

BOSTON GROUNDWATER TRUST (BGwT)
BOARD MEETING
July 11th, 2016

The Board of Trustees of the Boston Groundwater Trust held its meeting in the Heritage Room at the Lenox Hotel located at 710 Boylston Street. The Executive Director posted a meeting notice at Boston City Hall in accordance with the provisions of the Commonwealth of Massachusetts' Open Meeting Law. Mr. Mitchell, co-chair, called the meeting to order at 4:06 pm. The following trustees were present:

Mr. Tim Mitchell, Neighborhood Association of the Back Bay
Mr. Gary Saunders, Boston Back Bay Association
Mr. John Hemenway, Beacon Hill Civic Association
Ms. Charlotte Moffat, Boston Conservation Commission
Ms. Janine Commerford, Greater Boston Real Estate Board
Ms. Lisa Soli, Fenway Community Development Corporation
Mr. Peter Shilland, Ellis Neighborhood Association
Mr. Austin Blackmon, Chief, Office of Environment, Energy, & Open Space

Also present:

Mr. Christian Simonelli, Executive Director; Ms. Mohona Siddique, Neighborhood Liaison at the Office of Boston City Councilor Josh Zakim; Mr. John Kastrinos, Lead Hydrogeologist, Haley & Aldrich

1. Adoption of the minutes of the May 12th, 2016 Meeting

Minutes were previously electronically distributed to Board members for review. Discussion followed. Mr. Hemenway, Trustee, moved to adopt the minutes. Ms. Moffat, Trustee, seconded the motion.

Voted: To accept the minutes of the May 12th, 2016 meeting.

2. Financial Report

Mr. Hemenway reviewed the BGwT's financial reports. Mr. Hemenway noted an approximately \$23,000 discrepancy between the May Fidelity statement and the Trust's QuickBooks report for the same period. He noted that he and Mr. Simonelli met with Fidelity representatives to discuss the discrepancy. He believes the matter has been corrected but will confirm the resolution of this matter once he has reviewed the recently-received June Fidelity statement. Discussion followed.

3. Open Meeting Notice Protocol

Mr. Simonelli reviewed the procedure for posting notice of upcoming board meetings. Discussion followed. Mr. Hemenway noted that the Commonwealth's Open Meeting law now requires all public entities to include the meeting agenda in addition to meeting location, date, and time. Discussion followed. Mr. Simonelli noted that he spoke with Ms. Maureen Feeney, Boston City Clerk, and she confirmed that, going forward, Board Meeting notices must include the agenda. Discussion followed. Mr. Hemenway requested that Mr. Simonelli obtain a written copy of the protocol from the Boston City Clerk. Mr. Hemenway also noted that Board by-laws pertaining to Open Meetings should be updated to bring them into compliance with these recent changes to the Commonwealth's Open Meeting law. Mr. Simonelli agreed to draft revised by-law language and bring it to the Board for a vote at the September Board meeting.

4. Discussion and Update on LightWell Project

Mr. Simonelli provided an update on the progress made by the LightWell project team since the last Board meeting. Discussion followed.

- An educational display on the importance of groundwater infiltration has been placed in the storefront window of the South End branch of the Boston Public Library. The display provides an overview of the LightWell project, and features two maps of BGwT data.
- Development and testing of the prototypes for the proposed BGwT LightWell installations is proceeding and is going well.
 - The electronics and programming are working well with the InSitu data logger. Depth levels can be read continuously and displayed on the LED matrix.
 - To extend battery life, display of data can be provided less frequently, for shorter time periods, or only during certain windows of time.
 - Options for securing the well cap have been developed.
 - Fabrication of the second prototype will begin shortly.
 - Development of the display for the prototype well is almost complete.
 - Currently working on developing crowdsourcing functionality through Bluetooth to enable the public to access groundwater data via smartphone.
- Installation of an interactive exhibit of the prototype has been delayed until at least late summer or early Fall, with location of the planned installation still to be determined.
 - The exhibit will have two components: a table with a touch screen top that will show mappings of groundwater for the 17 years of BGwT data, and an interactive, hands-on display that simulates a typical BGwT groundwater well, complete with electronic data logger and changeable water level. The groundwater well display will feature a see-through version of the prototype LightWell interactive cap to enable viewing of a transparent tube beneath it. This tube, which represents the below-ground portion of a well, will contain water and an electronic data logger to read the water level. By means of a hand-pump connected to a hidden reservoir, users will be able to manually change

the water level in the tube and observe how the change in water level is reflected by a change in the color of the well cap.

