agency can demonstrate that it has the appropriate legal authority to undertake such functions.

APPENDIX A TO SUBPART E—COST-EFFECTIVENESS ANALYSIS GUIDELINES

1. *Purpose.* These guidelines represent Agency policies and procedures for determining the most cost-effective waste treatment management system or component part.

2. *Authority.* These guidelines are provided under sections 212(2)(C) and 217 of the Clean Water Act.

3. *Applicability.* These guidelines, except as otherwise noted, apply to all facilities planning under step 1 grant assistance awarded after September 30, 1978. The guidelines also apply to State or locally financed facilities planning on which subsequent step 2 or step 3 Federal grant assistance is based.

4. *Definitions.* Terms used in these guidelines are defined as follows:

a. *Waste treatment management system.* Used synonymously with ''complete waste treatment system'' as defined in §35.905 of this subpart.

b. *Cost-effectiveness analysis.* An analysis performed to determine which waste treatment management system or component part will result in the minimum total resources costs over time to meet Federal, State, or local requirements.

c. *Planning period.* The period over which a waste treatment management system is evaluated for cost-effectiveness. The planning period begins with the system's initial operation.

d. *Useful life.* The estimated period of time during which a treatment works or a component of a waste treatment management system will be operated.

e. *Disaggregation.* The process or result of breaking down a sum total of population or economic activity for a State or other jurisdiction (i.e., designated 208 area or SMSA) into smaller areas or jurisdictions.

5. *Identification, selection, and screening of alternatives.* a. *Identification of alternatives.* All feasible alternative waste management systems shall be initially identified. These alternatives should include systems discharging to receiving waters, land application systems, on-site and other non-centralized systems, including revenue generating applications, and systems employing the reuse of wastewater and recycyling of pollutants. In identifying alternatives, the applicant shall consider the possibility of no action and staged development of the system.

b. *Screening of alternatives.* The identified alternatives shall be systematically screened to determine those capable of meeting the applicable Federal, State and local criteria.

c. *Selection of alternatives.* The identified alternatives shall be initially analyzed to determine which systems have cost-effective potential and which should be fully evaluated according to the cost-effectiveness analysis procedures established in the guidelines.

d. *Extent of effort.* The extent of effort and the level of sophistication used in the cost-effectiveness analysis should reflect the project's size and importance. Where processes or techniques are claimed to be innovative technology on the basis of the cost reduction criterion contained in paragraph 6e(1) of appendix E to this subpart, a sufficiently detailed cost analysis shall be included to substantiate the claim to the satisfaction of the Regional Administrator.

6. *Cost-effectiveness analysis procedures.*

a. *Method of analysis.* The resources costs shall be determined by evaluating opportunity costs. For resources that can be expressed in monetary terms, the analysis will use the interest (discount) rate established in paragraph 6e. Monetary costs shall be calculated in terms of present worth values or equivalent annual values over the planning period defined in section 6b. The analysis shall descriptively present nonmonetary factors (e.g., social and environmental) in order to determine their significance and impact. Nonmonetary factors include primary and secondary environmental effects, implementation capability, operability, performance reliability and flexibility. Although such factors as use and recovery of energy and scarce resources and recycling of nutrients are to be included in the monetary cost analysis, the non-monetary evaluation shall also include them. The most cost-effective alternative shall be the waste treatment management system which the analysis determines to have the lowest present worth or equivalent annual value unless nonmonetary costs are overriding. The most cost-effective alternative must also meet the minimum requirements of applicable effluent limitations, groundwater protection, or other applicable standards established under the Act.

b. *Planning period.* The planning period for the cost-effectiveness analysis shall be 20 years.

c. *Elements of monetary costs.* The monetary costs to be considered shall include the total value of the resources which are attributable to the waste treatment management system or to one of its component parts. To determine these values, all monies necessary for capital construction costs and operation and maintenance costs shall be identified.

