CITY OF MANITOWOC

WISCONSIN, USA

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Date: September 27, 2021

To: Public Infrastructure Committee

From: Greg Minikel, P.E., Engineering Division Manager

Re: Update on Flooding Issues at North 5th & Pine St. (Item #21-0799)

The Committee recommended that we talk to the designer of the storm sewer on Waldo Blvd.

I contacted Andy Block at JT Engineering and asked him about adding additional stormwater flow to the Waldo Blvd. storm sewer system. Andy stated that the storm sewer design on Waldo Blvd. for handling the 10-year storm event was being pushed to the limit already and the design required all storm manhole covers from the Little Manitowoc River to Lincoln Blvd. to have bolt down covers.

We had previously discussed the 4 additional options listed below to possibly help the situation and they are as follows (recommendations to each option are shown in red bold text):

Option #1:

Install approximately 60 feet of new 15-inch storm sewer pipe from the southwest corner of Lincoln and Pine St. and discharge it into the brand-new storm manhole located in the island that was just installed in May 2021. Option #1 has an estimated cost of $35,000.

After discussions with JT Engineering, I feel that we could still look at building Option #1. It will tax the Waldo Blvd. system some more, but we could leave all of the existing pipe in place. We would simply plug what is not being used. This option should absolutely help with short term heavy rain events, say 20 minutes or less. However, there could be some problems with the Waldo Blvd. storm sewer system for longer duration heavy rain events. If problems do occur on Waldo Blvd., then we could always go back to the way it was or leave everything connected and allow the stormwater flows to go both directions at the intersection of Pine & Lincoln. However, then we are back to square one this issue.

Option #2:

Install 2 new larger 2 ft. by 3 ft. inlets on the north end of the first two islands south of Pine St. There are existing 2 x 2 inlets at these locations, but they plug up with debris very easily. We would also plan to install approximately 25 ft. of 12-inch inlet leads from the inlet to the mainline storm sewer pipe. We believe that the existing leads are smaller than our current 12-inch standard. Option #2 has an estimated cost of $32,000.

Option #2 could be implemented. This option will just put more stormwater in to the pipes that go down Pine St. and past Ashley's home. However, this is a Catch 22 situation. More stormwater in the pipes may cause backups as well, but the neighborhood stated that generally the only thing that seems to help is to pull the grates off of the small 2'x2' inlets that typically plug up very quickly. I would rather get as much stormwater as possible into the larger inlets and into the pipe than to have the stormwater flowing overland and running down the big hill on Pine St.

Option #3:

Install 6 new inlets (2x3's) on the northwest, southwest and southeast corners of Pine St. and North 6th St. We will also need to install 2-3 new manholes in this intersection as well. In addition, we could install a new 15-inch storm sewer on North 6th St. from Pine St. to Waldo Blvd. However, this will require cutting back into the new pavement on Waldo Blvd. and will also require the replacement of the concrete pavement on the west side of North 6th St. Option #3 has an estimated cost of $200,000. Besides the cost of this option, the other downside is that we would be continuing to add stormwater to the Waldo Blvd. storm sewer system that was not part of the design calculations, which could result in the re-occurrence of flooding issues we solved with the Waldo Blvd. storm sewer upgrades.

After discussing this with JT Engineering, I do not recommend Option #3 at all.

Option #4:

This option would be the similar to Option #3, but we would not install the new storm sewer on N. 6th St. from Pine to Waldo Blvd. We would just install new larger inlets and pipe the water into the existing 18" storm sewer on Pine St. Option #4 has an estimated cost of $65,000.

Option #4 could be implemented, but it has basically the same answer as Option #2 above.

As a reminder, there is also an existing 12-inch CMP storm sewer that runs under a portion of the garage and home at 955 N. 5th St. See the attached map. **Unless the City intends to acquire this property, I would highly recommend that we re-line the 84 feet of 12-inch pipe to make sure that it remains in good condition and will not allow stormwater and clay/silt material to run in and out of the pipe.** The estimated cost to reline this pipe based on the September 2020 quote from Visu-Sewer is $23,940. The cost is high due to this being a standalone project and also due to the use of the styrene free resin. The Contractor recommended this so that the homeowner does not have smell the styrene resin.

The Property Owner also made a statement at the Committee meeting indicating that the City should just buy her property and build a pond. We also contacted Andy Sorenson at SMI to have them possibly give us a proposal for a feasibility study to determine whether or not this site would be in a good location and if it would be large enough to have a substantial impact on the flooding issues in this area.

We also referred this flooding location to Strand Associates for them to possibly give us other options to help alleviate the flooding issues.

We do not really have a specific recommendation for the Committee. If the Committee would like to pursue one or more of the options outlined above, then they should recommend referral to the Capital Allocation Work Group (CAWG) and Finance Committee to request them to find a way to fund these projects.