EAST LYME WATER & SEWER COMMISSION
REGULAR MEETING
Tuesday, FEBRUARY 27, 2018
MINUTES

The East Lyme Water & Sewer Commission held a Regular Meeting on Tuesday, February 27, 2018, at the East Lyme Town Hall, 108 Pennsylvania Avenue, Niantic, CT. Acting Chairman Seery called the Regular Meeting to order at 7 PM.

PRESENT: Kevin Seery, Acting Chairman, Dave Jacques, Joe Mingo, Dave Murphy, Carol Russell, Roger Spencer

FILED
Mar 2 2018 AT 11:45 AM/PM
EAST LYME TOWN CLERK

ALSO PRESENT: Joe Bragaw, Public Works Director
Brad Kargl, Municipal Utility Engineer
Anna Johnson, Finance Director

ABSENT: Mark Nickerson, Chairman, Dave Bond, Steve DiGiovanna, Dave Zoller

1. Call to Order / Pledge

Acting Chairman Seery called the Regular Meeting of the East Lyme Water & Sewer Commission to order at 7 PM and led the assembly in the Pledge of Allegiance.

2. Approval of Minutes

- **Regular Meeting Minutes – January 23, 2018**

Mr. Seery called for a motion or any discussion or corrections to the Regular Meeting Minutes of January 23, 2018.

Ms. Russell asked that under Future Agenda Items that the sentence be changed to read that she was giving the update and not the intern.

****MOTION (1)**
Mr. Mingo moved to approve the Regular Meeting Minutes of January 23, 2018 as amended.
Mr. Murphy seconded the motion.
Vote: 6 – 0 – 0. Motion passed.

3. Delegations

Mr. Seery called for delegations.
There were no delegations.

4. Billing Adjustments

Mr. Kargl said that he had provided them with the listing and information on the four (4) properties that had qualified according to the '1 in 10' Leak Adjustment Policy.

Mr. Jacques asked if they had demonstrated what was required according to the plan.
Mr. Kargl said yes.

5. Approval of Bills – from Attachment B

Mr. Seery called for a motion on the Well 1A Treatment Project bill.

**MOTION (2)
Mr. Murphy moved to approve payment of the following Well 1A Treatment Project bill: Tighe & Bond, Inv. #011890022-023 in the amount of $52,358.42.
Ms. Russell seconded the motion.
Vote: 6 - 0 – 0. Motion passed.

Mr. Seery called for a motion on the Niantic Pump Station Upgrade bill.

**MOTION (3)
Mr. Murphy moved to approve payment of the following Niantic Pump Station Upgrade bill: Xylem, Inv. #400777965 in the amount of $9,121.68.
Ms. Russell seconded the motion.
Vote: 6 – 0 – 0. Motion passed.

6. Finance Director Report
Ms. Johnson said that she had provided them with her report. She noted that the sewer decrease was due to the New London Treatment fees being down (from 18% to 14%). She said that the pump station maintenance has also helped.

Ms. Russell asked if the New London fees would be something that would hit them at a later time. Mr. Bragaw said no. He added that while the New London and Waterford fees have gone up – ours have gone down due to less use.

7. Water & Sewer Operating Budget Status Report
Mr. Bragaw said that he had provided them with the report. The sewer side looks like it will finish the year around $100,000 under budget as the items are tracking very well. The water side however is another story. With the treatment plant costs to operate not going down but the billing revenues being down they are not doing well. They still have to do the same maintenance on the system and use the same chemicals.

8. Sewer Project Updates
- **Niantic Pump Station Emergency Upgrades**

Mr. Kargl reported that he had provided them with the update. The plan is to have this done by the end of March. The control closing check valves are still not in however they are hoping to initiate the project in mid March.

Mr. Spencer suggested a method whereby they could work and put the check valves in when they do arrive.

- **Niantic and Pattagansett PS – Draft Preliminary Engineering Reports**

Mr. Kargl said that he would review these reports and be able to share the information with them at their next meeting.

