December 14, 2021

Marilyn Toft, City Council Secretariat
City of Toronto, City Hall, 100 Queen Street West, 12th floor, West Tower,
Toronto, ON M5H 2N2
Via email: councilmeeting@toronto.ca

Dear Councillors and Mayor Tory,

RE: EX28.6 Toronto Water budget [and related impacts on EX26.16 TransformTO Net Zero Strategy also] **-**

We are writing to show our support for you to **amend*** and **adopt** the **Toronto Water** budget *as outlined here.

We are writing as we are concerned about microplastics, and sewage-related hygiene items, being found on shorelines, and in water and wastewater treatment systems, impacting Toronto's drinking water, wildlife, climate change, and biosolids applied to local agriculture, etc., and to inquire about and request: could you please make further motions regarding City of Toronto Water sewer blockages, pipes leaking, and replacement of lead and other aging pipes, etc., specifically for more and better: monitoring and data; reporting; and communications, at City Council (CC) December 15, 2021?

There may be opportunities for the City of Toronto to:

1. increase awareness of, and therefore save money - by reducing sewer system blockages arising from items that shouldn't be flushed, including "flushable" single use wipes and other sewage related hygiene items ("floatables"), fats, oil, grease ("FOG"), and PPE, etc. that result in 'fatbergs' or 'rag monsters' - and reduce litter from sewage treatment bypasses and combined sewer overflows also, which would improve shoreline and water quality and City alignment with Toronto's Biodiversity Strategy, and reduce microplastics in Toronto waterbodies (our drinking water source);

2. save money and reduce GHG emissions by reducing City water pipe leaks;

3. improve communications about Toronto Water; and more!

Below are: recommendations (draft wording for potential motions); summary and background, with 48 footnotes thus far.

Thank you for your assistance with this,
Ms. A. Pope
Coordinator (Volunteer)
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Toronto, ON M6J 0A8

Recommendations:

City Council request the General Manager, Toronto Water, to:

1.) provide a budget briefing note to *IEC or City Council* by *January 11 or February 2, 2022*, on what monitoring is done, data exists, and is included in the 2022 Budget, about City of Toronto:

a.) (i.) sewer blockages, (ii.) sewage treatment bypasses, (iii.) combined sewer overflows in wet weather, and (iv.) dry weather overflows (where development has outpaced capacity?)[1] [2]; and include: location (district, ward, address); size (solid waste weight); contents and causes*; frequency (number); impact (number and type of customers impacted and length of pipe impacted); age and condition of pipe; associated costs (time and dollar value to remove and process the blockage out, and dispose of it in landfill)*; trend (whether they have increased or decreased), and improvement plans with timelines**;

* including whether Ontario's Extended Producer Responsibility (EPR) program will allow the City of Toronto to recover any of those costs, and if so, what the estimated dollar amount is;

** including a report on the effectiveness of education and awareness programs[3] conducted by Toronto Water, a jurisdictional scan of best practices elsewhere, and recommendations for the next education and awareness campaigns, restrictions, and other measures to be taken by the City of Toronto to reduce improper disposal of items in Toronto's sewers and waterways;

b.) water and wastewater systems ((i.) water intake, (ii.) treated water distribution, and (iii.) wastewater) pipes leaking[4] [5] and include: location (district, ward, address); size (water volume); causes; frequency (number of occurrences); impacts (water lost, and associated excess CO2 emissions generated); age and condition of pipe; associated costs (time and dollar value to repair pipes and damage caused by water or wastewater, if any); trend (whether they have increased or decreased); and improvement plans with timelines; and,

c.) Toronto Water lead and other aging pipes replacement updates, including also progress on how many lead service lines remain to replace and by when they are scheduled to be replaced[6];

2.) provide a budget briefing note to *IEC or City Council* by *January 11 or February 2, 2022*, on what the status and progress is of the draft(?) Toronto Inner Harbour Floatables Strategy that was under review or has been developed(?), what work Toronto Water is responsible for going forward as its part in that, and where it is reflected in the Toronto Water budget for 2022 and future years.[7]

