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EPA

IMPLEMENTATION OF THE WATER QUALITY-BASED PROVISIONS IN THE CSO CONTROL POLICY

OUTLINE OF DRAFT EPA GUIDANCE

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Background

Why did the U.S. Environmental Protection Agency (EPA) prepare this outline?

One of the principles in the Combined Sewer Overflow (CSO) Control Policy is the "review and revision, as appropriate, of water quality standards and their implementation procedures when developing CSO control plans to reflect the site-specific wet weather impacts of CSOs." The Agency is developing this guidance because there is a perception that impediments exist to implementing the water quality-based provisions in the Policy. States indicated a need for additional guidance on how to review and revise, as appropriate, their water quality standards for waters affected by CSOs. Others indicated States' failure to conduct these reviews hinders identification of appropriate CSO control goals and development and implementation of long-term control plans that are consistent with the Clean Water Act (CWA) requirements.

Congess in House Report 105-769, accompanying the Agency's FY 1999 Appropriations, urged EPA to:

- develop guidance, after public comment, to facilitate the conduct of water quality and designated use reviews for CSO-receiving waters;
- provide technical and financial assistance to States and EPA Regions to conduct these reviews;
- report progress to relevant authorizing and appropriations committees by December 1, 1999.

This outline fulfills the Agency's obligation to report progress on developing guidance on CSO Control Policy implementation. We are also providing two other documents: (1) *Summary of the Listening Sessions -- Observations & Recommendations For Guidance And Technical Assistance To Facilitate Water Quality And Designated Use Reviews For Waters Impacted By Combined Sewer Overflows* and (2) *Summary Of Participants' Comments At The EPA-WEF Experts Workshop On Implementing The Water Quality-Based Provisions Of The CSO Control Policy*

How did EPA gather information on what was needed to facilitate water quality and designated use reviews for waters affected by CSOs?

The Agency held listening sessions in Philadelphia, PA (April 21, 1999), Lowell, MA (May 5-6, 1999), and Chicago, IL (May 13-14, 1999), as well as conducted numerous conference calls to obtain a broad range of perspectives from knowledgeable individuals. The focus of the meetings and conference calls was to obtain participants' views on the:

- impediments to implementing the water quality-based provisions of the CSO Control Policy;
- actions that the Agency should take to overcome any identified impediments.

Approximately 156 individuals participated in the meetings and conference calls, including:

- 73 communities/consultants,
- 53 State staff (15 different States),
- 21 Regional Office/Headquarters personnel,
- 9 watershed/environmental representatives.

Following the listening sessions and conference calls, EPA prepared preliminary guidance materials. To critically review these materials, EPA and the Water Environment Federation (WEF) co-sponsored an invited experts workshop on September 24, 1999. Workshop participants included a facilitator and 15 knowledgeable individuals with a variety of backgrounds and experiences involving CSO control planning and implementation, and in the water quality standards program.

In co-sponsoring the workshop, the Agency sought and received a wide range of diverse perspectives on (1) the impediments to implementing the water quality-based provisions of the CSO Control Policy, including State review of water quality standards for the waters receiving CSOs, and (2) the actions EPA should take to overcome these impediments. The facilitator did not ask participants to reach consensus on recommendations or provide advice as a group. The Agency will consider all suggestions and recommendations as it prepares draft guidance for public review and comment by April, 2000.

Why is guidance needed?

The CSO Control Policy is a national strategy to engage municipalities, permitting and enforcement authorities, water quality standards authorities, and the public in a comprehensive and coordinated effort to achieve the level of control in a combined sewer system that would contribute to the attainment of water quality standards in waters affected by CSOs. EPA believed that States and communities, in conjunction with the public, would actively participate in the planning, selection, design, and implementation of CSO long-term control plans. EPA also expected that development of long-term plans would support an evaluation of the attainability of water quality standards on CSO-impacted receiving waters, and that standards would be revised, as appropriate. The anticipated level of coordination and cooperation has not occurred everywhere.