(1) Capital construction costs used in a cost-effective analysis shall include all contractors' costs of construction including overhead and profit, costs of land, relocation, and right-of-way and easement acquisition; costs of design engineering, field exploration and engineering services during construction; costs of administrative and legal

services including costs of bond sales; start-up costs such as operator training; and interest during construction. Capital construction costs shall also include contingency allowances consistent with the cost estimate's level of precision and detail.

(2) The cost-effectiveness analysis shall include annual costs for operation and maintenance (including routine replacement of equipment and equipment parts). These costs shall be adequate to ensure effective and dependable operation during the system's planning period. Annual costs shall be divided between fixed annual costs and costs which would depend on the annual quantity of waste water collected and treated. Annual revenues generated by the waste treatment management system through energy recovery, crop production, or other outputs shall be deducted from the annual costs for operation and maintenance in accordance with guidance issued by the Administrator.

d. *Prices.* The applicant shall calculate the various components of costs on the basis of market prices prevailing at the time of the cost-effectiveness analysis. The analysis shall not allow for inflation of wages and prices, except those for land, as described in paragraph 6h(1) and for natural gas. This stipulation is based on the implied assumption that prices, other than the exceptions, for resources involved in treatment works construction and operation, will tend to change over time by approximately the same percentage. Changes in the general level of prices will not affect the results of the cost-effectiveness analysis. Natural gas prices shall be escalated at a compound rate of 4 percent annually over the planning period, unless the Regional Administrator determines that the grantee has justified use of a greater or lesser percentage based upon regional differentials between historical natural gas price escalation and construction cost escalation. Land prices shall be appreciated as provided in paragraph 6h(1). Both historical data and future projections support the gas and land price escalations relative to those for other goods and services related to waste water treatment. Price escalation rates may be updated periodically in accordance with Agency guidelines.

e. *Interest (discount) rate.* The rate which the Water Resources Council establishes annually for evaluation of water resource projects shall be used.

f. *Interest during construction.* (1) Where capital expenditures can be expected to be fairly uniform during the construction period, interest during construction may be calculated at I=1/2PCi where:

I=the interest accrued during the construction period,
P=the construction period in years,
C=the total capital expenditures,
i=the interest rate (discount rate in section 6e).

(2) Where expenditures will not be uniform, or when the construction period will be greater than 4 years, interest during construction shall be calculated on a year-by-year basis.

g. *Useful life.* (1) The treatment works' useful life for a cost-effectiveness analysis shall be as follows:

Land—permanent.
Waste water conveyance structures (includes collection systems, outfall pipes, interceptors, force mains, tunnels, etc.)—50 years.
Other structures (includes plant building, concrete process tankage, basins, lift stations structures, etc.)—30–50 years.
Process equipment—15–20 years.
Auxiliary equipment—10–15 years.

(2) Other useful life periods will be acceptable when sufficient justification can be provided. Where a system or a component is for interim service, the anticipated useful life shall be reduced to the period for interim service.

h. *Salvage value.* (1) Land purchased for treatment works, including land used as part of the treatment process or for ultimate disposal of residues, may be assumed to have a salvage value at the end of the planning period at least equal to its prevailing market value at the time of the analysis. In calculating the salvage value of land, the land value shall be appreciated at a compound rate of 3 percent annually over the planning period, unless the Regional Administrator determines that the grantee has justified the use of a greater or lesser percentage based upon historical differences between local land cost escalation and construction cost escalation. The land cost escalation rate may be updated periodically in accordance with Agency guidelines. Right-of-way easements shall be considered to have a salvage value not greater than the prevailing market value at the time of the analysis.

(2) Structures will be assumed to have a salvage value if there is a use for them at the end of the planning period. In this case, salvage value shall be estimated using straight line depreciation during the useful life of the treatment works.

(3) The method used in paragraph 6h(2) may be used to estimate salvage value at the end of the planning period for phased additions of process equipment and auxiliary equipment.

(4) When the anticipated useful life of a facility is less than 20 years (for analysis of interim facilities), salvage value can be claimed for equipment if it can be clearly demonstrated that a specific market or reuse opportunity will exist.