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[1] November 10, 2020: Water Monitoring Report shows dry weather overflows (Lake Ontario Waterkeeper).
[2] November 5, 2021: groundwater encountered at new developments is being diverted into the sewer system.
[3] toronto.ca/notdownthedrain/
[4] June 10, 2021: Study released (Residential and Civil Construction Alliance of Ontario) (PDF).
[5] March 10, 2017: "The Big Leak" episode (The Water Brothers) aired (TVO).
[6] City of Toronto: Water Service Replacement Program (2008-2018) (1); & Drinking Water System Reports (2).
[7] The draft(?) Toronto Inner Harbour Floatables Strategy has been under review or developed(?) (1, 2, 3)

3.) provide a budget briefing note to *IEC or City Council* by *January 11 or February 2, 2022*, advising on the work that Toronto Water's Environmental Monitoring and Protection unit is doing in its Outfall Monitoring Program, what details and reports are available, and where this is reflected in the Toronto Water budget for 2022 and subsequent years.[8]

4.) report to *IEC or City Council* by *January 11 or February 2, 2022*, on the feasibility of conducting the above detailed monitoring and gathering of data, as per (1.) through (3.)****, to be reported on an ongoing basis to IEC monthly starting Q1 2022 and published on the City's website in a user friendly dashboard that is easy for residents to find and understand, showing monthly, and current and historical annual, totals, and a hyperlink to the details;

****and including also:

d.) monthly progress status and updated completion date for the **DR&CW Project** - to eliminate combined sewer overflows (CSOs) in Don River and Toronto Harbour - and capacity to accelerate the completion[9] [10]; and

e.) a plan, including timeline and costs, to swiftly and permanently **eliminate CSO's in** Black Creek, Mimico, Humber River and **the west end shoreline** as soon as possible.(9)

5.) inquire and assess with the Canadian Water and Wastewater Association (CWWA), and Municipal Enforcement Sewer Use Group (MESUG), and report back to IEC by January 11, 2022, on how the City of Toronto can support efforts to urge the federal government to take swift action to regulate the term "flushable" and adopt stringent International Water Services Flushability Group (IWSFG) flushability standards, paired with strong consequences and support for education, awareness and enforcement for noncompliance.[11] [12] [13] [14] [15]

6.) inquire and assess with the UofT Trash Team[16], Fionn Ferreira[17], and other applicable experts*, and report back to IEC in Q1 2022, on City of Toronto: capacity to urge the provincial and federal governments to swiftly require (a.) microfiber filters on clothes washing machines[18], and (b.) magnetic microplastics capture devices for homes, buildings, water and wastewater treatment plants, be mandated for all new and existing equipment, facilities, and appliances, paired with strong consequences and support for education, awareness and enforcement for

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[8] Outfall Monitoring Program webpage at the City of Toronto website.
[9] November 10, 2020: Lake Ontario Waterkeeper 2019 Water Monitoring Report released.
[10] August 2021: City of Toronto website's DR&CW project overview webpage displaying updates.
[11] April 5, 2021: article, Wastewater Professionals Release Specification for Flushability.
[12] Sep 9, 2021: webinar about the preliminary class action lawsuit settlement between Charleston (SC) Water and wipes manufacturer Kimberly Clark, which was due in part to the IWSFG flushability standard.
[13] November 9, 2021: tweet mentioning advocacy for legislation to regulate the term "flushable" is coming with the Canadian Water and Wastewater Association (CWWA).
[14] The City of London, and Town of Cobourg, both in Ontario, each: have joined IWSFG.
[15] Municipal Enforcement Sewer Use Group (MESUG).
[16] Divert and Capture research on the effectiveness of filters available to add to clothes washing machines to capture 98% of microfibers, reducing microfibers in wastewater treatment plants and local waterbodies.
[17] An award winning inventor of devices developed to be commercially available in 2023 to use magnets to remove all types of microplastics from water and wastewater treatment plants, and homes, etc. with an 87% effectiveness rate.
[18] Express support to amend Ontario Private Members Bill 279 to include existing machines and adopt it.

noncompliance; and, the feasibility to obtain and implement (a.) & (b.) in all applicable City facilities, corporations, City and not for profit housing, and not for profit organizations, and, on a rebate basis for homeowners, multi-residential buildings, laundromats, and other water users.

*including also the effectiveness of other measures available to reduce microplastics in waterbodies including also: Enviropod Littatraps (storm sewer catch basin filters)[19]; distribution of pocket ashtrays; installation of “Ballot Bins” cigarette butt receptacles, and revisiting cigarette butt receptacles with Terracycle Canada.

