

CAMBRIDGE WATER BOARD

MEETING MINUTES

May 8, 2018

This meeting was called to order at 5:05 p.m. at 250 Fresh Pond Parkway, in Cambridge, Massachusetts. Those in attendance were:

Cambridge Water Board (CWB): Richard Johnson, Ann Roosevelt, Kathleen Kelly and Jason Marshall

Cambridge Water Department (CWD): Sam Corda, Fred Centanni, Mark Gallagher and Dave Kaplan

Cambridge Health Department: Sam Lipson

Consultants: Carol Rego and James Pescatore, CDM Smith

Visitors: Karen Falb, Madeline Fletdor, Shelagh Hadley, Jonathan King, Jamie Porreca, Janice Snow, Susan Strang, Barbara Taggart, Julie S. Vargas, E. A. Vargas and Deborah K. Walker

A. MINUTES OF APRIL 10, 2018 MEETING

Mr. Johnson moved and Ms. Kelly seconded the motion to approve the April 10, 2018 minutes as amended. The vote was unanimous in favor of the motion.

B. MANAGING DIRECTOR'S REPORT

This meeting is a public workshop with representatives from the Cambridge Public Health Department and CDM Smith to discuss the *Evaluation of Cured-in-Place (CIPP) and Other Plastic Pipe for Potable Water Applications in the City of Cambridge*. The purpose of this workshop is to propose and define the CIPP/Plastic Pipe study with input from all attendees of this public forum; which will be conducted over the next several months.

Mr. Corda opened the discussion with the following overview. The Cambridge Water Department, the City Manager and the Cambridge Water Board have agreed to study the CIPP Process and plastic pipe for possible potable water use in Cambridge. It is important to note that the CIPP product used in drinking water is different than that which is used for wastewater and stormwater applications. CIPP and other plastic pipe materials are approved for use in potable drinking water application by DEP for use in Massachusetts.

The Water Board voted on a resolution at the February 2018 Water Board meeting that supported a workshop/public forum to discuss the strategy for analyzing CIPP pipe materials

Currently we have used high density polyethylene (HDPE) and CIPP pipe in Cambridge as follows:

- i. Cambridge Park Drive into the AMTRAK/MBTA maintenance facility, approximately 800 feet of HDPE pipe installed around 2008. Stray currents made "swiss cheese" out of the ductile iron pipe in less than 10 years.
- ii. Along Main Street from Wadsworth to Ames, approximately 900 feet of CIPP installed in 2014. The water main was on the MBTA tunnel and was very problematic to repair.

- iii. HDPE under the Little River between Discovery Park and the Wetland Park at the end of Cambridge Park Drive, approximately 90 feet installed in 2011. This material was used to prevent premature failure from corrosion because the pipe ran under the river.

Mr. James Pescatore and Ms. Carol Rego from CDM Smith as well as Mr. Sam Lipson from the Cambridge Public Health Department attended the Water Board meeting to discuss a proposed scope to study CIPP and Plastic pipe.

Ms. Rego introduced herself as having over 36 years of experience, mostly in the specialty areas of drinking water quality and water treatment.

Mr. Pescatore introduced himself as having over 42 years of experience in the drinking water industry and with pipes of all sizes and types.

For Mr. Pescatore's work relating to the study he would define the possible needs and purpose that CIPP/plastic pipe would serve in Cambridge; identify all the various products and materials for drinking water applications: what they are, where and how are they used and what materials are in contact with the water (an example is that one of the CIPP products has polyurethane in contact with the water); develop a list of references on all of these materials; find and review research that has been performed, such as water quality information specifically relating to the material in contact with the drinking water; find and review available information from the American Water Works Association (AWWA), Environmental Protection Agency (EPA), the Water Research Foundation (WRF) and Trenchless Technologies, for examples; will look at independent research from the Metropolitan Water District of California, as another example; review the NSF Certification requirements and see what the thresholds are that they developed and any test results and/or studies.

Other municipalities, agencies and states that have used these materials in Massachusetts should be contacted to learn of any information that they may have. The report will discuss and determine if there have been any durability and/or deterioration issues with or relating to the lining material (in contact with the water).

Mr. Marshall stated that it would be probative for the report to state whether information was unavailable on a particular item or topic. Mr. Pescatore agreed to include such clarification in the report.

The Board submitted the following list of areas to be considered in the study process:

Worker Safety: Please discuss what is known about worker safety in handling and installing CIPP. What studies show chemical exposures that can be experienced by the public and workers?

There are several different vendor formulas of CIPP. Please cite field studies which provide publicly available data that prove each formula is safe and what conditions are needed for safe use.

Key Topics: Cured in Place Pipe (CIPP) for Drinking Water - Study Workshop

Please cite longitudinal field studies that identify which pollutants and how much leach out of various CIPPs over 5, 10, and if possible 20 to 50 years.

Discuss the publicly available field studies that have been conducted that analyze the effects of chlorine and other disinfectants on CIPP. Please provide copies.

