

Attachment A

Standards, Procedures and Policies for I/I Reduction Projects

Final Issues and Findings

REGIONAL I/I CONTROL PROGRAM

STANDARDS, PROCEDURES & POLICIES FOR I/I REDUCTION PROJECTS FINAL ISSUES AND FINDINGS

Background

Local Agency Workshop #10 was held Tuesday, October 11, 2005 to present, answer questions about, gather input on, and reach consensus on including draft standards, guidelines, procedures, and policies as draft in the Executive's Program Recommendation for I/I control. The workshop emphasized that the proposed direction for long-term I/I Control was based on Local Agency input, the key points including:

- Local Agencies to regulate new development and redevelopment;
- Standards, guidelines, procedures, and policies are to remain "draft" until they could be reviewed, revised, and finalized by the County and MWPAAC after initial reduction projects were completed;
- Draft standards, guidelines, procedures, and policies (once finalized) to be incorporated into County Code and Local Agency regulations as necessary;
- County to conduct a system flow review every ten years in partnership with Local Agencies; and
- County to maintain current information related to I/I reduction technology, and act as a clearinghouse.

The draft standards, guidelines, and procedures are intended for use in the planning, design, and construction of projects that reduce I/I. The policies are designed to support the draft standards, guidelines, and procedures. The history of developing the draft standards, guidelines, procedures and policies included:

- Individual meetings with each Local Agency
- Revisions and presentation to the Local Agencies at Workshop #7
- E&P Subcommittee detailed review and formulation through 15 meetings
- Use of draft standards, guidelines, policies, and procedures on pilot projects
- E&P Subcommittee review and revision of draft standards, guidelines, policies and procedures following completion of the pilot projects, summer of 2004 (MWPAAC Engineering & Planning Subcommittee Final Draft Regional I/I Control Standards, Procedures, Policies and Intergovernmental Agreement (E&P Final Draft))

Of the 41 draft standards and guidelines, 27 have been accepted by the E&P Subcommittee as draft standards to be used on all projects in the I/I Control Program, while the remaining 14 had been accepted as draft guidelines. The draft standards and guidelines are grouped under the headings Planning, Public, and Private. Guide specifications have also been developed and many of the standards referred to the guide specifications.

Local Agencies had a central role in development of the standards, guidelines, policies and procedures. Other sources included the Department of Ecology (WSDOE), a review/evaluation of rehabilitation methods, a national survey of other agencies, Washington State Department of

Transportation (WSDOT)/American Public Works Association (APWA) and other standard specifications, and validation/revision of draft standards based on pilot project experience.

The name and a brief description of each draft standard and guideline, whether it has been accepted as a draft standard or a draft guideline and a qualitative estimate of how many Local Agencies already have similar I/I standards in their codes is provided in the following table.

Standard/Guideline Title	General Description * Presenter comments	Standard or Guideline	Number of Local Agencies that Have Similar I/I Standards
PS¹-1: Storm Drainage Connections to the Sanitary Sewer	Prohibits storm drainage connections to the sanitary sewer system unless approved by the County and the local agency. * Exemptions for small areas of surface drainage, such as areas around dumpsters, are often allowed where they can flow into sanitary sewers.	Standard	Some
PS-2: Design Capacity for Pipeline Rehabilitation Projects	Requires the pipeline system designer to consider any loss in hydraulic capacity on pipeline	Standard	Few
PS-3: Visual Inspection of Manholes for Sewer System Evaluation Survey (SSES) Investigations	Outlines provisions for performing visual inspection of manholes for SSES investigations.	Guideline	None
PS-4: Closed Circuit Television (CCTV) Inspection of Sewers for SSES Investigation	Outlines provisions for performing CCTV inspection of sewers for SSES investigations.	Guideline	Few
PS-5: Smoke Testing for SSES Investigations	Outlines provisions for performing smoke testing for SSES investigations. * Documentation of problems with photographs or sketches. When private property owners must fix problems themselves, documentation and indisputable proof of the problems is important.	Guideline	None
PS-6: Dye Testing for SSES Investigations	Outlines provisions for performing dye testing for SSES investigations. * Recommended that appropriate agencies be informed to avoid erroneous toxic spill calls.	Guideline	None

