



Sanitary Sewer Manhole Rehabilitation

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Strategic Initiative



Supportive and Sustainable Infrastructure

Introduction

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

Project Background

- ◆ Sanitary sewer manholes are an integral part of the infrastructure that continuously conveys wastewater to the plant to be treated
- ◆ Manholes are necessary for change in direction of gravity pipelines
- ◆ Also, like the name implies, manholes are access points for operational personnel to maintain, clean, and repair sanitary sewer pipelines to make certain that the wastewater system functions properly

Project Background

- ◆ Manholes are typically constructed of concrete, with older manholes being built from brick and mortar
- ◆ Overtime, manholes experience deterioration and corrosion from the constant off-gassing from wastewater that is being conveyed through them
- ◆ If nothing is done to stop or prevent further corrosion, the structural integrity of manholes can be compromised and they need to be removed and replaced which is costly and disruptive

Project Details

- ◆ This project is to rehabilitate 206 manholes by using a multi-layered polymer lining method
- ◆ The 206 manholes were chosen based on assessment of condition, age, and the amount of flow seen in the manholes
- ◆ Consequently, some of the City's oldest manholes located on the largest conveyance lines are to be rehabilitated in this project



Project Details

- ◆ Scope of Work
 - ◆ Manholes cleaned by water blasting
 - ◆ Apply moisture barrier and adhesion coat
 - ◆ Apply surfacer to fill all voids and restore the surface
 - ◆ Apply a top coat of hybrid-polyurea lining
- ◆ All 3 coats create a multi-layered polymer lining



Moisture barrier application



Surfacer application



Corrosion barrier application

Project Details

◆ Benefits

- ◆ Reduce O&M costs
- ◆ Prevents corrosion
- ◆ Eliminates infiltration
- ◆ Restores wall surfaces
- ◆ 100 year design life
- ◆ 10 year warranty
- ◆ Trenchless application



Bid Process and Results

- ◆ The City of Brighton has chosen to use a bid that was developed for the City of Broomfield to perform this same type of sanitary sewer manhole rehabilitation
- ◆ The bid was based on manhole surface area to be lined, and therefore can be directly transferred to the City of Brighton project
- ◆ Concrete Conservation Inc. can perform this work for \$400,000.00
- ◆ Spending authority for this project is from the approved 2019 Sewer Activity Enterprise Fund Budget

Final Recommendation

Staff believes that accepting the bid from Concrete Conservation Inc. for the Sanitary Sewer Manhole Rehabilitation project would accomplish the following:

- ◇ Provide a long term, cost effective solution to sanitary sewer manhole deterioration
- ◇ Extend the life of existing sanitary sewer manholes
- ◇ Prevent the high cost and disruption of completely removing and replacing manholes that will experience structural integrity issues in the future if corrosion continues to take place

Questions?