ATTACHMENT C

C. Potential Alternatives to Prohibiting Sanitary Sewer Overflows -- Authorized Discharges at Less than Secondary

The purpose of the prohibition on untreated sanitary sewer overflow as proposed above is to assure that raw sewage (human excrement and other pollutants) does not go into rivers and streams. That measure is important to protect human health and the environment. EPA is soliciting comments on an alternative approach that the Agency believes may well result in less treatment of sewage prior to discharge. The alternative approach would allow municipalities in limited circumstances, to divert some of the sewage to peak excess flow treatment facilities (at satellite locations) that may provide less than secondary treatment, before discharging to rivers and streams.

EPA is proposing the "prohibition and excuse" approach because the Agency believes that a well-designed, well-operated POTW should deliver sewage for treatment to meet limits based on secondary treatment under all but severe natural conditions or certain conditions beyond the control of the system operator. This is consistent with EPA's longstanding interpretation of Clean Water Act requirements and regulatory requirements that apply to discharges of domestic sewage from separate sanitary sewers. In addition, this approach was unanimously supported by the SSO Subcommittee, which included EPA, as reflected in today's proposal. If EPA were to change its interpretation and propose a different legal framework by which NPDES permits could "authorize" discharges from separate sewer systems under a statutory theory other than secondary treatment, such a framework would need to derive from CWA sections 301(b) and 304. Permit authorization under a statutory theory other than secondary treatment would represent a change in EPA's interpretation of the applicability of regulatory standards as well as a change from the approach supported by the SSO Subcommittee. Because sanitary sewers are designed to deliver all flows for treatment, capacity-related discharges (except those caused by severe natural conditions) are the result of inadequate planning for growth, or inattention to design, construction, operation, or maintenance of the system. Permit authorization under the approach described below could, in some cases, result in a relaxation in regulatory standards. For these reasons, EPA has serious legal concerns about

whether the CWA can be interpreted to "authorize" SSO discharges with this alternative approach. Such an alternative approach would be at odds with EPA's historic interpretation, which is that the Clean Water Act is designed to assure secondary treatment of sewage from POTWs, and that all separate sewers in a municipal sanitary sewer collection system are part of the POTW. The Department of Justice expressed similar concerns during interagency review of the proposed rule.

EPA is also concerned that an approach that would "authorize" SSO discharges based on a BAT/BCT theory may allow more SSOs, or at a minimum, result in delays in the remedial actions to address existing SSOs, particularly those related to system capacity. As discussed previously, EPA is concerned that such an approach might legitimize SSOs, which could result in more incidents of insufficiently treated sewage being discharged to the nation's waters. If a separate sewer collection system is well-designed and well-operated, discharges from such sewers should be rare.

For the above reasons, EPA also have serious concerns about whether the Clean Water Act should be interpreted to "authorize" SSO discharges under this alternative approach. Thus, EPA believes the "prohibition and excuse" framework is more appropriate than an "authorization" framework. The Agency nonetheless invites comment on the legal and practical implications if EPA were to support a BAT/BCT "authorization" alternative. EPA recognizes that any such change involves complex issues that will involve additional data collection and analysis as well as a more detailed articulation of potential approaches. Pursuing an alternative approach would therefore require additional notice and comment.

EPA interprets the CWA as requiring that permits for discharges from sanitary sewer collection systems need to include effluent limitations based on the secondary treatment regulation (40 CFR Part 133) and any more stringent limitations necessary to meet water quality standards. This interpretation considers the discharge from a sanitary sewer collection system to be a discharge from a "publicly owned treatment works" (POTW) within the meaning of section 301(b)(1)(B) of the CWA. The NPDES regulations define POTW to include "pipes, sewers, or other conveyances only if they convey wastewater to a POTW providing treatment" See 40 CFR 122.2, 125.2, 125.3(a)(1)(i). CWA section 301(b)(1)(B)

requires permits for discharges from POTWs to include effluent limitations "based upon secondary treatment" as defined by EPA under CWA section 304(d)(1), or more stringent water quality-based requirements.

