King County Regional Infiltration/Inflow Control Program
Local Agency Workshop #6 Summary
Tuesday, July 31, 2001

Background

The King County regional wastewater treatment system includes wastewater interceptors, pump stations, treatment plants and outfalls. Thirty-four politically and administratively independent Local Agencies discharge wastewater from their systems to King County's regional wastewater system. Increased wastewater flows within this vast service area have used significant portions of, and in some cases have exceeded the capacity of existing County facilities. The Regional Wastewater Services Plan (RWSP) has documented that excessive infiltration and inflow (I/I) into the system claims a significant portion of facility capacity during wet weather conditions. To protect the environment and accommodate the needs of Local Agencies, a balance must be achieved between the expansion of County facilities and the rehabilitation of County and Local Agency collection facilities. In addition, a structure for financing the costs of the necessary capital improvements in a manner acceptable to all participants must be devised.

To involve the Local Agencies in these decisions and to establish an I/I Control Program that works to resolve these issues, fourteen participatory workshops have been scheduled at points during the I/I Control Program when Local Agency education and input are important. To date, six workshops have been held to introduce participants to the issues, address technical, financial, and cost sharing issues, determine criteria for pilot project selection and describe modeling of wastewater flows.

Local Agency Workshop #6 was held on Tuesday, July 31 at the Doubletree Hotel Bellevue Center in Bellevue, Washington. An attendance sheet is attached to this general summary of the Workshop.

Workshop Purpose

Workshop #6 focused on the following I/I Control Program topics:

- I/I Control Program pre-design, design, construction, and post-construction standards and rehabilitation techniques
- Project construction contract management and language options and requirements
- Private property I/I removal concerns and issues

Local Agency input was solicited before the workshop on these topics and the information gained was incorporated into the workshop documents and presentations.

Local Agencies were encouraged to provide additional comments and input at this workshop to guide the ultimate I/I Control Program recommendations. Also featured was an update on various Program elements currently underway.

Welcome and Introductions - *Don Theiler, King County*

Mr. Theiler, King County's Wastewater Treatment Division Manager, welcomed attendees and gave a brief introduction to the day's topics: I/I Control Program project standards, rehabilitation techniques, contract options and the necessity to address private property I/I contributions. He made it clear that the King County Wastewater Treatment Division and Local Agencies must change the way business is done because I/I currently causes regional and local problems. Examples include overflows that cause environmental and public health impacts as well as cost increases from capital improvement projects. He also pointed out that the Regional I/I Control Program is proactive, designed to get ahead of the problem before regulations that would mandate action are adopted.

Mr. Theiler explained that common design and maintenance standards are important; he made it clear that these standards would be developed in a consensus-based, interactive process with Local Agencies. Noting that I/I from private side sewers has to be addressed because they are the source of 50% or more of existing I/I, he indicated that new technologies provide opportunities to successfully address the private property issue.

Program Update and Workshop Overview – *Gunars Sreibers, King County*

Mr. Sreibers, I/I Control Program Manager, reviewed the I/I Control Program status and schedule, including:

- Effects of the drought
- Flow monitoring next winter
- Pilot basin/project candidates
- Status of potential federal funding

Mr. Sreibers explained that I/I flow monitoring efforts had been challenged because this was the area's third driest winter on record. While the 807 flow monitors gathered some useful dry weather information – and showed that the allowable I/I threshold was exceeded in over half the basins monitored in the small storms that did occur – there was a lack of information on rainfall-induced infiltration (RDII). As a result, the selection of pilot projects would be delayed a year, until the spring of 2002. In addition, he said King County was moving ahead with plans to reinstall flow monitors in the upcoming wet season to obtain the flow information necessary to choose pilot projects and to evaluate I/I removal efforts. He said certain activities in the I/I Control Program were expected to continue on schedule in spite of the recent dry weather, including efforts related to modeling the system.

Mr. Sreibers also gave an update on the possibility of obtaining $37 million in federal funding to support additional pilot projects. An initial list of programs slated for federal support did not include the I/I Control Program; however, he said the County is still pursuing the possibility of obtaining the funding this year and would make every effort to garner the federal support next year if it were not granted in 2001.