An industry product testing organization, the National Sanitation Foundation International (NSF), certifies that CIPP installations for potable water pass a standard test procedure. Please describe when the water sample is collected, how it does or does not mimic water quality in Cambridge, include all NSF 61 original data that shows pollutant and leaching data from each vendor formula, shows how it was collected, and describes whether it is a bench or field study, and over what period of time the data was collected.

How long should CIPP be kept out of service after it is installed because of leaching? Please cite field studies, not bench studies to answer this.

What peer review studies identify how different installation conditions affect chemical releases from CIPP? Please cite peer review studies and data.

Please discuss the environmental effects of using CIPP. Include, but do not be limited by, studies related to materials emitted into the air during resin CIPP lining, field studies which discuss how plastics interact with drinking water as they age, any studies which discuss off taste of water, any studies which discuss problems with the lining and stability or other issues with CIPP.

Please discuss the human health effect of using CIPP, including but not limited to, how CIPP may interfere with the hormonal system and fertility, any links to cancer, and adverse behavioral effects.

Will the literature review be submitted for peer review to identify, for example, gaps in research or inaccuracies?

Once this information is compiled and reviewed, CDM Smith will develop a draft technical memorandum for review and discussion ideally at a public Water Board meeting to be held in either September or October of 2018.

Mr. Lipson introduced himself as having 20 years' experience in at the Cambridge Public Health Department working to address community concerns about hazardous chemical and biological hazards or potential hazards, with an emphasis on risk exposure and risk management strategies.

He began by relating a prior example of a community process in Cambridge intended to address risk concern, in 2000 when the risk from West Nile virus had newly emerged in the area. In that case there was very little available data on the virus as a human pathogen or the adulticide spray that was used to knock-down the vector carrying that virus. In the absence of significant information a decision still had to be made that balanced the risk of inaction against the potential risk of exposure to the pyrethroid insecticide used in truck spraying. The outcome was a good process that examined risks and uncertainties on both sides. Not everyone involved on the advisory team agreed completely with the final decision, which rested ultimately with the Public

Health Department, but everyone agreed that it was a fair and open process. In the end all points of view were well articulated.

Mr. Lipson proposed that the Water Department start this risk review by looking to understand the potential risks of the material that are involved in the CIPP process under consideration. He would work with CDM Smith once the specific products are identified, both the material in direct contact with the treated water and the epoxy layer that would not be in direct contact with water. This would include an informal evaluation of relative risk between using the proposed CIPP methods and materials in a few isolated locations and not using CIPP but relying on other methods of replacement or allowing certain sections to remain in place without improvement.

A risk review, even an informal one, would estimate a “worst-case” exposure scenario given the amount of CIPP-treated pipe being proposed and the rate at which exposed material might leach into the water supply. This would involve understanding the potential breakdown products and leaching capacity of the actual compounds in contact with the water and understanding what analytics to use to start with.

The final step would involve an examination of risk mitigation strategies in the event that CIPP with these specific materials and these treatment methods is used. This would include: 1) searching the literature for expected leaching rates of the polyurethane (interior) contact surface, 2) test for major breakdown products of CIPP material exposure to treated water in the one location where this method has been employed in the past, 3) continue to track peer-reviewed literature relevant to this material and method, 4) participate in field research opportunities in collaboration with other drinking water systems to improve and deepen available dataset and literature on possible exposures associated with this type of CIPP used in treated water delivery systems, 5) consider future removal or mitigation options available if major concerns emerge about the safety of the CIPP materials and methods currently being proposed, and 6) continue to consider alternate approaches and materials if new technologies that are deemed safer are available.

Once Mr. Lipson and the CDM team have completed this review we would hold another public meeting in November or December 2018 to share information gathered and to consider additional steps that may need to be taken to determine if CIPP and/or other plastic pipe solutions may play a beneficial role in the Cambridge water system.

There were questions about using materials other than Ductile Iron Cement Lined (DICL) pipes, which is our standard for repair or replacement of the 40” force and supply lines to Payson Park. These lines are currently being evaluated to determine their remaining life and at the completion of the evaluation and based on its condition, we will determine what the next steps will need to be.

At the close of the discussion Ms. Kelly asked if there could be a summary table developed, tabulating the various manufacturers of the CIPP product for drinking water use, the nationally recognized testing labs and the EPA certifications for each product.

C. OPERATIONS

Transmission and Distribution:

No comments

Watershed:

No comments

Business:

No comments

Water Operations:

No comments

Engineering:

No comments

D. ACTION ITEMS

None

E. MISCELLANEOUS CORRESPONDENCE AND ITEMS OF INTEREST

No comments

F. NEW BUSINESS

None

G. NEXT MEETING DATES/TOPICS

- June 12, 2018: Approved/FY19 Water Department Budget
- September 11, 2018: TBA/Study Workshop
- October 9, 2018: TBA/ Study Workshop
- November 13, 2018: TBA/Study Workshop
- December 11, 2018: TBA/ Study Workshop

Ms. Kelly moved and Mr. Marshall seconded the motion to adjourn the meeting at 6:34 p.m.
The vote was unanimous in favor of the motion.