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TECHNICAL MEMORANDUM

Date: August 11, 2023 Project Number: 23-108-0000

To: Becky Shaw, Stormflow Surfacing

From: Madeleine Myles, B.A.Sc., Pavement Engineering Analyst
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Stormflow Infiltration Testing, Stratford, ON

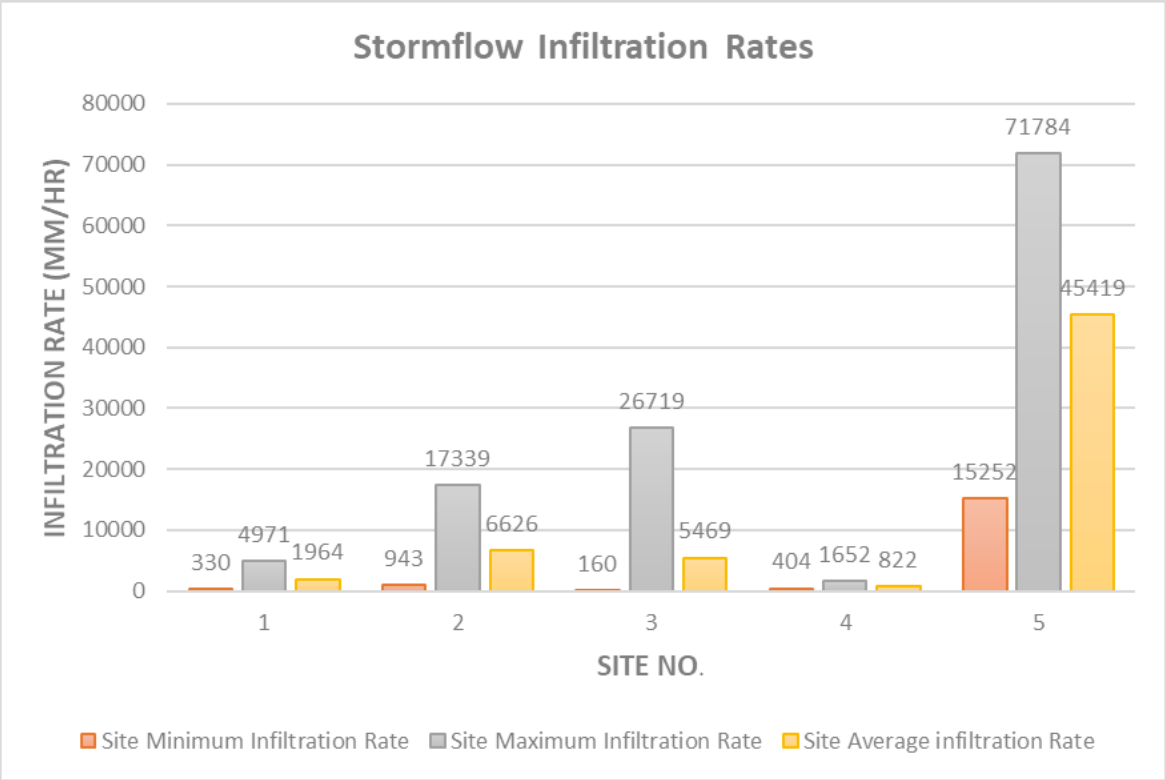
EXECUTIVE SUMMARY

PTech Engineering Solutions Inc. (PTech) was retained by Stormflow Surfacing to measure the infiltration rates of in-situ porous rubber pavement, Stormflow, at five test sites in Stratford, Ontario. Test Sites 1 through 4 are in Northshore Park and are multi-use paths for pedestrian and cyclist traffic. Test Site 5 is a driveway used for personal vehicles and exists at a residence within the vicinity of the park. The test sites were constructed between 2014-2022 and have varying pavement structures.

Infiltration testing was performed at multiple test locations throughout each of the five test sites on July `11, 2023. The National Centre for Asphalt Technology (NCAT) permeameter was used to perform the infiltration testing, following the procedures outlined in the ASTM C1701 standard. Three tests were performed consecutively at each test location.

The data obtained was utilized to calculate the infiltration rate for each test location following ASTM C1701. The minimum and maximum infiltration rates of each test site were compared to rainfall intensity values from Intensity-Duration-Frequency (IDF) curve data that are reflective of design storms expected in Stratford, Ontario. The infiltration rates were the following and are presented in the figure below:

- Site 1 - 331 mm/hr to 4,971 mm/hr
- Site 2 - 943 mm/hr to 17,339 mm/hr
- Site 3 - 160 mm/hr to 26,719 mm/hr
- Site 4 - 404 mm/hr to 1,652 mm/hr
- Site 5 - 15,252 mm/hr to 71,784 mm/hr



As noted and shown in the figure above the five sites have all maintained infiltration since construction without any maintenance efforts being implemented to restore permeability. Apart from Site 3, the infiltration throughout all the sites exceeded the rainfall intensity of 292.5 mm/hr expected for a 100-year storm that is 5 minutes in duration. At Site 3 more than half the test locations had an infiltration rate that exceeded the maximum rainfall intensity of 292.5 mm/hr (5 min duration, 100-year storm). The maximum infiltration rates demonstrate the anticipated performance of Stormflow during rain events having high intensity and short duration.