistance.	Coordinates munic. in its juris.; provides special services on contract basis; serves as a fiscal agent for other local units of government.	Provides a wide range of services.	All wastewater management functions, similar to local government. State defines function and scope.	State statutes define extent of authority. Usually applied to finance public service improvements.	Used primarily for financing capabilities.	Serves as financing mechanism. Can provide technical assistance to small communities.	Provides financing and operational functions.	Active and flexible role to play in managing small wastewater systems.

Table C-1 (continued)

Management Entity	State Agency	County	Municipality	Special District	Improvement District	Public Authority	Public Nonprofit Corp.	Private Nonprofit Corp.	Private For Profit Corp.
Financing Capabilities	Provides financial support through federal grants and state revenues.	Charges for sewerage sources and finance construction through taxation, general funds, special assessments, bonds, and permit fees.	Has a broad range of fiscal powers (similar to counties).	Local taxation, service charges, special assessments, grants, loans, bonds, and permit fees.	Can apply special property assessments, user charges, other fees. Can sell bonds.	Can use revenue bonds, user charges, and connection fees.	User charges and services fees and sales of stocks and tax-exempt bonds. Can accept some Federal grants and loans.	Eligible for Federal grants and loans.	User charges. The PUC can influence the service rates charged.
Advantages	Regulatory and financial advantages over local government. State enforcement can insulate from local political pressure. Can administer training/cert. programs.	Can interact with states and local governments on many issues. Often seen as administrative arms of the state. Provide efficient resource base for providing public services.	Can better react to local perception and attitude.	Flexible. Renders equitable services (only those receiving services pay for them). Simple, independent forms of government.	Can extend public services without major expenditures. People in the benefitted area usually favor the improvement.	Good when local governments are not able to provide public service because of financial, administrative, or political problems. Has a certain degree of autonomy.	Offers flexibility in establishing management facilities and financing facilities by state and local governments. Financing method does not affect local debt limitations.	Provides public services where local governments are unwilling or unable.	Frees the local public sector from providing these services. Competition between firms will help maintain quality while keeping costs down.
Disadvantages	Program organizations differ. (Difficult to implement methods from one state in another. Can become distanced from local governments.	Sometimes not willing to provide specialized public services to a defined service area. Community debt limits could be restrictive.	Might lack admin. capabilities, staff, or willingness to design, install, operate, and/or regulate a facility. Financial capabilities might be limited.	Can promote proliferation of local government and duplication and fragmentation of public services. Fiscal problem could result from overuse.	Contributes to fragmentation of local government services. Can result in administrative delays.	Financing ability is limited to revenue bonds. Thus, local government must support the debt incurred by the public authority.	Local governments might be reluctant to apply this concept.	Services could be of poor quality or could be terminated.	Threat that the company could go out of business. Private corporations are usually not qualified for federal and state grant and loan programs.

C-2

Source: Ciotoli and Wiswall, 1982.

Appendix C (cont.)

In addition to the types of management structures described above, two additional approaches to managing decentralized wastewater systems include public/private partnerships and management districts, as describe below.

Public/Private Partnerships. It is sometimes difficult to determine which parties are responsible for the various decentralized system management functions because of the split responsibility between the public and private sector. Several options exist for public/private partnerships in the management of decentralized systems. Systems can be privately owned and managed under a permit system, privately owned and publicly managed, or publicly owned and managed. In the first option, the resident must comply with the regulations and pays all costs for maintenance, pumping, and if necessary, rehabilitation. In the second option, the resident pays user charges to the local district which performs the necessary maintenance (this does not cover rehabilitation). The final option involves the public organization providing wastewater services for all households and collecting user charges to pay for the service; all construction, operation, and maintenance tasks are performed by the public agency, or firms under contract to it.

Wastewater Management District. When a government agency or public authority is unable or unwilling to assume the life-cycle management of decentralized wastewater systems, a special management entity, such as a management district, can be formed where state statutes permit. This management option involves incorporating decentralized systems into a local or regional wastewater management district, with district personnel responsible for system operation and maintenance. Decentralized wastewater management districts have been in existence since 1972, when Georgetown, California implemented a community-wide onsite wastewater system management program in the Lake Auburn Trails subdivision (Shephard, 1996).

Table C-2 summarizes a number of decentralized wastewater management programs that have been implemented as management districts throughout the country. For a further discussion of management systems for decentralized wastewater treatment systems, see Shephard (1996).

