4/27/16

Representative Madaro and City Councilor LaMattina submitted a letter with questions about Eversource’s proposed substation to the Energy Facilities Siting Board (EFSB). We are grateful for their interest, and we have taken the time to answer these important questions below:

1. *“Is there a demonstrable need for this substation in East Boston?”*

Not according to ISO-New England, the independent organization responsible for determining the region’s energy needs and implementing solutions to meet those needs.  ISO-NE has provided energy demand forecasts for the Chelsea-East Boston region through 2023, when it projects a net demand of 133 megawatts (MW).  The three transformers currently in operation at the Chelsea Substation – which also distributes energy to East Boston – can collectively distribute 140.7 MW of energy while operating within their “normal” rating (which Eversource defines as 75% of their total capacity).  Indeed, Eversource itself has conceded during hearings that **no additional substation capacity is needed** if ISO-NE’s forecast is correct.[[1]](#footnote-1) By its own calculations, the peak energy demand for East Boston has DECREASED for 2 consecutive years![[2]](#footnote-2) The peak demand for 2015 was only 108 MW – far below the Chelsea Substation’s capacity.

ISO-New England did not recommend an East Boston substation in its 2015 Greater Boston Transmission Solutions Study.[[3]](#footnote-3) Eversource initially told EFSB that ISO-NE had recommended the substation, but Eversource eventually had to admit this was not true.[[4]](#footnote-4)

Equally important, even if the demand forecasts for East Boston necessitated additional transformer capacity, there is no need to build a substation *in* East Boston. East Boston’s electricity is currently supplied from Eversource’s Chelsea Substation (#488), which can satisfy any increased demand with one additional transformer. Eversource is already planning to connect the Chelsea Substation to the Mystic Substation in Everett, which will increase its reliability.

The power issues in East Boston are NOT the result of a lack of transformer capacity, but rather distribution infrastructure that needs to be upgraded. The brownouts in February were caused by fires under manholes in the distribution lines under the streets.[[5]](#footnote-5)

1. *“What are the expected health impacts to the residents of East Boston?”*

Eversource’s own health consultant, Dr. Peter Valberg, has publicly acknowledged that power-line electromagnetic fields (“EMFs”) like those produced by the proposed substation and transmission lines are “a suspected risk factor” in causing leukemia in children.  Valberg has even co-authored studies that have identified a correlation between EMF and childhood leukemia.

In 2011, the World Health Organization’s (WHO) International Agency for Research on Cancer (IARC) "has classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B)."[[6]](#footnote-6)

Valberg has claimed that EMFs are safe, and that there are no health risks associated with the proposed substation and 115,000 volt lines. But Valberg is not credible on this issue because he is being paid a substantial amount by Eversource to support this project. He has previously worked for Big Tobacco, testifying for Phillip Morris that light cigarettes are safer than regular cigarettes, a claim that is not supported by the Surgeon General and scientific literature.[[7]](#footnote-7) He has also worked defending an asbestos manufacturer against mesothelioma victims, claiming that one victim’s 14-years wearing dusty asbestos gloves at her job “most likely did not cause or contribute to her developing pleural mesothelioma.”*[[8]](#footnote-8)*

1. *“What are the expected environmental impacts to the community of East Boston*?”

The proposed substation and transmission lines would directly impact East Boston and the waterfront area on which they would be sited. To begin with, the site for the proposed substation is within a flood zone, and just feet from the Chelsea Creek. As we learned from Superstorm Sandy, substations situated so close to flood zones are extremely vulnerable to storm surges and flooding. [[9]](#footnote-9)

The shoreline near the parcel on East Eagle Street is also heavily eroded, and in need of stabilization. In fact, the U.S. Army Corps of Engineers has initiated an “Emergency Shoreline Stabilization Project” to prevent the eroding shoreline.[[10]](#footnote-10) Furthermore, part of the Army Corps project will involve wetland restoration at this site, including the establishment of salt marshes for the benefit of vegetation, fish and wildlife.  Placing a substation next to the salt marsh would undermine the Army Corps’ objectives, which have the explicit support of the U.S. Fish & Wildlife Commission and the Boston Redevelopment Authority. There is a second U.S. Army Corps of Engineers project to move and store the Northern Ave Bridge in the same Eagle Street lot, and the initial drawings show the bridge spans being stored right where Eversource plans to construct its substation.[[11]](#footnote-11) There does not appear to be room for the bridge project and Eversource’s substation construction, and the Eagle Hill community will suffer the consequences of any spill-over.

