



Greensand Filter Effluent Line Repair Project

Presenting: Michael Woodruff, Director of Infrastructure
Project Manager: Jake Hebert, Project Engineer

Strategic Focus Areas



Supportive and Sustainable Infrastructure



Financially Responsible

Introduction

- ◆ Project Background
- ◆ Project Details
- ◆ Bid Process and Results
- ◆ Final Recommendation

Project Background

- ◆ This is a design/build project that covers the following 3 components:
 - ◆ Design and repair solution for the 4 filter effluent lines which are currently leaking at the wall penetrations in the Greensand Water Treatment Plant
 - ◆ Air gap modification and backwash tank overflow pipe to prevent future flooding in the Greensand Plant
 - ◆ Construction of scaffolding in the Greensand Plant to assist with operations and maintenance of assets in the pipe gallery

Filter Effluent Lines

- ◆ The 4 filter effluent lines are currently leaking at the wall penetrations in the Greensand Water Treatment Plant
- ◆ Leaking is occurring from the Victaulic couplings and between the concrete and the pipe at the wall penetration
- ◆ The leaking has become so prominent that water plant staff is concerned there is a chance the effluent lines could entirely fail at any time
- ◆ Loss of the Greensand Plant would be detrimental, as the City would not have adequate water supply for its citizens during the summer months

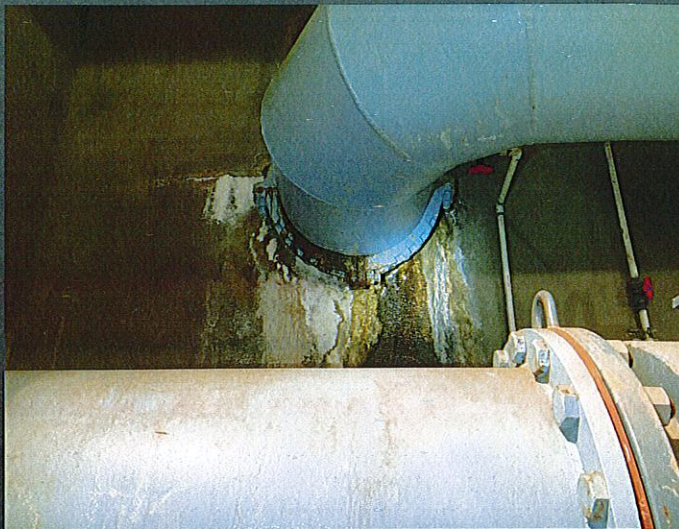
Filter Effluent Lines



Greensand Pipe Gallery

Filter Effluent Lines

- ◇ Blue pipe is the effluent from Greensand filter bed
- ◇ This pipe is carrying filtered water to the clearwell
- ◇ Penetration through the concrete wall shows significant leaking
- ◇ All 4 effluent line wall penetrations are leaking as shown
- ◇ The construction for this project can only be performed between the months of October to May, when Greensand is not operating due to system demand



Filter Effluent Lines

- ◇ Scope of work
 - ◇ Design/build services for identifying and repairing leakages on all 4 effluent lines



Air Gap and Backwash Overflow

- ◆ An additional part of this project is to either modify the air gap that is required by CDPHE or install an overflow pipe at the backwash tank
- ◆ The additional scope of work was developed to prevent flooding in the Greensand plant, which occurred in 2013 due to electronic failures
- ◆ There was 9 ft of water in the basement of the Greensand Plant when flooding occurred
- ◆ A backwash tank overflow would ensure no flooding even in a situation where electronics fail

Air Gap and Backwash Overflow

- ◆ Scope of Work
 - ◆ Design/Build services for modifying air gap and/or installing overflow pipe at the backwash holding tank

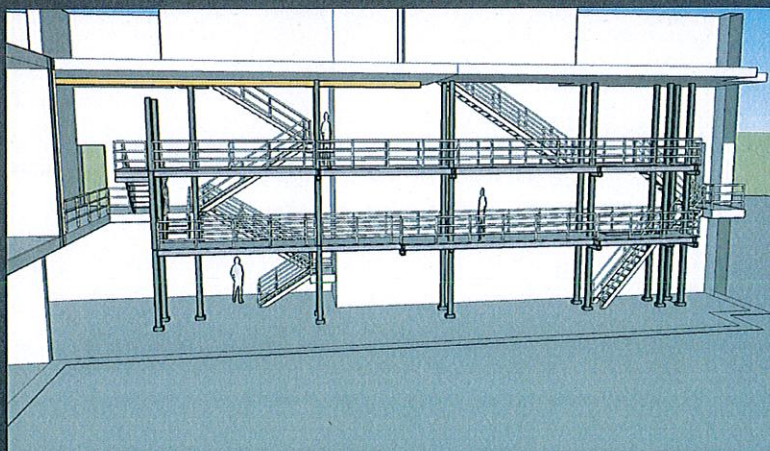


Scaffolding

- ◆ Permanent scaffolding will also be installed in the Greensand pipe gallery
- ◆ Design for scaffolding was completed in 2016
- ◆ Scaffolding is necessary due to the inaccessibility for operators and plant mechanics to perform maintenance of the Greensand Plant assets

Project Details

- ◆ Scope of Work
 - ◆ Construction of the scaffolding that was designed as a separate project



RFP Process and Results

- ◆ Formal Request For Proposal Process
 - ◆ Proposals due October 24th, 2018
 - ◆ Two (2) proposals received
- ◆ City staff analyzed and evaluated the design/build proposals
 - ◆ IMEG was determined to be the most responsive and responsible bidder with a bid price not to exceed \$582,617.00
 - ◆ This cost includes diagnostic and design of the leakage repairs, construction of the leakage repairs, design and construction of the air gap and/or back wash tank overflow, and construction of the scaffolding

Final Recommendation

Staff believes that accepting the design/build proposal from IMEG for the design and build services for the Greensand Filter Effluent Line Repair Project would accomplish the following:

- ◆ Provide a long term, reliable solution to repair issues at the Greensand Water Treatment Plant to ensure continuation of treatment and distribution to customers
- ◆ Provide efficiency and cost savings by using one general contractor to perform construction on all three project components: filter effluent line leaks, air gap and/or backwash tank overflow pipe, and scaffolding

Questions?