



Department Source: City Utilities - Sewer/Stormwater

To: City Council

From: City Manager & Staff

Council Meeting Date: May 15, 2017

Re: Public Hearing – Henderson Branch Sewer Extension

Executive Summary

This is a Public Hearing for the design and construction of sanitary sewers to serve the Henderson Branch Watershed.

The proposed sanitary sewer system improvement project includes the design and construction of approximately 8,600 linear feet of sewer that would ultimately serve the entire 1300 acre Henderson Branch watershed and an additional 800 acres of property adjacent to the watershed. This sewer would consist of either a gravity sewer with an estimated construction cost of \$4,300,000 or a combination of gravity sewer and lift station at an estimated cost of \$3,100,000. The project can be funded by a combination of sewer bond funds in the amount of \$2.6 million and a contribution from the Boone County Regional Sewer District in the amount of \$628,047. Should the gravity sewer be constructed additional funding of \$1,071,953 would be provided from Sewer Utility enterprise funds. A Public Hearing for this project was previously conducted on July 5, 2016 and October 3, 2016.

Discussion

In 1973, Black and Veatch completed a Sewer Master Plan for the City of Columbia. The main objective of the plan was to identify an area for watershed protection. In order to protect human health and the environment the recommendations included creating a regional sanitary sewer collection and treatment system and reducing sewer treatment discharge points within the identified watershed protection area. The identification of a watershed protection area in the plan qualified the City to be eligible for Federal and State grants for sewer improvements. The City's Regional Wastewater Treatment Plant and trunk sewers were constructed in the late 1970s and early 1980s. The majority of the funding was provided through United States Environmental Protection Agency (EPA) construction grants to serve as a regional facility for protection of the watershed. Up to 90 percent of the funding for the Perche Creek, Hinkson Creek and Bear Creek outfall sewers was provided through these grants. The construction of the outfall sewers and the City's Regional Wastewater Treatment Plant greatly improved water quality of the local streams.

In 2007, the Council adopted an updated Sewer Master Plan that defined a new watershed protection area or service area. This plan continued with the concept of regionalization for protection of the watersheds. More than 100 sewer treatment facilities have been removed from service and connected to the City's Regional Wastewater Treatment Plant since it was constructed and placed in service in 1983.



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The Sewer Master Plan approved by Council in 2007 included the Henderson Branch Sewer Extension as a future project which continues the EPA endorsed concept of regionalizing sewer collection and treatment for the protection of human health and the environment. The project consists of extending public sewer from the existing Perche Creek Interceptor sewer to a point just north of the I-70 and US-40 interchange, as shown on the attached diagram. Construction could be completed by either constructing a gravity sewer or a combination of gravity sewer and a lift station.

Should the gravity sewer be approved, it would include approximately 8,600 linear feet of 24" - 30" diameter sewer. This sewer would ultimately serve the entire 1300 acre Henderson Branch watershed and an additional area of approximately 800 acres adjacent to this watershed. This is anticipated to cost approximately \$4,300,000. If a combination of gravity sewer and lift station is constructed, it would include approximately 4000 feet of gravity sewer, a lift station and 4600 feet of force main. Either would be constructed generally along the alignment shown on the attached diagram. This option is anticipated to cost approximately \$3,100,000.

The construction of either of these would initially allow for the elimination of at least two existing sewage treatment facilities that discharge a total of approximately 17,500 gallons of effluent per day into Henderson Branch. Removing these point discharges will result in improved water quality for both Henderson Branch and Perche Creeks. Either project would allow for the removal of three additional treatment facilities operated by the Boone County Regional Sewer District, connection of other existing facilities and provide for regional waste water treatment via a public sewer system for future development in the area. This project was included as a proposed bond funded project in the ballot issue approved by voters in the November 2013.

The potential fiscal impacts to the General Fund and other utilities will not change from the information provided at the October 3, 2016 Public Hearing. The Sewer revenues remain the same as previously provided however, there would be an increased operating cost to the Sewer Utility if the pump station option is approved of approximately \$15,500 annually. In addition, additional capital costs would be required in the future to serve the entire area.

