



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D C 20460

OFFICE OF WATER AND
HAZARDOUS MATERIALS
PROGRAM REQUIREMENTS MEMORANDUM
PRM# 79-8

SUBJECT: Small Wastewater Systems

FROM: John T. Rhett, Deputy Assistant Administrator
for Water Program Operations (WH-546)

A handwritten signature in black ink that reads "John T. Rhett".

TO: Regional Administrators
Regions I-X

I. Purpose

This memorandum clarifies EPA policy on the funding of privately and publicly owned small alternative wastewater systems, provides guidelines for identifying expensive projects and implements the new Federal interagency agreement for rural wastewater projects.

II. Discussion

During the facility planning stage, alternatives for providing wastewater treatment systems are explored to determine the most cost-effective method of treatment. Review of a sample of approved systems indicates that on-site or small-flow wastewater treatment systems often have not been considered carefully even when such systems are likely to be more cost-effective than collection and interceptor networks. Section 201(g)(5) of the Clean Water Act of 1977, (P.L. 95-217), requires all grant applicants to study fully innovative and alternative treatment options.

Both privately owned and publicly owned small alternative wastewater systems are grant eligible under the Act with specific restrictions and conditions applicable. Key terms are defined as follows:

Small alternative wastewater systems are wastewater conveyance and/or treatment systems other than conventional systems. Alternatives include, but are not limited to: septic tanks and subsurface disposal systems; other on-site systems including dual systems; small systems serving clusters each consisting of a small number of households or commercial users, each user with average annual (seasonal for facility in use for portion of year) dry weather flows of under 25,000 gallons per day; six-inch and smaller gravity sewers carrying partially or fully treated wastewater or carrying raw wastewater as a part of

Limited conveyance systems serving clusters of households and small commercial establishments and pressure and vacuum sewers. These alternative sewers are specifically exempted from the collection sewer-interceptor designations when planned for small communities and are not subject to the collection system policy. These systems also include other treatment works which employ alternative technologies listed in Appendix E, 40 CFR 35, and serve communities of 3,500 population or less or the sparsely populated areas of larger communities.

A conventional system is a collection and treatment system consisting of minimum-size (6 or 8 inches) or larger gravity collector sewers, normally with manholes, force mains, pumping and lift stations and interceptors leading to a central treatment plant employing conventional concepts of treatment as defined in Section 5, Appendix E, 40 CFR 35.

Small alternative wastewater systems may be publicly or privately owned. Privately owned systems (called "individual systems" in the Act and 40 CFR 35) may serve only one or more principal residences or small commercial establishments. Publicly owned systems may serve one or more users. Perpetual or life-of-project easements or other binding covenant running with the land affording complete access to and control of wastewater treatment works on private property are tantamount to ownership of such works.

High wastewater user costs exceeding \$200, \$300, and even \$500 annually for households in some communities under 10,000 in population have resulted from debt retirement costs for new collection systems or from high operation and maintenance costs of new sophisticated plants. Extremely high cost projects have culminated in political upheaval, refusal to connect into or to pay after connecting into central sewers, violence at public meetings, requests for injunctions, and filing suits against several parties, including EPA. In most cases, all of the feasible alternatives were not considered in the cost-effectiveness analysis and some systems were oversized by using inflated population projections and excessive water usage data. In the past, it has been difficult during facility plan review to pinpoint those projects that have severe financial impacts.

Previous policy and facility planning guidance have called for verification by the grantee that that community is able to raise the local share. PRM 76-3 requires the estimated operation and maintenance and debt retirement costs to each user to be presented in clear, understandable terms at the facility planning public meeting. In his letter of December 30, 1976, the Administrator asked the Regional Administrators to pay careful attention to facility plans where average local debt retirement costs per household exceed 1 percent of annual median income and for which local debt retirement costs plus operation and maintenance costs exceed 2 percent.

Guidelines modifying the 1 percent to 2 percent guide have been included below to assist in identification of expensive projects for further analysis. We are preparing a format with instructions for municipal officials and State and Federal reviewers to use to determine the size of project the municipality can afford using readily available local financial data.

Loan and grant programs of several Federal agencies for construction of wastewater treatment works in the past usually have been handled individually with little coordination among the agencies. This has resulted in unnecessary paperwork, duplication, federally imposed administrative burdens, construction of inappropriate or too sophisticated, costly facilities, fostering of development on rural land, and poor structuring of local share debt financing.

