

ATTACHMENT D

April 12, 2004

CITY OF COLUMBUS LTCP

SCOPE OF WORK FOR THE

TECHNOLOGY AND INITIAL ALTERNATIVES REPORT

1.1 Introduction

The City of Columbus intends to prepare a Technology and Initial Alternatives ("TIA") Report by August 1, 2004. The TIA will identify and provide a brief, initial discussion of the technologies and alternatives the City is considering for its LTCP. The purpose of this document is to describe how the City will prepare the TIA.

1.2 General Considerations for the TIA

In the TIA, the City will structure conceptual CSO control alternatives. At this stage, the CSO control alternatives are structured at the "big-picture" level, considering the initial decision factors and potential characteristics of alternatives outlined below. Individual alternatives for CSOs will be identified to better develop the "big-picture" alternatives.

1.2.1 Projects Common To All Alternatives

Any infrastructure improvement projects already planned by the City that impact the wet-weather performance of the collection system and WWTPs will be identified and incorporated in all alternatives. These are projects that have been selected independently of CSO control objectives, but have a cross-benefit in terms of wet-weather control.

1.2.2 Outfall-Specific Solutions

Certain CSOs are inherently conducive to outfall-specific solutions for achieving CSO control goals, due to their location or the magnitude of their CSO discharge. An example is the Alum Creek Storm Tanks, discharging to Alum Creek, which is remote from any other CSO outfall. CSOs with the potential for outfall-specific solutions will be identified under this task, along with general technology candidates to achieve local CSO control (e.g., storage, treatment, etc.)

1.2.3 Localized Consolidation Of Outfalls

As opposed to CSOs that are candidates for outfall-specific solutions, groups of CSOs may stand out as candidates for local consolidation for CSO control purposes. Under this task, groups of CSOs with potential for consolidation will be identified, along with general candidate technologies.

1.2.4 Regional Consolidation

Regional consolidation of CSOs may be a candidate component of an overall alternative, in combination with additional system capacity and wet-weather equalization at the treatment plants. This possibility will be investigated.

1.2.5 Utilization Of POTW Capacity

As part of recognizing the importance of the WWTPs as downstream controls on the collection system, the City will use WWTP upgrade programs to maximize utilization of the WWTP capacity as part of the City's CSO control program.

1.3 Goals Of Initial Alternatives Development

In the TIA, the City will develop specific CSO control alternatives to meet the CSO control goals. In developing these specific CSO control alternatives, several factors, or goals, will be considered:

- The alternatives will coordinate with potential SSO control alternatives identified by the CMOM/SECAP team as well as recommended upgrades in the WWTP Facilities Upgrade Program. This coordination between the three programs is essential to the City's wet-weather control program.
- The alternatives will include scaleable components, e.g., storage and/or treatment technologies. This will allow the alternatives to be assessed for varying levels of control – for example, control to a 3-month return period event, allowing approximately 4 untreated overflows per year, or control to a 12-month return period event, allowing no overflows in a typical precipitation year. The TIA will use a one-year level of control for the comparison and initial evaluation.

The City will work with Ohio EPA during this process. It is the City's intention to meet with Ohio EPA on a regular basis as it develops its alternatives analysis.

1.4 Identification Of Control Alternatives

The City will, in coordination with its CMOM/SECAP program, work through a screening process to identify up to ten system-wide alternatives to achieve the identified CSO control goals. Each of the alternatives will be made up of combinations of control measures. The control measures will in general emerge from one of the following four categories:

- Source controls – can include technological controls, e.g., sewer separation, or policy/regulatory controls, e.g. pollution prevention programs.
- Collection system controls – can include technological controls, e.g., adjustment of weir heights, or operational controls, e.g., wet-weather operating strategies for pump stations.
- Storage technologies – include a wide range of technological controls, from local, end-of-pipe storage facilities to centralized storage tunnels.
- Treatment technologies – include a wide range of technological controls, from local, end-of-pipe treatment facilities to centralized high rate treatment at the WWTP.

The initial selection of the components that in total make up an integrated CSO control alternatives is based on the CSO control goals identified above. Many combinations of components are possible, and within each component there are potentially many specific technologies available. Judgment and common sense are necessary to consolidate the many possibilities into a tractable group of 10 integrated CSO control alternatives.

During this phase, the components of each alternative are developed only to the level necessary to define the alternative. For example, end-of-pipe treatment at a particular CSO may be identified as a component of an alternative, but the specific treatment technology, along with the final recommended size of the facility (a function of the level of control), will be determined during the evaluation of the integrated alternatives.

1.5 Preliminary Sizing Considerations

In identifying the up to 10 candidate integrated CSO control alternatives, the City will investigate preliminary sizing consideration using existing flow monitoring and rainfall data collected from January 1, 2000 to January 1, 2004. The final sizing analysis for the LTCP will utilize the City's PC-SWMM model. Preliminary sizes will be developed for a one-year level of control for all CSOs; however, selection of a final level of service will not occur until the LTCP is complete

1.6 Preliminary Siting Issues

In developing the ten integrated CSO control alternatives, preliminary siting issues must be included. Using the information on facility sizes required to obtain a desired CSO control goal, control technologies can be assessed relative to available sites for facilities. This level of screening is the beginning of an iterative process on selecting technologies and sites. As stated in the CSO Guidance:

“As with other aspects of the alternative development process, identifying and evaluating potential sites calls for iterative screening. The objective of preliminary site development is to identify potential locations for the

range of facilities identified based on the sizing procedures. Common sense and engineering judgment are used at the preliminary siting level to identify possible locations for facilities.”

1.7 Conclusion

Based on the methodologies described above, the City will prepare a TIA by August 1, 2004. The TIA will provide a “big picture” list of the available alternatives that will be evaluated in more detail as the LTCP is developed.