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October 5, 2017

**Via Electronic Filing and Hand-Delivery**

Attorney Melanie Bachman,  
Acting Executive Director  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

**Re: *Docket No. 461A - Eversource Energy application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 115-kilovolt (kV) bulk substation located at 290 Railroad Avenue, Greenwich, Connecticut, and two 115-kV underground transmission circuits extending approximately 2.3 miles between the proposed substation and the existing Cos Cob Substation, Greenwich, Connecticut, and related substation improvements.***

Dear Attorney Bachman:

Enclosed please find one (1) original and fifteen (15) copies of the Town of Greenwich's Post-Hearing Brief and Proposed Findings of Fact.

I certify that copies have been sent on this date to all participants of record as reflected on the Council's service list.

Please do not hesitate to contact me if you have any questions regarding this filing.

Very truly yours,



David A. Ball

DAB/lcc  
Enclosures

cc: Service List

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

EVERSOURCE ENERGY APPLICATION FOR  
A CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AND PUBLIC NEED FOR  
THE CONSTRUCTION, MAINTENANCE,  
AND OPERATION OF A 115-KILOVOLT (KV)  
BULK SUBSTATION LOCATED AT  
290 RAILROAD AVENUE, GREENWICH,  
CONNECTICUT, AND TWO 115-KV  
UNDERGROUND TRANSMISSION CIRCUITS  
EXTENDING APPROXIMATELY 2.3 MILES  
BETWEEN THE PROPOSED SUBSTATION  
AND THE EXISTING COS COB SUBSTATION,  
GREENWICH, CONNECTICUT, AND RELATED  
SUBSTATION IMPROVEMENTS.

DOCKET NO. 461A

OCTOBER 5, 2017

**TOWN OF GREENWICH POST-HEARING BRIEF**

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**TOWN OF GREENWICH POST-HEARING BRIEF**

The Town of Greenwich ("Town") opposes Eversource's Petition for Reconsideration of its Application for a Certificate of Environmental Compatibility and Public Need in which it seeks approval for the Alternative Modified Project ("Current Application"). Eversource has again failed to meet its burden of proving the public need for this \$100 million project. As a result, the same infirmities that led to the Council's denial in Docket 461, mandate a denial of the Current Application. In fact, Eversource's supposed justification for its current \$100 million project is *weaker* than its arguments in Docket 461. Eversource no longer claims that the proposed 115-kV substation is needed to provide greater capacity to address projected overloads on the 27.6-kV transformers at the Cos Cob Substation, which was the focus of its need argument in Docket 461. Instead, acknowledging that those projections are erroneous, and in light of the Town's commitment to energy efficiency and demand reduction measures, Eversource has abandoned this argument entirely.

Eversource now asserts that the project is needed to address the “reliability” of the 27.6-kV distribution system in Greenwich. Yet despite its vacillating rationales for the project need, Eversource has barely modified its proposal in this docket and continues to advocate for an exorbitant transmission solution. Worse, the issue with distribution feeders that Eversource is now focused on is based on theoretical computer projections that have been demonstrated to be grossly exaggerated based on actual events. Just like Eversource’s load projections in Docket 461 have been proven false, Eversource’s projections of overloads on distribution feeders have also been proven false.

The proposed transmission project, consisting of a new double-circuit 115-kV transmission line and a new 115-kV substation, will do very little to address multiple deficiencies that currently plague the entire electrical system in Greenwich. Because Eversource once again failed to meet its burden of establishing the need for this project, the Current Application must be denied.

**I. Just as Eversource could not establish the need for the project in the Initial Application, it has failed to establish the need for the current project.**

On May 13, 2016, the Connecticut Siting Council (“Council”) denied Eversource’s Application for a Certificate of Environmental Compatibility and Public Need in Docket No. 461 (the “Initial Application”).<sup>1</sup> The Initial Application contemplated a new 115-kV transmission line, the retirement of the Prospect and Byram Substations, and a new Greenwich Substation with three 60-MVA transformers affording a total of 134 MVA of permissible load capacity.<sup>2</sup> While that proposal provided significant added capacity, the

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<sup>1</sup> Council Admin. Notice 43, Opinion.

<sup>2</sup> Council Admin. Notice 43, Eversource 1 p. E-17.

Siting Council rejected the Application because of the \$140 million cost and because Eversource failed to demonstrate the public need for the project.<sup>3</sup> The Council found that Eversource failed to meet its burden of proving the project was “necessary for the reliability of the electric power supply of the state.”<sup>4</sup>

In this Docket 461A, Eversource proposes the same transmission solution, only smaller and providing less additional capacity. Eversource continues to propose two 115-kV transmission lines and a 115-kV substation. The primary change in the proposal is reducing by one the number of transformers at the proposed new substation, and Eversource no longer proposes retiring the obsolete Byram Substation.<sup>5</sup> This watered-down proposal is an obvious effort to reduce the upfront costs and defer upgrades to a point that the Council might be tempted to approve the Current Application, even though Eversource advocated for these upgrades as part of its “need” argument in Docket 461 and has admitted that those upgrades may be needed in the future, at additional cost.<sup>6</sup>

Eversource’s current proposal is less cost-effective, and yields far less bang for the buck because it does very little to address the multiple reliability problems with the Greenwich electrical system that the Town has endured for decades.<sup>7</sup> At the same time, the project would impose an unacceptable price tag of at least \$100 million on Connecticut ratepayers, who already pay among the highest electric rates in the United

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<sup>3</sup> Council Admin. Notice 43, Opinion p. 8.

<sup>4</sup> Id.

<sup>5</sup> 8-29-17 Tr. pp. 79-80; Eversource 1, Vol. 1, Pre-Filed Testimony, p.11; Eversource 2, Resp. to Q-CSC-019; Eversource 1, Vol. 1, Current Application, p.6;

<sup>6</sup> Proposed FOF ¶¶ 101-109.

<sup>7</sup> Proposed FOF ¶¶ 59-100.



States.<sup>8</sup> Because there is no justifiable need for this project, the Current Application must be denied.

**A. Eversource's claim of "need" in Docket 461 was proven to be false.**

In the Initial Application, Eversource claimed that the supposed need for the project was based on a risk of overloads on the 27.6-kV transformers at the Cos Cob Substation.<sup>9</sup> As the Town argued throughout, this claimed need was premised on baseless assumptions about future electrical consumption in the Town and load usage on the Cos Cob 27.6-kV transformers.<sup>10</sup> In its Initial Application and throughout Docket 461, Eversource relied on projections of peak load using alleged 2013 load data, while ignoring available data for 2014 and 2015, and projecting a 1% growth rate each year into the future.<sup>11</sup>

In the Current Application, Eversource continued to justify the need for the project on that same faulty premise. In May 2017, it argued in its Petition to Reopen that the faulty projections were "material and relevant" in asserting that the risk of excessive load in Greenwich was a basis for the need for this project.<sup>12</sup> Indeed, according to those load projections, the output on the Cos Cob transformers would have exceeded their rated limits in 2017.<sup>13</sup> Eversource adhered to this argument, even though 2016 was the hottest summer on record, and as Eversource knew – but only

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<sup>8</sup> See Administrative Notice 52, pp. 1, 70.

<sup>9</sup> Council Admin. Notice 43, Eversource 1, p. E-1 ("Without the necessary system upgrades, contingency events could result in the overload of Cos Cob Substation transformers by as early as 2017").

<sup>10</sup> Council Admin. Notice 43, Town Resp. to CSC Q-3;

<sup>11</sup> Council Admin. Notice 43, 3-10-16 Tr. pp. 91-92; Council Admin. Notice 43, Eversource 1, p. E-5.

<sup>12</sup> Eversource 1, Vol. 1, Pre-Filed Testimony, p. 26 Attachment A (stating that FOF 97-108 from Docket 461 relating to Load Forecasting "remain accurate and relevant"); Council Admin. Notice 43, FOF No. 97 (2016-2022 load projections); Proposed FOF ¶¶ 4-6.

<sup>13</sup> Council Admin. Notice 43, FOF No. 97; Council Admin. Notice 43, Eversource 1, p. E-1 & E-5.

disclosed in response to discovery – the load on the Cos Cob transformers in 2016 continued to be far less than in 2013, and nowhere near Eversource’s projections.<sup>14</sup>

On the first day of this hearing, Eversource dropped its bombshell. Despite the fact that its primary need argument from 2015 through the present docket had been the risk of overloads on the Cos Cob 27.6-kV transformers due to its projections of increased load usage in Greenwich (which the Town always disputed) - Eversource suddenly reversed itself and stated that it was no longer basing its claim of need on those load projections.<sup>15</sup> Mr. Bowes testified that “with the changes in demand in New England as well as Connecticut, ***we are no longer projecting load growth*** . . . With energy efficiency, distributed generation and demand response it's actually a little bit negative by a fraction of a percent.”<sup>16</sup> In other words, Mr. Bowes acknowledged that the load projections presented in Docket 461 would never materialize. The Town’s arguments opposing the Initial Application in Docket 461 were proven to be correct.

At the July 25<sup>th</sup> hearing, Mr. Bowes admitted “that there will be energy efficiency, distributed generation and demand response in the Town of Greenwich that mitigates any future increase in electrical consumption in the town.”<sup>17</sup> Mr. Bowes further acknowledged that “[t]here is no need for capacity” and Eversource is no longer concerned about load growth in the Town of Greenwich due in part to energy efficiency efforts by the Town.<sup>18</sup> Had the Council approved Eversource’s \$140 million project in

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<sup>14</sup> 8-29-17 Tr. p. 16; Proposed FOF ¶ 7.

<sup>15</sup> 7-25-17 Tr. p. 11-12 (“We are no longer presenting any load forecasts as a need for this project”). Proposed FOF ¶¶ 9-14.

<sup>16</sup> 7-25-17 Tr. p. 12.

<sup>17</sup> 7-25-17 Tr. p. 111.

<sup>18</sup> 8-29-17 Tr. p. 24, 91.

Docket 461, it would have done so based on premises that were false – precisely as the Town had argued.

Mr. Bowes defined the new claim of need by making the vague assertion that the project is required to improve the “reliability” of the Greenwich distribution system.<sup>19</sup> However, rather than withdrawing the Current Application (or filing a new application), and engaging in a thorough planning process that resulted in a comprehensive solution to the multitude of system reliability issues in Greenwich, Eversource opted to push ahead with the same transmission-based solution, and with no further analysis. For all of the reasons set forth below, once challenged, Eversource’s new “need” argument crumbles.