Under the Interagency Agreement for Rural Water and Sewer Projects, Environmental Protection Agency (EPA), Farmers Home Administration (FmHA), Economic Development Administration (EDA), Housing and Urban Development (HUD), and Community Services Administration (CSA) will coordinate their efforts to improve the delivery of Federal water and sewer programs to rural and semi-rural communities. Major features include:

- °Emphasis on alternatives that may have lower per capita capital and operating costs and require less sophisticated technology and skill to operate than conventional collection and treatment facilities;
- °A regular exchange of information among the agencies involved in funding the project, including meeting periodically and using the Federal Regional Councils;
- °The facilitating of application and disbursement of funds for rural water and sewer projects and informing communities of the range of funding and other assistance available to them;
- °The establishment of a universal data base for national wastewater disposal and treatment needs;
- °The more efficient use of the A-95 process of review by clearinghouse agencies;
- °Use of the same criteria to evaluate the financial impact of the proposed system upon the community;
- °Coordination of the review of facility plans between EPA and FmHA and use of the plans by FmHA as their feasibility report to the extent possible;
- °The demonstration of compliance with Federal requirements under specific statutes only once when communities are using funds from more than one program with identical compliance requirements. Where agency regulations differ in compliance requirements, agencies will work together to ensure individual or coordinated review as appropriate.

Facility planning in some small communities with unusual or inconsistent geologic features or other unusual conditions may require house-to-house investigations to provide basic information vital to an accurate cost-effectiveness analysis for each particular problem area. One uniform solution to all the water pollution problems in a planning area is not likely and may not be desirable. This extensive and time-consuming engineering work will normally

result in higher planning costs which are expected to be justified by the considerable construction and operation and maintenance cost savings of small systems over conventional collection and treatment works.

Though house-to-house visits are necessary in some areas, sufficient augmenting information may be available from the local sanitarian, geologist, Soil Conservation Service representative or other source to permit preparation of the cost-effective analysis. Other sources include aerial photography and boat-carried leachate-sensing equipment which can be helpful in locating failing systems. Detailed engineering investigation, including soil profile examination, percolation tests, etc., on each and every occupied lot should rarely be necessary during facility planning.

III. Policy

A. Funding of Publicly and Privately Owned Small Alternative Wastewater Systems

1. Minimum Standards and Conditions

The Clean Water Act and the regulations implementing the Act impose no restrictions on types of sewage treatment systems. These alternative systems are eligible for funding for State approved certified projects when the following minimum standards and conditions are met:

- a. For both publicly and privately owned systems, the public body must meet the requirements of 40 CFR 35.918-1 (b), (c), (e) through (j); 35.918-2 and 35.918-3.

A comprehensive program for regulation and inspection of these systems must be established prior to EPA approval of the plans and specifications. Planning for this comprehensive program shall be completed as part of the facility plan. The program shall include, at a minimum, the physical inspection of all on-site systems in the facility planning area every three years with pumpouts and systems renovation or replacement as required. The program shall also include, at a minimum, testing of selected existing potable water wells on an annual basis. Where a substantial number of on-site systems exist, if necessary, appropriate additional monitoring of the aquifer(s) in the facility planning area shall be provided.

For privately owned systems the applicant must demonstrate in the facility plan that the solution chosen is cost-effective and selected in accordance with the cost-effectiveness guidelines for the Construction Program, (Appendix A, 40 CFR Part 35). These systems are not eligible for a 15 percent cost preference for the alternative and innovative processes and techniques in the cost-effectiveness analysis. Publicly owned systems, however, are eligible for the 15 percent cost preference.

- b. In addition to the conditions in paragraph A.1, privately owned systems must meet the requirements of 40 CFR 35.918-1(a) and (d) and the following.
- (1) Provide facilities only for principal residences, (see 40 CFR 35.918(a)(2)) and small commercial establishments (i.e., those with annual or seasonal, if not operated throughout the year, dry weather flows of less than 25,000 gpd and more than one user equivalent per day; e.g. 300 gpd). Not included are second homes, vacation or recreation residences;
 - (2) Require commercial users to pay back the Federal share of the cost of construction with no moratorium, during the industrial cost recovery study. The 25,000 gpd exemption does not apply for those commercial establishments;
 - (3) Treat nonprofit and non-governmental institutional entities such as churches, schools, hospitals and charitable organizations, for purposes of this special authority, generally the same as small commercial establishments.