EPA does not interpret discharges from a POTW, within the meaning of section 301(b)(1)(B), to include discharges from CSOs. Combined sewers are sewer systems designed to convey storm water runoff (including large volumes of runoff from street curb inlets and area drains) in addition to domestic sanitary sewage and commercial and industrial wastewater. Due to this design difference, combined sewer systems are generally subject to significantly larger increases in flow due to either rainwater or snowmelt that enters the system than are typical of sanitary sewer systems, although some sanitary sewer systems may also experience large flow increases during wet weather. During wet weather, combined systems are generally operated to convey the maximum amount of combined wastewater and storm water to the treatment works. Any excess flow is generally discharged from the system at designed overflow points before reaching the continuously operating treatment plant.

The storm-related increase in flow in combined sewer systems associated with the intentional collection of large volumes of inflow, the associated flow management challenges, and the resulting design of overflow points led to EPA's application of the BAT/BCT framework to CSOs, as well as other distinctions for combined sewer overflows in the NPDES regulations (see 133.103(a), January 27, 1989, (54 FR 4225)). This approach recognizes that during wet weather conditions, CSO overflow structures do not, nor were they designed or constructed to, convey wastewater to a POTW plant providing secondary treatment. As such, wet weather discharges from CSO discharge structures are not subject to limitations based on secondary treatment. In contrast, EPA has historically considered sanitary sewers to be conveyances that convey wastewater to a POTW providing treatment, and hence applied secondary treatment requirements.

Permits for CSO discharges need to include effluent limitations based on the application of best available technology economically achievable (BAT) for toxic pollutants and for pollutants that are neither toxic nor conventional pollutants. For conventional pollutants, the interpretation results in the application of best conventional control

technology currently available (BCT). Additionally, like all discharges, if necessary, permits authorizing discharges from CSO structures need to include any more stringent water quality-based requirements if necessary to meet water quality standards. EPA's interpretation of the applicable technology-based standards for wet weather CSO discharges was upheld in *Montgomery Environmental Coalition v. Costle*, 646 F. 2d 568 (DC Cir. 1980). Consistent with the Agency's CSO policies and strategies, the BAT/BCT requirements are applied on a best professional judgment (BPJ) basis within the framework described in those policies and strategies. The factors used for applying the BAT and BCT technology-based standards are described in 40 CFR 125.3. This approach provides regulatory flexibility for establishing requirements for CSOs and allows addressing CSO discharges in the context of comprehensive controls addressing the collection system.

EPA provided guidance on the planning, selection and implementation of CSO controls in the National CSO Control Strategy (September 8, 1989 (54 FR 37370)) and the CSO Control Policy (April 19, 1994 (59 FR 18688)). These documents describe provisions for developing appropriate requirements for several categories of CSOs. The National CSO Control Strategy and CSO Control Policy provide that permits are to prohibit CSOs that occur during dry weather. Such a discharge would be considered a discharge from a POTW because combined sewer systems were designed and constructed to deliver flows to a POTW plant for treatment during dry weather. The National CSO Control Strategy also clarifies that discharges from locations or points within a combined sewer system that are not permitted are prohibited. This would include discharges from locations within a combined sewer system other than designed overflow points (e.g. line breaks, backups through manholes or catch basins). The 1994 CSO Control Policy provides comprehensive guidance for developing site-specific NPDES permit requirements for combined sewer systems to address wet weather CSO discharges from designed overflow points. Under the CSO Control Policy, permittees with combined sewer systems that have CSOs are to immediately undertake a process to accurately characterize their sewer systems, to demonstrate implementation of nine minimum controls identified in the Policy and to develop and implement a long-term CSO control plan that will ultimately result in the compliance with the requirements of the CWA.

Under an alternative that would incorporate a BAT/BCT

approach to discharges from separate sanitary collection systems, EPA would need to change its current interpretation of the term POTW, specifically, the interpretation of "conveyances only if they convey wastewater to a POTW providing treatment." While changing to the BAT/BCT standard might allow NPDES authorities to authorize discharges from PEFTFs serving sanitary sewer collection systems through permits at a treatment level less than secondary treatment, EPA is concerned that such an "authorization" could legitimize less than secondary treatment of SSO discharges that, although prohibited under applicable standards, are currently occurring. Under this alternative, effluent limitations in permits for discharges from PEFTFs would need to include effluent limitations based on BAT/BCT and any more stringent limitations necessary to meet water quality standards. While the requirements for such discharges would not be based on secondary treatment, the approach might reduce some risks presented by SSO discharges by reducing uncontrolled wet weather overflows and ensuring some non-biological treatment (e.g., suspended solids removal, disinfection) for the controlled, wet weather overflows that remained. This alternative, however, which would not require all domestic sewage flows in a separate system to be delivered for treatment at the secondary treatment plant, would weaken currently applicable standards. EPA requests comment on the relative health and environmental benefits associated with applying the secondary treatment regulations at 40 CFR Part 133 or the application of a BAT/BCT framework to intermittent, peak flow discharges from sanitary sewer collection systems. Comments on such alternatives should be mindful of the need to assure that SSO discharges (authorized under either a secondary treatment or BAT/BCT framework) remain subject to the water quality-based requirements of the Act.