**B. Eversource has again failed to prove the “need” for its project in this Docket 461A.**

Mr. Bowes’ new assertion that this project is needed solely to address the “reliability” of the Greenwich distribution system is contradicted by the evidence in this docket. Just as Eversource based its claim of need in the Initial Application on load projections, which were proven to be erroneous, in this docket Eversource bases its claim of need on computerized simulations of overloads on certain distribution feeders. Those simulations have now been proven erroneous and unreliable, and the record is clear that Eversource’s distribution feeders are not failing due to overloading.<sup>20</sup>

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<sup>19</sup> 7-25-17 Tr. p. 12.

<sup>20</sup> Proposed FOF ¶¶ 16-59.

**1. Eversource's computerized simulations are proven erroneous and unreliable.**

In response to Q-CSC-001, Eversource provided the results of computerized simulations of "single contingency scenarios," in which it displayed the projected loads on the three remaining 27.6-kV feeders from Cos Cob to Prospect if one of the four went out of service.<sup>21</sup> Eversource's single contingency simulations projected significant overloads on feeders to Prospect under 2015 peak load conditions at Cos Cob Substation.<sup>22</sup> However, when a single contingency event actually occurred on the day of the 2015 peak load, the actual loads on those feeders were much lower than the projections, no customer outages occurred, and Eversource explained that the simulations do not take into account the ability of Eversource to shift loads to avoid customer outages under real-life conditions.<sup>23</sup>

In response to Q-TOWN-077, in which the Town sought the *actual* load distribution on those four 27.6-kV feeders under peak load conditions at Cos Cob Substation, Eversource objected with the untenable assertion that the actual load data was "not relevant or material."<sup>24</sup> Only when ordered by the Siting Council to produce the information did Eversource provide the actual load data in response to Q-TOWN-077.<sup>25</sup> That actual data, which Eversource attempted to keep out of the record, proved that the simulations do not accurately project the loads on feeders when one feeder is out of service, and the simulations are therefore unreliable.<sup>26</sup>

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<sup>21</sup> Eversource 2, Resp. to Q-CSC-001; Proposed FOF ¶ 17.

<sup>22</sup> *Id.*

<sup>23</sup> Proposed FOF ¶¶ 16-32.

<sup>24</sup> Eversource 14, Resp. to Q-TOWN-077.

<sup>25</sup> 8-29-17 Tr. p. 42.

<sup>26</sup> Proposed FOF ¶¶ 16-32; Eversource 15, Supp. Resp. to Q-TOWN-007.

On cross-examination on the last hearing day, Mr. Bowes admitted that the computerized simulations overstated the loads on the feeders. Specifically, when focused on the 2015 peak load when one of the feeders was out of service, leaving three remaining in service, the actual loads on those three feeders were far less than the computerized simulations predicted.<sup>27</sup> As Mr. Bowes admitted: “none of the three circuits hit their projected loads.”<sup>28</sup> With feeder 11R52 out of service, the simulation predicted that there would be an overload on feeder 11R55, at 104% of its normal rating.<sup>29</sup> But in actuality, when 11R52 was unavailable in 2015, feeder 11R55 did not overload, and was only loaded to 77% of its normal rating.<sup>30</sup> In addition, the simulation over-projected the loads on the other two feeders (11R51 and 11R58).<sup>31</sup>

The table below compares Eversource’s projections of the loads on feeders 11R55, 11R51, and 11R58 to their actual loads when 11R52 went out of service on the day of the 114.8 MVA peak load in 2015:

<b>Feeder</b>	<b>Projected Load<sup>32</sup></b> <i>(MVA)</i>	<b>Actual Load<sup>33</sup></b> <i>(MVA)</i>	<b>Overstated Projection</b> <i>(MVA)</i>
11R51	33.21	30	3.21
11R52	NA	NA	NA
11R55	33.8	25	8.8
11R58	16.64	15	1.64

<sup>27</sup> Proposed FOF ¶ 28.

<sup>28</sup> 9-5-17 Tr. p. 61.

<sup>29</sup> Eversource 2, Resp. to Q-CSC-001; 8-29-17 Tr. p. 47; Proposed FOF ¶ 26.

<sup>30</sup> Eversource 15, Supp. Resp. to Q-TOWN-077; 9-5-17 Tr. p. 58; Proposed FOF ¶¶ 25-26.

<sup>31</sup> Eversource 15, Supp. Resp. to Q-TOWN-077; 9-5-17 Tr. p. 61; Proposed FOF ¶ 27

<sup>32</sup> Eversource 2, Resp. to Q-CSC-001; Eversource 9, Resp. to Q-TOWN-001.

<sup>33</sup> Eversource 15, Supp. Resp. to Q-TOWN-077; 9-5-17 Tr. p. 58, 61.

When pressed for an explanation, Eversource's response made clear why the simulations do not represent what happens in reality. They admitted that in actuality when one feeder goes out of service, the system operates just as it was designed: load shifting takes place ensuring that other feeders are able to carry the load of the feeder that goes out of service, thereby avoiding outages.<sup>34</sup> This was proven by the fact that in July 2015, when the 27.6-kV transformers at Cos Cob reached their peak load and feeder 11R52 was unavailable, there were no customer outages in Greenwich.<sup>35</sup> The remaining three feeders from Cos Cob to Prospect handled the load without losing service, just as the system was designed.<sup>36</sup> Under real life conditions, the risk of overloads on these feeders was proven to be dramatically less of a problem than Eversource had portrayed in their simulations. These simulations, which are the basis for Eversource's new "need" argument, grossly overstate projected feeder overloads and, as proven in July 2015, the simulations cannot be relied upon because they fail to accurately reflect real-time conditions.<sup>37</sup>

**2. The computerized simulations assumed peak load of 130.5 MVA in 2013, when actual peak load was lower.**

Throughout Docket 461, and continuing in this Docket 461A, Eversource has presented to the Council the supposed fact that the 2013 recorded peak load on the Cos Cob 27.6-kV transformers was 130.5 MVA.<sup>38</sup> While it has now abandoned its concern about load growth, Eversource continues to rely on that 130.5 MVA peak load

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<sup>34</sup> 9-5-17 Tr. pp. 61-62; Proposed FOF ¶¶ 20, 29-32.

<sup>35</sup> 9-5-17 Tr. p. 61.

<sup>36</sup> Proposed FOF ¶¶ 18-20.

<sup>37</sup> Results of simulations that fail to take into account real-life conditions are inherently unreliable. See, e.g., *Valente v. Textron, Inc.*, 559 Fed. Appx. 11, 13-14 (2d Cir. 2014) (conclusions based on simulations that do not reflect actual conditions are unreliable and, therefore, inadmissible as a matter of law).

<sup>38</sup> Proposed FOF ¶ 33.

figure as a justification for this project.<sup>39</sup> Moreover, Eversource based its faulty computerized simulations on the premise that peak load in 2013 was 130.5 MVA.<sup>40</sup> However, upon review of the components of the loads served by Cos Cob, as a matter of fact, the actual 2013 peak load never reached 130.5 MVA. The assertion that peak load on the Cos Cob 27.6-kV transformers reached 130.5 MVA in 2013 is false.<sup>41</sup>

The Cos Cob Substation serves the following loads at 27.6-kV: Prospect Substation, North Greenwich Substation, Byram Substation, the Greenwich Network, and the 11 large commercial and industrial customers.<sup>42</sup> The Cos Cob Substation does not normally serve the loads at the Tomac and Mianus Substations.<sup>43</sup> Tomac is fed by the “1750” line from Stamford.<sup>44</sup> Tomac then serves the Mianus Substation.<sup>45</sup> In this docket, for the first time, Eversource was asked to identify the specific peak loads comprising the 130.5 MVA it claims were served by Cos Cob. In its responses to Q-TOWN-015 and Q-CSC-013, Eversource revealed that data, and it is now apparent that Eversource inaccurately computed the Cos Cob peak load, and overstated it.

If Eversource's claim that the actual 2013 peak load on the Cos Cob transformers totaled 130.5 MVA was accurate, then the sum of the peak loads served by Cos Cob – Prospect Substation, North Greenwich Substation, Byram Substation, The Greenwich Network, and the 11 large commercial and industrial customers –

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<sup>39</sup> Eversource 1, Vol. 1, Pre-Filed Testimony p. 4; Eversource 1, Vol. 1, Current Application p. 1.

<sup>40</sup> Eversource 1, Vol. 1, Pre-Filed Testimony p. 4; Eversource 2, Resp. to Q-CSC-001.

<sup>41</sup> Proposed FOF ¶¶ 33-38.

<sup>42</sup> Council Admin. Notice 43, Eversource 1, p. E-3.

<sup>43</sup> Eversource 9, Resp. to Q-TOWN-011 (“the Mianus and Tomac substations are not normally served by the Cos Cob Substation.”); 8-29-17 Tr. p. 66.

<sup>44</sup> Eversource 9, Resp. to Q-TOWN-009 (“The Tomac Substation is designed to be served by the 115-kV 1750 transmission line and the Mianus Substation is designed to be fed from the 12H59 feeder”). Notice 43, Eversource 1, p. E-3.

<sup>45</sup> Eversource 9, Resp. to Q-TOWN-008 (“Mianus Substation is normally supplied from Tomac Substation over the 12H59 feeder”).

should have equaled 130.5 MVA.<sup>46</sup> However, according to the 2013 figures that Eversource provided, and summarized in the chart below, the sum of the peak loads fed at 27.6-kV by the Cos Cob Substation equals only **126.7 MVA**:

1) Prospect Substation	51.2	MVA
2) North Greenwich Substation	31.0	MVA
3) Byram Substation	15.9	MVA
4) The Greenwich Network	9.3	MVA
5) 11 customers	19.3	MVA
<b>TOTAL:</b>	<b>126.7</b>	<b>MVA<sup>47</sup></b>

Eversource's representation that there was a peak load of 130.5 MVA in 2013 on the Cos Cob Substation 27.6-kV transformers is false. In fact, the peak load was approximately *4 MVA lower*, according to Eversource's own data.<sup>48</sup> The central fact upon which Eversource continues to base its claim of need – the supposed 130.5 MVA of peak load in 2013 – is false. The premise of Eversource's erroneous computerized simulations – that 2013 peak load was 130.5 MVA – is false. Had the Siting Council approved Eversource's \$140 million proposal in Docket 461, it would have done so based on this false premise. This data cannot be relied upon.