Mr. Sreibers then presented an I/I Control Program overview. He explained that the purpose of the day's workshop was to:

- Introduce and discuss needed project pre-design, design, construction and post-construction standards
- Introduce and discuss the issues of project management, contract language, and private property
- Generate input from the Local Agencies on these topics

Program Standards and Rehabilitation Techniques for I/I Control Projects –
Eric Bergstrom, Earth Tech Team

Mr. Bergstrom explained that common standards are needed for I/I control projects in order to ensure minimum acceptable quality, improved functionality, compliance with state and federal regulations, regional coordination and Local Agency equity. He described the process for development of these regional standards: draft standards would be compiled with Local Agency input between July and December 2001 and tested in pilot projects in 2002 and 2003. These standards would be evaluated and revised as needed, then adopted and implemented in future I/I reduction projects along with other Local Agency projects.

Mr. Bergstrom showed how these standards would be developed using existing standards from "The Orange Book" (*WSDOE Criteria for Sewage Design*), WSDOT/APWA specifications, and existing Local Agency standards. He then reviewed current rehabilitation methods, including the traditional "dig and replace" as well as nine categories of 150 proprietary trenchless techniques. He indicated that a national survey revealed that lateral and side sewer rehabilitation was vital for successful I/I reduction.

He then emphasized that regional standards would be focused on three primary outcomes: reducing I/I, eliminating sanitary sewer overflows (SSOs), and reducing the potential for I/I to recur. Next, Mr. Bergstrom ran through detailed examples of possible candidate standards in the three categories of pre-design & design, construction and post-construction. (See the attached Powerpoint slides for depictions of these examples.) He mentioned there was widespread concern about surface restoration.

Table Discussions Regarding Program Standards & Rehabilitation Techniques –
Alice Shorett, Earth Tech Team

Ms. Shorett outlined the schedule for the remainder of 2001 and the period from 2002 through 2005 for developing, testing, adopting, implementing and revising draft program standards. She then posed the following question for small group discussion at each of the tables:

'What practical standards can we adopt as Local Agencies to reduce I/I?'

During the table discussions, some common themes and suggested standards emerged. These included the following:

- System checks should be tied to property sale
- All new construction should be tested using TV inspection and pressure testing
- Regular inspections should occur (e.g., every ten years)
- Design standards must include duration/longevity – a 50-year standard was suggested
- Permitting needs to be expedited and handled by the city

- Bedding for side sewers should be standardized

NOTE: Detailed table discussion notes and individual written comments are attached to this document.

I/I Construction Contract Options - *Bob Wheeler, Earth Tech Team*

Mr. Wheeler turned the group's attention to project management and construction contract language options. After providing some background to the issues, he stated that agreement was needed on funding between a Local Agency and King County for I/I reduction projects. There would also have to be agreements between the project manager (whether King County or the Local Agency) and the construction contractor for pre-design, design, construction and post-construction work. The task at hand is to develop consensus on who would manage the projects and what contract language would be used.

Mr. Wheeler summarized the input from Local Agencies received at the first I/I Control Program Workshop and from a recent survey. At the first workshop, Local Agencies suggested that King County ought to manage half the pilot projects and Local Agencies should manage the other half. The recent survey indicated some change in this approach for both pilot projects and I/I Control Program projects beyond the pilots. In the survey, Local Agencies indicated that they preferred to manage their own projects using their own contract language, although a few small and medium Local Agencies still showed some preference for having King County manage the I/I reduction projects using regional contract language. (A summary of this survey, conducted in the spring of 2001, is attached to this document.)

Schematic diagrams illustrated how the process of determining project management and contract language might work. By establishing criteria to ensure that I/I Control Program goals would be met, Local Agencies would be able to manage I/I Control Program projects using Local Agency contract language. Additionally, Local Agency standards could be utilized to supplement regional standards, leading to successful I/I reduction projects.

Mr. Wheeler also summarized other information gained from the survey:

- Districts generally serve cities through the use of franchise agreements and are required to obtain permits from the cities
- The primary financial issue was the need for efficient payment/reimbursement systems, perhaps using a payment system similar to a Public Works Trust Fund. All Local Agencies are under State audit requirements, so audit issues were not of great concern
- The responses on permits and fees were helpful but would not be used at this time. They would be developed into a database for future project-specific reference

Mr. Wheeler ended this portion of the workshop by indicating that Local Agencies felt it was important to include the following elements of contract language:

- Hold Harmless and indemnification clauses
- Bonds
- Local coordination
- Insurance

- Hours for construction
- Public notifications

Table Discussions Regarding Contract Language - *Alice Shorett, Earth Tech Team*

Ms. Shorett outlined the schedule for the remainder of 2001 and for 2002 through 2005 for developing testing, adopting, implementing, and revising draft contract language. She then posed the topics for small group discussion at each of the tables:

- *Confirmation of I/I Program Management and Contract Language Preferences*
- *Critical I/I Program Contract Language Issues*

Most of the table discussions supported preference for Local Agency management and contract language, in effect maintaining local control over projects. There was also a suggestion that inter-governmental agreements be designed to permit either Local Agency or King County management and to establish provisions for follow-through. There was also a suggestion that liability on private property had to be addressed.

