



Department Source: City Utilities - Sewer/Stormwater

To: City Council

From: City Manager & Staff

Council Meeting Date: November 16, 2020

Re: Public Hearing: Proposed construction of the Hickman Avenue, Sixth Street and Seventh Street Stormwater Management Project (SS134)

## Executive Summary

This is the public hearing for the replacement and improvement of public storm drainage infrastructure at Hickman Avenue and Sixth Street. The project location is shown on the attached Location Map. The existing storm drainage box is failing. This project will improve storm water management for the area. The project may also include the purchase of a property and removal of the structure to improve storm water management. The resolution estimate for this storm water project is \$1,100,000 and will be paid from Storm Water Utility funds.

## Discussion

This project was identified in the 2015 Stormwater Ballot Initiative. The proposed improvements include replacing approximately 300 to 400 feet of RCB as well as replacing or adding approximately 200 feet of pipe and 10 inlets. These improvements will replace failing and undersized infrastructure and improve storm water management. Additionally, proposed improvements will reduce flooding risk to area structures by increasing the storm water overflow capacity from Sixth Street to Hickman Avenue. To compare alternatives for this project, the term "overflow capacity" means the ability for flood flows exceeding the capacity of the underground system to flow overland at a depth of one foot in Sixth Street and not flow into doors of structures. Currently, buildings, fences, the roadway intersection and a large tree block the storm water overflow path from Sixth Street to Hickman Avenue causing storm water to pond more deeply during very large rainfall events.

Interested parties (IP) meetings were held on January 28, 2020, and October 13, 2020. Additionally, staff attended a neighborhood virtual meeting along with multiple meetings with smaller groups of property owners to gather feedback. A Council Work Session was held August 17, 2020, to discuss the project and the costs, benefits and risks of various alternatives. See attached Contact Log.

Based on the feedback received from property owners and Council, staff has weighed the project costs, benefits, and risks associated with various alternatives and narrowed the options to two alignments, which have similar hydraulic capacities within the underground system but different overflow paths and capacities. Alignment 2 described in this memo reflects the alternative suggestion from the Council Work Session. See the attached project graphic.



# City of Columbia

701 East Broadway, Columbia, Missouri 65201

Alignment 1 includes purchasing and removing the Center Project building located at 515 Hickman Avenue. By removing the structure, fence and tree, this alignment has approximately 180 cfs (cubic feet per second) overflow capacity, therefore a greater reduction in flood risk to area structures than Alignment 2. The construction area is primarily within the existing right of way areas and 515 Hickman Avenue and minimizes disturbance of the Jefferson Middle School site. Members of the Center Project expressed considerable interest in this option. Construction costs for Alignment 1 are approximately \$745,000. Additional unknown costs include acquiring the property at 515 Hickman Avenue and removing the structure. If Council directs staff to proceed with Alignment 1 or continuing to evaluate both alignments, then an appraisal of the property will be ordered. Results of the appraisal are provided to Council in the ordinance to acquire or any agreement to acquire the property. If Alignment 1 property acquisition is cost prohibitive or a satisfactory agreement cannot be reached with The Center Project, then staff would move forward with the necessary easement acquisition and final design for Alignment 2.

Alignment 2 includes deep excavation into some poor soils farther into the Jefferson Middle School site. In addition to the construction of the additional RCB, this alignment would lower the Sixth Street and Hickman Avenue intersection to improve the storm water overflow path from Sixth Street to Hickman Avenue. The overflow capacity for Alignment 2 is approximately 115 cfs, therefore has a lower reduction in flood risk to area structures than Alignment 1. The resulting construction for Alignment 2 is a larger footprint and more disturbance on the school site and tighter timeframes to coordinate with the Columbia Public Schools construction project. The additional intersection pavement, concrete box, and earth moving adds approximately \$190,000 to the construction costs, with total construction costs for Alignment 2 approximately \$935,000. In speaking with Columbia Public School representatives, staff will need to move forward quickly if this is the alignment selected due to the planned construction at Jefferson Middle School next year.

Either RCB alignment, new higher-capacity inlets and added storm pipes will decrease the incidence of flooding along Sixth Street for similar size storms. The neighborhood asked to install as much curb and gutter as possible on the east side of Sixth Street. That will depend on the alignment chosen and final street grades. The neighborhood also asked staff to explore the possibility of adding stormwater storage farther up in the watershed to reduce overflows of the stormwater system. Staff analysis found that reducing flood-magnitude flows in this manner would be very expensive in a developed watershed like this one because the required volume of stormwater detention area is approximately the size of eleven quarter-acre lots at a depth of three feet. The goal of adding storage upstream will continue as properties redevelop but cannot be realized in the time-frame of this project.

The total project cost estimate is \$1,100,000.



## Fiscal Impact

Short-Term Impact: Total project costs are estimated to be \$1,100,000.

Long-Term Impact: By preventing collapse and emergency repairs, this project will have a large beneficial, though unquantifiable, fiscal effect.

## Strategic & Comprehensive Plan Impact

### Strategic Plan Impacts:

Primary Impact: Public Safety, Secondary Impact: Infrastructure, Tertiary Impact: Not Applicable

### Comprehensive Plan Impacts:

Primary Impact: Infrastructure, Secondary Impact: Environmental Management, Tertiary Impact: Not Applicable

## Legislative History

| Date       | Action   |
|------------|--|
| 11/02/2020 | R140-20: Setting a public hearing: proposed replacement and improvement of public storm drainage infrastructure adjacent to the intersection of Hickman Avenue and Sixth Street. |
| 10/13/2020 | IP Meeting   |
| 08/17/2020 | Council Work Session. Council asked staff to explore an additional alternative.  |
| 1/28/2020  | IP Meeting   |
| 04/07/2015 | Voters approve rate increase for the Stormwater Utility with this project as one of the priorities.  |

## Suggested Council Action

Direct staff to proceed with the final design for replacement and improvement of the public storm drainage infrastructure at Hickman Avenue and Sixth Street.