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<sup>46</sup> 9-5-17 Tr. p. 79.

<sup>47</sup> Eversource 9, Resp. to Q-TOWN-015; Eversource 2, Resp. to Q-CSC-013; Council Admin. Notice 43, Eversource 1, p. E-3.

<sup>48</sup> Proposed FOF ¶ 38.



**3. The 27.6-kV distribution feeders are failing because of age and physical condition – not because of overloading.**

Eversource's claim of need in this docket is predicated on the assertion that overloads on distribution feeders affect the reliability of the Greenwich distribution system, and the new transmission line and 115-kV substation will address that alleged problem. This is a false premise as the computerized simulations on which Eversource relies have been proven to be erroneous.<sup>49</sup> However, there are issues with the 27.6-kV distribution cables, and Eversource's project utterly fails to remedy those issues.<sup>50</sup>

The Greenwich 27.6-kV distribution system is designed to allow any one feeder to be out of service (and in some cases, more), without any resulting customer outages.<sup>51</sup> Indeed, in actuality, that is precisely how the system works as long as the cables are functioning properly.<sup>52</sup> Accordingly, when feeder 11R52 went out of service in July 2015, load was transferred to other feeders and there was no interruption of electrical service.<sup>53</sup>

On cross-examination, the Town questioned Mr. Bowes about certain failures of the 27.6-kV feeders that he claimed were a cause of concern and justified the need for this project.<sup>54</sup> His response was that failures were a function of the cables not working properly and not because the feeders were overloading.<sup>55</sup> Eversource identified three feeder failures that occurred in July, 2015 (none of which resulted in customer

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<sup>49</sup> Proposed FOF ¶¶ 16-38.

<sup>50</sup> Proposed FOF ¶¶ 39-58.

<sup>51</sup> 8-29-17 Tr. p. 34. See also FOFs ¶¶ 39-42.

<sup>52</sup> 8-29-17 Tr. p. 51.

<sup>53</sup> 9-5-17 Tr. p. 61.

<sup>54</sup> 7-25-17 Tr. pp. 22-23; 8-29-17 Tr. pp. 43, 52-53.

<sup>55</sup> 8-29-17 Tr. pp. 48, 51, 54-57.

outages).<sup>56</sup> In each instance, Mr. Bowes admitted that when the 27.6-kV feeder failed, it was not because the feeder reached or exceeded its load capacity.<sup>57</sup> Rather, it was the integrity of the cable that failed.<sup>58</sup> Mr. Bowes admitted that overloading did not cause these cables to fail.<sup>59</sup> Rather, it was the failures of the 40-year old cables that caused the overloads.

The table below demonstrates that the feeders that failed in 2015 were not overloaded at the time of failure, and had ample additional capacity, based on normal rating and load figures provided by Eversource:

<b>Date</b>	<b>Feeder</b>	<b>Normal Rating<sup>60</sup></b> <i>(MVA)</i>	<b>Load at failure<sup>61</sup></b> <i>(MVA)</i>	<b>% of Unused Feeder Capacity at Time of Failure</b>
7/22/2015	11R52	33.5	25	25.37%
7/27/2015	11R56	15.9	7.5	52.83%
7/28/2015	11R55	32.5	14	56.92%

In sum, the problem is not overloaded 27.6-kV distribution feeders; it is antiquated cables many of which have been kept in use beyond their life expectancies.

Mr. Bowes also testified about a feeder to the Byram substation which went down in July 2017. In response to questioning, Mr. Bowes admitted that the issue was not the design of the existing system, or any overloading of the feeder that failed.<sup>62</sup> Similar to the July 2015 outages, the failure of the Byram feeder, 11R56, was caused by a cable

<sup>56</sup> Proposed FOF ¶¶ 45-46.

<sup>57</sup> Council Admin. Notice 43, Eversource Resp. to OCC-042; Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. pp. 49, 55, 64.

<sup>58</sup> Proposed FOF ¶ 54.

<sup>59</sup> 8-29-17 Tr. p. 55, 57; Council Admin. Notice 43, Eversource Resp. to Q-OCC-042; Eversource 9, Resp. to Q-TOWN-017.

<sup>60</sup> Eversource 2, Resp. to Q-CSC-001.

<sup>61</sup> Council Admin. Notice 43, Eversource Resp. to Q-OCC-042.

<sup>62</sup> Proposed FOF ¶¶ 48-52, 54.

failure – not overloading – which in turn resulted in a brief customer outage.<sup>63</sup> Indeed, that particular outage occurred at 4 a.m., when load was likely at its lowest.<sup>64</sup> Accordingly, overloading is not the cause of the problem.<sup>65</sup> There is clearly a problem with the cable not performing as it should have under normal load conditions. And even if this project were approved, feeder 11R56 would remain the Normal feeder to the Byram Substation,<sup>66</sup> which highlights the fact that this Application fails to remedy the real problems in Greenwich.

It became clear during the hearing that the claimed weakness with the Greenwich distribution system is antiquated feeder cables that no longer operate as they should. The solution to that purported reliability issue is not a \$100 million transmission project consisting of a 115-kV substation that does nothing to fix the deficient cables. The most effective solution that has never been proposed or explored by Eversource is a replacement of the older cables with newer cables in the same ducts. That solution would get to the heart of the problem, rather than the massive transmission project Eversource continues to push.

**C. The proposed project does not solve the actual system reliability deficiencies in Greenwich.**

The Town and Eversource recognize that there are several issues that compromise the entire Greenwich electrical system, all of which require attention. Unfortunately, not one of those issues is remedied by this \$100 million transmission-based proposal.

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<sup>63</sup> 8-29-17 Tr. pp. 48-49.

<sup>64</sup> 8-29-17 Tr. p. 51.

<sup>65</sup> Proposed FOF ¶¶ 56-58.

<sup>66</sup> Eversource 14, Resp. to Q-Town-076; Proposed FOF ¶ 53.

**1. The proposed project does nothing to improve the performance or reliability of the 27.6-kV feeders running from Cos Cob.**

As explained above, there are problems with the performance of the 27.6-kV feeders coming out of the Cos Cob Substation. While Eversource claims that the proposed project will reduce loading on the 27.6-kV cables, by Eversource's own admission, the feeder failures are not a function of overloading on those feeders, and this project does not involve any upgrading or replacing of those feeders.<sup>67</sup> Therefore, the proposed project does not solve those problems.

It is undisputed that the Greenwich 27.6-kV distribution system will continue to rely on the same antiquated cables after this project is built.<sup>68</sup> The 11 large commercial and industrial customers, who include Greenwich Hospital and the Grass Island Wastewater Treatment Plant, which alone comprise more than 10% of the Town's load usage, will still be fed by those 27.6-kV feeders.<sup>69</sup> In addition, the Greenwich Secondary Network, North Greenwich Substation and Byram Substation will all continue to be fed by the same 27.6-kV cables after this project is built.<sup>70</sup> Indeed, in 2016, the loads served by these 27.6-kV feeders totaled 69.9 MVA out of a total peak load of 115.6 MVA.<sup>71</sup> Even if this transmission project is built, all of the customers dependent on these distribution feeders – a majority of customers in Greenwich - will be just as susceptible to outages caused by faulty cables as they were before.<sup>72</sup>

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<sup>67</sup> See discussion, *supra*; Proposed FOF 59-66.

<sup>68</sup> Eversource 9, Resp. to Q-TOWN-020; Eversource 14, Resp. to Q-TOWN-076; 8-29-17 Tr. pp. 61-63.

<sup>69</sup> 8-29-17 Tr. p. 62; Council Admin. Notice 43, Eversource Resp. to Q-OCC-075; Eversource 2, Resp. to Q-CSC-013; Proposed FOF ¶¶ 61-63.

<sup>70</sup> 8-29-17 Tr. p. 61-63; Eversource 14, Resp. to Q-TOWN-076.

<sup>71</sup> Eversource 2, Resp. to Q-CSC-013; 8-29-17 Tr. p. 61-63; Proposed FOF ¶ 62.

<sup>72</sup> 8-29-17 Tr. p. 61-63; Proposed FOF ¶ 64.

Yet, instead of devising a plan to upgrade those cables, Eversource proposes a \$100 million transmission line and 115-kV substation which fails to address any of the cable deficiencies that exist. Even if this project is approved, the same faulty cables will remain in place, and will eventually require replacement, and Eversource has not presented a plan to replace these cables.<sup>73</sup> Accordingly, the majority of customers in Greenwich will not benefit from this project. Eversource should be addressing these faulty 27.6-kV cables immediately, without requiring Siting Council approval. Rather than spending \$100 million on a project that is not needed, the Town urges Eversource to replace the older 27.6-kV feeder cables which must be upgraded.

**2. The proposed project does nothing to address the impact of outages on the 115-kV “1740” / “1750” lines feeding the Cos Cob Substation.**

One of the most glaring systemic problems in Greenwich is its reliance on the two overhead 115-kV transmission lines that originate in Stamford.<sup>74</sup> These lines are known as the “1740” and “1750” lines.<sup>75</sup> These transmission lines feed both the Cos Cob and Tomac Substations, from which the entire Town of Greenwich receives its electricity.<sup>76</sup> The “1740” and “1750” 115-kV transmission lines exist on the same overhead structures (“double circuit towers”) rendering both lines vulnerable to the same contingency event.<sup>77</sup> As Mr. Bowes explained at the August 29<sup>th</sup> hearing, “double circuit towers are less reliable than two independent lines.”<sup>78</sup> In addition, placement of the 1740 and 1750 lines on the same structures hampers Eversource’s ability to

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<sup>73</sup> 7-25-17 Tr. p. 24; Proposed FOF ¶¶ 65-66.

<sup>74</sup> Proposed FOF ¶¶ 67-79

<sup>75</sup> Eversource 1, Vol. 1, Pre-Filed Testimony, p. 10; Eversource 10(a), revised Figure 5.

<sup>76</sup> 8-29-17 Tr. pp. 65-67.