NOTE: Detailed table discussion notes and individual written comments are attached to this document.

Large Group Discussion Regarding Standards and Construction Contracts

Themes from this discussion included:

- I/I rehabilitation should focus on older systems
- Concern was expressed about 'red tape' in multi-agency approach
- Regional standards are necessary
- Side sewers (and TV inspection of them) should be a focus
- In contracts, 'boilerplate' elements are not the key sections of language

Addressing I/I Removal on Private Property - *Marcos Lopez, Earth Tech Team*

Mr. Lopez addressed this component, necessary for successful I/I reduction. He cited the fact that a recent national survey (the results of which are attached to this document) found that 50% or more of I/I comes from private property lateral sewers. He then reviewed the issues of jurisdictional controls on side sewers and laterals. He indicated that there would be challenges in this area for Districts because the Agency in control is often the City served by that District. Mr. Lopez reminded Local Agencies of their comments at the first I/I Control Program Workshop, where they highlighted the need for educational materials for private property owners as well as the need to address funding concerns, e.g., who would pay for I/I removal from private property.

He said that successful I/I rehabilitation on private property had been accomplished using a handful of different techniques, including removing inflow sources, digging and replacing, pipe bursting, lining, property line clean outs, and strict construction inspections. Local Agencies submitted comments on private property I/I rehabilitation during the 2001 survey. These comments emphasized the need for easement or right-of-entry on private property as well as

customer notification and education. Mr. Lopez assured Local Agencies that the County would work with them to notify property owners of the I/I problem and to educate the public about the problem. He said that I/I reduction on private property had been successfully undertaken in other regions as well as locally, and could be done in a cost-effective manner.

Large Group Discussion Regarding Private Property I/I Reduction

A brief discussion by the whole group of I/I removal on private property focused on a couple of key points. The first was that the majority of I/I originates on private property, and it must be addressed for an I/I reduction program to succeed. Second, experience showed that I/I removal on private property could be done successfully. It was also stated that public education was an important component of the I/I Control Program, especially related to private property issues.

The discussion revealed general agreement that while there were challenges to removing I/I on private property, with cooperation between the County and Local Agencies these can be managed. It was pointed out that once I/I was removed from private property laterals, it would have to be routed elsewhere in an environmentally appropriate method. Mr. Lopez summarized this section by stating "We'll look at the **whole** picture – from house line out to the street and, if need be, look at what other systems are necessary."

NOTE: Individual written comments on private property issues are attached to this document.

Wrap up—What Happens Next? - *Alice Shorett, Earth Tech Team*

Ms. Shorett provided the group with the following key elements to take away from Workshop #6:

- The process of developing I/I Control Program standards and contract language would be a consensus-based, iterative dialogue between King County and the Local Agencies
- I/I Control Program standards would build on and supplement existing standards (though few standards currently exist for rehabilitation). Model standards would be developed and presented to the King County Council by December 2002
- The 2001 survey of Local Agencies revealed a preference for Local Agency management and contract language for I/I projects. In order for Local Agency management and contract language to meet I/I Control Program goals, criteria would be developed for these elements
- National experience showed that laterals and side sewers had to be addressed for successful I/I reduction – and that I/I removal from private property could be accomplished

Local and National I/I Survey Results

As promised, the results of two King County surveys regarding I/I are attached. The first survey was conducted to determine how successful efforts to remove I/I have been in other communities across the country. The second survey questioned Local Agencies about two issues – project management and contract language – in attempting to determine whether Local Agency control or King County/regional control of these would be preferred. The findings of both surveys were presented at Workshop #6 and are summarized in the attached documents.

Next Steps

Workshop #7 is tentatively scheduled for December 2001 *(NOTE: now changed to January 2002)* to address policies regarding rehabilitation on private property as well as decide on standards and contracting alternatives. Prior to that time, King County would be soliciting Local Agency input on these elements of the I/I Control Program.