

**Engineering and Planning Subcommittee  
Presentation to MWPAAC General Meeting on 1/22/2014**

**Skyway Infiltration/Inflow Reduction Project**

**Summary of presentation to E&P Subcommittee on January 9, 2014**

75% of the peak flow in King County's collection system is from infiltration/inflow  
95% of that flow is from local agencies  
50% of that flow comes from private property

Pilot project was constructed in 2004 involving almost all of the properties in a small basin in Skyway to determine effectiveness of retrofit techniques (pipe bursting and reinstalling side sewers and reconnecting them to the sewer main). This project resulted in an 88.5% reduction in peak I/I.

This second phase of the project was selected because downstream improvements were needed to store peak I/I – wanted to see if it was more cost-effective to remove or reduce the I/I rather than build the downstream improvements. If so, results would be used to develop a long-term I/I strategy in concert with local agencies

Most of the project characteristics were the same as the original project (same neighborhood, age of sewer, same design and construction techniques, same contractor, same inspector)

Rehabilitated 90% (330 out of 369 of the side sewers in the basin – but completed only 70% of available pipe length of the side sewers due to physical obstacles or concerns that pipe bursting process may affect other utilities)

Got very good bids \$3.3M on a \$5M estimate, low change orders 5%

Results: Only achieved a 19% reduction this time

Reasons:

- Possibly more sump pumps than anticipated that are connected within the residence's plumbing system
- Fewer parcels rehabilitated than in pilot study
- Area larger than originally delineated (previously-unknown diversion manhole sent high flows into the basin)
- Partial rehabilitation on some side sewers
- Rehabilitation may change hydrogeology of area, causing infiltration into sewer at new locations or surface drainage issues that have to be addressed at additional cost

Lessons learned:

- Focus on areas where flow monitoring shows 3+ gpm per property
- Spend money on rehabilitation, not excessive investigation like smoke testing and CCTVing because it doesn't identify where the I/I is coming from
- There may be other basins where I/I has potential to be more cost-effective

Next steps – issue report, monitor for another season (under way currently), then make decisions on best practices and policies in concert with the member agencies. E&P Subcommittee will continue to discuss this issue and its impact on the member agencies.