<sup>77</sup> 8-29-17 Tr. p. 66.

<sup>78</sup> 8-29-17 Tr. p. 66.

maintain both lines if maintenance work is required.<sup>79</sup> On August 5, 2012, a tree fell across the 1740 and 1750 lines causing a major outage event. As a result, 99.5% of the entire Town of Greenwich went black.<sup>80</sup>

Even if this project is approved, the Town's dependence on the 1740 and 1750 lines as its sole source of power remains.<sup>81</sup> Any new substation on Railroad Avenue will receive power from these two lines.<sup>82</sup> There is currently no other way to deliver 115-kV to any point west of Stamford. The proposed project does nothing to provide a contingency in the event the 1740 and 1750 lines go down.<sup>83</sup> Rather than spending \$100 million on a project that is not needed, the Town urges Eversource to devise a plan to eliminate the Town's complete dependence on the 1740 and 1750 lines as its only source of power.

**3. The proposed project does nothing to address the isolation of the Tomac Substation and its reliance on a single 4.8-kV transformer.**

Another serious deficiency in the Greenwich electrical system exists at the Tomac Substation.<sup>84</sup> Unlike all of the other substations in the Town that distribute power at 13.2-kV, Tomac distributes electricity to customers in Old Greenwich at 4.8-kV.<sup>85</sup> Accordingly, if there is a distribution outage in Tomac, the Old Greenwich customers cannot be re-fed through neighboring 13.2-kV distribution feeders.<sup>86</sup>

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<sup>79</sup> 8-29-17 Tr. p. 69.

<sup>80</sup> 8-29-17 Tr. pp. 67-69. In November 2011, outages on the 1740 and 1750 lines caused a similar total blackout of Greenwich customers. Council Admin. Notice 43, Eversource Late Filed Exhibit LF-024.

<sup>81</sup> Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. pp. 69-70.

<sup>82</sup> 8-29-17 Tr. p. 69; Eversource 2, Resp. to Q-CSC-024.

<sup>83</sup> Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. pp. 69-70.

<sup>84</sup> Proposed FOF ¶¶ 80-86.

<sup>85</sup> 8-29-17 Tr. p. 71.

<sup>86</sup> 8-29-17 Tr. p. 72-73, 74-75; Eversource 2, Resp. to Q-CSC-013; Eversource 9, Resp. to Q-TOWN-029.

Compounding this problem is the fact that Tomac has only a single 4.8-kV transformer without any backup.<sup>87</sup> Every other substation in Greenwich has multiple transformers. If there is an outage on that single 4.8-kV transformer the residents in Old Greenwich lose power.<sup>88</sup> This is exactly what happened in April 2016. A lightning arrester failed causing an outage on that single 4.8-kV transformer at the Tomac Substation, leaving Old Greenwich customers with no electrical service.<sup>89</sup>

Unfortunately, Eversource's \$100 million transmission project does nothing to address these issues. While Mr. Bowes testified that efforts are being made to connect Tomac customers with the 13.2-kV distribution system, he admitted that this effort would only benefit approximately half of the Old Greenwich residents.<sup>90</sup> Accordingly, even after the project is built, Tomac will remain partially isolated by virtue of its continued distribution at 4.8-kV, and the Tomac Substation will continue to rely on a single 4.8-kV transformer, with no backup in the event of a contingency.<sup>91</sup> Rather than spending \$100 million on a project that is not needed, the Town urges Eversource to devise a plan to connect all of the Tomac customers to the 13.2-kV distribution system, and to eliminate the Tomac Substation's dependence on a single 4.8-kV transformer, with no backup.

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<sup>87</sup> 8-29-17 Tr. p. 72.

<sup>88</sup> 8-29-17 Tr. p. 72-73, 74-75; Eversource 2, Resp. to Q-CSC-013; Eversource 9, Resp. to Q-TOWN-029.

<sup>89</sup> Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. p. 73.

<sup>90</sup> Eversource 2, Resp. to Q-CSC-013; Eversource 9, Resp. to Q-TOWN-029; 8-29-17 Tr. p. 74-75.

<sup>91</sup> Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. p. 73.

#### **4. The proposed project does nothing to address the obsolete equipment in the Byram Substation.**

In the Initial Application in Docket 461, Eversource proposed retiring both the Prospect and Byram Substations and replacing them with a new 115-kV substation with three 60 MVA transformers.<sup>92</sup> Eversource rationalized this expensive plan by describing the Byram transformers as “vintage and obsolete.”<sup>93</sup>

After the initial \$140 million proposal was denied by the Siting Council, Eversource suddenly omitted its plan to upgrade the antiquated Byram Substation in a transparent effort to lower costs in the hope of obtaining Council approval. However, even after this project would be built, Byram’s equipment would still require upgrading, including switches, circuit breakers, switchgear lineup, and the “vintage and obsolete” transformers.<sup>94</sup>

Mr. Bowes explained Eversource’s change in plan by admitting that the company was trying to reduce costs.<sup>95</sup> He also admitted that as a result of the success of energy efficiency programs in the Town, he was willing to wait 3 – 5 years to determine whether any upgrade was needed at Byram at all.<sup>96</sup> While the Town’s success in energy efficiency and overall load reduction should indeed be recognized as reducing the need for this project, if the project is approved, it will do nothing to address the obsolete Byram equipment.<sup>97</sup> Rather than spending \$100 million on a project that is not needed,

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<sup>92</sup> Proposed FOF ¶ 87.

<sup>93</sup> Council Admin. Notice 43, Eversource Resp. to Data Request FPET-03, Q-FPET-010; 8-29-17 Tr. p. 78; Proposed FOF ¶ 88.

<sup>94</sup> Eversource 1, Resp. to Q-CSC-025; Eversource 9, Resp. to Q-TOWN-027; 7-25-17 Tr. pp. 26; 8-29-17 Tr. p. 81, 96; Proposed FOF ¶ 92.

<sup>95</sup> 8-29-17 Tr. pp. 78-79.

<sup>96</sup> 7-25-17 Tr. p. 26.

<sup>97</sup> 8-29-17 Tr. p. 79; Proposed FOF ¶ 90.



the Town urges Eversource to devise a plan to upgrade the obsolete equipment at the Byram Substation.

**5. The proposed project does nothing to address the Town's poor performing 13.2-kV overhead distribution lines.**

The Town asked Eversource to provide information as to the worst performing 13.2-kV distribution circuits in the State of Connecticut. The results are staggering. Of the 100 worst performing circuits in the State based on average outage duration, 14 of the circuits are 13.2-kV overhead distribution lines that are serving Greenwich.<sup>98</sup> More than *one-third* of the Town's 13.2-kV overhead distribution lines are among the 100 worst performing circuits in the state.<sup>99</sup>

Mr. Bowes admitted that this project, if approved, would not do anything to improve the 13.2-kV lines.<sup>100</sup> Other than the proposed new substation's connections to the 13.2-kV feeders, Eversource's project does not include any other upgrades to the 13.2-kV circuits in Greenwich.<sup>101</sup> Mr. Bowes did not provide any specificity about Eversource's supposed plan to address the 13.2-kV circuits, and the Town's single greatest vulnerability has not gone away. Rather than spending \$100 million on a project that is not needed, the Town urges Eversource to come up with a concrete plan to maintain and upgrade the poor performing 13.2-kV circuits, which are a genuine cause of unreliable electric service in the Town.<sup>102</sup>

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<sup>98</sup> Proposed FOF ¶¶ 96. In addition, out of the 100 worst performing circuits in the State based on average outage frequency, 11 of the circuits are 13.2-kV overhead distribution lines that are serving Greenwich.

Proposed FOF ¶¶ 97.

<sup>99</sup> Proposed FOF ¶¶ 98.

<sup>100</sup> 8-29-17 Tr. pp. 86, 88.

<sup>101</sup> 8-29-17 Tr. p. 86; Eversource 9, Resp. to Q-TOWN-028.

<sup>102</sup> Proposed FOF ¶¶ 95-100.

**II. There are more cost-effective solutions to the Town's system reliability needs than this project.**

In Docket 461, Mr. Bowes testified that Eversource's \$140 million project was its attempt "to satisfy need at the lowest possible cost."<sup>103</sup> The Council squarely rejected that contention in part because of the exorbitant price tag of the Initial Application. Unfortunately, the new project is *more* expensive than the Initial Application when taking into account the minimal benefit it provides, and the multitude of issues that are not addressed by the project. There are far more cost-effective solutions that Eversource has still not considered.<sup>104</sup>

**A. The current proposal is too expensive for the minimal benefit provided.**

While on the surface Eversource's current proposal appears less expensive, at a cost of \$100 million, a closer look reveals that this project is actually more expensive than that.

First, on a per MVA basis, the current proposal is *more* costly than the project that the Council rejected in Docket 461.<sup>105</sup> In the Initial Application in Docket 461, Eversource proposed three 60 MVA transformers, with a total permissible load capacity of 134 MVA.<sup>106</sup> The cost for the 134 MVA of permissible load capacity was approximately \$140 million, or **\$1.05 million per MVA**.<sup>107</sup> Eversource cited that figure to justify its rejection of distribution-based alternatives.<sup>108</sup> The Current Application proposes two 60 MVA transformers, with a permissible load capacity of 60 MVA. The

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<sup>103</sup> Council Admin. Notice 43, 12-1-15 Tr. p. 148.

<sup>104</sup> Proposed FOF ¶¶ 102-139.

<sup>105</sup> Proposed FOF ¶¶ 101-106.

<sup>106</sup> Council Admin. Notice 43, Eversource 1, p. E-17.

<sup>107</sup> Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001.

<sup>108</sup> Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001.

cost for this 60 MVA of permissible load capacity is \$100 million, or **\$1.67 million per MVA**.<sup>109</sup> By proposing a new substation with so much less capacity, there is far less “bang for the buck” and the new project is in fact a *more costly proposal*, when considering the minimal return. Furthermore, when taking into account that the existing Prospect Substation would be retired, along with its 55 MVA of capacity, the new project proposes spending \$100 million for a **net increase of only 5 MVA** of capacity.<sup>110</sup> While the cost of the project is reduced by 29% from the Initial Application, the capacity in the new substation is reduced by 55%.

