



## PUBLIC WORKS DEPARTMENT

Council Committee Meeting Date: September 6, 2016

### DISCUSS PROJECT DELN0001- DELMAR/FONTANA SOUTH OF 83<sup>RD</sup> STREET DRAINAGE PROJECT

#### OPTIONS

Option 1- Direct Public Works to continue the development of Project DELN0001.

Option 2- Direct Public Works to eliminate Project DELN0001 from the current CIP and to move forward with the installation of the low water crossing signs in 2016.

#### BACKGROUND

This project has a long history, dating back to the mid 1980's. Full design for drainage improvement project was completed back in 2007, however, due to the project costs for the City increasing by more than a million dollars, the project was cancelled. That project's intent was to solve problems related to the drainage channel between Delmar Lane and Somerset Drive just south of 83<sup>rd</sup> Street. There are currently two low water crossings at Delmar Lane and Fontana Street. Just east of Delmar the open channel drains into an underground drainage system. During significant rainfalls the backup of water at this culvert causes significant roadway flooding as well as the flooding of residential properties. In June of 2010, a storm caused flooding of a home in this area which caused this project to be looked at again. Just recently on August 27, 2016 a vehicle was swept into this channel at the Delmar low water crossing. Below is a list of many of the project activities in the last 30 years.

- 1984- Prairie Village developed a storm water master plan and listed this channel as a future project.
- 1996- City started a feasibility study for this area. Plan was to utilize County SMAC funds. Project was tabled as there was no support for removing the low water crossings. At this time both SMAC and Public Works felt removing the low water crossings was a critical component of the project.
- 1998- Record storms in Kansas City area. Car was swept downstream at the Delmar low water crossing. A teen age girl was able to kick out the rear window and a resident helped her escape safely.
- 2000 to 2007- The project was reconsidered and a committee comprised of City Staff members, City Council members, our Engineering Firm, and neighbors was created to develop a solution. The project was debated and lack of support for removal of the low water crossings, by the neighbors, caused the city to request and obtain an exception from SMAC to leave the low water crossings. Projects costs increased with this alternative solution by about 1 million dollars.

Public Works requested additional funds in the fall of 2007 and council decided to not add the additional City funds to the project and the project was cancelled.

- 2010- Significant rainfall caused high water at the Delmar low water crossing which caused garage and basement flooding.
- 2012- New Staff at public works became aware of the past problems at the low water crossings. After seeing video of flooding in 2008 Public Works felt the project needed to address a significant safety concern.
- 2012- A resident meeting was held and the general consensus was to build the project that was cancelled in 2007.
- 2013- Public Works requested to re-evaluate the past project to confirm it was the correct and best way to spend \$2.5 million dollars. Larkin, Lamp, Rynerason & Associates was hired to do this analysis.
- 2013 Study-  
Public Works and Larkin studied the design of the past project and became concerned that the past project did not solve the roadway flooding problems. The project did plan to install a system at the low water crossings to warn of the roadway flooding but Public Works felt that given the cost of this project the roadway flooding should be adequately addressed. When Larkin began to study the past project their analysis showed that the water flows used to develop the past project were underestimated. Larkin worked with Johnson County to discuss the watershed study that was completed about the same time as the past project (2007) was developed. Results of those discussions determined that the flows used for the design of the Delmar/Fontana drainage project were indeed underestimated.
- 2016- Council discussed the project on March, 21, 2016 following a meeting with the resident's adjacent to the channel. Two options for moving forward were discussed and are listed below in this memo. After discussion, Council directed Public Works to do a peer review of the work to make sure of the results.
- 2016- Public Works hired Don Baker with Water Resources Solutions to review the work Larkin, Lamp, Rynerason has completed. After review of the models and after discussions with Johnson County SMAC he determined that the 2007 project would NOT meet the SMAC criteria for funding.

In summary the 2007 project does not meet SMAC criteria and therefore no SMAC funds are available for that specific design. The project would need to be funded by the City alone.

If the City were to build a \$3 Million to \$4 Million dollar project in this area, Public Works believes that it should not only remove residential properties from the 100 year flood plan but should also eliminate the low water crossings.

Two options exist at this time-

1. Move forward now with developing a project to solve residential flooding and remove the low water crossings. Given that this is essentially starting over we suggest we begin with a new request for proposals from consultants and start with a new analysis and new ideas for the project. If SMAC funds were available, the first \$250,000 is not reimbursable by SMAC since that is what they funded for design of the original project. The soonest a Preliminary Engineering Study could be submitted to SMAC would be January 2017. Staff would also recommend installing warning signs now as it will take a few years to develop a new project.
2. Cancel the existing CIP project and install warning signs now. The drainage project would be considered in the future when the downstream metal pipes needed to be replaced due to condition. This would be at least 15 to 20 years into the future. When these pipes need to be replaced the residential and street flooding would need to be addressed at that time.

Residents adjacent to the channel between Roe and Somerset were sent a letter notifying them of tonight's discussion. Residents may be in attendance to make comments on the project.

## FUNDING SOURCE

If the project DELN0001 is continued at this time funding(about \$1,000,000) will remain in the project. If project is canceled funds will go to the Drainage Repair Program as all the funds are from the Storm Water Utility Fund and have to be used for drainage related items.

### Past funding for this project-

	<u>City</u>	<u>SMAC</u>
2007 Design-	\$75,000	\$250,000
Larkin 2013 Study	\$45,000	
2016 Peer Review	\$5,000	

## RELATED TO VILLAGE VISION

TR3a. *Ensure that infrastructure improvements meet the needs of all transportation users.*

## ATTACHMENTS

None

## PREPARED BY

Keith Bredehoeft, Public Works Director

September 1, 2016