Participants in the listening sessions and in the EPA-WEF Experts Workshop identified a number of impediments in coordinating the development and implementation of long-term CSO control plans with the review of water quality standards. Implementation of the water quality-based provisions in the CSO Control Policy involves complex and expensive activities, all of which are not well understood by local and State officials and the public. EPA must support local officials who develop, fund and implement CSO long-term control plans; State officials who develop permits and review water quality standards; and the public who pays for CSO control programs and evaluates any revisions to water quality standards for CSO-receiving waters. We can accomplish this by reiterating EPA's support for the review and revision, as appropriate, of water quality standards as an integral part of the CSO planning and

implementation processes, and by providing technical guidance that clarifies expectations about the relationship between long-term CSO control planning and water quality standards.

What will the guidance do?

The guidance will provide the policy, programmatic and technical support to integrate the processes for planning and implementing CSO controls with those for water quality standards. The first component of the guidance will clearly and simply explain EPA's goals for improving implementation of the water quality-based provisions in the CSO Control Policy -- particularly the need for improved coordination among participating entities. Our purpose is to help local officials, State authorities, and the public understand that:

- A long-term CSO planning process is necessary to meet the CWA requirements, as well as other local and watershed goals.

- The planning process involves a concerted dialogue and active participation among National Pollutant Discharge Elimination System (NPDES) and water quality standards authorities, permittees, municipal officials, ratepayers, and other members of the public, and should be implemented in conjunction with the control of all sources of contamination on a watershed basis.

- Identification of program goals for combined sewer systems requires a full understanding of the causes of the overflows, the effects of the overflows on local water quality, and the cost and effectiveness of different control options. It also involves understanding how other pollutant sources in a watershed contribute to nonattainment and the extent to which attainment will require control of sources other than CSOs. These activities are often data-intensive, involving monitoring and modeling over an extended time period.

- The monitoring and modeling needed to evaluate different CSO control options should also be designed to evaluate the attainability of existing water quality standards under the control options during development and implementation of the long-term plan.

- Adjustments in water quality standards may be necessary, if well designed and operated control programs can not eliminate all CSOs, including their discharges of bacteria, nutrients, and toxicants and the costs of the controls would result and substantial and widespread economic and social impact.

The second component of the guidance - ***How do you coordinate the planning and implementation of CSO control programs with the re-evaluation of water quality standards?*** - will explain how to integrate the CSO control planning and implementation processes with the water quality standards processes. We will involve State and local entities in developing this component of the guidance document and use their experience in developing case studies and examples. This component of the guidance will provide more detailed information to EPA and State NPDES authorities, State water quality standards authorities, CSO communities and local constituency groups.

This second component will affirm EPA's expectation that the CSO long-term control plans are to be developed to meet both the technology-based and the water quality-based requirements of the CWA, and will clearly describe the iterative processes and the tools for doing so. We will suggest a series of steps that will facilitate the integration of CSO control planning and implementation with the re-evaluation of water quality standards. By clarifying the roles and inter-relationship of local, State and Federal entities, the guidance will foster a more informed dialogue on CSO control planning and implementation, and greater coordination and cooperation in the water quality standards review processes.

The guidance will provide specific examples of how the review and, if appropriate, revision processes would work in a CSO context, describing, for example, the options for refining designated uses (e.g., subcategories allowing intermittent exceedances) to address bacteria during storm events. We will include background information on existing State approaches for reconciling their water quality standards with any remaining overflows, after the implementation of well designed and operated long-term control programs. We will explore the possibility of developing a "model use attainability analysis" that States could use in developing subclasses of their designated uses and applying the subclasses to specific waters where a well designed and operated CSO control program does not eliminate all overflows.

In addition, the guidance will explain how communities and States can take advantage of the flexibility in the CSO Control Policy and the Water Quality Standards Program to reflect site-specific conditions. For example, development and implementation of a long-term CSO control plan is an iterative process and can be phased to implement high priority projects, such as eliminating, relocating or treating CSOs that flow into sensitive areas, and to monitor and evaluate the effect of these initial controls on water quality. Monitoring the efficacy of initial, high priority controls can generate useful information that can enable the permittee to better tailor additional controls. Synchronizing the long-term CSO planning process with the standards review process enables the two processes to inform each other.

There are alternatives to modifying or removing a use, which States need to consider in fulfilling their obligation under the CWA to develop water quality standards that protect public health and the environment. In many cases, sufficient information will not be available until portions of the long-term control plan are implemented to fully evaluate the effectiveness of these controls in precluding CSOs from interfering with the attainment of the water quality standards. Once agreed-to portions of the plan are implemented, and the effect on water quality evaluated, the State will be better able to determine whether the use can be attained with additional controls, or whether a water quality standards action is warranted.