9. Water Project Updates
- **Well 1A and 6 Treatment Plant Modifications and Upgrades**

Mr. Kargl reported that there has been a bit of a 'hiccup' on Amendment #2 and they have found that they have to do the fire items. They are waiting on the information from the Fire Marshal and working on other items in the meantime.

Mr. Bragaw noted that the micro-grid for this area is not dean and that there may be another round coming up in April.

- **Orchards Booster Station**

Mr. Kargl noted that the study had come back with the next steps being to install an ultrasonic meter on the station to get information on the flow rate so that they would be in a better position to evaluate what is happening with regard to current build out and build out over time. The initial thought is that it is okay

for right now and that drops are most probably due to irrigating during the summer which may not have been planned for.

- **Capital Budget Status – Bride Lake WTP Filter Controls Upgrade**

Mr. Kargl said that he was looking for $60,000 fro the work to be done at the Bride Lake treatment plant. He noted how they could afford to do this in accordance with the capital budget for the water department.

****MOTION (4)**
Mr. Murphy moved to authorize up to $60,000 from the Water Construction Account for the upgrade of the Bride Lake Water treatment Plan filter controls and for improvements to the chemical feed pump monitoring systems by Integrated Control Systems, Inc.
Ms. Russell seconded the motion.

Mr. Mingo asked about having a discussion with the CEEP on how we are operating our wells.
Mr. Kargl said that they would never want to abandon Well 3B as it is a large production well. Well 6 is a 1M gpd well but the State has limited us due to an effect on the Pattagansett River even though it is an artisan well.
Vote: 6 – 0 – 0. Motion passed.

10. Water Rules and Regulations – Consider Update
Mr. Kargl noted that they are working on an update to the sewer regulations however they also have water regulations that are dated 1983. They would have to be revised to go along with the new meter program. He said that he would like the subcommittee to work on them but he would like to take a 'stab' at them first by marking up the existing rules and regulations for the subcommittee to further review.

11. Correspondence Log
There were no comments.

12. Chairman's Report
Mr. Seery reported that they are working on the budgets, the Town is coming in with a zero increase, and the school is looking for a 2.59% increase. He noted that the Fire Marshal is retiring. The Police Chief is the new Emergency Management Director.

13. Utility Project Coordinator Update
Mr. Bragaw noted that they had put the job offering out and only received two (2) resumes. He said that they would like to re-advertise a bit differently and have it cited as a 'Utility Engineer' and increase the pay level to $80,000 to $90,000. He noted that one of the field personnel on the water side gave notice and would be leaving on June 1 so this would give them some wiggle room to increase the salary range.

Mr. Mingo asked if anyone has stepped forward.
Mr. Bragaw said that there hasn't been much interest as there are four to five positions like this one out there looking to be filled so it is out at a time where others are also looking.
The consensus of the Commission was that the increase was a housekeeping issue.

14. Staff Updates

a. Water Department Monthly Report

Mr. Kargl noted that they had some breaks in January. They also sent over water to New London as planned.
Mr. Mingo asked about plastic or bronze water meters and which way they would go.
Mr. Kargl said that they were not there yet for any discussion on it.

b. Sewer Department Monthly Report

There was discussion regarding a potential subcommittee regarding the Tri-town agreement.
The Commissioners felt this was a good idea and that it is not too early to be thinking of it.

15. Future Agenda Items
Mr. Bragaw suggested that they could do a budget workshop during their March meeting if they wanted to. He said that he would have all of the numbers except for the revenue as they typically do not have those until April. If they add it to the March agenda they would not have to hold a Special Meeting in April.
Mr. Seery said that he would be chairing the April meeting and suggested that they could discuss it as the time grew closer so that they could see what items were on the March agenda.

16. Discussion of Community Water Fluoridation Thesis Paper
Mr. Seery asked Ms. Russell to give them the brief synopsis on this.
Ms. Russell said that she would provide Mr. Kargl with a complete copy so that he would have it in the office for anyone who wanted to read it. She explained how this came about and Jessica, an intern with LLHD did this as her college thesis during 2014 and 2015 and not for LLHD. It involves an overview of fluoride in the public sector and the various issues. Community water fluoridation began in 1945. Today the main benefit is seen as topical however it is still a controversial issue as fluoride is found in many items. There is not a lot of research on what is a safe amount; therefore there is a need for more recent studies.