Second, Eversource’s proposal defers important costs to the future.<sup>111</sup> While the project in Docket 461 would have provided enough capacity to allow for the retirement of both the Prospect and Byram Substations, Eversource abandoned the retirement of Byram in this docket. Accordingly, Greenwich customers would still depend on the “vintage and obsolete” equipment at the Byram Substation even after Eversource’s Application in this Docket 461A was approved. In order to provide reliable service to customers served by Byram, Eversource will clearly have to upgrade Byram Substation’s equipment in the near future.<sup>112</sup> In addition, while Eversource acknowledges it is no longer concerned about load growth in Greenwich, it is nonetheless proposing the same-sized 115-kV circuits as in Docket 461, and has plans to replace the 60-MVA transformers at the new substation with brand new 80-MVA

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<sup>109</sup> Eversource 1, Resp. to Q-CSC-023; Eversource 1, Vol. 1, Ex. B, p. A-17; Eversource 1, Vol. 1, Ex. A, p. A-27.

<sup>110</sup> Eversource 1, Resp. to Q-CSC-013, Q-CSC-023; Eversource 1, Vol. 1, Ex. B, p. A-17; Eversource 1, Vol. 1, Ex. A, p. A-27.

<sup>111</sup> Proposed FOF ¶¶ 107-109.

<sup>112</sup> Eversource 1, Vol. 1, Pre-filed Testimony p. 11; 8-29-17 Tr. p. 96; Council Admin. Notice 43, Eversource 1, Eversource 1, p. E-16 (Table E-4).

transformers in the future, another cost that is not included in the \$100 million figure quoted by Eversource.<sup>113</sup>

Given the actual cost of this project and the minimal benefit to the reliability of the Greenwich electric system, Eversource's exorbitant Current Application should be rejected.

**B. Eversource has failed to adequately consider distribution alternatives.**

In Docket 461, Eversource insisted that only a \$140 million transmission project could satisfy the Town's needs because of the imminent risk of overloads on the 27.6-kV Cos Cob transformers.<sup>114</sup> In support of this argument, Eversource submitted a number of "distribution alternatives" that it considered and rejected for various reasons.<sup>115</sup> Eversource argued that none of those alternatives could match the far-reaching benefit of its proposed bulk substation, which was needed to address the enormous transformer overload problem that was about to threaten the Town's electric service.<sup>116</sup>

In this docket, the premise of Eversource's urgent claim of need has now been abandoned, as Eversource's load projections were proven erroneous by actual load in the summers of 2014 – 2016.<sup>117</sup> Instead, Eversource now claims that this is "purely a reliability project . . . to address multiple issues on the distribution system in Greenwich."<sup>118</sup> Incredibly, despite this new justification for the alleged need for this

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<sup>113</sup> Eversource 9, Resp. to Q-TOWN-058; Eversource 1, Vol. 1, Ex. B p. A-17; Eversource 1, Vol. 1, Ex. A p. A-27; Proposed FOF ¶¶ 108-109.

<sup>114</sup> Council Admin. Notice 43, Eversource 1, p. F-2 to F-3; Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001; Proposed FOF ¶ 110.

<sup>115</sup> Id.

<sup>116</sup> Id.

<sup>117</sup> See discussion, *supra*.

<sup>118</sup> 7-25-17 Tr. p. 12.

project, Eversource did not do any new meaningful planning or analysis of distribution alternatives, and it continues to cling to its position that any distribution alternatives should be rejected.<sup>119</sup> Eversource rejects many distribution alternatives for the reason that they “result in a loss of load in the event two or more of the 27.6-kV transformers at the Cos Cob Substation fail.”<sup>120</sup> This is an improper basis on which to reject these distribution alternatives because the loss of two transformers is not a planning criterion for the company. Eversource has not provided any evidence that it has ever lost two of the 27.6-kV transformers at the Cos Cob Substation. Moreover, Eversource projects flat or declining load usage on those transformers, and its project contemplates a new substation with only two transformers, demonstrating that Eversource does not plan for the loss of more than one transformer.<sup>121</sup>

Eversource’s position is disturbing because one would assume that once the basis of the need for this project changed so dramatically, a responsible utility would withdraw the pending application and assess new alternatives against the new stated need. Worse, the “distribution alternatives” that Eversource says it considered were also rejected based on contingency simulations that have now been proven false and overstated, and Eversource did not adequately explore distribution alternatives that its own data show are viable.<sup>122</sup>

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<sup>119</sup> Eversource 2, Resp. to Q-CSC-026.

<sup>120</sup> Eversource 2, Resp. to Q-CSC-026.

<sup>121</sup> Proposed FOF ¶¶ 113.

<sup>122</sup> See discussion, *supra*.

## 1. Distribution Option 1 was never meaningfully analyzed.

Distribution Option 1, identified in response to Q-CSC-026, has simply never been tested, priced and considered against the current \$100 million proposal for a 60-MVA permissible load capacity substation.<sup>123</sup> Distribution Option 1 would involve reconductoring existing feeders from Cos Cob to Prospect, which is clearly a remedy that would more effectively address older cables that are failing. Eversource rejected this option, without ever pricing it, due to the “fatal flaw” of “length and impedance differences” causing the feeders to overload when tested. Eversource’s rejection of this option does not withstand scrutiny.<sup>124</sup>

First, as described above, the overloads on feeders in Eversource’s computerized simulations have been proven to be false and overstated. Second, Eversource fails to explain why the impedance differences it highlights cannot be addressed with minimal expense by installing current limiting reactors.<sup>125</sup> Third, in Distribution Option 1, Eversource considered larger 750 kcmil cables to replace the existing 500 kcmil cables.<sup>126</sup> Mr. Bowes complained that increasing the size of the cables would require construction of new trenches and ducts.<sup>127</sup> However, the Town’s expert made clear that new cables are rated to operate under normal conditions at 105 degrees Celsius, whereas old cables, per Mr. Bowes, can only operate at 90 degrees Celsius.<sup>128</sup> The ability to operate modern cables at higher temperatures enables the cables to carry more electricity. Therefore, replacing the existing cables with same-

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<sup>123</sup> Proposed FOF ¶¶ 114-122.

<sup>124</sup> Proposed FOF ¶¶ 114 – 122.

<sup>125</sup> Proposed FOF ¶ 117.

<sup>126</sup> Eversource 2, Resp. to Q-CSC-026.

<sup>127</sup> 9-5-17 Tr. p. 34.

<sup>128</sup> 8-29-17 Tr. at 59, 181.

sized cables in the existing ducts would produce additional capacity at a significant cost savings.<sup>129</sup> This was never considered by Eversource.

There has been no serious examination of the reconductoring of these cables when compared to the minimal benefit of the \$100 million proposed project.

## **2. Distribution Option 4 is not a fair alternative.**

In response to the Town's proposed solution, Mr. Bowes testified that Eversource considered that proposal in its "Distribution Option 4," which he claimed should be rejected because it would cost \$120 million.<sup>130</sup> However, a review of the details of this option reveals it is *not* the same proposal suggested by the Town and it is an unfair attempt by Eversource to inflate costs to make it appear as if distribution alternatives are as expensive as Eversource's \$100 million transmission proposal. They are not.<sup>131</sup>

Under Distribution Option 4, Eversource would: "install" four new 27.6-kV feeders from Cos Cob to a new substation, build a new substation with two 80 MVA transformers, and reconfigure and upgrade the 13.2-kV feeders at Prospect and Byram, while retiring both Prospect and Byram Substations.<sup>132</sup>

Without making any modifications to this option whatsoever, Eversource rejected it.<sup>133</sup> This option, however, includes the massive expense associated with reconfiguring and upgrading the 13.2-kV feeders at Prospect and Byram, while retiring both Prospect and Byram Substations.<sup>134</sup> Since Eversource is no longer planning to retire Byram or reconfigure any of the feeders into the Byram Substation, one would have thought

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<sup>129</sup> Proposed FOF ¶¶ 119-122.

<sup>130</sup> 9-5-17 Tr. p. 34.

<sup>131</sup> Proposed FOF ¶¶ 123-129.

<sup>132</sup> Eversource 2, Resp. to Q-CSC-026.

<sup>133</sup> Id.

<sup>134</sup> Id.

Eversource would have analyzed realistic distribution options that do not include these expenses which it now claims may not be necessary.

Moreover, the option states that four new 27.6-kV feeders from Cos Cob to a new substation would be “install[ed].”<sup>135</sup> In other words, Eversource provided a price that includes digging entirely new ducts and trenches, rather than reconductoring within the existing ducts with same-sized cables.<sup>136</sup> This added expense is significant and unnecessary.

Finally, the substation contemplated in Distribution Option 4 is a substation with 80 MVA transformers, which would be larger and more expensive than the proposed 60 MVA substation.<sup>137</sup>

In sum, Eversource rejected Distribution Option 4 because of its supposed \$120 million cost, even though it larded the option with construction that is not being proposed, for the sole purpose of inflating the price. If Eversource had properly examined reconductoring same-sized cables in their existing ducts, a substation with 60-MVA permissible load capacity (as it now proposes), and no upgrades to Byram (as it now proposes), this alternative would have been far less expensive than the current \$100 million proposed project.

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<sup>135</sup> Id.

<sup>136</sup> Proposed FOF ¶ 126.

<sup>137</sup> Eversource 2, Resp. to Q-CSC-026.



**3. A real distribution alternative has been shown to be much less expensive and more beneficial.**

In Docket 461, in Late Filed Exhibit Q-LF-001, Eversource actually provided the cost of a distribution solution that would address the issues Eversource claims as the need for this \$100 million transmission project.<sup>138</sup> In that exhibit, Eversource identified four “key objectives” of its proposed transmission-based project, the steps required to improve and expand its distribution system to achieve those objectives, and the estimated costs associated with those steps.<sup>139</sup> Of those four key objectives, the first objective (reducing load on the Cos Cob Substation) is no longer a concern, and the third and fourth objectives (addressing the aging transformers and switchgear at Prospect Substation) are addressed by retiring Prospect and building a new substation to feed the loads currently served by Prospect (as Eversource is currently proposing).<sup>140</sup> The cost of achieving the second objective (increasing distribution feeder capacity between the Cos Cob and Prospect substations), according to Eversource’s exhibit, is \$33 million - \$37 million.<sup>141</sup> Eversource now estimates that retiring Prospect and building a new indoor substation on Railroad Avenue to feed the loads currently served by Prospect will cost approximately \$28.2 million.<sup>142</sup>

Accordingly, based on Eversource’s own cost estimates, in order to achieve its key objectives of improving distribution feeder capacity and addressing the aging transformers and switchgear at the Prospect Substation by building a new substation with two 60 MVA transformers, fed at 27.6-kV, the cost would be approximately \$62

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<sup>138</sup> Proposed FOF ¶¶ 130-137.