Summary:

It appears Toronto Water experiences could be monitored with more useful quantifiable detail, and data about it reported to IEC monthly and findable easily on the City's website, or if Toronto Water is doing these things already, then there is room for it to be communicated better.

Toronto Water must be experiencing service interruptions and spending money on these issues, and able to show data as to whether these issues continue, due to which causes, with what frequency and severity, whether it is increasing or decreasing, whether education and awareness campaigns have had an impact, to what degree, and be able to reference and report on what is done in other jurisdictions that the City could consider doing to help improve experiences here and overall be continuing to work further toward improved water quality, service levels, and reduced unnecessary or avoidable costs over the long run.

Background:

- July 20, 2021: City of Toronto Strategic Communications advised in an email, "Toronto Water has not seen an increase in issues due to wipes, and FOG at this time", "There has been no increase in incidents of blockages” or "increased costs [to clear sewers]", and to attribute the quotes to Bill Shea, Director, Distribution & Collection, Toronto Water.

- June 30, 2021: 311 Toronto advised in an email, “that information isn’t available or collected through service requests that are submitted, please see the link for Open Data and you may search the City of Toronto’s Open Data Portal https://open.toronto.ca/.” [The information is not at the Open Data Portal, as far as our capacity to discern.]

- Both the above were replying to a Jun 25, 2021, email request sent to 311 inquiring about “Toronto Water’s experiences during covid, specifically the number and frequency of blockages and costs (which are contributed to by single use wet wipes, and/or PPE, FOGs & resulting fatbergs), and whether they have increased since Feb 2020”.

- April 16, 2020: Ontario “municipalities are reporting sewer blockages of increased size and frequency” since February 2020.[20]

[19] Enviropod Littatrap: Reducing Trash in our Waterways webinar (October 6, 2021), case studies, Trapping Trash and Diverting it from Our Waterways (March 24, 2021).
[20] April 16, 2020: interview featuring Barry Orr (TVO.org).

- June 23, 2020: “There is a need for increased public awareness of microplastic pollution in the marine environment from the inapt disposal of [wipes & other hygiene] products.”[21]

- Jun 10, 2021: 103 million litres of water daily - 10% of the water in Toronto’s pipes - was reported to have been leaking in 2004 (in 2021 is there more current data?), and Toronto is reported to have more than 1,200 watermain breaks every year.(4) (48)

- November 8, 2021: the 50th Water Environment Association of Ontario Symposium’s keynote presentation by Barry Orr was about sewer blockages.[22]

- Litter cleanup data shows hygiene items, including also PPE and sewage-related flushed floatables, are found in shorelines, parks and at storm sewers.[23]

- Aquatic wildlife are impacted by sewage[24] [25] & (38) and plastics[26]: City Council must work more in alignment with Toronto’s Biodiversity Strategy[27] and Bird Friendly City Certification.[28]

- Further anecdotal reports have arisen on more wipes, gloves, and various items tangled with single use wipes at combined sewer overflow locations including Black Creek.

- “Between 2010 and 2018, the City of Toronto logged nearly 10,000 calls per year from residences due to “sewer service line-blocks” relating to factors such as disposal of non-flushable materials down household toilets”.[29]

- April 19, 2019: “Toronto spends roughly $3.5 million a year on maintenance and repair costs from blocked sewers”.[30]

- May 12, 2021: Canada declared plastics as toxic.[31]

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[21] June 23, 2020: Study shared via Chelsea Rochman, B.Sc., Ph.D (Rochman Lab at University of Toronto).
[22] Water Environment Association of Ontario (WEAO) (September 29, 2021, November 8, 2021).
[23] Hygiene items including sewage related floatables as per litter cleanup data:
(i.) Love Your Lake by A Greener Future (2014 to date & 2021; notably (per further detail provided via email), 8,906 hygiene items collected since 2014, 2,838 of which were in 2021, 683 of which were picked up on Toronto shorelines;
(ii.) 2020 study published on cleanups in Toronto by University of Guelph researchers (1, 2);
(iii.) Urban Litter Challenge by University of Toronto Trash Team (2019; 2020; 2021 - notably, 327 personal hygiene items);
(iv.) Lake Ontario Waterkeeper (2019 - notably, 718 sewage related items; 2018, 2017);
(v.) Great Canadian Shoreline Cleanup (2017 to 2021 for Toronto (provided via email) - notably sewage related items: 1,061 (2017), 831 (2018), 1,159 (2019), 333 (2020), & 533 (2021));
(vi.) City of Toronto Litter data lists PPE and not other hygiene items(?).
[24] February 5, 2018: Study by McMaster University “wastewater effluent” can be harmful to fish (TVO.org).
[25] August 13, 2019: areas with higher wet wipes content have a smaller population of freshwater clams.
[26] May 6, 2021: Birds and Plastic Pollution - A Case Study in Toronto (A Greener Future; Ontario Nature).
[27] October 3, 2019: Toronto Biodiversity Strategy.
[28] May 7, 2021: Toronto certified as a Bird Friendly City: Nature Canada (continuing requirements).
[29] April 4, 2019: Study by Ryerson Urban Water and specialist Barry Orr (media release).
[30] April 19, 2019: “Mislabeled ‘flushable’ items damaging Toronto’s sewers” (CityNews).
[31] May 12, 2021: Canada added plastic manufactured items to Schedule 1 under CEPA.