Mr. Spencer said that the State requires us to fluoridate –
Mr. Kargl said that Towns of 20,000 in population are required and that we go over that amount during the summer period.

Mr. Mingo said that he did not want to hear anything more on this as it is not for them to be involved with this.
(Note: 8:18 PM – Mr. Mingo left the meeting)

Mr. Seery noted that if something conclusive comes along that he was certain that they would be notified.

Ms. Russell submitted NIH studies that she asked Mr. Kargl to forward to the DPH.

17. ADJOURNMENT
Mr. Seery called for a motion to adjourn.

****MOTION (5)**
Mr. Murphy moved to adjourn the February 27, 2018 Regular Meeting of the East Lyme Water & Sewer Commission at 8:25 PM.
Mr. Jacques seconded the motion.
Vote: 6 – 0 – 0. Motion passed.

Respectfully submitted,

Karen Zmitruk,
Recording Secretary

February 27, 2018

To: East Lyme Water & Sewer Commission
Fr: Carol Russell
Re: Potential Developmental Neurotoxicity of Fluoride – NIH Supported Studies

NIH Funded Study Links Prenatal Fluoride Exposures to Lower IQ in Children

In September 2017 results were published in *Environmental Health Perspectives (EHP)* from one of the first *longitudinal human* studies *using individual measures of urine fluoride levels* to assess whether prenatal and/or childhood *exposures to low levels of fluoride* may be neurotoxic. The study was conducted in Mexico from June 2012 thru February 2017 with funding from the **NIH National Institute of Environmental Health Sciences (NIEHS)**. The researchers followed 299 mother-child pairs selected from cohorts in the Early Life Exposures in Mexico to Environmental Toxicants (ELEMENT) project, the 1999 recipient of the **NIEHS** Progress and Achievement Award. The selected mother-child pairs were followed from pregnancy into childhood. Archived urine samples in ELEMENT taken from the mothers during pregnancy and samples taken from the children between the ages of 6-12 years were tested for urine fluoride levels. Cognition of the children was measured by a General Cognitive Index (GCI) at age 4 and a full- scale intelligence quotient (IQ) at 6-12 years. The study found a significant inverse relationship between the maternal fluoride levels and IQ of the offspring. Specifically, higher maternal urine fluoride (within the range of levels of exposure in other general population samples for pregnant women) was associated with lower IQ in the child. However, no association was found with cognitive or IQ performance and elevated fluoride levels in the child's urine at ages 6-12. According to co-researcher Dr. Howard Hu, *"This suggests that the prenatal nervous system may be more sensitive to fluoride than the nervous system of school-aged children."* The enclosed *EHP* article by science writer, Julia R. Barrett, provides a brief discussion of the study and its implications. (Reference Attachment 1) The full study, **Prenatal Fluoride Exposure and Cognitive Outcomes in Children at 4 and 6-12 Years of Age in Mexico**, can be accessed online at: *https://ehp.niehs.nih.gov/ehp655/*

NIH Supports New and On-going National Toxicology Program Research on Fluoride Neurotoxicity

The **NIH** is supporting on-going work by the **National Toxicology Program (NTP)** related to the effects of fluoride exposure on neurodevelopment. The **NTP** conducted a systematic review of 32 rat and mouse studies relevant to fluoride and learning. The results of this **NTP** review were published in 2016 and found low to moderate evidence "*linking fluoride exposure to decreased learning and memory loss.*" Currently, the **NTP** is in the process of conducting a separate systematic review of the scientific literature regarding how fluoride exposures in early life may impact brain development or behavior. In addition to this literature review of human, animal, and mechanistic studies, the **NTP** is conducting its own laboratory research with an emphasis on low fluoride exposures. Results are expected during 2018. Reference: https://ntp.niehs.nih.gov/pubhealth/hat/noms/fluoride/neuro-index.html