One alternative to permanent modification or removal of a use is issuance of a permit with a variance. A variance provides a "bridge" to move from an impaired designated use and existing water quality to the fully attained designated use and the water quality necessary to support that use. With a variance, further environmental progress can be made by precluding additional impairment of water quality, and requiring the implementation of high priority controls (e.g., directing overflows from sensitive areas) in the first phase, while conducting additional studies and analyses to address complex questions related to the attainment of the use.

We will clarify the processes and rigor of analyses required to obtain a variance and provide additional guidance on conducting use attainability analyses, particularly for recreational uses. One tool that may be useful is a series of "model" use attainability analyses that could be adapted to the number and volume of overflows, the pollutant parameters involved (e.g., bacteria, nutrients, toxicants) and the type, size and resource value of the receiving water.

If available, case studies for small communities will be included in the document. Small communities may not have the infrastructure or resources to engage in, or pay for, the development of expensive customized controls or comprehensive monitoring and modeling programs. Model control plans would assist.

Initially, this document will consolidate key elements in existing guidance to respond to the questions raised in the listening sessions and EPA-WEF Experts Workshop. We will clarify existing guidance where necessary. If the time frame for generating any of the guidance identified in the outline extends beyond the Agency's commitment to propose the guidance for public comment by April, 2000, the guidance will be identified in the April, 2000 proposal and completed as soon as possible. In addition, the Agency received many recommendations for future guidance by participants in the listening sessions and in the EPA-WEF Experts Workshop. EPA has not evaluated the merits or feasibility of proceeding with these recommendations, but the April, 2000 proposal will ask for comment on the merits and priority for future guidance.

The following outline identifies the topics that are likely to be addressed in the draft guidance to be published in April, 2000.

OUTLINE -- How do you coordinate the planning and implementation of CSO control programs with the re-evaluation of water quality standards?

Purpose

With this guidance, how does EPA expect to accelerate the implementation of the water quality-based provisions of the CSO Control Policy?

- Affirm EPA's expectation that CSO long-term control plans will be developed and implemented to contribute to the attainment of water quality standards in waters affected by CSOs.
- Affirm EPA's support for evaluating the attainability of water quality standards, including those for urban streams that are adversely impacted by wet weather discharges.
- Clarify the roles and responsibilities of EPA, State authorities, and local communities and their constituencies to improve coordination and cooperation.
- Use a schematic to suggest steps that integrate CSO control planning and implementation with water quality standards re-evaluations.
- Re-affirm existing policies and programmatic and technical guidance, or develop additional materials as necessary, to support improved coordination and cooperation in the development and implementation of long-term CSO control plans and the re-evaluation of applicable water quality standards.

Audience

Who should read this guidance?

- A broad spectrum of EPA and State staff who are involved with:
  - development and issuance of NPDES permits for communities with CSOs and other wet weather discharges;
  - development and review of water quality standards on waters affected by CSOs and other wet weather discharges;
  - enforcement actions for communities with CSOs and other wet weather discharges.
- Municipal staff and their consultants who support the development and implementation of CSO programs.
- Watershed and community-based organizations who are working to control CSOs and other wet weather discharges, and to restore and protect the waters in their local watersheds.

Introduction

Water quality-based provisions of the CSO Control Policy

- What are the Presumption Approach and the Demonstration Approach?
- Does the Presumption Approach meet the water quality-based requirements of the CWA?
- What are examples of "performance based requirements" that are linked to States' water quality standards?
- How should a community decide whether to use the Demonstration Approach or Presumption Approach to develop a long-term CSO control program?

Coodination among permitting, enforcement and water quality standards programs

- How does the Agency coordinate the permitting, enforcement and water quality standards programs where there is a planned or pending enforcement matter?