- The LightWell well caps could be ready for deployment soon as early Fall, pending the public process of approvals and formal approval of funding support by the BGwT.
- Proposed total Trust contribution is estimated to be \$20,000. Formal approval of the project and the Trust contribution will be put forward for a vote at the September meeting.

Mr. Mitchell suggested that Mr. Simonelli request that the LightWell project team attend the next Board meeting. Mr. Simonelli stated that he would contact the team and confirm their availability. Discussion followed.

5. Presentation by John Kastrinos of Haley and Aldrich on the Hydrogeology of Boston

John Kastrinos of Haley and Aldrich presented the Hydrogeology of Boston and how it relates to groundwater levels in Boston. Highlights of the presentation were as follows:

- Geology of the Boston Basin
- The history of the land-making efforts and the impact this had on building foundations
- Groundwater levels in the fill stratum and their importance to the preservation of wood pile-supported foundations
- The negative effect an improperly installed well screen in the soils below the organic silt stratum can have on groundwater levels in the fill stratum
- The role deep excavations and infrastructure can play on negatively impacting groundwater levels in the fill stratum
- Progress made on repairing infrastructure and the installation of recharge systems installed through the City's GCOD zoning

Upon completion of his presentation Mr. Kastrinos held a question and answer session. Refer to the attached presentation for additional details.

6. Executive Director's Report

BGwT Executive Director Mr. Christian Simonelli distributed his report. Discussion followed. Refer to the attached *Executive Director's Report: July 11th, 2016* for a complete list of activities.

The meeting adjourned at 5:45 p.m.

NEXT MEETING: September 15th, 2016 @ 4:00 pm at the Lenox Hotel.

Notes submitted by Christian Simonelli, BGwT Executive Director, on 7/13/2016.

J. Commerford, Secretary: Approved




EXECUTIVE DIRECTOR'S REPORT
July 11th, 2016

1. **Readings** – We are in the process of finishing up our 6th set of readings of the year.
2. **Meetings** –
 - a. I met with Bill Fleming, resident of 118 Pembroke Street and Brian Timm, Project Manager for DiPrete Engineering to review the paving and recharge installation of private alley 527 (5/13).
 - b. I attended scoping sessions for the 2 Oxford Street project (5/25) and the 321 Harrison Avenue project (6/20) and wrote comment letters for both.
 - c. I attended the citizen's advisory committee meeting #4 for the Back Bay/South End Gateway Project (6/15) and wrote a comment letter for the project.
 - d. I met with the Trust Technical Advisory Committee (5/25).
 - e. I spoke and met with residents throughout the GCOD to discuss ZBA procedures and advised them on what they need to provide us to satisfy the zoning.
3. **MBTA** - Approximately 44.9 gpm is being injected into recharge wells in the area. In addition to our manual monitoring we have 4 wells in the area with dataloggers recording a water level every 60 min. Levels in the Appleton & Tremont Street area are lower than what was projected. Along with the MBTA's Engineer (GZA Geo-Environmental) I coordinated with BWSC and ISD for entry into buildings in the vicinity. Investigations are ongoing.
4. **Porous Alley 543** - We continue to datalog two wells in Porous Alley No. 543. A final report from CRWA is expected shortly.
5. **DCR** – The Storrow Drive Tunnel pump station system is operating as anticipated. Discharges in both pumps to the east and west have equal run times and are showing no anomalies. The low levels to the west of Berkeley Street along the Back Street have come back up and are stable. DCR coordinated with BWSC, inspected the infrastructure, and found no issues. I am not sure what caused the drop. I have installed 3 dataloggers in the wells that dropped to see if this occurs again. Internally within the next 6 months the DCR will look at underpass repairs and start to form a plan for what's next. Recharge will be part of the plan and will be looked for possible upgrade.
6. **BWSC** – Entry into the North End buildings along Commercial Street is being coordinated with ISD. BWSC will accompany ISD personnel to inspect buildings and check for sump pumps and laterals. A TV inspection of pipe along Richmond Street revealed a leak by the low well (25L-1586) at the corner of Richmond and Commercial. BWSC will continue to investigate. Pipe in question is at a low level elevation. BWSC noted that nothing was seen in manholes along Clarendon and Gray Streets. However, they still need to access some manholes in Clarendon as they were covered by parked cars. There may be lateral leak at the corner of Gray and Clarendon Street. Alley No. 430 work is setup to design and a contract will be bid in the Autumn of 2016, with construction is anticipated to occur in mid-2017. In the Stuart Street area between Berkeley and Dartmouth Streets steam lines are causing an issue for inspections. BWSC will coordinate with Veolia to help in accessing lines. Manholes along Fairfield Street by Beacon Street were inspected but no infiltration seen. Back Street manholes were also inspected and there may be some infiltration. BWSC will continue to look into manholes in Back Street. DCR recently inspected their storm drain line in Back Street and no infiltration was seen.
7. **MassDOT** - Additional inspection and repairs of the 30" portion of the Prudential Tunnel drain line is scheduled for later this month. So far wells in the area have shown a slight increase in response to the previous repairs that were made in early January.
8. **Veolia Energy** - The Copley Square Public Library and other smaller steam customers are still being investigated as possible locations. Veolia submitted data to DEP on discharge content. The permitting process was vetted and will be completed without any issues.
9. **Eliot Hotel** - The Eliot Hotel on Commonwealth Avenue has had water seeping in through their elevator pits. The problem first sprung up last May and occurred again this past December. BWSC tested the water and the results indicated that it was groundwater. The Hotel completed the water-proofing around two weeks ago and so far there have been no issues.