Attached to this Council Memo is correspondence from HDR, Inc. the design consultant for the project. This Pump Station Alternative memo provides additional details on the gravity sewer option, the pump station and force main option and future capital improvements necessary to serve the entire area. This includes a present value analysis which demonstrates the gravity sewer is the least expensive long term option.

Fiscal Impact

Short-Term Impact: The total construction cost of the Henderson Branch Sewer Extension is estimated to be \$4,300,000 for a gravity sewer or \$3,100,000 for a combination gravity sewer and lift station. The BCRSD will provide funding in the amount of \$628,047.00, \$2,600,000.00



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will be funded from Sewer Bonds and \$1,071,953.00 is available from Sewer Utility enterprise revenue funds if the gravity sewer is approved.

Long-Term Impact: The annual maintenance cost for the sanitary sewer collection system has averaged \$0.995 per foot based on the past three year average. This corresponds to an annual cost of approximately \$8,557.00 for collection system maintenance however, this cost will not be incurred during the first five years. The anticipated operating cost for the lift station is \$15,500 annually. The treatment costs have averaged \$0.0012 per gallon the past three years this corresponds to an initial annual cost of \$7665 for treatment. Additional capital expenditures would be required in the future and are detailed in the correspondence from HDR.

Vision & Strategic Plan Impact

Vision Impacts:

Primary Impact: Environment, Secondary Impact: Economic Development, Tertiary Impact: Development

Strategic Plan Impacts:

Primary Impact: Infrastructure, Secondary Impact: Economy, Tertiary Impact: Not Applicable

Comprehensive Plan Impacts:

Primary Impact: Environmental Management, Secondary Impact: Infrastructure, Tertiary Impact: Economic Development

Legislative History

Date	Action
04/15/2017	Setting a Public Hearing for the Henderson Branch Sewer Extension Project
10/03/2016	Public Hearing for the Henderson Branch Sewer Extension Project
07/05/2016	Public Hearing for the Henderson Branch Sewer Extension Project
06/06/2016	(R60-16) Setting a Public Hearing for the Henderson Branch Sewer Extension Project
08/17/2015	(B232-15) Amending the General Cooperative Agreement with Boone County Regional Sewer District
08/03/2015	(R125-15) Engineering Services Agreement with HDR Engineering for the Henderson Branch Sewer Extension Project



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03/18/2015	(Ord22383) Authorizing the issuance of Sewerage System Revenue Bonds, Series 2015, in the aggregate principal amount on not to exceed \$20,500.00
03/03/2015	(R11-15A) Authorizing the offering for sale of not to exceed \$20,500.00 principal amount of Sewage System Revenue Bonds, Series 2015, of the City of Columbia, Missouri.
07/22/2014	(R125-14) Transferring funds to offset expenditures relating to the November 2013 Special Bond Election for sanitary sewer improvements.
01/02/2014	(Ord21742) Declaring the results of the Special Election held in the City of Columbia, Missouri on November 5, 2013.
08/05/2013	(Ord 21760) calling a special election on whether to issue the Sewer System Revenue Bonds in the amount of \$32,340,000 for constructing, improving, repairing, rehabilitating, replacing, equipping, expanding, and extending the city-owned sewerage system.
07/01/2013	Pre-Council Meeting – General Obligation Bond Projects – Infrastructure Ballot Presentation
05/20/2013	Pre-Council Meeting – November Storm Water / Sewer Ballot Issue – Sewer Utility Presentation – Storm Sales Tax Presentation
01/01/2007	Public Hearing – Sewer Master Plan
12/04/2006	(R262-06) Setting a Public Hearing to consider adopting the Sewer Utility Master Plan

Suggested Council Action

Following public input and Council discussion, staff should be directed to proceed with the design of the Henderson Branch Sewer Project with either the gravity sewer option or force main option as determined by Council.