Finally, it is telling that Eversource failed to mention in their letter that the Boston Zoning Code **expressly forbids** the installation of a substation at this site.  Indeed, 338 East Eagle Street is zoned as a “waterfront manufacturing subdistrict,” and Article 53, Section 15 of the Zoning Code provides that substations are “forbidden” in these subdistricts.

1. *“What are the expected impacts to surrounding businesses?”*

Multiple experts testified at the EFSB hearing that EMFs from the substation would interfere with sensitive electronic equipment at Channel Fish’s adjacent facility.  Among other things, the EMFs are likely to prevent Channel Fish’s **magnetic anomaly detector** from functioning properly.  This piece of equipment is critical to Channel Fish’s operation, as without it Channel Fish cannot ensure that all metal has been removed from the fish being processed, shipped and sold to customers.  **If metal is missed, and ends up in a customer’s product, Channel Fish can held liable and immediately lose that customer – the threats to Channel Fish’s business and its workers’ livelihoods are very real.** Channel Fish also tests the fat content of its product using sensitive laboratory equipment, which utilizes nuclear-magnetic resonance (NMR). The manufacturer of the NMR equipment has expressed significant concerns to Channel Fish and others about EMF interference with its equipment. Again, interference to this equipment poses a direct threat to Channel Fish and its employees.

1. *“What alternatives have been explored? In particular, has the possibility been explored of expanding the Chelsea facility to accommodate the need for more power?”*

There are many superior alternatives to constructing a substation at 338 East Eagle Street. As part of its application for this project, Eversource mentioned at least two of these:

1. Expanding the existing Chelsea Substation, which is currently powering East Boston.

2. Building a new station on Eversource’s land on Crescent Avenue in Chelsea.

Eversource claimed that it lacks sufficient space to expand the Chelsea Substation, but this is easily disproven.  The Chelsea Substation sits on a 117,000 square foot parcel of land.  By contrast, the proposed East Eagle substation site is only 16,800 square feet, roughly 1/7th the size! And in fact, most of the equipment needed to expand the Chelsea Substation (*e.g.*, another transformer and the attendant high-voltage switchgear) is already located at the site according to Eversource.[[12]](#footnote-12)  Even if the existing Chelsea Substation could not be expanded – which it certainly can – Eversource also owns another superior parcel of land nearby on Crescent Avenue.  That parcel is (a) larger than the East Eagle site, (b) not located in a waterfront district subject to zoning restrictions, and (c) not located on eroding land that has been earmarked for “emergency stabilization” and wetland restoration by the Army Corps of Engineers.  As such, both the existing Chelsea Substation and the Crescent Avenue site are superior alternatives to the proposed East Eagle Street location.

Beyond this, a new substation could be sited on Massport property. Eversource can also explore purchasing other more suitable property.

1. *“Where else have these types of high voltage lines been run*?”

Eversource says that high voltage lines are everywhere, but this is not true. High voltage 115,000 volt transmission lines are not currently in East Boston. The EMF modeling Eversource provided shows neighboring residences being exposed to EMF levels as high as 7.5mG to 10mG. This would be an exposure higher than 99.42% or 99.54% of people in the U.S. , respectively.[[13]](#footnote-13)

1. *“What are the risks involved when these high voltage lines are installed underground*? *What are the risks presented to the community with the construction and operation of the substation?”*

Eversource’s claim that “there are no risks to the community” is disingenuous and wrong.  As noted above, Eversource’s own consultant previously acknowledged that EMF’s from substations and high voltage transmission lines are a “suspected risk factor” for leukemia in children. We would not want to live under high voltage power lines that are on towers with clear-cuts in the countryside… **so why do we want to have those same lines installed under our streets?**

1. *“Are there risks associated with the proposed substation being located near oil tanks*?”

Yes. Substations and transformers are large ignition sources. They create sparks, catch fire, and even explode. The proposed site for the East Boston substation is alarmingly close to the Sunoco fuel depot. Of particular concern is the proximity of the tank that contains jet fuel, which is actually the tank closest to the proposed substation. The proximity actually violates the American Petroleum Institute’s standards for distance from ignitable sources (API RP752/753). If Sunoco would not be allowed to place the tank that close to a substation – why is Eversource allowed to place a substation that close to jet fuel tank???

1. *“What percentage of the load capacity created by the substation will be used by Logan International Airport*?”

According to Eversource, 35-40% of the energy used in East Boston is destined for Logan Airport, Eversource’s largest customer in East Boston.[[14]](#footnote-14) It is well-known that Logan Airport is embarking upon a multiyear construction project to significantly expand its Terminal E.  Eversource’s claim that the airport “is not a contributor to the anticipated load increase” in East Boston completely lacks credibility. 