¹ Planning Standard

Standard/Guideline Title	General Description * Presenter comments	Standard or Guideline	Number of Local Agencies that Have Similar I/I Standards
PS-7: Modeling and Engineering Analysis	Recommends basin modeling be performed to assess ongoing and future sewer planning efforts	Guideline	Few
PUB²-1: Connections to Existing System	Requires connections of new sewer piping to an existing sewer system at a manhole or to a sewer main via a tee. Also requires testing and inspection of the new piping before it is put into service. * Emphasis is to avoid hammer taps that are problematic for I/I into the system.	Standard	Few
PUB-2: Sewers on Steep Slopes	Requires sewer mains on steep slopes to be designed by a Professional Engineer (PE) to ensure integrity of the system. * Joints can pull apart during ground movement or there can be other problems with the pipe itself.	Standard	Few
PUB-3: Manhole Location and Covers	Standard focuses on avoiding placement of manholes in locations subject to inflow sources. In those areas where it cannot be avoided, the standard requires the manhole to be watertight.	Standard	Few
PUB-4: Manhole Size	WSDOT/APWA guidelines and manhole manufacturers' recommendations to be followed regarding the minimum distance between knockouts in manholes * Undersized manholes that are too small for connections, may experience cracking.	Standard	Few
PUB-5: Manhole Joints	Manhole to be watertight from the casting down. Materials and construction to be in accordance with WSDOT/APWA guidelines.	Standard	Few
PUB-6: Side Sewer Connection Location and Taps	Outlines requirements for connection of side sewers to sewer mains. * Emphasize avoiding hammer taps.	Standard	Few
PUB-7: Sewer System Design	Requires sewer system design to be performed by a PE applying appropriate standards and measures regarding pipe materials, bedding, and backfill.	Standard	Few
PUB-8: Abandonment Requirements	Addresses abandonment requirements for manholes and sewer pipes.	Standard	Few

² Public Standard

Standard/Guideline Title	General Description * Presenter comments	Standard or Guideline	Number of Local Agencies that Have Similar I/I Standards
PUB-9: Pipe Rehabilitation Methods	Addresses design and construction requirements for pipe bursting, cure-in-place pipe, slip lining, fold and form pipe, and spray-on linings. * Most agencies don't deal with rehabilitation in their standards, even though many of them are using these rehabilitation techniques.	Guideline	None
PUB-10: Manhole Rehabilitation	Includes design and construction requirements for manhole rehabilitation, including coatings, linings and chemical grouting.	Guideline	Few
PUB-11: Spot Repairs	Outlines requirements for trenchless and dig-and-replace spot repairs on sewer mains * Guideline refers back to the guide specifications with the different methods of pipe bursting and lining.	Guideline	None
PUB-12: Manhole Leveling Rings	Outlines requirements for manhole materials and installation of leveling rings.	Standard	Few
PUB-13: Manhole Lids/Inserts	Requires a manhole pan or gasketed, locking lid for manholes that are susceptible to inflow.	Standard	Few
PUB-14: Root Intrusion	Addresses root removal and correction of I/I problems at the point of root intrusion. * Root intrusions should be evaluated for removal during the wet season when soils are fully saturated.	Standard	None
PUB-15: Pipeline Leak Testing	Requires that new sewers pass an air or water test. There is also a provision that if the testing cannot be performed, the sewer needs to be CCTV-inspected for leakage during the wet season, but while still under warranty.	Standard	Few
PUB-16: Manhole Leak Inspection	Requires visual inspection of manholes following substantial completion to verify the structure and connections are watertight.	Standard	Few
PUB-17: CCTV Inspection	Requires a complete CCTV inspection of newly installed and rehabilitated sewer pipe.	Standard	Some
PUB-18: Inspection of Pipe Installation and Backfill	Outlines inspection activities for pipe installation and backfilling operations.	Standard	Some
PUB-19: Product Specific Inspection	Requires verification that specified products and materials are being delivered to the job site, and that specified test reports are being provided. * Verification that right type of pipe is going into the ground.	Standard	None