Watershed-based water quality standards and permits

- How is CSO control planning affected by the presence of other dischargers in a watershed? How are other sources of CSO-related pollutants, such as bacteria, nutrients, and toxicants, considered in the decision to revise water quality standards?
- What are the advantages of participating in a watershed planning effort?
- How are watershed-based water quality standards adopted, reviewed and evaluated and to what extent is this done? How are site-specific water quality standards factored into watershed-based standards?
- How are NPDES permits issued on a watershed basis and to what extent is this done?
- Should a community participate in a watershed planning effort if water quality standards are not adopted or permits are not issued on a watershed basis?
- How can watershed considerations affect a community's long-term control plan and the re-evaluation of water quality standards?
- How can watershed monitoring support a community's long-term control plan and a use attainability analysis?
- How will a watershed plan or a total maximum daily load (TMDL) analysis affect a community's long-term control plan?
- How are "wet weather" sources controlled on a watershed basis? Will nonpoint sources also be controlled?
- How can CSO control planning and implementation be developed and implemented on a watershed basis when other watershed planning activities, including TMDL analyses, are occurring on a different schedule? Should development and implementation of a long-term control plan be delayed until the watershed plan or TMDL is completed?
- What would be different if a CSO permit is issued, along with other discharge permits, on a watershed basis?
- How are activities handled if a watershed includes more than one State?

FIGURE 1 – SUGGESTED STEPS IN COORDINATING THE DEVELOPMENT AND IMPLEMENTATION OF CSO CONTROL PROGRAMS WITH RE-EVALUATING WATER QUALITY STANDARDS

NPDES AUTHORITY	*PERMITTEE*	*WATER QUALITY STANDARDS AUTHORITY*
1. FORM A COORDINATION TEAM **2. ISSUE PERMIT TO REQUIRE** • **Documentation of the implementation of the nine minimum controls;** • **Development of the long-term control plan.**	**3. INITIATE DEVELOPMENT OF THE LONG-TERM CONTROL PLAN** • **Create a public advisory group with a full spectrum of community and environmental organizations, private citizens, and downstream communities.** • **Develop a monitoring plan that can be used for the long-term control plan, use attainability analysis, and compliance evaluations of the effectiveness of the controls.**	**4. IDENTIFY APPLICABLE WATER QUALITY STANDARDS & IMPLEMENTATION PROCEDURES**
	5. DEFINE WATER QUALITY IMPACTS • **Characterize the combined sewer system and evaluate the effects of CSOs on designated uses and water quality.** • **Evaluate the effectiveness of the nine minimum controls in reducing overflows.** • **Develop priorities, e.g., direct CSOs away from sensitive areas** • **Involve the public.**	
	6. DEVELOP A RANGE OF ALTERNATIVES • **Evaluate water quality improvements.** • **Develop costs and a phased implementation schedule, as appropriate.** • **Request, if appropriate, water quality standards revision and provide information supporting the request.**	
		7. EVALUATE REQUEST FOR WATER QUALITY STANDARDS REVISION • **Consider options and alternatives, e.g., allow a mixing zone for bacteriological criteria; refine the use classification system to include a subclassification for intermittent exceedance; segment the water body to preserve the use in some areas; determine if sufficient information was provided to revise the use.** • **If a use attainability analysis is appropriate, but sufficient data were not provided, involve EPA, NPDES Authority and permittee in reaching agreement on data and analyses and responsible entity.**
	8. GATHER INFORMATION FOR THE USE ATTAINABILITY ANALYSIS • **Use existing information, if available, or gather additional information.** • **Involve community-based organizations in the effort.**	

FIGURE 1 – continued

NPDES AUTHORITY	*PERMITTEE*	*WATER QUALITY STANDARDS AUTHORITY*
10. EVALUATE CONTROL PLAN	**9. COMPLETE LONG-TERM CONTROL PLAN** • **Involve public advisory group in explaining the plan to the public.** • **Consider public comments, making appropriate changes.**	
		11. EVALUATE INFORMATION FOR THE USE ATTAINABILITY ANALYSIS • **Discuss options with EPA, NPDES Authority and Permittee**
		12. PROPOSE AN OPTION • **Options may include: variance, refinements in the use classification system, applying criteria at point of contact, revising a use, etc.** • **Propose change for public comment.**
		13. SUBMIT WATER QUALITY STANDARDS REVISION TO EPA • **EPA reviews, approves or disapproves.**
14. PROPOSE/ISSUE A PERMIT TO IMPLEMENT THE PLAN • **Fact sheet for proposed permit references any anticipated variance or other water quality standards revision.** • **Include phased implementation of plan, if appropriate, operational plan, and monitoring requirements.**	**15. IMPLEMENT THE PLAN** • **As phases are implemented, monitor to determine reductions in overflows and pollutant loadings, and project additional reductions likely, based on implementation of next phases.**	
		16. DETERMINE THAT WATER QUALITY STANDARDS ARE APPROPRIATE OR REVISE OR PROPOSE OTHER WATER QUALITY STANDARDS REVISIONS • **Evaluate monitoring data.** • **Meet with EPA, NPDES Authority on appropriate action.**
		17. IF APPROPRIATE, SUBMIT WATER QUALITY STANDARDS REVISIONS TO EPA • **EPA reviews, approves, or disapproves.**
18. REVISE PERMIT TO REQUIRE ADDITIONAL CONTROLS OR REVISE CONTROLS, AS APPROPRIATE	**19. REVISE PLAN, IF APPROPRIATE AND IMPLEMENT REVISIONS** • **Involve public advisory group.**	