- 10. Website** - I have added some new content to our website. The most recent items are posted under our "Newest" tab on our homepage. As always, I would appreciate any feedback you may have.
- 11. Vacation** – I'll be on vacation from August 15-19.


Hydrogeology of the Boston Basin – Deciphering an Urban Watershed

John Kastrinos, P.G.
Haley & Aldrich, Inc.
Boston, MA

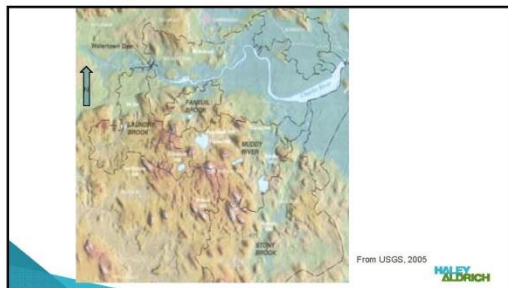
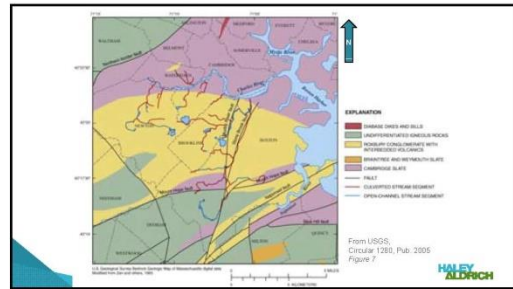



Agenda slide example


- 1 Geology of the Basin
- 2 Water, Wastewater, and Land-Making
- 3 Groundwater in Three Dimensions
- 4 Well Screens and other Sinks
- 5 Progress to Date

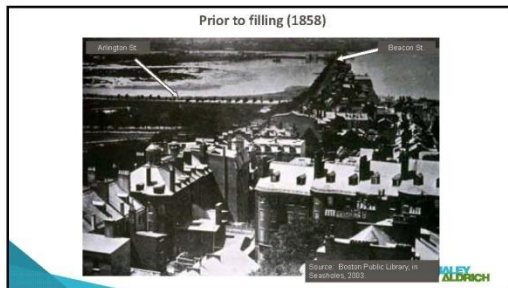
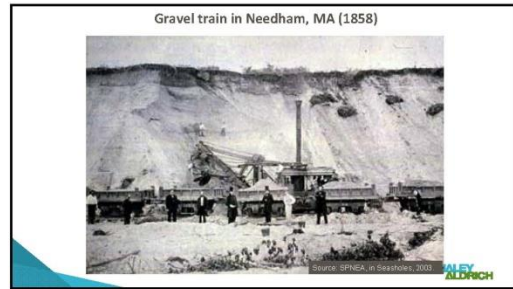
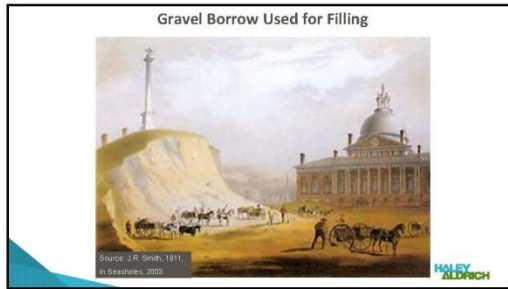