Table C-2. Management Districts: Summary of Case Study Characteristics

Case Study	Funding Source	Size of Area	Waterbody Protected	Program Components
Crystal Lakes, CO	Annual dues (\$60 per lot, \$100 per lot if served by central water and sewer, \$180 per lot if connected to seasonal central water and sewer)	4,000 lots	Crystal Lakes	Developer establishes and manages decentralized water and wastewater facilities in the subdivision. Management is funded through annual dues and includes, maintenance, removal of sewage from vaults, and delivery of drinking water to cisterns.
Crystal Lake, MI	Not Reported	1,100 homes	Crystal Lake	Establishment of new ordinances: (1) inspection/upgrade required prior to sale, (2) homeowners required to report on all systems, (3) health department required to inspect the systems, (4) systems must be upgraded within 120 days of inspection if failed, and (5) non-compliance meets with tough consequences.
Georgetown Divide, CA	Annual dues (\$12.75 to \$22.75), design costs (\$540 per system), and hook-up fees (\$875 per system)	3,000 acres	American River	Management entity is responsible for operations and maintenance, repair and inspection, system design, control of installation and siting, and control of building process. Inspection and maintenance program is database-controlled.
Kueka Lake, NY	\$300 per year per parcel fee	Not Reported	Kueka Lake	Management entity responsible for evaluating, monitoring, and setting standards. Ordinances established include (1) the town had ultimate authority, (2) a mix of system designs was allowed, (3) annual inspection were required for highly technical systems, (4) systems within 200 feet of the lake must be inspected every 5 years, (6) systems must be inspected prior to property transfer, and (7) enforcement powers.
Stinson Beach, CA	Funds obtained from tax revenues, semiannual fee of \$53, and charges for special inspections and inspection for compliance.	700 onsite systems	Groundwater/ Coastal waters	The District's management activities include inspection of system installation and routine system operation, and water quality monitoring. The district's rules and regulations specify the criteria to be used when issuing permits for new onsite systems, as well as for the repair and/or replacement of existing systems. Most of the systems in the community are inspected at least once a year; the systems that have been corrected or replaced, however, are inspected two or three times a year. District has a broad range of regulatory authority to perform onsite management functions.

Table C-2(continued)

Case Study	Funding Source	Size of Area	Waterbody Protected	Program Components
Guysborough, Nova Scotia	<p><u>Initial Funds</u>: \$2,500 fee per equiv. unit or property, funds from Capital Assistance Program (50% of total), and funds from the Council of the Municipality of Guysborough (26% of total)</p> <p><u>Funds for Management Program</u>: Connection fee of \$3,500. Annual property tax equal to the expected annual maintenance fee plus an amount to be set aside for future capital.</p>	700 residents	Guysborough harbor	<p>Built a Rotating Biological Contactor type sewage treatment facility to service the main core of the community. Second, a portion of the District was connected by sewer lines to an aerated lagoon system. The remaining properties within the District have been serviced by individual on-site systems. The municipality hired one employee to be responsible for the general maintenance of the treatment plant and lagoon systems. A preventative maintenance was established for the onsite systems</p>
Cass County, MN	\$3,800 per resident initial cost; annual fee of \$12 to \$15	110 miles, 85 towns	numerous lakes, streams	<p>In 1994, the county developed an "Environmental Subordinate Service District," whereby a township, as the local unit of government, can effectively provide, finance, and administrate government services for subsets of its residents. Establishment of such districts within a town is authorized under MN Statute 365A. The purpose of these districts is to provide a self-sufficient, effective, and consistent long-term management tool, chiefly for neighborhood alternative (STEP) collection and communal leach fields. This innovative model stays at the grass roots level where the affected property owners and township are involved. Cass County provides technical and support assistance when required, but is not directly involved. The partnering with the townships and the county has allowed resource sharing, improved communication, and thus has opened up prospects for other cooperative ventures such as land-use planning, road improvements, and GIS use.</p> <p>Once a Subordinate Service District is created by petition and vote from the residents needing the specific service, a County/Township agreement is signed. The County then determines the system's design, handles construction oversight, gives final approval for the collection system, commits to yearly inspections, and assures regulatory compliance. The leach fields are located away from lakes, wells, and groundwater supplies. Cass County will allow systems to lie on county-administered land in order to defray residents' costs, or to enable optimal siting (Shephard, 1995).</p>