7. *Innovative and alternative wastewater treatment processes and techniques.*

a. Beginning October 1, 1978, the capital costs of publicly owned treatment works which use processes and techniques meeting the criteria of appendix E to this subpart and which have only a water pollution control function, may be eligible if the present worth cost of the treatment works is not more than 115 percent of the present worth cost of the most cost-effective pollution control system, exclusive of collection sewers and interceptors common to the two systems being compared, by 115 percent, except for the following situation.

b. Where innovative or alternative unit processes would serve in lieu of conventional unit processes in a conventional waste water treatment plant, and the present worth costs of the nonconventional unit processes are less than 50 percent of the present worth costs of the treatment plant, multiply the present worth costs of the replaced conventional processes by 115 percent, and add the cost of nonreplaced unit processes.

c. The eligibility of multipurpose projects which combine a water pollution control function with another function, and which use processes and techniques meeting the criteria of appendix E to this subpart, shall be determined in accordance with guidance issued by the Administrator.

d. The above provisions exclude individual systems under §35.918. The regional Administrator may allow a grantee to apply the 15-percent preference authorized by this section to facility plans prepared under step 1 grant assistance awarded before October 1, 1978.

8. *Cost-effective staging and sizing of treatment works.*

a. *Population projections.* (1) The disaggregation of State projections of population shall be the basis for the population forecasts presented in individual facility plans, except as noted. These State projections shall be those developed in 1977 by the Bureau of Economic Analysis (BEA), Department of Commerce, unless, as of June 26, 1978, the State has already prepared projections. These State projections may be used instead of the BEA projections if the year 2000 State population does not exceed that of the BEA projection by more than 5 percent. If the difference exceeds this amount, the State must either justify or lower its projection. Justification must be based on the historical and current trends (e.g., energy and industrial development, military base openings) not taken into account in the BEA projections. The State must submit for approval to the Administrator the request and justification for use of State projections higher than the BEA projections. By that time, the State shall issue a public notice of the request. Before the Administrator's approval of the State projection, the Regional Administrator shall solicit public comments and hold a public hearing if important issues are raised about the State projection's validity. State projections and disaggregations may be updated periodically in accordance with Agency guidelines.

(2) Each State, working with designated 208 planning agencies, organizations certified by the Governor under section 174(a) of the Clean Air Act, as amended, and other regional planning agencies in the State's non-designated areas, shall disaggregate the State population projection among its designated 208 areas, other standard metropolitan statistical areas (SMSA's) not included in the 208 area, and non-SMSA counties or other appropriate jurisdictions. States that had enacted laws, as of June 26, 1978, mandating disaggregation of State population totals to each county for areawide 208 planning may retain this requirement. When disaggregating the State population total, the State shall take into account the projected population and economic activities identified in facility plans, areawide 208 plans and municipal master plans. The sum of the disaggregated projections shall not exceed the State projection. Where a designated 208 area has, as of June 26, 1978, already prepared a population projection, it may be used if the year 2000 population does not exceed that of the disaggregated projection by more than 10 percent. The State may then increase its population projection to include all such variances rather than lower the population projection totals for the other areas. If the 208 area population forecast exceeds the 10 percent allowance, the 208 agency must lower its projection within the allowance and submit the revised projection for approval to the State and the Regional Administrator.

(3) The State projection totals and the disaggregations will be submitted as an output of the statewide water quality management process. The submission shall include a list of designated 208 areas, all SMSA's, and counties or other units outside the 208 areas. For each unit the disaggregated population shall be shown for the years 1980, 1990, and 2000. Each State will submit its projection totals and disaggregations for the Regional Administrator's approval before October 1, 1979. Before this submission, the State shall hold a public meeting on the disaggregations and shall provide public notice of the meeting consistent with part 25 of this chapter. (See §35.917(e).)

(4) When the State projection totals and disaggregations are approved they shall be used thereafter for areawide water quality management planning as well as for facility planning and the needs surveys under section 516(b) of the Act. Within areawide 208 planning areas, the designated agencies, in consultation with the States, shall disaggregate the 208 area projections among the SMSA and non-SMSA areas and then disaggregate these SMSA and non-SMSA projections

among the facility planning areas and the remaining areas. For those SMSA's not included within designated 208 planning areas, each State, with assistance from appropriate regional planning agencies, shall disaggregate the SMSA projection among the facility planning areas and the remaining areas within the SMSA. The State shall check the facility planning area forecasts to ensure reasonableness and consistency with the SMSA projections.