2. Other Eligible and Ineligible Costs

In addition to the costs identified in the Construction Grants Regulations, 40 CFR 35.918-2, the following costs are also grant eligible:

- (a) Vehicles and associated capital equipment required for servicing of the systems such as septage pumping trucks and/or dewatered residue haul vehicles.
 - (1) Vehicles purchased under the grant must have as their sole purpose, the transportation of liquid or dewatered wastes from the collection point (e.g., holding tanks, sludge-drying beds) to the treatment or disposal facility. (Other mobile equipment is allowable for grant participation as provided for on pages VII-12 and 13, "Handbook of Procedures, Construction Grants Program for Municipal Wastewater Treatment Works.")
 - (2) If vehicles or equipment are purchased the grantee must maintain property accountability in accordance with OMB Circular A-102 and 40 CFR 30.810.

- (b) Septage treatment plants (eligible for 85 percent grant funding as part of an alternative system).
- (c) Planning for establishment of small alternative wastewater systems management districts, including public hearings to discuss district formation. The "mechanics" of establishing the districts such as legal and other costs for drafting of ordinances and regulations, elections, etc., are a normal function of government and are not grant eligible, (Construction Grants Program Handbook of Procedures, VII-6).
- (d) Rehabilitation, repair or replacement of small alternative wastewater systems as provided for by 40 CFR 35.908(c).

3. Grant Funding of Small Alternative Wastewater Systems

Small alternative wastewater systems are eligible for 85 percent grants; 75 percent of the Federal grant may be funded from the 4 percent set-aside. The 10 percent grant increase must be funded from the 2 percent set-aside (3 percent in FY 1981). The 10 percent grant increase can also be applied to small alternative wastewater systems where 4 percent set-aside funds are not available (i.e., in States where there is no 4 percent set aside or States where 4 percent set-aside funds have been depleted).

4. Use of Prefabricated or Preconstructed Treatment Components

The use of prefabricated or preconstructed treatment components such as septic tanks, grinder pump/tank units, etc., normally is more economical than construction in place and should be carefully considered. In the case of very small systems, prefabricated or preconstructed units should in most instances be the most cost-effective. For somewhat larger systems of standard design, prefabricated or preconstructed units may also be cost-effective and should be carefully considered in the facility plan.

5. Useful Life of Small Alternative Wastewater Systems

Whenever conditions permit, these alternative treatment works including soil absorption systems, shall be designed to ensure a minimum useful life of twenty years.

6. Comparison of Small Alternative Wastewater Systems with Collection Systems in Cost-Effective Analysis

The present worth of small alternative wastewater systems for future development permitted by the cost-effectiveness guidelines, (40 CFR 35, Appendix A) may be compared with the costs of alternative and conventional collection systems for the same planning area. In each instance both eligible and ineligible costs shall be considered including service line costs from residence to collector, connection fees and service to the on-site units.

IV. Determination of the Economic Impact of the Project

When total user charges for wastewater treatment services, including debt service and operation and maintenance, for the average user in the service area, exceed the following percentages of annual household median incomes:

- 1.50 percent when the median income is under \$6,000;
- 2.00 percent when the median income is between \$6,000-\$10,000;
- 2.50 percent when the median income is over \$10,000.

the projects shall be considered expensive and shall receive further intensive review to determine, at a minimum:

1. the adequacy and accuracy of the cost-effective analysis, particularly noting whether all the feasible alternatives have been considered and if the cost estimates are reasonable;
2. the soundness of financing of the local share, and
3. whether the grant applicant has sought out all the sources of supplemental funding.

(Costs of an expensive project can sometimes be reduced by additional facility planning effort, including reduction in scope.)

A format, instructions and criteria for determination of the financial capability of the public body to carry the debt load of a new project are being prepared and will be promulgated at an early date. This process will be tailored for the use of municipal authorities and State and EPA reviewing officials.

V. Interagency Coordination and Streamlining the Review and Approval of Grants or Loans for Construction of Wastewater Treatment Works in Sparsely Populated Communities

A. Coordination with Farmers Home Administration (FmHA)

Communities should be encouraged to contact FmHA during the development of their facility plans to receive informal comments before the plans are finalized and submitted for review.

Upon receipt of State certified facility plans for communities under 10,000 population, the Region shall send a copy of each plan to State FmHA officials for their review concurrently with regional review. FmHA will provide comments normally within 30 days to the Region on the financial capability of the community to carry the project, the structuring of the local share debt, the viability of the selected alternative and other matters in which FmHA is interested. The comments are for each Regional Administrator's information and appropriate action, if received within the 30-day period. They are not FmHA's official comments to the community on its plan. Close cooperation between FmHA and regional reviewers is encouraged. For States which are delegated final facility plan review, the above coordination shall be between the State and State FmHA officials.