Standard/Guideline Title	General Description * Presenter comments	Standard or Guideline	Number of Local Agencies that Have Similar I/I Standards
PUB-20: Certification, Warranty and Qualifications	Requires a minimum 1-year warranty. For rehabilitation products or systems without a proven track record, the product manufacturer must provide certification that the product will perform as specified.	Guideline	Few
PRV³-1: Pipe Protection – Depth of Cover	Addresses depth of cover for side sewers, and strives to limit burial depths between 3 feet minimum and 15 feet maximum. The guideline requires following pipe manufacturers' recommendations for materials and installation when these conditions cannot be met. * Address private property standards separately because they often show up in different places than public standards.	Guideline	Few
PRV-2: Allowable Connections to Side Sewers	Prohibits new side sewers discharging to separated sewer systems to convey sources of clean water flow.	Standard	Few
PRV-3: Pipe Zone Bedding and Trench Backfill	Outlines requirements for side sewer pipe installation and bedding requirements. * We made this into a guideline because agencies approach this differently.	Guideline	Some
PRV-4: Pipe Materials	Addresses required design characteristics of pipe materials to be used for side sewers	Guideline	Some
PRV-5: Inspection Wyes/Cleanouts	Requires installation of inspection wyes/cleanouts between 2 and 5 feet from the face of the building for new sewer installations. * This allows you to get in and inspect side sewers	Standard	Some
PRV-6: Lateral and Side Sewer Rehabilitation Methods	Addresses design and construction requirements for pipe bursting, cured-in-place pipe, slip lining, and fold-and-form pipe for rehabilitation of side sewers.	Guideline	None
PRV-7: Spot Repairs	Outlines requirements for trenchless and dig-and-replace spot repairs on side sewers.	Standard	None
PRV-8: Root Intrusion	Addresses root removal and correction of I/I problems at the point of root intrusion.	Standard	None
PRV-9: Side Sewer/Lateral Leak Testing	Requires that new sewers pass an air or water test.	Standard	Some

³ Private Standard

Standard/Guideline Title	General Description * Presenter comments	Standard or Guideline	Number of Local Agencies that Have Similar I/I Standards
PRV-10: Sanitary Side Sewer Inspection	Requires that side sewers be inspected before the trench is backfilled. * Some agencies already doing this. Concerns over the FTE if every single backfill needed to be inspected.	Guideline	Few
PRV-11: Sanitary Side Sewer CCTV Requirements	Requires a CCTV inspection of the connection between the lateral and the main where the lateral/side sewer cannot be pressure tested.	Standard	Some
PRV-12: Product Specific Inspection	Requires verification that specified products and materials are being delivered to the job site, and that specified test reports are being provided.	Standard	None
PRV-13: Product Specific Certification	For rehabilitation products or systems without a proven track record, requires that the product manufacturer provide certification that the product will perform as specified.	Standard	Few
PRV-14: Bonding and Warranty Inspection	In order to assure that I/I improvements remain intact and maintained, requires inspection of improvements prior to the end of the warranty period so that construction deficiencies can be corrected and paid for via the performance bond.	Standard	Few

Final Issues and Findings to the Draft Standards, Guidelines, and Procedures

At Workshop #10, each of the standards, guidelines, policies and procedures were reviewed and discussed. Comments and suggestions for language revisions, additions and deletions were received and recorded. The Final Draft has not been updated to reflect these changes, as there will be further sessions to revise and finalize the document following completion of initial I/I reduction projects. The comments, issues and findings listed on the following pages document the feedback received at the workshop and will be brought forward and discussed in the review sessions to finalize the standards, guidelines, policies and procedures after initial I/I reduction projects are complete.

