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DATE: June 22, 2020

TO: Board of Public Works

FROM: Randy Turtenwald, Director of Engineering & Public Works

SUBJECT: Report on Northside Basement Flooding & Pumping into Right-of-Way (ROW) and Possible City Assistance to Prevent Overland Flows

At the Board of Public Works (BPW) Meeting held on March 30, 2020, the BPW granted permission to pump into the ROW to the owner at 312 Liberty Street while he worked with Steiger Construction to pipe basement water to the City's storm sewer system to prevent overland flow. During the time when Steiger Construction was investigating where to place a conduit to convey the basement water, they found the neighboring houses all had gas services in the location needed to gravity flow to the corner catch basin. If the conduit is placed below the gas services, the conduit would be too low to gravity drain. If the conduit is placed above gas service the conduit would be shallow and freeze during winter months. Therefore, Steiger Construction concluded the project was not viable and advised the property owner to seek another remedy. I was told the property owner is pursuing filling their basement to mitigate the problem.

Prior to this investigation, the BPW directed the Director of Engineering and Public Works to investigate the possibility of the City providing assistance conveying basement groundwater to the City's storm sewer system to prevent overland flow. The Engineering estimate to install a pipe (conduit) behind and parallel to the curb and gutter that homeowners could pump into is approximately \$10,000.00 from mid-block (N200') to a corner catch basin. (Not including engineering cost) This would be paid by the City and could be assessed to benefited properties at a percentage set by the City's Common Council. (From 0 to 100%) This is a very simplistic project analysis with many variables that would make this type of City assistance not viable.

The following are factors that need consideration for each individual block:

1. Gas Services are in conflicting locations with the new conduit. Unlike Steiger Construction, the City has the authority to order Xcel Energy to relocate the gas services either above or below new conduit. This would require time and effort to coordinate but can be done.
2. Catch Basins are not always available at every street corner. In this situation, to make a connection to City's storm sewer would require going out into the paved surface of the road. Depending on the distance needed, this could easily add \$10,000.00 to the project.
3. If street trees exist between sidewalk and the curb, they would have to be removed including the stumps and nothing could be replanted because the City needs to maintain the pipe. This not only would increase the cost, but also may not be embraced by neighbors and/or community.
4. Detriment to the homeowner's foundation. When homeowners pump water from their basement in many cases, this is transporting soil particles along with the water. Therefore, the collection system would be designed with cleanouts to flush these particles to catch basins where they can be removed. This will add cost to operational and maintenance budgets. The larger problem with this particle transportation is the perpetual pumping will lead to long term foundation deterioration and possible failure.
5. The installation cost of these projects may seem to be relatively inexpensive but the design and installation effort is approximately the same soft cost effort of designing a street. Therefore, the more effort directed at the problem would cause other projects to be delayed or not constructed. This work could be outsourced but would add several thousands of dollars to each project.

In conclusion, it is the opinion and recommendation of the Director of Engineering and Public Works that the City does not provide this type of assistance but work with the homeowners to mitigate the problem by filling the basement. The City Planning Department already has this City assisted program in place and homeowners should be encouraged to initiate mitigation.

Although short term pumping in the ROW is a viable solution, long term (multiple years) is not and the City should discourage this practice.