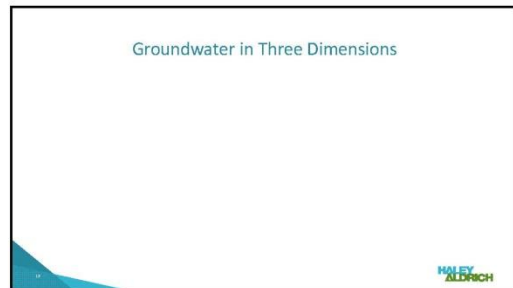
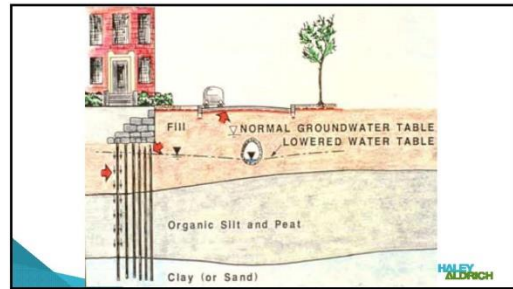
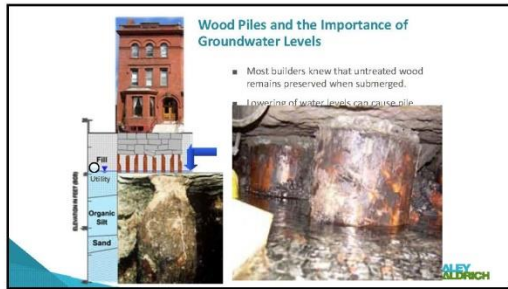
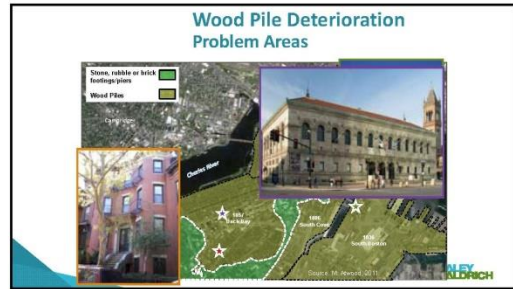
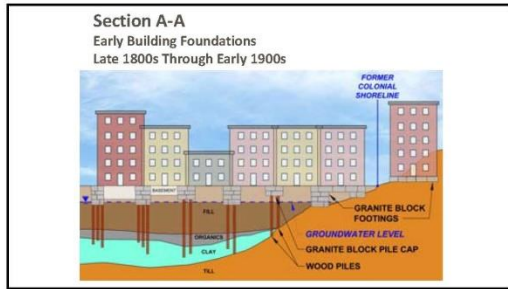
Geology of the Basin