Suggested steps in coordinating the development and implementation of CSO control programs with re-evaluating water quality standards

[The outline follows the schematic in Figure 1. Not all activities are necessarily sequential; many will occur simultaneously. Additional detail will be included in the guidance.]

Coordination team

- How is a coordination team formed? Who is responsible for its formation?
- Who should participate?
- How can a coordination team facilitate the development and implementation of long-term control plans consistent with the applicable water quality standards or facilitate their reconciliation?
- When should EPA be involved (e.g., inter-state issues on a common body of water), if the State issues the NPDES permits?
- How can a permittee, downstream community affected by CSOs, members of the interested public contact the coordination team to find out the State's or EPA's views on an issue?

Permit requiring documentation of the nine minimum controls and development of the long-term control plan

- How can a community use the evaluation of the effectiveness of the nine minimum controls in informing the long-term planning process?
- How can the efficacy of the nine minimum controls be assessed? Are there examples where implementation of the nine minimum controls have reduced overflows sufficiently to meet the water quality-based requirements of the CWA?

Public participation/advisory group

- How can community-based organizations assist in the long-term control planning and implementation?
- What materials are available to assist States and communities in explaining the CSO control and water quality standards programs to the public? What are some examples of translating costs and benefits to a community (e.g., how much a water utility bill will increase for each added day the public would be able to swim, or how much of the water quality problem is attributable to other sources)?

Monitoring plan

- What are the purposes of a monitoring plan, e.g., characterize the combined sewer system, evaluate the efficacy of the nine minimum controls, characterize CSO water quality impacts, determine water quality benefits of CSO control alternatives, and confirm attainment of water quality standards through compliance monitoring?
- How can communities use the monitoring data and analyses collected in conjunction with the long-term control plan development and implementation to support State use attainability analyses decisions?
- How can communities ensure that citizen monitoring data will be accepted? What guidance is available?

Water quality standards

- How are water quality standards linked to the objective, goals and requirements in the CWA?
- What are the States' authorities under the CWA for the development, review and implementation of water quality standards? What are EPA's authorities?
- How are water quality standards adopted, reviewed, and approved or disapproved by EPA? On what bases will EPA disapprove States' water quality standards revisions and promulgate Federal standards?
- What flexibility do States have in designating uses?
  - What role does a State's use classification system play in providing greater flexibility in regulating discharges? What are some examples of this flexibility?
  - How does a State revise its use classification system and what role does EPA play in the revision?
  - What might an acceptable urban aquatic life or recreation use look like? What data and analyses would be necessary to develop such a use?
  - How have States developed subcategories of uses, consistent with the CWA and implementing regulations, to account for overflows during wet weather events which a well designed and operated system can not eliminate? What other approaches have States used to reconcile their water quality standards with the overflows remaining after implementation of long-term control programs.
  - Are there acceptable "urban" aquatic life or recreation uses?
  - If a State refines its use classification system, does the State have to have a use attainability analysis to revise the uses for a specific water body?
  - If a State revises its use classification system, does that mean a community can anticipate a revision of the uses on CSO-receiving waters?
  - How do costs factor into States' decisions on designating uses and State flexibility on use designations?
- Must all waters be designated with the "fishable/swimmable" goal uses?
  - What are the factors that States should consider in designating waters for aquatic life in urban areas? Recreation?
  - Can States designate different uses for different segments of the same water body, as long as downstream uses are protected? Can a State use a mixing zone, rather than apply the bacteriological criteria at the end of the pipe?
- When can a State revise the "fishable/swimmable" goal uses?
  - Will a State upgrade the uses for a water body as CSOs are controlled? Can the public petition a State to upgrade the use for a particular waterbody to further water quality improvements? Would a use attainability analysis be necessary?
  - How can the public participate in decisions on whether to retain or revise the uses for a water body?
  - What factors are examined when demonstrating that a use is not attainable and selecting another use for the water body?