If EPA were to apply the BAT/BCT approach to SSO discharges, the Agency would still promulgate standard permit conditions that were similar to the CMOM program, prohibition, and reporting, record keeping and public notification standard permit conditions proposed in today's notice. The CMOM program standard permit condition would not be explicitly modelled on the nine minimum controls and long-term control plan of the CSO Control Policy, but rather would be based on the framework proposed in today's notice. These standard permit conditions could provide a framework for permitting authorities to determine the technology-based and water quality-based requirements needed to comply with the CWA. As a result, they would provide a parallel planning framework to

the nine minimum controls and long-term control plan described in the 1994 CSO Control Policy. Many of the principles of the CMOM standard permit condition proposed in today's notice are consistent with the principles identified for the nine minimum controls and long-term control plans called for in the CSO Control Policy. The planning and operating requirements of the CSO Control Policy (i.e., the nine-minimum controls and long-term control plan) and the planning and operating requirements proposed for SSOs in today's notice (i.e., CMOM program requirements), are similar in that they provide flexible frameworks for the consideration of system-specific factors and the selection and implementation of specific measures that may ultimately provide for compliance with the CWA. EPA believes that most aspects of the nine minimum controls and long-term control plan generally should be reflected in a CMOM program. The Agency notes that specific measures that would be identified by a permittee and the manner in which they are implemented can vary significantly between combined sewers and sanitary sewers, depending on system specific factors.

EPA requests comments on this approach and on how the standard permit conditions for CMOM programs and the prohibition on SSO discharges that are proposed in today's notice would need to be modified if the Agency were to adopt such an approach. The Agency also requests comments on how the factors associated with the BAT and BCT standards should be used to identify measures necessary to come into compliance with various parts of the CMOM program standard permit condition, such as the determination of adequate system capacity (i.e., capacity for delivery of flows for treatment prior to discharge).

If a BAT/BCT approach were adopted, a modification to the CMOM requirements proposed in this notice would be necessary to address the possibility that a permittee's system evaluation and capacity assurance plan and program audit indicates that the use of a PEFTF to reduce adverse health or environmental impacts may be appropriate. Since a BAT/BCT framework would provide more flexibility for authorizing discharges from PEFTFs under an NPDES permit, the Agency believes that if this approach were adopted, it would be necessary to build a comprehensive process for analyzing the need of a PEFTF into the CMOM provision. EPA requests comment on what information should be considered in such a comprehensive process and how it should be incorporated into

the CMOM approach.

An additional consideration associated with this approach is the costs of addressing SSOs and the framework for considering those costs. As noted in the draft *SSO Needs Report* and also in Table 8 in Section I.K. of this notice, the incremental costs of controlling SSOs caused by wet weather increase significantly as the control objective for frequency of overflows is decreased. In addition, as noted in the draft *SSO Needs Report* and section I.K of today's preamble, some municipalities facing some of the most significant I/I problems in their collection system, may significantly reduce costs by incorporating a limited number of treated discharges into a comprehensive control strategy that may also include expanding collection system and/or treatment plant capacity, and reducing peak flows. The Agency requests comments on the consideration of these costs under an approach based on a system-wide application of BAT/BCT and more stringent water quality-based requirements as well as under the secondary treatment framework proposed in today's notice.

