APPENDIX I:
HYDRANT FLOW TESTING PROTOCOL

InnServices – Hydrant Flow Testing Protocol

1. Preparation prior to Hydrant Flow Test:

- Hydrant flow testing shall be arranged through InnServices Water Operations by email (iuiwaterappt@innservices.co), a minimum of two (2) weeks in advance of the proposed hydrant flow testing date.
- Verify with InnServices the date and time of the test for approval and to confirm the system will be fully operational on that date.
    - Flow test should be conducted during peak hours in the morning to reflect the worst-case scenario.
- Confirm with InnServices by a sketch which hydrants are to be used for the Flow Hydrant(s) and the Residual Hydrant, and adjust locations at InnServices discretion based on available system information for each water system and modelling, if required.
- Provide confirmation to InnServices that the personnel who will be conducting the hydrant flow testing will be following NFPA 291 guidelines.
- Confirm with the Town of Innisfil any permits or approvals needed such as a Right-of-Way Activity Permit (ROP) and provide InnServices with an approved copy of the permit.
- Ensure testers have all required testing equipment, safety equipment and traffic control equipment.
- Ensure that hydrant flow test will not be performed below zero degrees Celsius.
- Testers to contact InnServices 48 hrs prior to testing to confirm that the system is still good for testing.

2. On-Site Preparation:

- Upon arrival, check in with InnServices to reconfirm the system is fully operational and that watermain mainline valves are all fully open.
- Confirm the hydrant locations, discharge location, treatment method of water flow and any impact to traffic and residents prior to start of testing.
- Confirm temperatures are acceptable for the testing to occur.
- Confirm that secondary valve is fully open and that hydrant is in good operating condition prior to beginning flow testing.
- Ensure traffic control measures are in place prior to testing.

- Ensure all safety measures are in place prior to testing.

3. Performing the Hydrant Flow Test

- Tester shall conduct hydrant flow testing in accordance with the guidelines set out in the current edition of NFPA 291.
- At the Residual Hydrant:
    - Check the secondary valve.
    - Install all testing equipment to hydrant.
    - Open the hydrant slowly and bleed out any air from hydrant barrel.
    - Verify that the hydrant is functioning properly and is fully open.
  - At the Flow Hydrant:
    - Check the secondary valve.
    - Install all testing equipment to hydrant.
    - Install diffuser for discharge.
    - Add the de-chlorination tablets or other treatment method approved by InnServices.
    - Open the hydrant slowly and bleed out any air from hydrant barrel.
  - Obtain and record the Static reading from the Residual Hydrant.
  - Open one port from the Flow Hydrant and record the Pitot Pressure and record the start time of test.
  - Monitor residual gauge to ensure system pressure does not drop below 20 psi (138 kpa).
  - Record the residual reading from the Residual Hydrant.
  - Open a second port from the Flow Hydrant and record the Pitot Pressure.
  - Monitor residual gauge to ensure system pressure does not drop below 20 psi (138 kpa).
  - Record the residual reading from the Residual Hydrant. Slowly shut down the Flow Hydrant.

4. Completion of Hydrant Flow Test

- Restore the site to how it was found and ensure there has been no property damage.
- Be sure to drain / pump-out the hydrants, re-install Anti-Tamper-Device's (if required).
- Complete a **Fire Flow Test Report** and submit a PDF copy, signed by the tester, to InnServices via email. Review results to confirm the results obtained are reasonable based on available system information. The report shall include the following information at a minimum:
    - Test date and time;
    - Location description, including a Key Map that shows adjacent streets and hydrant info (residual & flow hydrant(s));
    - Name of InnServices Water Operator that was present;
    - Name of Company and name of tester that conducted the flow test;
    - Brief statement from tester confirming the test has been conducted in accordance with NFPA guidelines;
    - Table showing the following information:
        - Static pressure (psi), watermain size, test number, number of outlets, outlet inside diameter (in), discharge coefficient, residual pressure (psi), pitot pressure (psi), flow (US GPM). A minimum of two (2) sets of flow data are to be obtained during the test
    - Test readings plotted on a Pressure vs Flow Graph
    - Brief description of condition of hydrant, noting any minor defects (ie. Paint/rust issues, broken hydrant marker, slow leaking seals, etc.)