(5) For non-SMSA facility planning areas not included in designated areawide 208 areas, the State may disaggregate population projections for non-SMSA counties among facility planning areas and remaining areas. Otherwise, the grantee is to forecast future population growth for the facility planning area by linear extrapolation of the recent past (1960 to present) population trends for the planning area, use of correlations of planning area growth with population growth for the township, county or other larger parent area population, or another appropriate method. A population forecast may be raised above that indicated by the extension of past trends where likely impacts (e.g., significant new energy developments, large new industries, Federal installations, or institutions) justify the difference. The facilities plan must document the justification. These population forecasts should be based on estimates of new employment to be generated. The State shall check individual population forecasts to insure consistency with overall projections for non-SMSA counties and justification for any difference from past trends.

(6) Facilities plans prepared under step 1 grant assistance awarded later than 6 months after Agency approval of the State disaggregations shall follow population forecasts developed in accordance with these guidelines.

b. *Wastewater flow estimates.* (1) In determining total average daily flow for the design of treatment works, the flows to be considered include the average daily base flows (ADBF) expected from residential sources, commercial sources, institutional sources, and industries the works will serve plus allowances for future industries and nonexcessive infiltration/inflow. The amount of nonexcessive infiltration/inflow not included in the base flow estimates presented herein, is to be determined according to the Agency guidance for sewer system evaluation or Agency policy on treatment and control of combined sewer overflows (PRM 75–34).

(2) The estimation of existing and future ADBF, exclusive of flow reduction from combined residential, commercial and institutional sources, shall be based upon one of the following methods:

(a) *Preferred method.* Existing ADBF is estimated based upon a fully documented analysis of water use records adjusted for consumption and losses or on records of wastewater flows for extended dry periods less estimated dry weather infiltration. Future flows for the treatment works design should be estimated by determining the existing per capita flows based on existing sewered resident population and multiplying this figure by the future projected population to be served. Seasonal population can be converted to equivalent full time residents using the following multipliers:

Day-use visitor.....0.1–0.2
Seasonal visitor 0.5–0.8

The preferred method shall be used wherever water supply records or wastewater flow data exist. Allowances for future increases of per capita flow over time will not be approved.

(b) *Optional method.* Where water supply and wastewater flow data are lacking, existing and future ADBF shall be estimated by multiplying a gallon per capita per day (gpcd) allowance not exceeding those in the following table, except as noted below, by the estimated total of the existing and future resident populations to be served. The tabulated ADBF allowances, based upon several studies of municipal water use, include estimates for commercial and institutional sources as well as residential sources. The Regional Administrator may approve exceptions to the tabulated allowances where large (more than 25 percent of total estimated ADBF) commercial and institutional flows are documented.

Description	Gallons per capita per day
Non-SMSA cities and towns with projected total 10-year populations of 5,000 or less	60–70
Other cities and towns	65–80

c. *Flow reduction.* The cost-effectiveness analysis for each facility planning area shall include an evaluation of the costs, cost savings, and effects of flow reduction measures unless the existing ADBF from the area is less than 70 gpcd, or the current population of the applicant municipality is under 10,000, or the Regional Administrator exempts the area for having an effective existing flow reduction program. Flow reduction measures include public education, pricing and regulatory approaches or a combination of these. In preparing the facilities plan and included cost effectiveness analysis, the grantee shall, as a minimum:

(1) Estimate the flow reductions implementable and cost effective when the treatment works become operational and after 10 and 20 years of operation. The measures to be evaluated shall include a public information program; pricing and regulatory approaches; installation of water meters, and retrofit of toilet dams and low-flow showerheads for existing homes and other

habitations; and specific changes in local ordinances, building codes or plumbing codes requiring installations of water saving devices such as water meters, water conserving toilets, showerheads, lavatory faucets, and appliances in new homes, motels, hotels, institutions, and other establishments.