A BAT/BCT approach would alter the framework for issuing permits for discharges from PEFTFs. Rather than require permits for discharges from PEFTFs to include effluent limitations based on the secondary treatment regulations at 40 CFR Part 133, a BAT/BCT framework also might be useful to identify a system-wide comprehensive set of measures to manage peak flow (e.g., removal of sources of peak flow, improved conveyance capacity, improved treatment plant capacity, and additional storage or equalization), establish management, operation and maintenance requirements for the collection system and, if still necessary, establish treatment requirements for discharges. If EPA pursued a BAT/BCT approach, the Agency could develop criteria and procedural guidelines to ensure a closely circumscribed framework that would only authorize discharges from a PEFTF as part of a comprehensive control strategy. The guidelines would describe, for example:

- A screening process and criteria that would be evaluated by the NPDES authority prior to permit issuance; and
- Criteria for permit conditions for peak excess flow treatment facilities.

<u>Screening Process</u>

If the final rule was premised on a theory to "authorize" PEFTF discharges through permits, the NPDES authority would conduct a screening process prior to permit issuance to determine whether discharges from a PEFTF could be authorized in the permit in the first instance. The screening process would support the determination of whether issuing a permit to conditionally authorize discharges from the peak excess flow treatment facility is appropriate or not. If the Director determined that a permit for discharges from the facility could be issued at all, the application information and screening criteria would support the development of appropriate permit conditions.

The permit applicant would provide the information to be used in this process in a permit application (Form 2A) and a companion engineering report that, at a minimum, contains the information described below. Where the applicant could not demonstrate all applicable criteria would be met, a permit for discharges from a peak excess flow treatment facility could only be issued in conjunction with an enforcement order that provides a compliance schedule.

Form 2A requires the submittal of specific facility, process and effluent information and data and other specified information. The companion engineering report would include an assessment of peak flows in the collection system including a description of the results of work to characterize and project peak flows; the source of extraneous flows contributing to peak flows, including estimates of the percentage of inflow and rainfall induced infiltration that comes from portions of the collection system other than the portions that are owned by the permittee; and continuous planned evaluation activities.

The applicant would identify cost-effective alternatives in the companion engineering report. The description of alternatives would include a detailed assessment of the current physical condition of the portion of the collection system that will contribute flows to the proposed peak excess flow treatment facility; and an identification and evaluation of a comprehensive set of reasonable alternatives to the excess flow treatment facility. The engineering report would, at a minimum, include a demonstration that increased storage of untreated wastewater during peak flow conditions, additional reduction of inflow and infiltration, increased capacity of the system, or other alternatives specified by the

Director are not practical and not cost-effective. EPA requests comments on other criteria for evaluating alternatives (e.g., measures are not feasible, remaining I/I is not excessive).

As part of the demonstration, the identification of alternatives would need to include consideration of: 1) additional I/I removal; 2) increased storage and/or flow equalization of peak flows; 3) increased capacity of the collection system and/or continuously operating treatment facility. At least one alternative that would need to be considered would be additional measures to reduce extraneous flows from portions of the collection system that are not owned by the permittee. The permit applicant would provide estimates of performance ranges of the different control techniques considered, as well as a description of the technical limitations of control techniques. The alternatives description would need to include estimates of the percentage of inflow and rainfall induced infiltration that comes from portions of the collection system other than those portions owned and operated by the permittee; and a description of the steps that have been taken to reduce inflow and rainfall induced infiltration and options for additional controls of these sources.

The description of alternatives would need to include a detailed cost estimates of alternatives and a summary of the overall costs of the sewer system assessment effort, measures to reduce I/I and measures to convey (including temporary storage) and treat flows at a continuously operating plant that provides biological treatment. The evaluation of costs would specify the planning period used in the analysis, which can be based on considerations of the design life of the facility, the duration of bonds or other financial instruments expected to finance the project and the 5-year permit period. The analysis would need to project the economic impacts of alternatives, including impacts on user fees.

The cost effectiveness analysis curves described in section 4.6 of “Sewer System Infrastructure Analysis and Rehabilitation”, EPA, 1991, includes a cost/flow curve that identifies the optimal point for sewer rehabilitation. The cost curve provides estimates of the total cost needed for corrective actions. The engineering report would include the supporting cost and flow curves used to develop the cost/flow curve with the optimal point for sewer rehabilitation; and

cost/performance curves to demonstrate the relationships between various discharge frequencies. This should include an analysis to determine where the increment of pollution reduction achieved diminishes compared to the increase costs.

The applicant would need to provide a description of the management, operational, and maintenance program for the collection system as well as a summary of major remediation projects that have been completed, including a description of the effectiveness of remediation measures. This description would also describe how the delivery of flows during peak flow conditions would be maximized to a continuously operating POTW treatment plant(s) that serves the collection system.