More important – without the load from the airport and the expected expansion, there would be absolutely no consideration of building a new substation, or even expanding the existing substation in Chelsea. Why should the East Boston community bear yet another burden for the airport? If Logan needs more power for expansion, they should find a spot on Massport for the substation, and find a way to feed it so it does not expose residents to high levels of EMF.

1. *“What impacts would this substation have on nearby property values and home insurance rates*?”

Most people do not want to live under or near high voltage power lines, so obviously this is going to negatively impact home values that are close to them. People also tend not to want to live near substations, which are unsightly and inherently dangerous. According to a 2013 paper published the Appraisal Institute, high-voltage transmission lines have had a “substantial and highly significant” negative impact on home values, particularly in higher-priced cities.[[15]](#footnote-15) Another report published by Appraisal Institute argues that the impact is less pronounced, but still concedes a negative impact on values.[[16]](#footnote-16) It is inconceivable that proximity to an unsightly substation or high voltage transmission lines will increase property values of neighboring properties!

1. *“How would the current proposal impact operations of the proposed City of Boston Public Works, EMS and Police facilities at the same location*?”

After discussing what to do with this parcel for 30 years, why would the City begin developing it by placing an unsightly and hazardous substation? Why would an electrical substation be the first stroke on this blank canvas? There are several impacts anticipated with the siting of the substation on this parcel.

1. The City raised concerns about EMF’s from the substation interfering with police communications in 2010.[[17]](#footnote-17) **No study was ever done to measure the impacts of EMFs on the police station’s radio system.[[18]](#footnote-18)**

2. The proposed substation would put high voltage equipment just feet from **a children’s playing field!** The soccer field would be so close to the proposed substation that Eversource had to design a screen to prevent soccer balls from flying into the station.  Eversource has admitted “there are no Eversource Energy substations as proximate to soccer or playing fields as the proposed East Eagle Street Substation would be to the proposed soccer field.”[[19]](#footnote-19) Why do it here in East Boston then? Eversource must believe our children matter less.

3. It will block the view of Chelsea Creek and perhaps impede a possible Harbor Walk.

4. It will be at odds with the City’s storage of deconstructed elements of the Northern Avenue Bridge at the site.

1. EFSB Hearing Transcripts, Vol. 2, 1/7/16 – Docket: **EFSB 14-04/ D.P.U. 14-153/14-154** [↑](#footnote-ref-1)
2. Eversource response to EFSB Information Request N-2 [↑](#footnote-ref-2)
3. 2015 ISO-NE “Greater Boston Area Transmission Solutions Study,” Aug. 12, 2015 [↑](#footnote-ref-3)
4. EFSB Hearing Transcripts, Vol. 2, 1/7/16 [↑](#footnote-ref-4)
5. “Manhole Fires Cause Power Outages In Boston,” CBS Boston 2/14/16: http://boston.cbslocal.com/2016/02/14/manhole-fires-cause-power-outages-in-boston/ [↑](#footnote-ref-5)
6. http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208\_E.pdf [↑](#footnote-ref-6)
7. Lori Aspinall v. Philip-Morris [↑](#footnote-ref-7)
8. https://www.publicintegrity.org/2016/02/08/19223/meet-rented-white-coats-who-defend-toxic-chemicals [↑](#footnote-ref-8)
9. http://www.huffingtonpost.com/2012/10/30/coned-explosion-hurricane-sandy-video\_n\_2044097.html [↑](#footnote-ref-9)
10. Public Notice, “Chelsea River Emergency Steambank Protection Project,” Army Corps of Engineers, November 10, 2015 [↑](#footnote-ref-10)
11. Public Notice, “Northern Avenue Bridge Project,” Army Corps of Engineers, February 16, 2016 [↑](#footnote-ref-11)
12. EFSB Hearing, Vol. 3, 2/2/2016 [↑](#footnote-ref-12)
13. https://www.niehs.nih.gov/health/materials/electric\_and\_magnetic\_fields\_associated\_with\_the\_use\_of\_electric\_power\_questions\_and\_answers\_english\_508.pdf p. 30 [↑](#footnote-ref-13)
14. Eversource Response to EFSB Information Request, CF-55 [↑](#footnote-ref-14)
15. “The Price Effects of HVTLs on Abutting Homes,” *The Appraisal Journal,* Winter 2013 [↑](#footnote-ref-15)
16. “High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects,” *The Appraisal Journal*, Summer 2009: pp. 227-245 [↑](#footnote-ref-16)
17. November 2, 2011. Memorandum from Maureen Anderson to John Zicko [↑](#footnote-ref-17)
18. EFSB Hearing Transcripts, Vol. 12, 3/23/16 [↑](#footnote-ref-18)
19. EFSB Records Request - RR66 [↑](#footnote-ref-19)