- July 14, 2021: City Council directed "the General Manager, Toronto Water [...] to submit monthly update reports to the Executive Committee outlining important service request levels and trends".[32] [November 12, 2021: the Executive Committee Clerk advised in an email that they "searched [their] system and did not locate any reports on the matter".]

- November 2021: the Sri Lankan government proposed that the International Marine Organization (IMO)'s marine environment protection committee re-classify nurdles (pre-production plastic pellets) as hazardous goods; the IMO secretariat referred the issue to its pollution, prevention and response committee which meets Spring 2022.[33]

- December 8, 2021: Cell death, allergic response and damage to cell walls are caused by microplastics that people ingest, and are in many cases the initiating event for health effects: research in Journal of Hazardous Materials.[34]

- October 1, 2021: "Rate Supported Programs reported a favourable year-to-date variance of $8.6 million" for the six months ended June 30, 2021, and "a favourable projected variance anticipated to be $10.2 million" at December 31, 2021, "primarily driven by lower than budgeted expenditures from Toronto Water and Solid Waste Management Services".[35]

- July 14, 2021: "Rate Supported Programs reported a favourable year-end variance of $20.5 million" for the year ended December 31, 2020.[36]

- November 19, 2021: Toronto Water's 2022 Operating Budget is $471.228 million, and 2022-2031 Capital Plan is $15.082 billion.[37]

- July 14, 2021: City Council authorized "the General Manager, Toronto Water to undertake a review and stakeholder consultation on the Sewers By-law and Toronto Water's Pollution Prevention Program".[38]

- December 29, 2016: Toronto Water and sewer blockages were covered in the media.[39]

- "Combined Sewer Overflows (CSOs) and raw sewage released into waterbodies affects the environment, recreation, and our connection with the water.

    - In the environment, raw sewage and CSOs:

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[32] July 14, 2021: MM35.12 Item 2.) "Increase in 311 Toronto Service Request Reports and Accountability Measures".
[33] November 29, 2021: "Nurdles - the worst toxic waste you've probably never heard of - billions of these tiny plastic pellets are floating in [waterbodies], causing as much damage as oil spills" (The Guardian).
[34] December 8, 2021: "Microplastics cause damage to human cells, study shows" (The Guardian).
[35] October 1, 2021: EX26.6 "Operating Variance Report for the Six Months Ended June 30, 2021".
[36] July 14, 2021: EX25.20 "Operating Variance Report for the Year Ended December 31, 2020".
[37] November 19, 2021: BU35.2 "2022 Water and Wastewater Consumption Rates and Service Fees".
[38] July 14, 2021: IE23.6 "Water Users Consultation on Water Fees, Charges and Programs".
[39] December 29, 2016: "How Toronto's sewage system keeps us safe, from 'fatbergs' to preventing floods".

        - degrade water quality; impact fish survival; cause shellfish bed closures; can contaminate water supplies, and destroy aquatic wildlife;
        - can contain high concentrations of bacteria like E.coli and nutrients, elevated concentrations of metals and organic contaminants and are a source of plastic and debris to our waterways;
        - increase the water temperature and impact clarity, making it really cloudy;
        - threaten the health of our watersheds by introducing excess nutrients and decreasing oxygen levels;

    - Sewage contains phosphorus which in high amounts can lead to algae blooms, which is an issue in many of our Great Lakes [including Lake Ontario] threatening wildlife, and posing a huge health risk for recreational water users."[40] [41]

        - Some blue-green algae (also called cyanobacteria) blooms produce harmful toxins that can be released into the water and can be harmful to humans, causing skin irritations, sore throat, and if swallowed, liver damage, fever, and diarrhea,[42] and result in death for pets.[43]

    - "In the US, 4.04 billion surface water recreation events occur annually, resulting in 90 million illnesses nationwide - the healthcare costs are $2.2 billion to $3.7 billion annually - including skin, wound, respiratory, and ear infections, and up to 67 deaths, and occur from swallowing contaminated water, breathing contaminated vapours from the water, or eating contaminated fish.