(2) Estimate the costs of the proposed flow reduction measures over the 20-year planning period, including costs of public information, administration, retrofit of existing buildings and the incremental costs, if any, of installing water conserving devices in new homes and establishments.

(3) Estimate the energy reductions; total cost savings for wastewater treatment, water supply and energy use; and the net cost savings (total savings minus total costs) attributable to the proposed flow reduction measures over the planning period. The estimated cost savings shall reflect reduced sizes of proposed wastewater treatment works plus reduced costs of future water supply facility expansions.

(4) Develop and provide for implementing a recommended flow reduction program. This shall include a public information program highlighting effective flow reduction measures, their costs, and the savings of water and costs for a typical household and for the community. In addition, the recommended program shall comprise those flow reduction measures which are cost effective, supported by the public and within the implementation authority of the grantee or another entity willing to cooperate with the grantee.

(5) Take into account in the design of the treatment works the flow reduction estimated for the recommended program.

d. *Industrial flows.* (1) The treatment works' total design flow capacity may include allowances for industrial flows. The allowances may include capacity needed for industrial flows which the existing treatment works presently serves. However, these flows shall be carefully reviewed and means of reducing them shall be considered. Letters of intent to the grantee are required to document capacity needs for existing flows from significant industrial users and for future flows from all industries intending to increase their flows or relocate in the area. Requirements for letters of intent from significant industrial dischargers are set forth in §35.925–11(c).

(2) While many uncertainties accompany forecasting future industrial flows, there is still a need to allow for some unplanned future industrial growth. Thus, the cost-effective (grant eligible) design capacity and flow of the treatment works may include (in addition to the existing industrial flows and future industrial flows documented by letters of intent) a nominal flow allowance for future nonidentifiable industries or for unplanned industrial expansions, provided that 208 plans, land use plans and zoning provide for such industrial growth. This additional allowance for future unplanned industrial flow shall not exceed 5 percent (or 10 percent for towns with less than 10,000 population) of the total design flow of the treatment works exclusive of the allowance or 25 percent of the total industrial flow (existing plus documented future), whichever is greater.

e. *Staging of treatment plants.* (1) The capacity of treatment plants (i.e., new plants, upgraded plants, or expanded plants) to be funded under the construction grants program shall not exceed that necessary for wastewater flows projected during an initial staging period determined by one of the following methods:

(a) *First method.* The grantee shall analyze at least three alternative staging periods (10 years, 15 years, and 20 years). He shall select the least costly (i.e., total present worth or average annual cost) staging period.

(b) *Second method.* The staging period shall not exceed the period which is appropriate according to the following table.

STAGING PERIODS FOR TREATMENT PLANTS

Flow growth factors (20 years)[1]	Staging period[2] (years)
Less than 1.3	20
1.3 to 1.8	15
Greater than 1.8	10

[1] Ratio of wastewater flow expected at end of 20 year planning period to initial flow at the time the plant is expected to become operational.
[2] Maximum initial staging period.

(2) A municipality may stage the construction of a treatment plant for a shorter period than the maximum allowed under this policy. A shorter staging period might be based upon environmental factors (secondary impacts, compliance with other environmental laws under §35.925–14, energy conservation, water supply), an objective concerning planned modular construction, the utilization of temporary treatment plants, or attainment of consistency with locally adopted plans including comprehensive and capital improvement plans. However, the staging period in no case may be less than 10 years, because of associated cost penalties and the time necessary to plan, apply for and receive funding, and construct later stages.

(3) The facilities plan shall present the design parameters for the proposed treatment plant. Whenever the proposed treatment plant components' size or capacity would exceed the minimum reliability requirements suggested in the EPA technical bulletin, ''Design Criteria for Mechanical, Electric, and Fluid System and Component Reliability,'' a complete justification, including supporting data, shall be provided to the Regional Administrator for his approval.

f. *Staging of interceptors.* Since the location and length of interceptors will influence

growth, interceptor routes and staging of construction shall be planned carefully. They shall be consistent with approved 208 plans, growth management plans and other environmental laws under §35.925–14 and shall also be consistent with Executive orders for flood plains and wetlands.