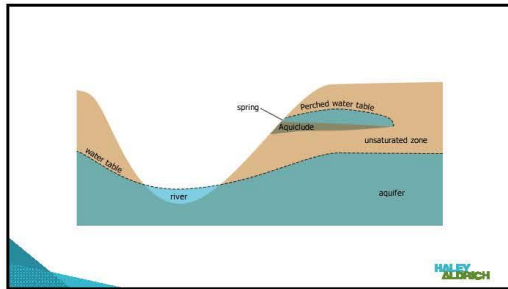
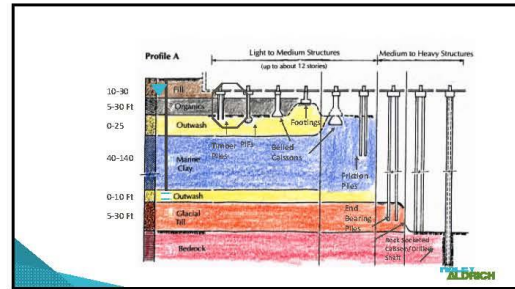
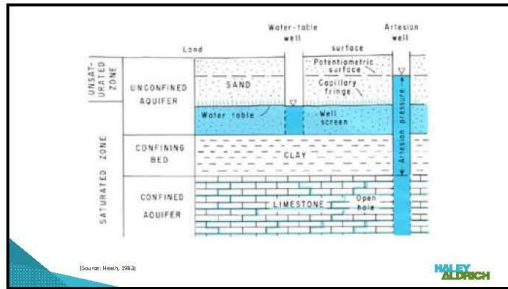


Water, Wastewater, and Land-Making

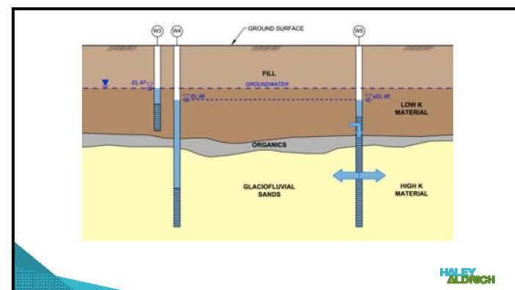
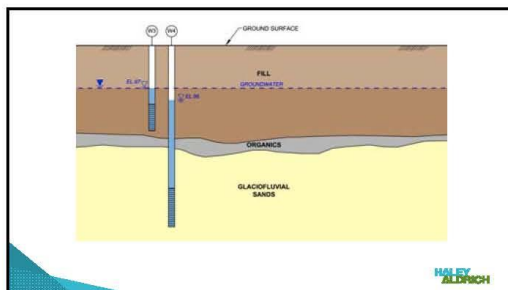


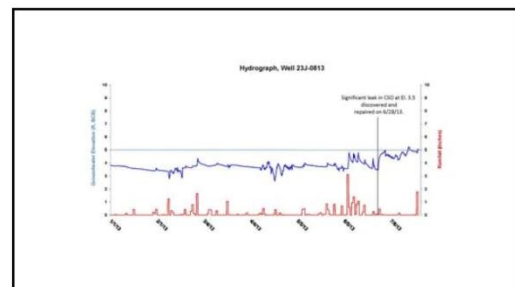
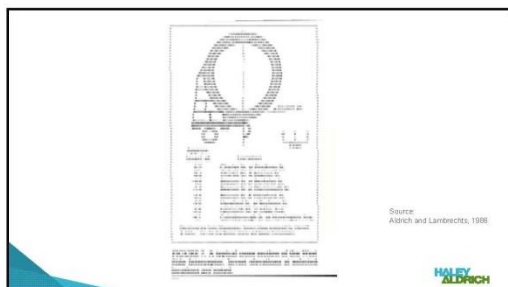
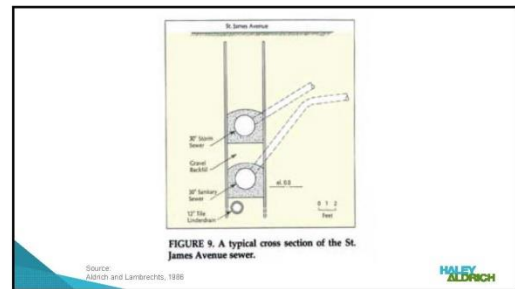
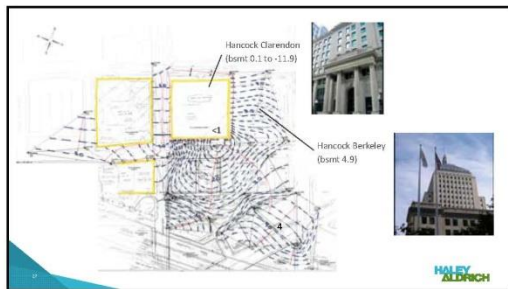
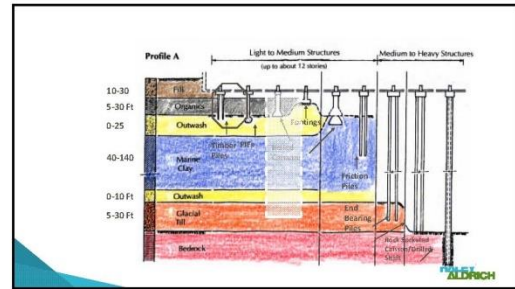
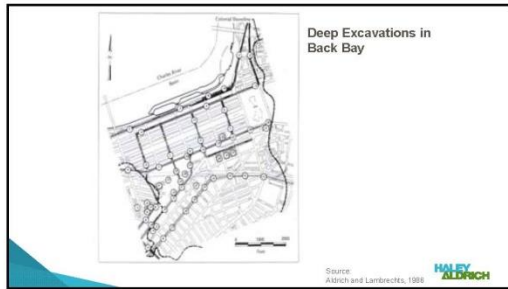