<sup>139</sup> Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001.

<sup>140</sup> Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001.

<sup>141</sup> Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001.

<sup>142</sup> Eversource 1, Vol. 1, Ex. B, p. A-17; Eversource 1, Vol. 1, Ex. A, p. A-27.

million - \$66 million, far less than Eversource's proposed \$100 million project.<sup>143</sup>

However, despite the lower cost, Eversource has never considered a solution involving increased distribution feeder capacity and a new substation on Railroad Avenue with two 60 MVA transformers fed at 27.6-kV.<sup>144</sup>

### **III. This Application should be denied as a matter of policy.**

#### **A. The exact same grounds for denial of the Initial Application in Docket 461, require denial of the current project in Docket 461A.**

In Docket 461, the Council denied Eversource's original \$140 million proposal finding that it did not "have enough information regarding the public need and the basis of the public need."<sup>145</sup> Significantly, the Council also found that "it is not evident to this Council that the GSLP is necessary for the reliability of the electric power supply of the state."<sup>146</sup> In addition, the Council found that the cost was "prohibitively expensive and relies too much on Connecticut ratepayers."<sup>147</sup>

Eversource's proposal in this docket is no different. Eversource now concedes that this project has nothing to do with concerns about overloading transformers at the Cos Cob Substation, and is instead purely a project supposedly necessitated by the need to improve the "reliability" of the 27.6-kV distribution system. However, Eversource proposes the exact same solution in this docket. Even though the new claim of need is based on the reliability of these 27.6-kV distribution feeders, the new proposal does nothing to upgrade and replace these antiquated cables. Instead, just

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<sup>143</sup> Proposed FOF ¶ 136.

<sup>144</sup> Eversource 2, Resp. to Q-CSC-026; Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001; Proposed FOF ¶ 137.

<sup>145</sup> Council Admin. Notice 43, Opinion, p. 8.

<sup>146</sup> Id.

<sup>147</sup> Id.

like in Docket 461, Eversource's proposed solution is to build an exorbitant new transmission line and 115-kV substation.

The bottom line is that Eversource proposes no real changes in this Docket 461A from the proposal that was rejected in Docket 461. While Eversource claims it is building a smaller substation with less capacity and is not upgrading the obsolete equipment at the Byram Substation because it is no longer projecting load growth, Eversource has not changed the size and capacity of the 115-kV circuits that will feed the new Greenwich Substation, has admitted that it designed the project so that it can replace the 60-MVA transformers at the new Greenwich substation with 80-MVA transformers, and has acknowledged that it will need to replace failing equipment at the Byram Substation in the future.<sup>148</sup> Eversource's project should be seen for what it is: a \$100 million proposal that provides minimal benefits and defers important costs to the future, all in an effort to try to persuade the Council that it is less expensive than the proposal that was rejected in Docket 461.

In addition, as described above, not only has Eversource failed to prove its project is necessary for the reliability of the distribution system in Greenwich, but it also admits that the proposed project is designed only to supply electricity to and benefit Greenwich customers.<sup>149</sup> Eversource admitted that its proposed project will not result in the feeding of 13.2-kV circuits in Stamford from 13.2-kV circuits that normally originate

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<sup>148</sup> Proposed FOF ¶¶ 107-108.

<sup>149</sup> Proposed FOF ¶¶ 138-140.

in Greenwich.<sup>150</sup> Accordingly, Eversource has not presented any evidence that its project is necessary for the reliability of the electric power supply of the State.<sup>151</sup>

Eversource has again proposed a transmission solution to a claimed local distribution problem, which should have been addressed without the need for Siting Council approval, and without causing Connecticut ratepayers to pay for a \$100 million project that provides so little benefit. Just as the Council denied the Initial Application in Docket 461 because it provided no benefit to the State, the current proposal – which is the exact same transmission-based proposal – must be denied for the same reason.

**B. Because of the reduction in demand as a result of the Town's energy efficiency programs, there should be no basis for the Council to re-examine the need for this project.**

In denying the Initial Application in Docket 461, the Council stated that it would only re-examine the need for a transmission-based proposal if “electric demand cannot be reduced through energy efficiency measures in conjunction with any other measures, or if electric demand cannot be reduced by any additional short-term measures employed by Eversource to increase reliability and capacity.”<sup>152</sup> As the record amply demonstrates, demand in the Town has indeed been reduced to the point that Eversource projects a possible decline in usage, and the Town has continued to focus on implementing a meaningful energy efficiency strategy.<sup>153</sup>

Mr. Bowes acknowledged that the Town's energy efficiency programs have reduced demand.<sup>154</sup> Indeed, just two years after arguing to the Council that there would

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<sup>150</sup> Proposed FOF ¶ 141.

<sup>151</sup> Proposed FOF ¶¶ 138-142.

<sup>152</sup> Council Admin. Notice 43, Opinion, p. 8.

<sup>153</sup> Proposed FOF ¶¶ 143-152.

<sup>154</sup> 7-25-17 Tr. p. 111.

be overloads on the Cos Cob transformers by 2017 unless its \$140 million Initial Application was approved, Eversource has now completely abandoned those projections in this docket.<sup>155</sup> Mr. Bowes made clear that one reason Eversource no longer projects overloads is because of the success of the Town's energy efficiency programs.<sup>156</sup> Indeed, in 2016, the hottest summer on record, the Cos Cob peak load remained significantly below the 2013 peak load. Eversource no longer claims the risk of future transformer overloads as a justification for the need for this project.

In addition, Eversource no longer proposes replacing the obsolete equipment in the Byram Substation. Mr. Bowes testified that Eversource's reversal of this proposal was also a function of the success of the Town's conservation efforts which have led to reduced demand.<sup>157</sup> Thus, based on the Council's ruling in Docket 461, there is no basis to now re-examine need, because the Town's energy efficiency programs have succeeded in reducing demand.

In addition to Eversource's recognition of the Town's positive progress towards improving energy efficiency and reducing demand, the Town documented its efforts to improve energy efficiency programs in Town-owned facilities and among Town residents.<sup>158</sup>

The Town has made significant progress toward achieving a reduction in municipal building energy consumption by 2018. The strategy, developed in consultation with Eversource, is to focus on reducing usage at the largest Town facilities such as the Grass Island Wastewater Treatment Plant, Town Hall, and Greenwich High

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<sup>155</sup> Proposed FOF ¶¶ 145.

<sup>156</sup> Id.

<sup>157</sup> Proposed FOF ¶¶ 146.

<sup>158</sup> Proposed FOF ¶¶ 147-152.

School, and to focus on reducing usage among large commercial and industrial users.<sup>159</sup> These efforts have already yielded demonstrable results. The Town's energy upgrades have resulted in a 17% reduction in usage at the plant in the last six years.<sup>160</sup> In addition to utilizing more efficient lighting at schools, the Town has also installed solar energy at two schools including Greenwich High School, which experienced a usage reduction of 8% in only one year from 2014 to 2015.<sup>161</sup> In addition, Eversource recently conducted an energy audit of the Greenwich Town Hall and expects to achieve a 10-25% reduction in usage at Town Hall in the coming year.<sup>162</sup>

Given the Town's commitment to reducing usage and improving energy efficiency, and the demonstrated benefits already achieved, there is every reason to anticipate, as Eversource testified, "that there will be energy efficiency, distributed generation and demand response in the Town of Greenwich that mitigates any future increase in electrical consumption in the Town."<sup>163</sup>

If this project were to be approved, it would undermine the Town's energy efficiency strategy. Eversource acknowledges that the need for this project is not about load capacity at all. Accordingly, even if the Town's load usage continues to be reduced through its conservation efforts, ratepayers – in the Town and throughout the State – would still have to pay for a \$100 million project. If Connecticut ratepayers see higher electric bills, it will surely stall the momentum towards energy conservation that the

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<sup>159</sup> Town 5.

<sup>160</sup> Town 5, Sched. A.

<sup>161</sup> Town 5, Sched. B.

<sup>162</sup> Town 5, Sched. B.

<sup>163</sup> 7-25-17 Tr. p. 111.

Town and the State have embraced.<sup>164</sup> Instead of proposing a \$100 million transmission solution that the Town opposes, it would be far more productive for Eversource to continue to help the Town reduce its load usage through energy efficiency and demand reduction programs, while directly addressing the needs of the distribution system.

**C. This project should be denied because it would be irresponsible to spend \$100 million in light of Eversource’s vacillating rationales for the need for this project.**

There is no question that the focus of Eversource’s arguments in the Initial Application in Docket 461 concerned load usage in the Town, and Eversource’s projections of increased electrical consumption and overloads on the Cos Cob transformers. The supposed issue of distribution feeder overloads was an afterthought.

It is inexplicable that after the Initial Application was denied by the Siting Council, Eversource now emphasizes an entirely different justification for need – the “reliability” of the distribution system – while proposing the exact same configuration in this docket, albeit with less capacity. It is disingenuous for Eversource to suggest that the reliability of the distribution feeders was always one of its arguments for need. After all, the computerized simulations that supposedly substantiate this argument, were never presented in Docket 461.<sup>165</sup> Surely if the risk of these feeders overloading was a real concern, Eversource would have produced, and highlighted, those simulations in support of the Initial Application. Of course, that would not have helped Eversource’s argument, because the credibility of those simulations was debunked when the Council

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<sup>164</sup> Town 4, Att. B (executive summary from draft Connecticut Department of Energy and Environmental Protection Comprehensive Energy Strategy).

<sup>165</sup> Council Admin. Notice 43, RECORD.

ordered Eversource to provide the actual load data in response to Q-TOWN-077. That actual load data proved that the computerized simulations grossly overstated the load on the feeders, and are meritless.<sup>166</sup>

**D. This project should be denied because Eversource's profit-motive is not a proper basis to approve an application.**

It is difficult to rationalize Eversource's continued insistence on a multi-million dollar transmission solution that was never designed to mitigate the majority of the existing electrical deficiencies in the Town. The true motivation in this Docket 461A, as well as in the initial Docket 461, is to generate profits for the company and to devise a scheme for future profits. It is undisputed that Eversource gets a much higher rate of return on transmission projects than distribution projects. That profit is critical to the company and its shareholders. However, it should have no place in planning for the energy needs of the State or the Town.

