



WEST HANTS REGIONAL MUNICIPALITY REPORT

Information ☒	Recommendation ☐	Decision Request X	Councillor Activity ☐
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To: Committee of the Whole

Submitted by: Todd Richard, Director of Public Works

Date: March 11, 2025

Subject: 335-369 Tremain Crescent Storm Water

LEGISLATIVE AUTHORITY

MGA 30 (1) (2) (3)

RECOMMENDATION or DECISION REQUEST

Staff are seeking direction from council on next steps on addressing the storm water system located on Tremain Crescent.

Potential motions for Council to consider:

- 1. Council direct staff to proceed with issuing a tender for the Tremain Crescent Stormwater Cross-Culvert near civic #335 to allow for the construction based on a 1:100-year event as per the CBCL detailed design and move forward with obtaining required easements and or required land acquisition.**
- 2. Council direct staff to continue with the identified long term capital plan and incorporate engineering & design into the King Street and O'Brien Street reconstruction projects to collect and re-direct storm water away from the area of 335-369 Tremain Crescent. Thus, deferring the Tremain Crescent Stormwater Cross Culvert to allow the cross-culvert sizing to be reduced based on the reduction / diversion of the current watershed catchment area after completion of the O'Brien and King Street projects.**

BACKGROUND

At the September 2023 council meeting the following motion was passed:

Council direct the CAO to engage staff in a dedicated effort to operationally address and engineer a solution to resolve the ongoing flood issues occurring between the culvert at 335 Tremaine Crescent through to the cross-culvert at approximately 369 Tremaine Crescent through the drainage ditch which leads to Tregothic Marsh.

Staff engaged CBCL to complete a stormwater assessment and crossing design to reduce flood risk at the cross-culvert near Civic #335 Tremain Cresent in Windsor. A hydrologic and hydraulic stormwater model was constructed for this area along with detailed drawings, it focused on the crossing at #335 and builds on the larger scale stormwater model created for the ongoing Windsor Stormwater Study.

Additional background detailed information can be found in the attached section; CBCL Draft Design Report.

Staff presented a “request for direction” on April 9, 2024 for a decision request. Discussion revolved around ditched downstream to improve drainage, diversion of storm water away from the Tremain Cresent area, obtaining municipal service easements and process for this to happen along with the high cost of construction for the concrete box culvert without eliminating the issue of storm water due to the low-lying area and tidal influence during extreme weather events. Staff did not receive any clear direction from council other than to defer the discussion to a later date.

Since the April meeting staff have researched properties in or near the area of the existing storm water corridor. Registered letters were sent to the property owners requesting their agreement for the municipality to obtain a storm water service easement. After receiving no formal responses or signed agreements staff have reached out by phone calls, emails and visits to residential properties to try and obtain voluntary consent for the service easement. More recently staff have tried to contact property owners’ multiple times.

Staff met on March 6th with 2 property owners to have an open discussion related to any concerns or issues with storm water in this area along with potential construction and easements. The meeting was very positive and allowed for an open dialogue around the issues and the overall plan, corrective measures taken and current practices in place to manage and help resolve the stormwater issues in this area.

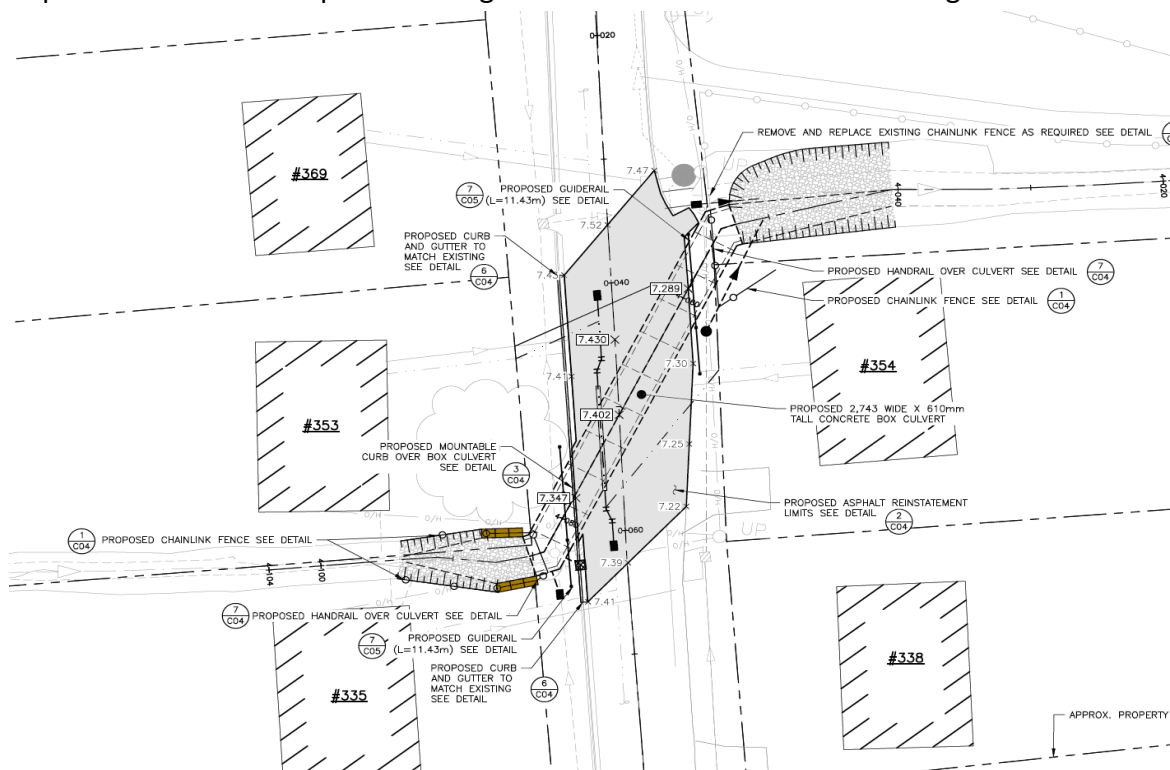
Property X	Public Opinion X	Environment X	Social ☐	Economic X	Councillor Activity ☐
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DISCUSSION