      In Canada, an estimated 400,000 people a year get sick from contaminated water."(40)

- 2% of microfibres are not filtered out at wastewater treatment plants: "millions of microplastics and microfibers per day directly released to aquatic environments"[44]

- 22 million pounds of plastic enter the Great Lakes every year. Of that, three million pounds of plastic ends up in Lake Ontario annually.[45]

- All of the other great lakes feed into Lake Ontario first, then the St. Lawrence River and Atlantic Ocean afterward.[46] Lake Ontario is home - and a source of drinking water - for up to 9 million people living in Ontario, Canada, and New York State, USA.[47]

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[40] February 9, 2021: "The Impact of Sewage in the Great Lakes" (Lake Ontario Waterkeeper webinar).
[41] July 27, 2021: "Toxic blue-green algae found in Hamilton Harbour" (CBC News).
July 27, 2021: "Toxic Blue-Green Algae Has Been Found Across Ontario This Summer" (Narcity.com).
August 27, 2020: "Toxic blue-green algae in Ontario has been discovered in multiple areas" (Narcity.com).
July 17, 2018: "Toronto Public Health warning concerning blue-green algae blooms in Humber Bay East".
[42] July 2, 2021: "Toxic Algae Shows Up On Lake Ontario Shoreline in Niagara" (Niagara At Large).
[43] July 20, 2019: "three dogs died in Canada after being exposed to [blue-green algae] in 2018" (Narcity.com).
[44] 2016-2019: up to 2% of microfibers not removed at wastewater treatment plants (via UofTTrashTeam).
[45] 2016 (via Plastic Lakes Project).
[46] Via: Plastic Lakes Project & Lake Ontario Waterkeeper.
[47] Via: Lake Ontario Waterkeeper.

- Microplastics come from: microfibers (laundering natural and synthetic textiles releases microfibers from washing machines into wastewater, which water and wastewater treatment plants filter some, not all, of, and from clothes dryers into the air; wearing or using textiles sheds microfibers into the air also); cigarette butts; pre-production plastic pellets; vehicle tire dust; macroplastics breaking down; fishing gear; and in runoff of microplastics and nanoplastics in sewage biosolids applied to agricultural land; and,

- Microplastics are known to*:

    - have been found in tap and bottled water, birds, fish and other aquatic life, beer, table salt, sugar, honey, the air, and people - adults, placenta, and baby poop;

    - release from plastics in tea bags and liners of takeout beverage cups;

    - contribute to climate change (relates to Toronto's Net Zero Strategy, etc.) upstream, and downstream in waterbodies;

    - contain, leach, absorb and adsorb toxic petrochemicals (that are associated with being hormonal disruptors, carcinogenic, cardiovascular and other health issues, immune responses); and

    - transport pathogens.

        - [*a dozen+ footnotes could be found and referenced here if they are required (our sincere apologies: we're grassroots volunteers and did not manage capacity to insert additional footnotes yet beyond the 48 so far].

- Toronto's waterbodies could be centered more visibly in the Toronto Water budget, department, and in communications and education of Torontonians.

    - Lake Ontario does not seem to be mentioned as Toronto's drinking water source up front in the Toronto Water 2022 Budget;

    - 'Lake' seems to be mentioned: three times in the Toronto Water 2022 BudgetTO presentation, twice as an outfall; four times in the Toronto Water 2022 Budget Briefing Note, thrice as an outfall; and not at all in the press release or Toronto Water's department page on the City's website.[48]

About Zero Waste Hub Toronto

Zero Waste Hub Toronto (est. 2018) is a grassroots not for profit organization, the founder and organizer of Toronto's first two zero waste fairs (May 2018 and 2019), and works with established local organizations and green groups to help promote waste reduction education, awareness, and opportunities, and create a zero waste future for Toronto.

[48] City of Toronto website: 1, 2, 3, 4.