(1) Interceptors may be allowable for construction grant funding if they eliminate existing point source discharges and accommodate flows from existing habitations that violate an enforceable requirement of the Act. Unless necessary to meet those objectives, interceptors should not be extended into environmentally sensitive areas, prime agricultural lands and other undeveloped areas (density less than one household per 2 acres). Where extension of an interceptor through such areas would be necessary to interconnect two or more communities, the grantee shall reassess the need for the interceptor by further consideration of alternative wastewater treatment systems. If the reassessment demonstrates a need for the interceptor, the grantee shall evaluate the interceptor's primary and secondary environmental impacts, and provide for appropriate mitigating measures such as rerouting the pipe to minimize adverse impacts or restricting future connections to the pipe. Appropriate and effective grant conditions (e.g., restricting sewer hookups) should be used where necessary to protect environmentally sensitive areas or prime agricultural lands from new development. NPDES permits shall include the conditions to insure implementation of the mitigating measures when new permits are issued to the affected treatment facilities in those cases where the measures are required to protect the treatment facilities against overloading.

(2) Interceptor pipe sizes (diameters for cylindrical pipes) allowable for construction grant funding shall be based on a staging period of 20 years. A larger pipe size corresponding to a longer staging period not to exceed 40 years may be allowed if the grantee can demonstrate, wherever water quality management plans or other plans developed for compliance with laws under §35.925–14 have been approved, that the larger pipe would be consistent with projected land use patterns in such plans and that the larger pipe would reduce overall (primary plus secondary) environmental impacts. These environmental impacts include:

(a) *Primary impacts.* (i) Short-term disruption of traffic, business and other daily activities.

(ii) Destruction of flora and fauna, noise, erosion, and sedimentation.

(b) *Secondary impacts.* (i) Pressure to rezone or otherwise facilitate unplanned development.

(ii) Pressure to accelerate growth for quicker recovery of the non-Federal share of the interceptor investments.

(iii) Effects on air quality and environmentally sensitive areas by cultural changes.

(3) The estimation of peak flows in interceptors shall be based upon the following considerations:

(a) Daily and seasonal variations of pipe flows, the timing of flows from the various parts of the tributary area, and pipe storage effects.

(b) The feasibility of off-pipe storage to reduce peak flows.

(c) The use of an appropriate peak flow factor that decreases as the average daily flow to be conveyed increases.

9. *State guidelines.* If a State has developed or chooses to develop comprehensive guidelines on cost-effective sizing and staging of treatment works, the Regional Administrator may approve all or portions of the State guidance for application to step 1 facility plans. Approved State guidance may be used instead of corresponding portions of these guidelines, if the following conditions are met:

a. The State guidance must be at least as stringent as the provisions of these guidelines.

b. The State must have held at least one public hearing on proposed State guidance, under regulations in part 25 of this chapter, before submitting the guidance for Agency approval.

10. *Additional capacity beyond the cost-effective capacity.* Treatment works which propose to include additional capacity beyond the cost-effective capacity determined in accordance with these guidelines may receive Federal grant assistance if the following requirements are met:

a. The facilities plan shall determine the most cost-effective treatment works and its associated capacity in accordance with these guidelines. The facilities plan shall also determine the actual characteristics and total capacity of the treatment works to be built.

b. Only a portion of the cost of the entire proposed treatment works including the additional capacity shall be eligible for Federal funding. The portion of the cost of construction which shall be eligible for Federal funding under sections 203(a) and 202(a) of the Act shall be equivalent to the estimated construction costs of the most cost-effective treatment works. For the eligibility determination, the costs of construction of the actual treatment works and the most cost-effective treatment works must be estimated on a consistent basis. Up-to-date cost curves published by EPA's Office of Water Program Operations or other cost estimating guidance shall be used to determine the cost ratios between cost-effective project components and those of the actual project. These cost ratios shall be multiplied by the step 2 cost and step 3 contract costs of actual components to determine the eligible step 2 and step 3 costs.