The house located at Civic #335 Tremain Cresent, as well as the surrounding properties, are low-lying. Foundations are at or near the bottom of the existing ditch system. Upgrading the municipal stormwater system is unlikely to fully address the reported residential flooding at this location as drain tiles discharge into the bottom of the ditch and will be submerged when water

The design event selected for the project is for the 1-in-100 year design event accounting for 2090 climate change projections. It was also agreed upon to design the crossing with the inclusion of the catchment area upstream of King St (Edgehill area) flowing into the Tremain Crescent stormwater crossing. Any future work to reroute these flows would benefit and lower the hydraulic grade line below what is proposed.

The Class B opinion of probable construction costs is **\$447,400 + HST**. This does not include potential easements, land purchases, or downstream work (east) of this project related to ditching and culvert improvements. Work on previously identified ditching and culvert improvements was completed during the 2024 construction season using inhouse resources.



NEXT STEPS

Staff is seeking direction on next steps to proceed. Staff could have CBCL finalize the design as per the attached documents and have the project tendered for construction or council could direct staff to proceed with other alternatives. Some alternatives are outlined below for consideration / direction.

FINANCIAL IMPLICATIONS

The 2024-25 Capital Budget included \$515,000 for the Tremain Crescent - Storm Water Culvert project. This will be updated and carried over into the 2025-26 Capital Budget. The approved funding source was through long-term borrowing. The debt servicing was budgeted at \$43,924, this will also be updated to reflect new estimates in the 2025-26 Operating Budget.

ALTERNATIVES

- Given the high capital cost to construct a box culvert to meet the 1-in-100 year design event that primarily impacts 2 properties other options may want to be considered by council.
 - Lower the design event to less than 1-in-100. This may not result in much reduction in flooding.
 - Utilize the existing system and direct staff to reduce the municipal storm water (street) runoff into the drainage corridor between Civic #335 and #353. Consideration to expedite the two street and services capital projects for King and O'Brien. Currently these projects are identified in the 5-year capital plan for 2025/26 and 2026/27. Storm water separation c/w curb and gutter could be designed to divert storm water away from the Tremain Crescent area and potentially be piped to the Martock Marsh area or further downstream to the Tregothic Marsh area not impacting the properties near Tremain Crescent.
 - If direction is given to proceed with the new concrete box culvert constructed across Tremain Crescent, then staff would recommend receiving direction to obtain a service easement along or near the existing corridor between Tremain Crescent and King Street. This would allow for maintenance and access along with potential future municipal storm water connections.
 - Continue with the existing 5-year capital plan and capture required stormwater improvements within the design to reduce municipal storm water toward the drainage ditch impacting Civic #335 and neighbouring properties.
 - Other considerations for flood risk mitigation are listed in Section 9 of the CBCL Design Report (see below).

9 Other Considerations for Flood Risk Mitigation

Property owners in areas of identified flood risk, or that have encountered property flooding in the past, should implement flood risk mitigation measures around their properties. Some general flood risk mitigation measures include:

- ▶ Disconnecting downspouts from foundation drains, and extending the downspout at least 1.8 metres away from the house;
- ▶ Making sure there is at least a 2 percent slope away from the house and that there are no low spots close to the house where water can accumulate;
- ▶ Providing drainage swales (shallow ditches with gentle side slopes) on the back and sides of the property to intercept surface flow that might come towards the building;
- ▶ If water tends to enter the basement, constructing a shallow sump pit that is watertight to the outside and installing a sump pump that discharges to the ground or a seep pit or rain garden located well away from the building ('interior sump pump system');
- ▶ Installing a backwater valve on the storm (if applicable) and sanitary sewer laterals in compliance with the most recent version of the National Building Code; and
- ▶ Constructing a seep pit or rain garden to limit storm water flows to the municipal storm infrastructure or neighbouring lands.