The applicant would need to demonstrate that the proposed treatment facility would be able to provide credible treatment under a wide range of operating conditions, including variable influent concentrations. The demonstration would include a description of the location of proposed discharges from the treatment facility; the treatment process to be used, included projected performance data and a description of operational requirements; available or projected information regarding effluent quality and frequency of discharge; descriptions of the technical limitations of the proposed treatment facility; and estimates of the effectiveness of treatment by the existing biological unit at the existing treatment facility (or as modified by proposed alternatives) under peak flow conditions relative to the effectiveness of the proposed treatment of in-system discharges. EPA requests comment on whether it should evaluate the appropriateness of providing guidance on minimum treatment requirements, and if so what minimum treatment requirements for PEFTFs should be (e.g. high-efficiency sedimentation, primary treatment, etc.).

The engineering report would also include a risk assessment where applicants would identify downstream uses which may potentially be impaired by the discharge as well as the major risks associated with other alternatives. The applicant would specifically identify any sensitive waters that would be downstream of the proposed peak excess flow treatment facility. Sensitive waters are to be identified by the NPDES authority in coordination with Federal, State and local agencies. Minimum criteria for sensitive waters could be provided. Examples of sensitive waters could include public drinking water intakes and their designated protection areas, swimming beaches and waters where swimming occurs,

shellfish beds, designated Outstanding National Resource Waters, National Marine Sanctuaries, waters with federal, state and local parks, and waters containing threatened or endangered species and their habitat. Except where such action would provide less protection of human health or the environment, peak excess flow treatment facilities that discharge to sensitive waters should be prohibited, eliminated or moved wherever physical possible and economically achievable. Where a prohibition, elimination, or relocation is not physically possible or economically achievable, or would provide less protection to human health. Treatment requirements would be consistent with attainment of designated uses of receiving waters.

As part of the engineering report, the applicant would have to show that the affected public has been provided an opportunity to actively participate in the decision-making process, including review and comment on alternatives. The affected public includes persons who reside downstream from the proposed treatment facility, persons who use and enjoy these downstream waters, rate payers, and any other interested persons. The applicant would provide a summary of major concerns raised by the public, describe the extent of support for the proposed facility, and how the concerns have or have not been addressed.

Permit Criteria

Under this approach, a permit for discharges from a peak excess flow treatment facility would have to, at a minimum provide for:

1) **Conditions defining when discharge may occur** - Permits would restrict the conditions under which discharges may occur. This can be done in a number of ways, including specifically prohibited discharges where the flows in the sewer system are less than a specified threshold flowrate (which would be based on the capacity of the collection system) and/or limiting the frequency of discharge.
2) **Technology-Based Effluent Limitations** - Permits would be required to provide appropriate technology-based effluent limitations.
3) **Water Quality-Based Effluent Limitations** - Permits would require any more stringent water quality-based effluent limitations (WQBELs) necessary to achieve water quality standards.
4) **Continuing Impacts Evaluation** - Permits would

require the permittee to implement a post-construction human health and water quality assessment program including requirements to monitor and collect sufficient information to demonstrate compliance with water quality standards and protection of designated uses.

5) **Continuing Alternatives Evaluation** - Permits would require the permittee to continue to evaluate if, based on current conditions, increased storage of untreated wastewater during peak flow conditions, additional reduction of inflow and infiltration, increased capacity of the system, or other alternatives are not practical and not cost-effective. The continuing assessment should evaluate progress made in rehabilitating the collection system, new or improved techniques to minimize overflows or changing circumstances that influence cost effectiveness.

6) **Monitoring and Reporting** - Monitoring and reporting requirements would be established on a case-by-case consistent with 40 CFR 122.44(i).

7) **Reopener** - The permit most likely would contain a reopener clause that authorizes the NPDES authority to reopen and modify the permit upon determining that the treatment facility fails to meet water quality standards or protect designated uses.

The Director would have to evaluate the criteria listed above when reissuing a subsequent permit in light of changing circumstances, progress made in rehabilitating the collection system, and planning criteria such as the duration of financial instruments used to finance the project.

EPA requests comment on other alternatives to the “prohibition and excuse” framework proposed today, such as approval of CMOM programs or defining *de minimis* thresholds for SSO discharges, and how such alternatives would appropriately protect human health and the environment.