Attachment - submitted by CR

NIH Funds Large Human Study in Canada on Potential Developmental Neurotoxicity of Fluoride

On November 25, 2016 York University in Ontario, Canada announced receipt of a $300,000 grant from the **NIH** *"to lead the largest study to date that investigates whether early life exposure to low level fluoride affects the developing brain."* This is a two- year study so results will probably not be forthcoming until sometime during 2019. The researchers will have access to the data in Canada's comprehensive pregnancy cohort, Maternal Infant Research on Environmental Contaminants (MIREC). The study will assess cognitive and neurobehavioral impact of prenatal, infant, and childhood fluoride exposures related to community water fluoridation. The announcement explains:

> *"Fluoride concentrations will be measured using urine samples obtained in each trimester from a sample of 1,960 pregnant women living in 10 large Canadian cities – half of which add fluoride to municipal water. The study will also examine whether neuro-developmental outcomes differ among children who ingested infant formula using fluoridated versus non-fluoridated water. It will also examine whether serial urinary fluoride concentrations in pregnant women are higher in women who live in communities that fluoridate their municipal water."*

The full announcement is enclosed as Attachment 2.

For Discussion

I recommend that we forward this information to CT DPH for comment and guidance. It appears additional data, especially relevant to prenatal and infant fluoride exposures, is needed to insure the benefits of water fluoridation outweigh potential developmental neurotoxic risks. Perhaps Connecticut should err on the side of caution, and pause voluntary water fluoridation, until more results come in from these important NIH supported studies.

Attachment 1: *Environmental Health Perspectives* article, "Low Prenatal Exposures to Fluoride: Are There Risks for Children?" by Julia R. Barrett.

Attachment 2: *yFile Daily News* (York University), November 25, 2016, Announcement, *"York Professor Leads Study That Could Help Answer Fluoride Safety Questions."*

ATTACHMENT 1

A Section 508–conformant HTML version of this article is available at https://doi.org/10.1289/EHP2289.

Low Prenatal Exposures to Fluoride: Are There Neurotoxic Risks for Children?

Julia R. Barrett

https://doi.org/10.1289/EHP2289

As a trace element, fluoride can help ward off dental cavities. Exceptionally high pre- and postnatal exposures, as seen in populations whose drinking water supplies are contaminated by natural fluoride sources, have been implicated in a number of adverse health effects.[1–4] However, less is known about fluoride's neurotoxic risks at lower levels of exposure. A new study in *Environmental Health Perspectives* examines risks of exposure to prenatal fluoride at concentrations typical of the general population.[5]

In many countries, small amounts of fluoride are added to drinking water, salt, or milk to reduce the incidence of tooth decay.[6–8] The U.S. Public Health Service recommends an optimal level of 0.7 mg/L fluoride in drinking water for caries prevention.[2] Fluoride can also occur naturally in water, with concentrations exceeding 4.0 mg/L in some areas of the United States[1]; this is the maximum contaminant level for fluoride set by the U.S. Environmental Protection Agency.[6]

There is some debate regarding whether fluoridation is still needed for drinking water. Fluoridation of public water supplies was started in 1945 in the United States as a preventive measure to reduce the incidence of tooth decay.[9] Most of the evidence for the benefits of fluoridation was collected prior to 1975, before widespread use of fluoride toothpastes and dental treatments[1,9] and before modern assessments of dietary sources of fluoride.[1,10] However, for people who do not have access to proper dental care, cutting off water fluoridation could cause them to get too little fluoride.

With high exposure—typically exceeding the maximum contaminant level—fluoride can accumulate in teeth and bones, causing tooth discoloration and weakness as well as bone pain and increased fracture risk.[1] An additional concern is potential neurotoxicity, particularly during fetal development and early childhood.[1,4,11] In a 2012 review of studies conducted in China and Iran,[3] children living in regions with very high levels of naturally occurring fluoride in drinking water had lower scores on intelligence tests than children living in regions with low water levels of fluoride.