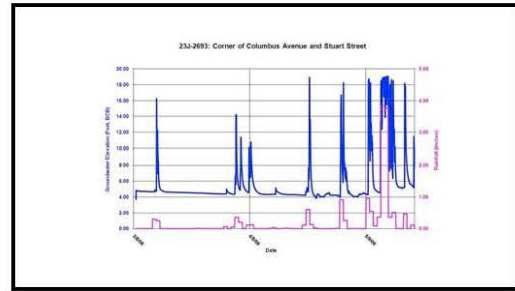
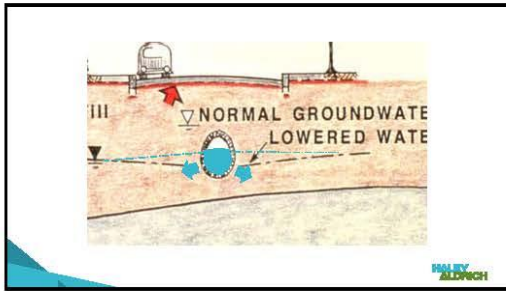




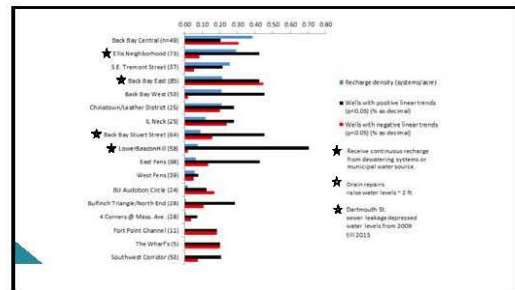
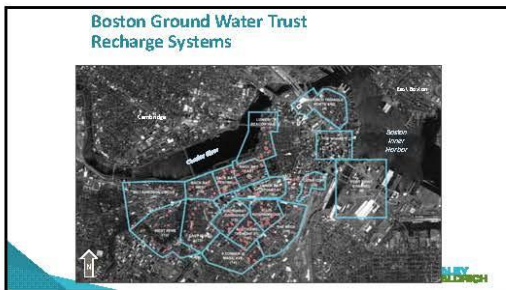
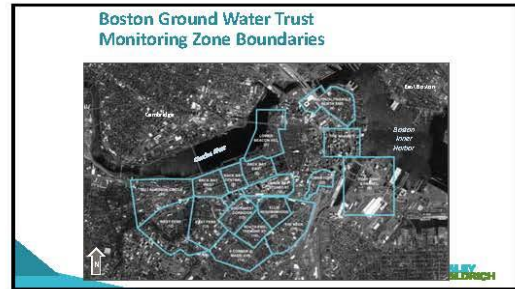
Well Screens, Sinks, and Sources







Progress to Date



Good references on Boston Groundwater and Wood Piles

- Seasholes, N.S., 2003, *Gaining Ground, A History of Landmaking in Boston*, MIT Press.
- Aldrich, H.L. and Lambrechts, J.R., 1986, Back Bay Boston, Part II – Groundwater levels: *Civil Engineering Practice*, v. 1, no. 2, p. 31-64.
- USGS, 2005, *Water Resources and the Urban Environment, Lower Charles River Watershed, Massachusetts, 1630-2005*, Circular 1280.
- Boston Ground Water Trust website – www.bostongroundwater.org

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Questions?

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