

EXECUTIVE DIRECTOR'S REPORT

January 19th, 2022

1. **Readings** – Hired a new part-time well reader and started our first set of readings for 2022.

2. **Meetings and Calls**–

- Provided testimony via Zoom for the Boston Water & Sewer Commission (BWSC) 2022-2024 Capital Improvement Program. (11/23). NOTE: A copy of my testimony is attached at the end of this report.
- Attended via Zoom the City's Building Energy Reporting and Disclosure Ordinance (BERDO) Reporting and Data Verification Listening Session. (12/1)
- Met with representatives of Vicinity Energy to discuss exploring water sustainability programs and location where the company may assist with groundwater recharge. (12/3)
- Presented to the BWSC construction and operation divisions. (12/6)
- Spoke with Jena Tegeler and Kannan Thiruvengadam about the Eastie Farm Resilience plan and best management practice for groundwater recharge. (12/9)
- Zoomed with Kristin Motte, Programs Librarian/Central Library Boston Public Library, about 2022 Groundwater Forum agenda and dates. (12/10)
- Attended scoping session via Zoom (12/13) wrote a comment letter (12/15) for the 2 Charlesgate West Project in the Fenway.
- Met with Garrett Dash Nelson, President & Head Curator Leventhal Map & Education Center at the Boston Public Library, about presenting to the Board. (12/13)
- Attended The Carbon Footprint of Wood Buildings & Mass Timber Performance seminar. (12/14)
- Microsoft Teams met with Wilko Koning, Senior Project Leader at Waternet in the Netherlands, to discuss wood pile foundations and water management. (12/16) NOTE: A copy of my notes from this call is attached at the end of this report.
- Microsoft Teams met with representatives from Environmental Systems Research Institute (ESRI) to kick off map upgrade project. (12/17)
- Zoomed with Tom Ready and Sara McCammond to discuss GCOD condition use permit requirements for project at 12 Farnsworth Street in the Fort Point Channel Neighborhood. (12/21)
- Microsoft Teams met with representatives from Environmental Systems Research Institute (ESRI) for working session on map upgrade. (1/5)
- Trained new Field Engineer to perform observation well network readings. (1/10)



- Microsoft Teams met with representatives from Environmental Systems Research Institute (ESRI) to setup ARCGIS online organization for the Trust. (1/12)
 - Presented the groundwater issue to the Boston Society for Architecture (BSA) Historic Resources Committee. (1/13)
 - Attended via Zoom the Public Improvement Commission (PIC) Commission Hearing. (1/13)
 - Testified via WebEx Zoning Board of Appeals hearings in December & January.
 - Communicated with residents, engineers, attorneys, & developers throughout the GCOD to discuss ZBA procedures and advised them on what they need to submit to meet the GCOD zoning.
3. **BluCloud Remote Monitoring Solution** – The 5 new units deployed in the Fall have been removed. They are being updated and recalibrated. The units are set to be redeployed this month.
 4. **City & State Agency Updates-** All agencies will provide updates on their efforts to address groundwater at the next City-State Groundwater Working Group meeting on Thursday January 27th.



Boston Groundwater Trust

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November 23rd, 2021

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Boston Water & Sewer Commission
980 Harrison Avenue
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Subject: Boston Water & Sewer Commission 2022-2024 Capital Improvement Program Testimony

Good evening. My name is Christian Simonelli, and I am the Executive Director of the Boston Groundwater Trust (BGWT). The Trust was established by the Boston City Council in 1986 to monitor groundwater levels in sections of the City where the integrity of wood pile supported building foundations are threatened by low groundwater. Wood piles will last indefinitely if they remain submerged by groundwater. If groundwater levels drop, the pilings can begin to decay, eventually leading to expensive foundation repairs (not covered by insurance) or, in the worst case, the total loss of the building.

After a period of dormant activity, the Trust was re-activated in 1997. Since that time our organization has made enormous progress including the installation of an 800+ observation well network to monitor groundwater levels. Most importantly the Groundwater Conservation Overlay District (GCOD), in Article 32 of the zoning code was created.

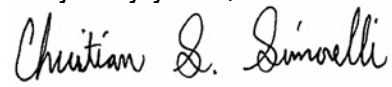
On the heels of creating the GCOD zoning the City-State Groundwater Working Group was also established. The Trust, the Commission, and several other City & State agencies signed a memorandum of understanding (MOU) and agreed to meet every quarter. At each meeting groundwater levels are reviewed. The agencies investigate & when warranted, repair underground infrastructure where groundwater levels are depleted. As a result, the Commission, along with the other agencies, have made several repairs over the years to underground infrastructure that has been found to be deficient. We have seen groundwater levels increase throughout our areas of interest because there are less leaks.



I am encouraged that the Commission's proposed 2022-24 CIP will address several long-standing areas where we have depleted groundwater levels. In addition, the Commission's investment in green infrastructure will also aid in maintaining groundwater levels. The less leaks we have, coupled with recharging more water into the ground, the better for the groundwater table and the wood pile supported buildings.

A personal thank you to John Sullivan and Irene McSweeney of the Commission. Both have been wonderful colleagues over the years in coordinating with our organization to address these matters. I look forward to continuing collaborating with them and other members of the Commission. Thank you for providing this forum and the opportunity to comment.

Very truly yours,



Christian Simonelli
Executive Director



12/16/21 10am Microsoft Teams Call

Wilko Koning, Senior Project Leader Energy, and water system Strandeiland IJburg at Waternet in Amsterdam

- Network of 2,800-3,000 observation wells read 6 times/year.
 - A bit too much. Some will be decommissioned and get them down around 2,500
 - Couple of hundred wells have dataloggers which are uploaded every 3-4 months
 - Most wells 20-30 years old
 - Some wells were installed in the 1930's when they started having issues with building settlement and sewers leaking
 - Funding for wells comes from Sewer work performed by Waternet
- Around 120,000-180,000 buildings supported on wood piles
 - 20%-25% have been underpinned
 - Records for about 80% of the buildings indicating building foundation type and cutoff elevation of the piles
 - Only about 40% of those records are accurate however
 - Have found different conditions during test pits and additional documentation that builders at the time chose a different pile cutoff based on existing groundwater levels at the time of construction
- Individual building owners responsible for maintaining groundwater level
 - Admit that is difficult due to a number of factors
 - Difficult for homeowner to prove infrastructure is cause for low groundwater levels which result in wood pile deterioration
 - Waternet not responsible for maintaining groundwater levels
 - Are responsible for maintaining their infrastructure and monitoring the wells
- No financial assistance for foundation repairs
- Subsidies for green roofs which can collect and store water to be recharged back into the ground
- High and low groundwater levels are an issue due to topography
- Trees also an issues
 - A typical tree can take about 150 liters ~ 40 gpd of water
- Looking at more opportunities for recharge
- Street redesign to divert, capture, and store rainwater for recharge
- Bioswales very popular and require little maintenance
- Moving forward would like to collaborate on data exchange and projects which research and measure the efficacy of porous systems
- Will follow up in early 2022 on a list of potential topics
- Did express interest in joining our 2022 forum