Philippe Grandjean, a professor of environmental health at the Harvard T.H. Chan School of Public Health who coauthored the 2012 review, notes that the advantage of the studies in China is that they were primarily conducted in rural areas where families remained in the same place for an extended time. Therefore, when a child was examined at school age, his or her current exposure to fluoride in water likely matched his or her prenatal exposures. "However, we do not have that kind of a setting in other parts of the world, necessarily, and particularly not in the United States," says Grandjean, who was not involved in the present study.

The authors of the new study[5] used data on 299 mother–child pairs collected through the Early Life Exposures in Mexico to Environmental Toxicants (ELEMENT) Project. Pregnant women recruited at three Mexico City hospitals provided urine samples during gestation, and information was collected regarding their demographics, lifestyle, and medical history. Their children's cognitive ability was evaluated at 4 years of age using the McCarthy Scales of Children's Abilities, and at 6–12 years of age, the children completed an IQ assessment (Wechsler Abbreviated Scale of Intelligence) and provided urine samples.

Higher levels of fluoride in mothers' urine during pregnancy were associated with lower cognitive and IQ scores in their children, but no association was found between the scores and the children's own fluoride levels at 6–12 years of age. Maternal and child urinary levels of fluoride averaged 0.90 and 0.82 mg/L, respectively. The authors estimated that each 0.5-mg/L increase in maternal urinary concentration was associated with an average decrease of 3.15 and 2.50 points in cognitive and IQ scores, respectively. The researchers recommend greater scrutiny of potential adverse effects of fluoride, particularly in pregnant women and in children.

The study's strengths include its longitudinal design, its large sample size, and the assessment of children's neurocognitive development using validated tests. However, the researchers could not rule out the impact of unmeasured variables, including total exposure to other neurotoxicants.

"So little research has been done on the effects of prenatal fluoride on neurodevelopment that it is difficult to know how to interpret the implications of this study," says study coauthor Howard Hu, a professor at the Dalla Lana School of Public Health, University of Toronto. "There are gaps that need to be addressed in order for the scientific world to better interpret the implications of

For people who get enough fluoride from toothpastes and dental treatments, fluoridated drinking water could result in overexposure. However, for people without access to proper dental care, fluoridated water is an important preventive measure. Image: © Ian Cartwright parenting/Alamy Stock Photo.

our study. And, of course, it is just one study, and these results need to be addressed with additional studies of its kind."

Julia R. Barrett, MS, ELS, a Madison, Wisconsin–based science writer and editor, is a member of the National Association of Science Writers and the Board of Editors in the Life Sciences.

References

1. National Research Council. 2006. "Fluoride in Drinking Water: A Scientific Review of EPA's Standards." Washington, DC:The National Academies Press.
2. U.S. Department of Health and Human Services Federal Panel on Community Water Fluoridation. 2015. U.S. Public Health Service recommendation for fluoride concentration in drinking water for the prevention of dental caries. Public Health Rep 130(4):318–331, PMID: 26346489, https://doi.org/10.1177/003335491513000408.
3. Choi AL, Sun G, Zhang Y, Grandjean P. 2012. Developmental fluoride neurotoxicity: a systematic review and meta-analysis. Environ Health Perspect 120(10):1362–1368, PMID: 22820538, https://doi.org/10.1289/ehp.1104912.
4. Choi AL, Zhang Y, Sun G, Bellinger DC, Wang K, Yang XJ, et al. 2015. Association of lifetime exposure to fluoride and cognitive functions in Chinese children: A pilot study. Neurotoxicol Teratol 47:96–101, PMID: 25446012, https://doi.org/10.1016/j.ntt.2014.11.001.
5. Bashash M, Thomas D, Hu H, Martinez-Mier EA, Sanchez BN, Basu N, et al. 2017. Prenatal fluoride exposure and cognitive outcomes in children at 4 and 6–12 years of age in Mexico. Environ Health Perspect 125(9):097017, https://doi.org/10.1289/EHP655.
6. U.S. Environmental Protection Agency. 2011. Questions and Answers on Fluoride. EPA 815-F-11-001. https://www.epa.gov/sites/production/files/2015-10/documents/2011_fluoride_questionsanswers.pdf [accessed 7 September 2017]
7. Marthaler TM. 2013. Salt fluoridation and oral health. Acta Med Acad 42(2):140–155, PMID: 24308394, https://doi.org/10.5644/ama2006-124.82.
8. Bánóczy J, Rugg-Gunn A, Woodward M. 2013. Milk fluoridation for the prevention of dental caries. Acta Med Acad 42(2):156–167, PMID: 24308395, https://doi.org/10.5644/ama2006-124.83.
9. Iheozor-Ejiofor Z, Worthington HV, Walsh T, O'Malley L, Clarkson JE, Macey R, et al. 2015. Water fluoridation for the prevention of dental caries. Cochrane Database Syst Rev (6):CD010856, https://doi.org/10.1002/14651858.CD010856.pub2.
10. Martinez-Mier EA, Spencer KL, Sanders BJ, Jones JE, Soto-Rojas AE, Tomlin AM, et al. 2017. Fluoride in the diet of 2-years-old children. Community Dent Oral Epidemiol 45(3):251–257, PMID: 28145570, https://doi.org/10.1111/cdoe.12283.
11. Grandjean P, Herz KT. 2015. Trace elements as paradigms of developmental neurotoxicants: Lead, methylmercury and arsenic. J Trace Elem Med Biol 31:130–134, PMID: 25175507, https://doi.org/10.1016/j.jtemb.2014.07.023.