B. Exchange of Information Among FmHA, HUD, EDA, CSA and EPA Through Joint Meetings

The agencies shall meet periodically during the year using the Federal Regional Councils. Meetings shall be initiated by any of these organizations and one of these meetings will take place at least 120 days before the beginning of each new fiscal year. These meetings may include:

1. Review of status of projects being jointly or concurrently funded;
2. Discussion of future projects in common;
3. Exchange of information on current and new administrative or substantive procedures or requirements; and
4. Review of action items such as:
 - a. One year priority or project lists to identify combined funding possibilities;
 - b. Existing project lists to identify overlapping projects or funding; and
 - c. Construction and inspection schedules to identify areas of coordination.

Regular meetings between respective state-level agencies are encouraged for similar purposes of coordination.

C. Encouragement of Alternatives to Conventional Collection and Treatment of Wastewater

Alternatives to conventional wastewater collection and treatment facilities that may have lower per capita capital, operating and maintenance costs and require less sophisticated technology and skill to operate shall be encouraged.

D. Provision of Funding and Other Assistance Information to Small Communities

Regional offices and other sources will provide, on request, information on the range of funding and other assistance for rural sewer projects. Technical information may be obtained from the Environmental Research Information Center (ERIC), Cincinnati, Ohio 45268, telephone number (513) 684-7394, or the Small Wastewater Flows Clearinghouse, West Virginia University, Morgantown, West Virginia 26506, telephone number (800) 624-8301.

E. Establishment of a Universal Data Base for National Wastewater Disposal and Treatment Needs

The EPA biennial Needs Survey will be used as the initial data base for all agencies involved in funding rural facilities.

F. More Efficient Use of the A-95 Process of Review

Notification of intent to apply for grant funds submitted to A-95 clearinghouses should indicate the intention to apply for joint or combined funding and identify the prospective assisting agencies.

The A-95 agency needs to conduct only one review of the actual project for each plan of study and Step 1 grant (except for special circumstances) which will meet the requirements for all agencies involved.

The use of the A-95 process and Water Quality Management Planning process under section 208 to identify projects that may be eligible for funding should be promoted.

Regions should encourage the clearinghouses to use the A-95 process to evaluate the rural and urban impact of jointly funded projects.

G. Acceptance of One-Time Demonstration or Assurance of Compliance with Federal Requirements for Jointly Funded Projects

The Regions and States where responsibility has been delegated should accept evidence of compliance with requirements of the following when they apply in an identical manner to the programs of each agency:

1. Uniform Relocation and Real Property Acquisition Policies Act of 1970;
2. Civil Rights Act of 1964; Civil Rights Act of 1968; Executive Order No. 11246;
3. Davis-Bacon Fair Labor Standards Act;
4. The Contract Work Hours Standards Act;
5. The Copeland (Anti-Kickback) Act;
6. The Hatch Act;
7. The Coastal Zone Management Act of 1972;
8. The Archaeological and Historic Preservation Act of 1974;
9. The National Flood Insurance Act of 1968, as amended by the Flood Disaster Protection Act of 1973, and regulations and guidelines issued thereunder;

10. The Wild and Scenic Rivers Act of 1968;
11. The Endangered Species Act of 1973;
12. The Clean Air Act;
13. Executive Order No. 11988 on floodplains management;
14. Executive Order No. 11990 on wetlands protection;
15. The National Historic Preservation Act of 1966, and Executive Order No. 11593;
16. The Safe Drinking Water Act of 1974.

Further guidance in this area will be issued after detailed review and discussion by all agencies of regulations and requirements implementing each of the above statutes.

VI. Implementation

This policy should be emphasized through Step 1 preapplication conferences, contacts through municipalities and the States and reviews of Steps 1 and 2 grant applications. This PRM is effective for facility plans started after May 31, 1979, except as follows:

- a. The determination of economic impact is applicable to facility plans review commencing 90 days after issuance of this guidance.
- b. Review of facility plans by FmHA should commence on facility plans received for review 60 days after issuance of this guidance.
- c. Joint meetings to exchange information using the Federal Regional Councils should commence prior to May 31, 1979. At least one of the future meetings should take place at least 120 days before the beginning of each new fiscal year that follows.
- d. The more efficient use of the A-95 review above shall commence as soon as practicable, but not later than May 31, 1979.