Moreover, given that Greenwich is at the farthest extent of Eversource's electric network in southwest Connecticut and this project, if approved, will extend Eversource's ability to supply electricity at 115-kV approximately 2.3 miles closer to the border with New York, it is equally obvious that Eversource values the extension of its 115-kV transmission line further west, as a future tap into a new market in New York.<sup>167</sup>

Ironically, there was some discussion about "gold-plating," as if the Town was making requests or was even in favor of this project. When the Greenwich Zoning Director, Public Works Commissioner, Conservation Director and Tree Warden were all

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<sup>166</sup> Proposed FOF ¶¶ 16-32

<sup>167</sup> Proposed FOF ¶¶ 154-157.



canvassed at the August 29<sup>th</sup> hearing, each Town official testified that there was no need for this project.<sup>168</sup>

The gold-plating is solely for Eversource's benefit. Eversource has not tailored the construction in a manner to reduce costs. To the contrary, it continues to use the same sized cables as it proposed in Docket 461 even though the new substation is proposed to be smaller.<sup>169</sup> Moreover, while this project seeks approval of a substation to house two 60-MVA transformers, Eversource admitted that its proposed substation will be large enough to accommodate two 80-MVA transformers in the future, thereby driving up the cost.<sup>170</sup> This detail is particularly inexplicable considering Eversource has now admitted that it is projecting flat or declining load usage because of the Town's successful conservation efforts. Eversource's proposal is over-building, from which it would reap the profits.

The electric rates in Connecticut are among the highest in the nation. In part because of massive transmission line projects, like the present proposal, Connecticut ratepayers have unacceptably high electric bills. The State is losing people and businesses, and high electric rates are one reason. The last thing the State needs at this time is overbuilding an exorbitant transmission line, which will provide no benefit to the State and minimal benefit to the real electrical system reliability issues facing the Town.

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<sup>168</sup> 8-29-17 Tr. pp. 278-279.

<sup>169</sup> Proposed FOF ¶ 108.

<sup>170</sup> Proposed FOF ¶ 108.

**E. Eversource's claims of the urgent need for this project are as overstated now as they were in Docket 461.**

Perhaps the most obvious reason that the current proposal should be denied is the fact that Eversource argued that the \$140 million Initial Application in Docket 461 had to be approved or else the lights would go out in Greenwich by 2017, due to overloads on the Cos Cob transformers. Now, Eversource admits that its load projections were false. If the Council had not exercised its good judgment to deny the Initial Application, Connecticut ratepayers would have been faced with a \$140 million bill predicated on a need argument that has since collapsed. Just as Eversource's "sky is falling" argument in Docket 461 was based on overstated load projections that were proven false, the company's "sky is falling" arguments in this docket are based on computerized simulations of potential feeder overloads that have been proven false.

In their haste to get Siting Council approval, Eversource never engaged in new planning or analysis to identify the most effective and lowest-cost solution. Instead they merely tweaked an already cost-prohibitive proposal. Just as they ignored actual data that refuted their erroneous load projections in Docket 461, they have now again ignored actual data proving that their computerized simulations purporting to show overloading on 27.6-kV distribution feeders are erroneous. Moreover, Eversource has exhibited a "win at all costs" approach, choosing to litigate for their over-priced scheme while ignoring the fact that antiquated cables failed under low-load conditions and need to be replaced. Eversource adopted this approach rather than engaging in thorough planning that would truly address system reliability issues at the lowest possible cost. Their gamesmanship included efforts to keep out of the record actual load data on the 27.6-kV feeders, knowing that it would completely undermine their computerized

simulations. Only when ordered by the Council to reveal this data, did the truth come out. The ratepayers of Connecticut deserve more from a public utility.

This is a proposal that should never have been brought before the Siting Council. There are legitimate issues with the Town's electrical system which can and should be addressed. But Eversource's claims of need for a new transmission line and substation are simply not credible, and should again be rejected. The Application should be denied.

**F. Eversource has failed to communicate and cooperate with the Town since the conclusion of the proceedings in Docket 461.**

In Docket 461, the Council expressed its concern about the apparent lack of communication and cooperation between the Town and Eversource, and encouraged the Town and Eversource to develop a mutually suitable solution to meet Greenwich's electric needs.<sup>171</sup> Rather than heeding the Council's direction, Eversource instead acted with the same hasty "win at all costs" approach that it has demonstrated throughout these proceedings.<sup>172</sup>

In all of the discussions with the Town, the Town questioned the need for this transmission-based project and sought a better explanation for why Eversource has not proposed alternative measures that would get to the heart of the electric needs in Greenwich, including improvements to the 27.6-kV feeders and the 13.2-kV distribution system, replacing older equipment and transformers in the existing substations, load-shifting, reliance on the 115-kV tap to the Tomac Substation, and improvements to the

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<sup>171</sup> Council Admin. Notice 43, Opinion, pp. 3, 8.

<sup>172</sup> Proposed FOF ¶¶ 166-184.

Tomac Substation.<sup>173</sup> Eversource repeatedly dismissed any distribution-based solutions, insisting on a transmission-based project.<sup>174</sup>

One of the transmission-based projects proposed by Eversource involved the construction of a hybrid overhead-underground transmission line along the Metro-North Railroad (“MNRR”) tracks.<sup>175</sup> The Town’s force main is located just south of the MNRR tracks.<sup>176</sup> Both during and after Docket 461, Town representatives made clear that the construction of a new transmission line along the MNRR must not interfere with the Town’s access to its force main. The Town is party to a Federal Consent Decree that requires the Town to replace and upgrade its force main.<sup>177</sup> In addition, the Town is required to maintain its existing force main in place as a back-up after it is replaced by a new force main.<sup>178</sup> The Council recognized in Docket 461 that if such a proposal “is approved, the overhead portion to the south of the MNRR tracks would require Eversource to construct the line in a way that would allow the Town to replace and upgrade its force main in accordance with the federal consent decree.”<sup>179</sup> The Town also expressed concern as to potential public health and safety issues if a transmission line were to be sited so close to the force main.

However, for months after the Council issued its opinion in May 2016, even though the Town repeatedly asked Eversource to provide the details of this proposed route so that it could determine whether the Town would be able to access its force

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<sup>173</sup> Town 1, p. 3; 8-29-17 Tr. p. 158; Eversource 1, Vol. 1, Pre-Filed Testimony, p. 17 lines 528-529.

<sup>174</sup> 8-29-17 Tr. p. 158.

<sup>175</sup> Eversource 1, Vol. 1, Pre-Filed Testimony, p. 23.

<sup>176</sup> Eversource 2, Resp. to Q-CSC-036 (cross-section sheets identifying location of force main).

<sup>177</sup> Council Admin. Notice 43, 3-10-16 Tr. p. 105.

<sup>178</sup> Eversource 1, Vol. 1, Pre-Filed Testimony, p. 18.

<sup>179</sup> Council Admin. Notice 43, FOF No. 301.

main and avoid any violations of the Federal Consent Decree, Eversource failed to provide those details.<sup>180</sup>

In January and February 2017, Eversource conceded that there were options for new cables to be placed through Bruce Park that didn't require horizontal directional drilling or high-pressure fluid filled cables (the specific methods of construction proposed in Docket 461).<sup>181</sup> In those discussions, Eversource indicated that it could mitigate the environmental impact concerns that were central to the Town's opposition in Docket 461 by eliminating horizontal directional drilling and using solid dielectric XLPE cables.<sup>182</sup>

The Town never altered its position that Eversource had not demonstrated the need for a transmission-based solution, and Town representatives informed Eversource that until that need could be proven, the Town could not endorse any route through Bruce Park or any other route.<sup>183</sup> Town representatives also told Eversource that they would have to see more details including a detailed depiction of the design (including the proposed crossings of Indian Harbor and I-95), and the location of splice vaults in environmentally-sensitive areas in the park.<sup>184</sup> For the first few months after the meeting in January 2017, Eversource only discussed with the Town its proposed transmission-based project through Bruce Park, and all of the communications with the Town related to the details of that proposal.<sup>185</sup>

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<sup>180</sup> Proposed FOF ¶¶ 174-179.

<sup>181</sup> Proposed FOF ¶ 175.

<sup>182</sup> Town 1, pp. 4-5; 8-29-17 Tr. pp. 166-167.

<sup>183</sup> Proposed FOF ¶ 176.

<sup>184</sup> Town 1, pp. 3, 4; Town 2, Resp. to Council Q-12; 8-29-17 Tr. p. 146, 148-150.

<sup>185</sup> 8-29-17 Tr. p. 162.

Yet, in April 2017, after months of discussions that related solely to the proposed route through Bruce Park, Eversource surprised the Town by announcing for the first time that it intended to file a petition to reopen Docket 461 seeking approval for the route along the MNRR tracks.<sup>186</sup> At no time did Eversource provide the details as to how a transmission line along the MNRR tracks could be reconciled with the Town's need to access and maintain its force main, and to comply with the Federal Consent Decree. Nor did Eversource provide any response to the Town's concerns about potential public health and safety issues by siting a transmission line so close to the force main. The Town's questions were never answered.<sup>187</sup>

In May 2017, Eversource filed the current Application, seeking approval for the route along the MNRR tracks, which it called the Proposed Modified Project.<sup>188</sup> The Proposed Modified Project proposed the placement of several poles in the corridor of the existing force main, and very close to the location of the new force main located ten feet away. However, Eversource did not in any way address how the proposed project would impact the Town's access to the force main, nor did Eversource indicate how the Town could possibly comply with the Federal Consent Decree if the Proposed Modified Project were approved.<sup>189</sup>

In addition, when Eversource filed its Petition in this docket seeking approval for the Proposed Modified Project, although Eversource knew that it needed permission from the Connecticut Department of Transportation (CDOT) to build its proposed transmission line in the MNRR right-of-way, Eversource presented its proposal before

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<sup>186</sup> Id.

<sup>187</sup> Id.

<sup>188</sup> Eversource 1, Vol. I, Ex. A.