Define water quality impacts

- How will characterizing a combined sewer system assist in defining the water quality impacts of CSOs?
- How are the water quality impacts of CSOs to be characterized? What and how much physical, chemical, and biological data are expected?
- How does the community relate the reductions in CSOs to water quality?
- How should implementation priorities be selected?
- How can the public be involved in determining the priorities?

Range of control alternatives

- What type of water quality impact analyses should communities conduct as they evaluate a range of control alternatives?
- How does a community select a control option, if implementation depends on revisions to water quality standards? How does a community phase a long-term control plan? What are examples of phased implementation along with water quality standards reviews?

Requests for water quality standards reviews

- How can a community's water quality standards issues be addressed on a more timely basis than the State's triennial water quality standards review cycle?
- What are available alternatives to revising or removing a use?
- If none of the community's control options appears sufficient to meet water quality standards, after an evaluation of the cost and effectiveness of a range of control options, how should a community request a re-evaluation of water quality standards?
- What information will a State need to review, re-evaluate and, if appropriate, revise the water quality standard?

Use attainability analyses

- What is a use attainability analysis?
  - When is a use attainability analysis needed? When is a use attainability analysis not needed?
  - What guidance is available on conducting a use attainability analysis (include references to EPA's *Technical Support Manuals, Interim Economic Guidance* and Water Environment Research Foundation's *A Suggested Framework For Conducting UAAs and Interpreting Results* and *A Comprehensive UAA Technical Reference)*?
  - Who conducts a use attainability analysis?
  - How is a use attainability analysis initiated? Who is involved in determining how much data to collect, the methods to use, the analyses to conduct, and the weight of evidence to support conclusions?
  - How can a community use the data collected for the long-term control plan as the basis of a use attainability analysis? What parts?
  - What are the steps in a use attainability analysis? Do all the steps need to be done? Are there simplifying assumptions that small communities can use?
  - Are there "model use attainability analyses" for different types, sizes and resource values of water bodies that could be adapted, depending on the number and volume of CSOs?

- If similar conditions are shared among several water bodies, is a separate use attainability analysis needed for each water body?
- What are the appropriate factors to be examined when conducting a use attainability analysis for aquatic life and recreation in urban areas?
- What factors are evaluated in determining whether controls impose a substantial and widespread social and economic impact on a community? Is the determination solely based on the community's ability to afford the long-term control plan? How do water quality and other types of benefits, as compared to the costs, factor into the analysis? If the incremental costs of additional controls exceed the benefits, must a community implement those controls, if they can afford to do so?
- Why does the Agency use a 2% indicator as the basis of the community's ability to afford controls beyond the technology-based requirements of the CWA? How are a community's other obligations taken into consideration, such as providing safe drinking water?

Permits requiring long-term control plan implementation while water quality standards are re-evaluated

- How will a control plan be evaluated and approved, if the implementation will be phased with potential re-adjustments after each phase prior to implementing the following phase?
- What if the sizing and costs of controls could change depending on completion of TMDL analyses, a watershed plan, or revisions in water quality standards?
- Who approves a long-term control plan? What is the process?
- How are enforceable permit conditions developed if a State has not revised its water quality standards or has insufficient information on which to revise a water quality standard?
- How can variances be used in the permitting process?
- If implementation of the plan is to be phased, how should the plan be phased? Are there criteria for setting priorities? How is the public involved in setting the priorities?
- What monitoring requirements will be included in the permit to assure adequate data are collected for evaluating the attainability of a use?
- Once the agreed to portions of the plan are implemented, and the effect on water quality evaluated, will the water quality standard be revised or will additional controls be required?

Guidance on phased implementation of the control plan, water quality standards revisions, revision to permits and plans included in the above guidance.

Small Communities

- Are there special considerations for small communities?