c. The actual treatment works to be built shall be assessed. It must be determined that the actual treatment works meets the requirements of the National Environmental Policy Act and all applicable laws, regulations, and guidance, as required of all treatment works by §§35.925–8 and 35.925–14. Particular attention should be given to assessing the project's potential secondary environmental effects and to ensuring that air quality standards will not be violated. The actual treatment works' discharge must not cause violations of water quality standards.

d. The Regional Administrator shall approve the plans, specifications, and estimates for the actual treatment works under section 203(a) of the Act, even though EPA will be funding only a portion of its designed capacity.

e. The grantee shall satisfactorily assure the Agency that the funds for the construction costs due to the addtional capacity beyond the cost-effective treatment works' capacity as determined by EPA (i.e., the ineligible portion of the treatment works), as well as the local share of the grant eligible portion of the construction costs will be available.

f. The grantee shall execute appropriate grant conditions or releases providing that the Federal Government is protected from any further claim by the grantee, the State, or any other party for any of the costs of construction due to the additional capacity.

g. Industrial cost recovery shall be based upon the portion of the Federal grant allocable to the treatment of industrial wastes.

h. The grantee must implement a user charge system which applies to the entire service area of the grantee, including any area served by the additional capacity.

APPENDIX B TO SUBPART E—FEDERAL GUIDELINES—USER CHARGES FOR OPERATION AND MAINTENANCE OF PUBLICLY OWNED TREATMENT WORKS

(a) *Purpose.* To set forth advisory information concerning user charges based on actual use pursuant to section 204 of the Clean Water Act, hereinafter referred to as the Act. Applicable requirements are set forth in subpart E (40 CFR part 35).

(b) *Authority.* The authority for establishment of the user charge guidelines is contained in section 204(b)(2) of the Act.

(c) *Background.* Section 204(b)(1) of the Act provides that after March 1, 1973, Federal grant applicants shall be awarded grants only after the Regional Administrator has determined that the applicant has adopted or will adopt a system of charges to assure that each recipient of waste treatment services will pay its proportionate share of the costs of operation and maintenance, including replacement. The intent of the Act with respect to user charges is to distribute the cost of operation and maintenance of publicly owned treatment works to the pollutant source and to promote self-sufficiency of treatment works with respect to operation and maintenance costs. The 1977 Amendments amended section 204(b) to allow grantees to establish user charge systems based on ad valorem taxes. This appendix does not apply to ad valorem user charge systems.

(d) *Definitions*—(1) *Replacement.* Expenditures for obtaining and installing equipment, accessories, or appurtenances which are necessary to maintain the capacity and performance during the service life of the treatment works for which such works were designed and constructed. The term ''operation and maintenance'' includes replacement.

(2) *User charge.* A charge levied on users of treatment works for the cost of operation and maintenance of such works.

(e) *Classes of users.* At least two basic types of user charge systems are common. The first is to charge each user a share of the treatment works operation and maintenance costs based on his estimate of measured proportional contribution to the total treatment works loading. The second system establishes classes for users having similar flows and waste water characteristics; i.e., levels of biochemical oxygen demand, suspended solids, etc. Each class is then assigned its share of the waste treatment works operation and maintenance costs based on the proportional contribution of the class to the total treatment works loading. Either system is in compliance with these guidelines.

(f) *Criteria against which to determine the adequacy of user charges.* The user charge system shall be approved by the Regional Administrator and shall be maintained by the grantee in accordance with the following requirements:

(1) The user charge system must result in the distribution of the cost of operation and maintenance of treatment works within the grantee's jurisdiction to each user (or user class) in proportion to such user's contribution to the total wastewater loading of the treatment works. Factors such as strength, volume, and delivery flow rate characteristics shall be considered and included as the basis for the user's contribution to ensure a proportional distribution of operation and maintenance costs to each user (or user class).

(2) For the first year of operation, operation and maintenance costs shall be based upon past experience for existing treatment works or some other rational method that can be demonstrated to be applicable.

(3) The grantee shall review user charges annually and revise them periodically to reflect actual treatment works operation and maintenance costs.