General Comments

- Finalizing the draft standards, guidelines, and procedures now and putting them into code may be premature. We want to revisit the draft standards, guidelines, and procedures after we have more field experience on large-scale projects.
- There is a need to test these draft standards, guidelines, and procedures and see how they affect the Local Agencies. Keeping them draft doesn't hinder the ability to test them, but it does mean that another two to three years may go by without getting some Local Agencies to establish certain standards.
- In trying to be cost-effective, the Executive's Program Recommendation will provide that the cost-effective projects (including those on private property and Local Agency

conveyance systems) will be funded from regional wastewater revenues. The funding will come from money that is saved by minimizing capital improvements.

- Enforcement procedures for the standards, guidelines and procedures have not been developed or discussed at this point in time. After the initial projects, if the standards, guidelines and procedures are adopted, a collaborative process to establish enforcement procedures will be initiated.
- There should be an additional policy that spells out when a Local Agency will be responsible for funding general side sewer repair. Unless there is absolute proof, smoke-testing or some other court-verified proof, that a property owner is causing a problem, the owner may not cooperate.

Specific Issues and Findings – Draft Standards/Guidelines/Procedures

- Per PUB-2, the County is to verify that a Professional Engineer does the design of County owned pipes to be installed on steep slopes.
- PUB-17 provides that all newly installed laterals shall be CCTV inspected. This applies only to the situation and condition where the lateral cannot be pressure tested.

Specific Issues and Findings – Draft Standard Details

- Standard details were developed to augment the Local Agency standard details and were not meant to stand alone.
- The guide specifications have been sent to the Local Agencies, including lessons learned.
- The intent is to have a group look at industry standards and act as a clearinghouse for lessons learned. He stressed it was a part of the process that he didn't want to get lost during the discussions.

Specific Issues and Findings - Draft Policies

- The purpose of the draft policies is to support the draft standards, guidelines, and procedures; and to provide a framework upon which the County and the Local Agencies could craft specific policies. Prior to the pilot projects there had been 23 draft policies, which had since been condensed into 15 by the E&P Subcommittee. The draft policies have not been subject to legal review and do not represent final policy language.
- **Policy #1: Public Funding for I/I Reduction Projects** - The language of the Right of Entry agreement language was carefully crafted to address the issue of future liability after the completion of I/I rehabilitation on private property. There was a clause terminating liability on a specific date or at the end of the warranty period. When a defect is found that points to a lack of performance by a contractor, it would be addressed on a case-by-case basis by the risk-assessment staff of the agency involved.

- **Policy #2: Public Awareness of I/I: Educational Materials** - The policy will include how the information clearinghouse will be effective and how information will be disseminated, for example via the website, mailing lists, hotlines, etc. A multi-lingual approach similar to the alternative formats for the pilot projects is also needed,
- **Policy #3: Public Awareness of I/I: Responsibility for Community** - Unless otherwise specified or negotiated in the IGA, the Lead Agency for each specific I/I reduction project shall be responsible for community education/involvement.
- **Policy #4: Access to Private Property for I/I Reduction and Control** - The local agency shall pass the necessary ordinances/resolutions and develop the appropriate access agreements that allow each agency or its agents to gain access to private property, such as a right-of-entry or a construction and inspection easement.
- **Policy #5: Inspection Training** - To promote region-wide consistency, the County, in conjunction with the local agencies, shall provide training opportunities on an I/I control program to agency representatives.
- **Policy #6: Limiting Liability** - If public resources support any portion of the I/I reduction work on privately owned property, then the Lead Agency shall establish a process to manage and limit its liability. The potential site and in-ground liability issues shall be a part of the I/I planning and design process. This issue is typically between the contractor and the Lead Agency. Contractors hold the client blameless for work being done.
- **Policy #7: Bonding, Licensing, Insurance, and Warranty Provisions** - The Lead Agency shall be responsible for ensuring that, for publicly funded I/I reduction projects, the construction contract includes appropriate bonding, licensing, insurance, and warranty provisions to ensure satisfactory completion of the project and warranty of the project for a sufficient amount of time (recommended minimum 12 months).
- **Policy #8: Stormwater Drainage Ordinances** - Where I/I work on private or public property results in the diversion of stormwater drainage, and there exists a stormwater system, then the I/I work shall involve meeting the provisions of the controlling jurisdiction's current stormwater drainage ordinances. Jurisdictional approval must be obtained. The long-term the potential for cumulative impacts resulting from I/I rehabilitation and stormwater diversions needs to be anticipate as part of the I/I rehabilitation planning process. Local and regional agencies responsible for stormwater management need to be included in the early planning stages. For the nine cost-effective initial projects that have been identified, the County and local agencies should initiate this coordination process now.
- **Policy #9: Responsibility for Stormwater Drainage** - Where I/I work results in the diversion of stormwater and an adequate stormwater system does not exist, the private property owner (on private property) or the local agency or associated agency (on public property) bears responsibility for discharging the stormwater drainage to an appropriate location.