Additional measures that could be taken specific to the flood risk identified at #335 Tremain Crescent:

- ▶ Foundation waterproofing to prevent water entering the basement through cracks or holes.
- ▶ Installing an exterior sump pit and pump to discharge foundation drainage away from the building ('exterior sump pump system'). Include an air gap at the end of the discharge pipe to prevent back-siphoning.
- ▶ Installing a backwater valve on the foundation drain outlet pipe, or disconnect the foundation drain from the gravity outlet if a backup power source is available to run interior and exterior sump pumps in event of power outage.

ATTACHMENTS

- CBCL – Tremain Crescent Stormwater (Cross Culvert near #335) Draft Design Report.

CHIEF ADMINISTRATIVE OFFICER REVIEW

This matter has been thoroughly reviewed over an extended period of time. Better information has been collected resulting in increased understanding of short- and long-term measures to be taken to improve the flood resiliency of the area when under extreme weather events.

As noted in the report the area proposed for the culvert installation is low and collects storm water from surrounding areas within the neighborhood and from higher overland water during events from higher elevations. Further, the water and system is dependent on gravity and the stormwater routes / ditches having enough downward grades to carry the water away. The

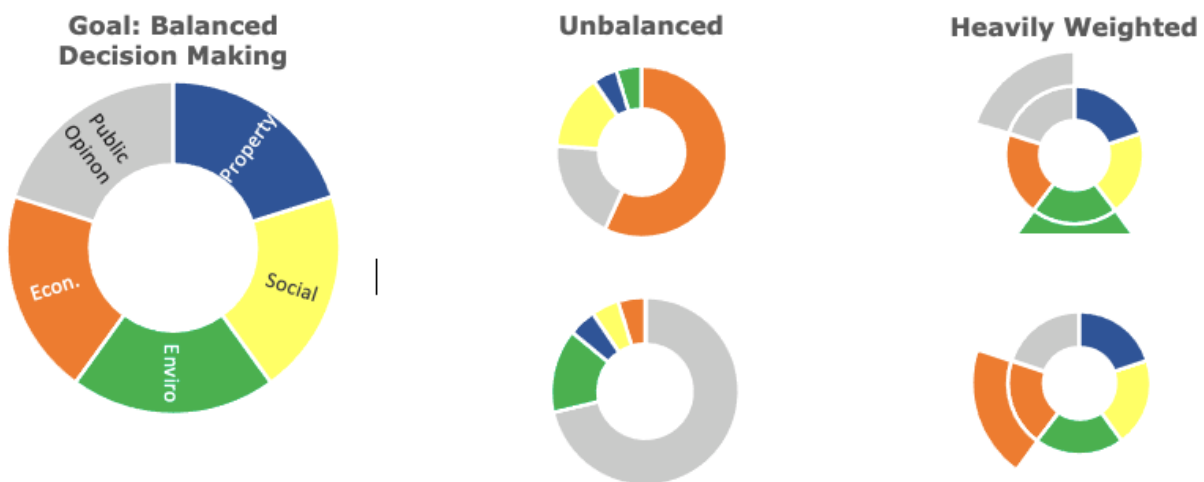
ditches do have a downward slope but it is minimal from the point of collection at Tremain, through the baseball field area, under the former rail line and through to the Payzant pasture lands or Tregothic Creek system. The ditching that has been carried out within the system has created a positive effect on pre-existing standing water as well as water flow during weather events.

The director is asking for direction that could be summarized as the following considerations:

1. Proceed with the installation of the large culvert preventing stormwater back up in and around the homes adjacent to and including 335 Tremain Crescent during extreme weather events with the expectation that the ballfield and Payzant pasture lands will provide storm water holding areas for the stormwater. This strategy is positively impacted by the ditching that has been performed by WHRM PWs. This strategy can be negatively impacted by the “leveling of stormwater” throughout all ditches and catchment areas when the tidal system is at high tide during weather events, when the system is full and water flow is neutralized.
2. Activate a strategy that diverts water from the Tremain area through future capital projects. This strategy is positively impacted by the ditching that has been performed by WHRM PWs and the existing stormwater holdings areas at the ballfields and . The current large culvert system proposed for the Tremain area would be revisited at a further date to determine size and scale.

Staff await Council’s discussion on the matter.

Council has been provided with a reference taken from the Meeting and Committee Procedural Policy , Appendix C “Decision Making by Council and Committee of the Whole” as a reminder of the principles highlighted for good decision making.



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