ATTACHMENT 2

YORK PROFESSOR LEADS STUDY THAT COULD HELP ANSWER FLUORIDE SAFETY QUESTIONS

Source: yFile Daily News (York University) | November 25th, 2016

Location: Canada, Ontario

A $300,000 grant from the National Institute of Health (NIH) will allow York University to lead the largest study to date that investigates whether early life exposure to low level fluoride affects the developing brain.

Faculty of Health Professor Christine Till, principal investigator of the study, will use the funding to determine if prenatal and childhood exposure to fluoride impacts learning abilities and behavioural problems in young Canadian children.

Previous studies led by Till and former PhD student, Ashley Malin, indicate that fluoride in tap water is associated with attention deficit hyperactivity disorder (ADHD) in children and adolescents. Findings were determined using information collected by the National Survey of Children's Health as well as the Centre for Disease Control and Prevention (CDC) in the U.S.

This two-year study, however, will access data from a Canadian pregnancy cohort, Maternal Infant Research on Environmental Contaminants (MIREC), to determine whether or not there is a link.

The research team consists of scientists from complementary fields spanning environmental health (Professor Lanphear, Simon Fraser University; Professor Muckle, Universite Laval), dentistry (Dr. Martinez-Mier, Indiana University), toxicology (Professor Ayotte, University of Montreal), and environmental epidemiology (Professor Hornung, Cincinnati Children's Hospital).

"Our study employs a prospective design that includes biomarkers of exposure to fluoride, detailed assessment of potential confounders, a comparison group, and the use of sensitive cognitive and behavioural measures that have been collected in one of the world's most comprehensively characterized national pregnancy cohorts (MIREC)," said Till.

Fluoride concentrations will be measured using urine samples obtained in each trimester from a sample of 1,960 pregnant women living in 10 large Canadian cities – half of which add fluoride to municipal water.

The study will also examine whether neuro-developmental outcomes differ among children who ingested infant formula using fluoridated versus non-fluoridated water. It will also examine whether serial urinary fluoride concentrations in pregnar women are higher in women who live in communities that fluoridate their municipal drinking water.

"We are doing this research because it addresses a topic of great public health relevance for both Canada and the United States where community water fluoridation is a widespread practice. Scientific advisory boards, including the National Toxicology Program, conclude that there is insufficient laboratory evidence to support or refute the likelihood of fluoride neurotoxicology. We need high quality data to address this gap in knowledge," said Till.

"Results of the study will have the potential to strengthen environmental health risk assessments related to water fluoridation and inform policy decisions about the safety of vulnerable populations, including young children and pregnant women, consuming fluoridated water."

She describes the research as a "win-win" situation, where both potential outcomes will provide valuable information in the hotly contested fluoride issue.