

## Flood Risk and Management Q&A

- Where would the water be pumped?
  - Based on the conceptual design, the intention would be for the water to be directed to Lake Pisiquid.
  
- Can you add storage in the short term to help alleviate flood risk?
  - Storage was considered a short-term measure to prevent overflows, but it would require storing combined sewer overflows (CSO), a mixture of stormwater and wastewater, in an open pond. CSO storage would also be a large undertaking with high capital costs and result in the loss of significant public space. Given the low-lying area and high groundwater, the storage would be susceptible to groundwater intrusion, requiring additional engineering intervention, including lining and pumping systems to drain the ponds.
  
- Is there ever a time when the lake gets too high, and we can't pump water to it?
  - We can pump water to the lake unless the lake floods the area by overtopping the former rail corridor.
  
- Will we be able to upgrade pumps, ponds, etc., if things get worse?
  - The proposed design is based on 2090 climate projections; however, upgrades and upsizing would be possible if required.
  
- Are there existing check valves in place on the system, or if things max out, does it all head down to the lowest areas of town?
  - The only existing check valve in the current system is on the outlet of the overflow (CSO) pipe from PS1 (Windsor Lift Station 1, located at the waterfront); this prevents lake water from entering the system. See the image below for the location of PS1, where the check valve is located.



- If you separate the lines, can stormwater still get into the sewer line?
  - In theory, once the system is separated, it will be a closed system; however, there will always be areas of potential inflow and infiltration (I&I) into the sanitary system. Groundwater (infiltration) seeps into sewer pipes through cracks, leaks, or faulty connections. Stormwater (rainwater) enters the sewer system through illegal direct connections like roof drains, sump pumps, downspouts, foundation drains, or holes in manhole covers (inflow). The hope is that these illegal connections will be removed from the system.
- If there is a flood this summer, will anything be different?
  - Until there are other improvements completed as identified, municipal staff will continue to operate and maintain systems and respond where necessary.

## Storm Standards and Data

- Is the CBCL data using the most recent storms?
  - Yes, the CBCL data includes the most recent storms and climate change projections. Flow metering was conducted in the spring of 2022 and 2024. We calibrate our models using real-world rainfall events and sewer flows to provide more confidence in the calculated results.
- When was the last time 100-year storm standards were upgraded?
  - The 100-year design storm used in the model was a 30% increase over the Intensity-Duration-Frequency (IDF) curves for Kentville, NS, which was last updated in 2023. The IDF curves represent the relationship between rainfall intensity, duration, and frequency and help engineers, hydrologists, and planners assess the risk of flooding and plan infrastructure accordingly.
- If this will take 25 years to fix, will we need to update the 100-year storm standards?
  - All climate change projections are just that – projections. However, the scientific community has made significant advancements in understanding climate patterns, lending greater confidence to these projections. The industry attempts to use best practices to predict an upper and lower limit for how storms may behave in the future. While it's important to acknowledge that future design storms may fall outside this range, either lower or higher, the increasing reliability of climate models allows us to be more informed about potential scenarios and prepare accordingly.
- Is there a timeframe for CBCL to advance this to a Class B design/estimate? How would that unfold to get to a Class B? Isn't that needed for discussions with government?
  - Given the amount of conceptual design completed to date, CBCL is confident the drawings could be used to start conversations with various levels of government. In

addition, once a specific project is identified and selected, we can advance the designs and estimates to a Class B level of detail.

## Infrastructure and Construction

- What is the maximum output of the pipe to the river?
  - Albert Street Outfall Maximum Flow Rate:  $1.14\text{m}^3/\text{s}$
- What will be the maximum output of water from the overflow workstation?
  - Stannus Street Pump Station Max Flow Rate:  $6\text{m}^3/\text{s}$ .
- If the project is approved, does this mean there would be constant construction in different areas of town for years?
  - This project will take many years to complete, resulting in prolonged construction. We will do our best to minimize the impact on residents, businesses, and visitors, but there will be disruptions to typical vehicle and pedestrian routes, and municipally supplied temporary water and wastewater infrastructure will be required.
- What is the timeline for the upgrades?
  - The upgrades proposed are significant and will likely be done in phases over 10 to 20 years, depending on the funding, contractors, and approvals.
- Are we moving the problem elsewhere by doing the projects in phases?
  - No. A phased approach aims to prevent moving the problem from one area to another by directing and moving the surface water to the lake.
- Can you comment on the scale of this compared to other municipal infrastructure projects in terms of size and complexity?
  - In terms of size, scale, and cost, this would be the municipality's largest and most complex infrastructure project.
- If you had the money and reasonable resources, how quickly could you implement this plan? Could you do it in 10 years rather than 20 years?
  - It could be possible to do the work in an expedited timeframe, but there are many variables to be balanced, including the cost, impact on taxpayers, community disruption, funding, contractor availability, and regulatory approvals.
- What grants or programs is West Hants participating in?
  - Applicable grants and infrastructure funding opportunities are applied for whenever available to us.

## Sewage and Odour Issues

- Would separation resolve the issue around the smell of sewage?
  - It is normal to occasionally smell odours from catch basins, as they are essentially vents for underground sewer systems, which can contain decaying organic matter. Separation would result in fewer odour incidents, especially in and around open catch basins.
  
- With the modelling you have today, can you determine where odours would be?
  - The hydraulic model used illustrates the effects of changing demand and climactic conditions on water distribution and wastewater collection systems. It is not designed to evaluate odour; however, the model could be used to determine the age and velocity of the sewer within the pipes, which can be used to identify areas where odour generation is possible.