TOWN OF PEACE RIVER
Information Briefing Note

To:	Mayor and Council	**Date:**	July 11th, 2022
Presenter:	Jim McCuaig, P.Eng.	**Prepared By:**	Jim McCuaig, P. Eng.
Topic:	101st Street Storm Sewer Repairs and Slide Mitigation	**File No.:**	38/150
Attachments:			

Issue

Administration have been monitoring the storm sewer behind the Points West building on 99th Street (River Road) which has failed and requires repair. The stormwater is now saturating the hill between 101st Street and 99th Street and has caused the hill to slump. This will require the Town to repair the storm sewer and mitigate the slope to ensure that 101st street remains a viable access to residents. Another area to the south of the storm sewer line now shows signs of slope failure and immediate steps are required for public safety.

Background

The stormwater is now saturating the hill between 101st Street and 99th Street and has caused the hill to slump as shown below:

To date, Administration have engaged Parkland Geo to determine the geotechnical of the storm sewer area in terms of risk and potential mitigation options. Administration have also engaged Beairsto Engineering to assist the E&I department in developing a plan to repair the storm sewer line and look at options to reroute a section of the stormwater line that may pose a future risk to Town infrastructure and residents along 101st Street.

From Parkland Geo's initial report:

"Inspection of the storm drain indicated significant signs of deterioration, including rusting, pitting and corrosion of the drain about 3 m below the top of slope. The failure of the storm drain resulted in erosion of the soil surrounding the pipe, causing a large visible void. The erosion appeared to continue downslope below the ground surface along the length of the pipe. The extent of the erosion and voids below the pipe is unknown due to limited visibility."

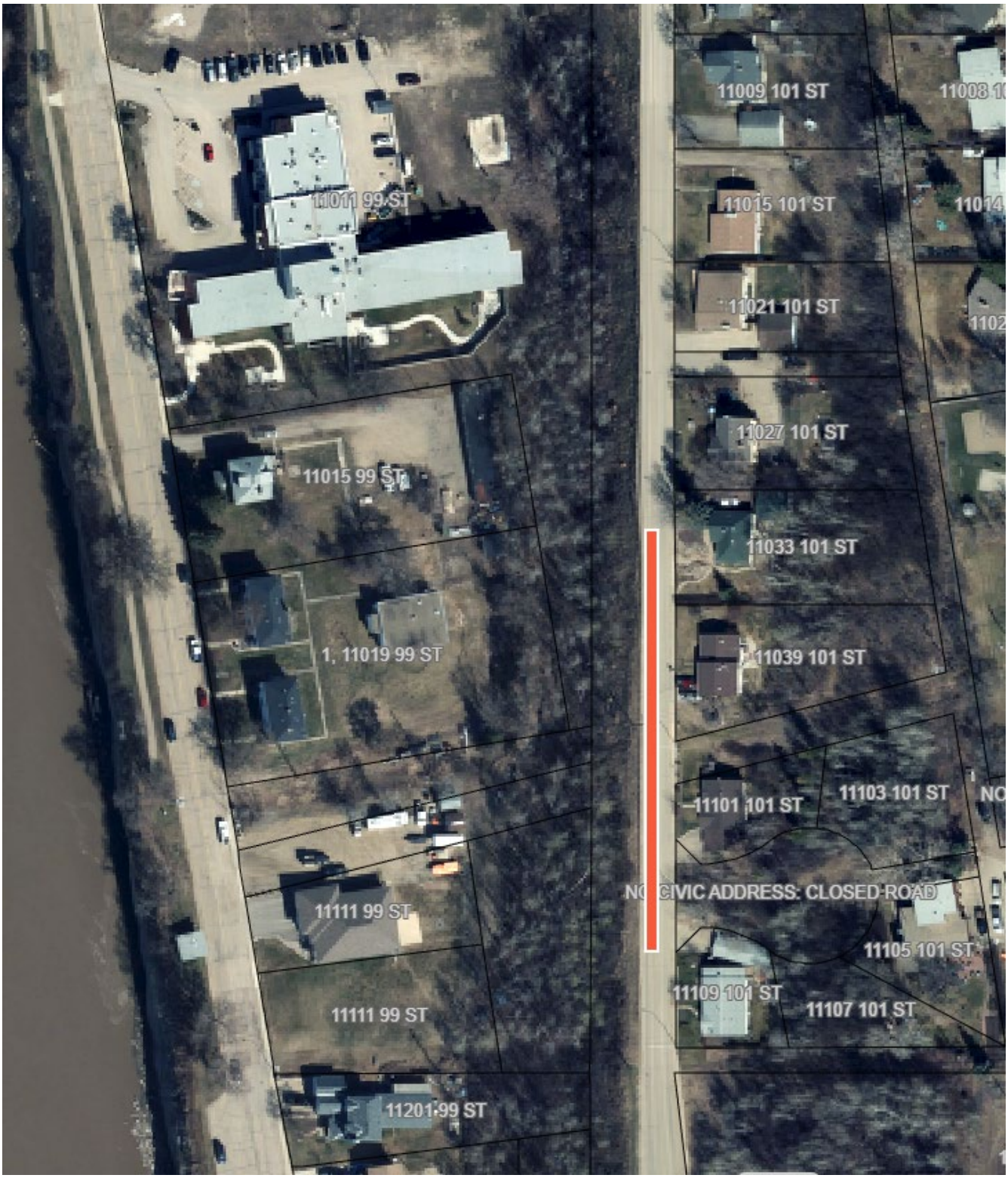
Our response to the initial situation was slowed due to available resources during Covid-19. We were looking to some intermediate steps to be taken this summer as follows:

- Remove existing unsuitable material;
- Repair/replace the failed stormwater pipe and line portions of the pipe that have not yet failed but are beyond their service life;
- Replace material with low to medium plastic clays and crushed gravel to stabilize the slope; and
- Provide soil erosion measures to control surface groundwater.

To date, we have also coordinated with Parkland Geo to complete a more in depth analysis of the slope in that area to assess any other risk to 101st Street. This included installing slope inclinometers along 101st Street to gauge movement within the slope.

Recent events have shifted our focus. Last week after the torrential downpour we reviewed the slope area behind Points West to gauge the impact the storm had on that area. We also examined the area on 101st street to see if there were any signs of tension cracking in the pavement. While no signs were noted at the site, the

pavement to the south was noted to display tension cracking along with separation between the road structure and the gutter. Both of these signs are indicative of slope movement. Last Friday, we met with Beairsto Engineering and Parkland Geo to discuss these findings and determine immediate actions and longer-term solutions. The subject area is in red below.



The curb and gutter can be seen in this photo as pulling away from the road structure. Also note the tension cracking in the road surface.

For immediate actions we will:

- Restricting a portion 101st street to one lane traffic;
- Provide sealant along the separation between the gutter and the pavement structure; and
- Analyzing the updated geotechnical date to complete a desktop analysis.

Longer term actions will be to:

- Evaluate options for Council to consider which may include a pile wall structure or a MSE wall structure in order to stabile the slope and 101st Street; and
- Pursue grant funding with the Province to assist with mitigation options.

_____

Submitted by: Jim McCuaig, P. Eng.

11 July 2022_____

Date Submitted