- **Policy #10: Infeasible and/or Prohibitively Expensive Modifications** - Where an I/I control project would result in the diversion of stormwater drainage, and the modifications required to properly discharge the stormwater are deemed to be infeasible and/or prohibitively expensive (for the property owner), consider giving the property owner choice of disconnection of illicit connection or surcharge. The term “prohibitively expensive” needed to be defined to establish a consistent method of evaluation. The surcharge could act as leverage in prompting the property owner, local agency or County to make necessary I/I repairs.

- Additional Options for modifying the policies related to I/I related diversions of stormwater
 - Modify draft Policy #1 to read, “environmentally infeasible and/or prohibitively expensive modifications should be considered for variances/waivers, but if a property owner fails to make repairs that are feasible and not prohibitively expensive, a surcharge may be levied.” This would allow for the removal of draft Policy #10.
 - Modify draft Policy #1 to read, “environmentally infeasible and/or prohibitively expensive modifications should be considered for variances/waivers that may include a surcharge.” This would allow for the removal of draft Policy #10.
 - Do not modify Policy #1 and re-word Policy #10 to include a variance/waiver.
 - Modify draft Policy #10 to read, “Local Agency may add a surcharge”.
 - Modify draft Policy #10 to allow for a temporary service agreement that says if and when conditions change, the property owner would be required to disconnect.
 - Modify draft Policy #10 to allow the property owner the option of obtaining a waiver until the property is sold or placing a lien on the property. The surcharge in draft Policy #10 is not associated with a surcharge for the County system. It is intended as a way for Local Agencies to deal with their customers.

- **Policy #11: Property Restoration** - The Lead Agency shall establish a standard for property restoration before initiating any I/I work (including landscaping, sidewalks, and driveways). Public property restoration is governed by local agency or associated agency codes or ordinances.

- **Policy #12: Contractor Qualifications** - The Lead Agency shall develop in the bid specifications specific minimum experience requirements for contractors to ensure that the selected contractor has experience in the type of work to be performed

- **Policy #13: Required Permits** - The lead agency should obtain all feasible state or federally required permits. The contractor should obtain permits as detailed in the specifications, such as the building, road, utility, right-of-way use, and/or clearing and grading permits. The permits that the contractor is required to obtain should be listed in the bidding documents.

- **Policy #14: Cooperative Efforts** - For all permit needs, the jurisdictions including the County, the local agency, and the associated agency (if pertinent) will work cooperatively and collaboratively.

- **Policy #15: Revisions to Standards, Procedures, and Policies** - MWPAAC shall review and make recommendations on proposed revisions to regional I/I control program.

MWPAAC shall recommend whether or not a revision should be adopted as part of a regional I/I Control Program.