<sup>189</sup> Proposed FOF ¶¶ 180-181.

obtaining that permission.<sup>190</sup> CDOT, upon reviewing the details of Eversource's Proposed Modified Project, refused to grant Eversource permission to use its right-of-way, concluding that Eversource's Proposed Modified Project "will cause immediate and irreparable harm to [New Haven Line] commuter rail service operation."<sup>191</sup>

In sum, between the close of Docket 461 and the filing of the Petition in this Docket, Eversource has failed to work cooperatively with the Town by ignoring the Town's questions relating to need, ignoring the Town's concerns relating to the interference with its force main, moving hastily to obtain approval for a transmission line along the MNRR without addressing the Town's concerns or getting approval from CDOT, and ignoring the Town's requests for details relating to both possible transmission line routes. Even worse, in this Docket 461A, Eversource mischaracterizes the Town's positions in order to make it appear that the Town actually agreed that there is a need for a transmission-based project, when in fact the Town has never done so.<sup>192</sup> For these reasons, the Current Application should be denied.

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<sup>190</sup> Eversource 4, pp. 1-2; 7-25-17 Tr. pp. 100-101; Eversource 5, Ex. A; 9-5-17 Tr. pp. 72-73.

<sup>191</sup> Eversource 5, Ex. A.

<sup>192</sup> See, e.g., Eversource 1, Pre-Filed Test., p. 17 lines 534-536.

**IV. If the Council determines that Eversource has met its burden of showing the need for the project, the Town does not oppose a coffer dam for the crossing of Indian Harbor, provided environmental harm to the surrounding areas is mitigated.**

Eversource's proposed route includes running the 115-kV transmission line across Indian Harbor.<sup>193</sup> At the hearing on August 29<sup>th</sup>, Mr. Bowes testified that Eversource will either utilize a coffer dam or a pedestrian bridge to facilitate the crossing of Indian Harbor.<sup>194</sup> During discussions with Eversource in the winter and spring of 2017, the Town's representatives questioned how Eversource would limit the impact on the surrounding environment, and avoid the risk of flooding, if a coffer dam was placed on the shores of Indian Harbor. Town representatives further discussed the approval process that would result from the need for Eversource to obtain permitting from the U.S. Army Corps of Engineers, which it acknowledged in Docket 461.<sup>195</sup> During these discussions, the Town also suggested that Eversource explore attaching the transmission line to a pedestrian bridge that the Town already had plans to build.<sup>196</sup> The Town never opposed a coffer dam, nor has it insisted on a pedestrian bridge.<sup>197</sup> Rather, the Town has consistently stated that the use of a coffer dam may present a viable construction option at a cost savings if Eversource was able to construct it in a way that minimizes the adverse environmental impact to surrounding areas.<sup>198</sup>

At the July 25<sup>th</sup> hearing, Eversource stated for the first time that it would use "floating work platforms" in order to construct the coffer dam, which the Town agrees

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<sup>193</sup> Proposed FOF ¶ 158.

<sup>194</sup> Proposed FOF ¶ 159.

<sup>195</sup> Proposed FOF ¶ 160.

<sup>196</sup> Id.

<sup>197</sup> Proposed FOF ¶ 161.

<sup>198</sup> Proposed FOF ¶ 162.



should mitigate the environmental impact to surrounding areas.<sup>199</sup> In sum, the Town never insisted on construction of a pedestrian bridge.<sup>200</sup> Further, the Town does not oppose construction of a coffer dam to cross Indian Harbor, provided that any such construction avoids negative environmental impacts, including by the use of a floating barge.<sup>201</sup>

**V. If the Council determines that Eversource has met its burden of showing the need for the project, the Town does not oppose the proposed underground route through the roads of Bruce Park, provided Eversource confines construction to previously-disturbed roadways and does not remove trees.**

In Docket 461, the Town opposed the proposed route of the transmission line through Bruce Park because Eversource's proposal utilized horizontal directional drilling to install high pressure fluid filled cables (HPFF) that would have had a devastating impact on the park.<sup>202</sup> In addition, the route through Bruce Park in the Initial Application would have been in close proximity to ballfields and playgrounds, which the Town adamantly opposed.<sup>203</sup> The Council recognized this environmental impact in denying Eversource's Initial Application.<sup>204</sup>

While the Town has consistently opposed a transmission-based project, the Town has stated that that if Eversource is able to demonstrate a need for such a project, the current project satisfies many of the serious concerns that were central to the Town's opposition in Docket 461.<sup>205</sup> In contrast to the Initial Application,

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<sup>199</sup> Proposed FOF ¶ 163-164.

<sup>200</sup> Town 2, Resp. to Council Q-12; 8-29-17 Tr. p. 159.

<sup>201</sup> Proposed FOF ¶ 165.

<sup>202</sup> Proposed FOF ¶¶ 187, 188.

<sup>203</sup> Proposed FOF ¶ 187.

<sup>204</sup> Council Admin Notice 43, Opinion.

<sup>205</sup> Town 1, p. 4.

Eversource's Current Application addresses many of the Town's serious concerns by: 1) not utilizing horizontal directional drilling, instead using solid dielectric (XLPE) cables, 2) conducting all work within the already-disturbed roadways in Bruce Park, curb to curb, and 3) avoiding the removal of any trees.<sup>206</sup> As a result, if the Council finds that Eversource has proven the need for this project, the Town does not oppose the current route and requests that the Council require Eversource to adhere to these conditions in order to ensure minimal environmental impact to Bruce Park.

**VI. If the Council determines that Eversource has met its burden of showing the need for the project, the record makes clear that a fully-enclosed indoor substation is the only appropriate design for a substation at either 281 Railroad Avenue or 290 Railroad Avenue.**

In this Docket 461A, Eversource proposes that a new substation be built at either 281 Railroad Avenue or 290 Railroad Avenue. Both of these locations are in close proximity to residential and commercial buildings. Due to noise and safety concerns, regardless of where the substation is located, the Town opposes the construction of an open-air substation and urges that the new substation be built using a fully-enclosed indoor design. Eversource acknowledged the Town's "legitimate concerns," and has testified that a fully-enclosed indoor substation at either location would satisfy their needs.<sup>207</sup>

Indeed, a review of the record makes clear that a fully-enclosed indoor design is the only appropriate design for the new substation that Eversource is proposing.<sup>208</sup> The Town's expert, drawing on decades of experience with utilities who regularly build

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<sup>206</sup> Proposed FOF ¶ 189.

<sup>207</sup> Eversource 8, p. 3; 8-29 Tr. p. 111.

<sup>208</sup> Proposed FOF ¶¶ 190-199.

substations in urban areas, testified that building an open air substation in close proximity to any form of occupied building – with or without a fence – has become rare due to the noise and safety issues posed by substations.<sup>209</sup> In addition, as Mr. Bowes explained, although Eversource has only built open-air substations, the proposed new substation is unique in that it will be located extremely close to residential and commercial customers, whereas Eversource usually builds substations in rural areas with much larger acreage.<sup>210</sup> Eversource also stated unambiguously that “a fully-enclosed indoor substation would be more effective in reducing sound levels from substation equipment, would provide a higher level of physical security, and would have less visual impact” than an open-air substation.<sup>211</sup> As Mr. Bowes explained at the July 25<sup>th</sup> hearing:

So as you look for either residential customers that are in proximity to a substation or commercial customers, I think you have to be cognizant that they could either impact the substation or the substation could impact them. I think the designs that we've proposed here, whether it's enclosed within a building, it certainly would contain external things from impacting the substation very nicely, and would minimize any impact from the substation to neighbors.<sup>212</sup>

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<sup>209</sup> Town 1, p. 25.

<sup>210</sup> 7-25-17 Tr. p. 84; 8-29-17 Tr. p. 115.

<sup>211</sup> Eversource 14, Resp. to Q-TOWN-082.

<sup>212</sup> 7-25-17 Tr. pp. 59-60.

In sum, the Town has raised legitimate concerns about building the proposed new substation in close proximity to occupied residential and commercial buildings, due to safety risks, security and noise. These issues can only be addressed by the utilization of a fully-enclosed indoor design.

**Respectfully submitted,**

Town of Greenwich

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## CERTIFICATE OF SERVICE

I hereby certify that on this day a copy of the foregoing was delivered by electronic mail to all parties and intervenors of record, as follows:

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**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

EVERSOURCE ENERGY APPLICATION FOR  
A CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AND PUBLIC NEED FOR  
THE CONSTRUCTION, MAINTENANCE,  
AND OPERATION OF A 115-KILOVOLT (KV)  
BULK SUBSTATION LOCATED AT  
290 RAILROAD AVENUE, GREENWICH,  
CONNECTICUT, AND TWO 115-KV  
UNDERGROUND TRANSMISSION CIRCUITS  
EXTENDING APPROXIMATELY 2.3 MILES  
BETWEEN THE PROPOSED SUBSTATION  
AND THE EXISTING COS COB SUBSTATION,  
GREENWICH, CONNECTICUT, AND RELATED  
SUBSTATION IMPROVEMENTS.

DOCKET NO. 461A

OCTOBER 5, 2017

**PROPOSED FINDINGS OF FACT OF THE TOWN OF GREENWICH**



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**PROPOSED FINDINGS OF FACT OF THE TOWN OF GREENWICH**

The Town of Greenwich ("Town") submits the following proposed Findings of Fact:

**I. Eversource has failed to establish the need for this project.**

**A. Eversource's claim of need in Docket 461 was proven to be false.**

1. In Docket 461, the focus of Eversource's claim of the need for a 115-kV transmission line and substation in Greenwich was the risk of the 27.6-kV transformers at the Cos Cob Substation being overloaded. (Council Admin. Notice 43, Eversource 1, p. E-1)
  
2. In Docket 461, Eversource claimed that the risk of the 27.6-kV transformers at the Cos Cob Substation being overloaded was based on its projections of peak load levels on the Cos Cob transformers, as depicted in Table E-1 of its application in that

docket (the "Initial Application"). (Council Admin. Notice 43, Eversource 1, p. E-5, Table E-1; Council Admin. Notice 43, 3-10-16 Tr. p. 91<sup>1</sup>).

3. Eversource projected that the "27.6-kV loads at Cos Cob Substation in 2017, without the proposed Greenwich Substation, would be 135.8 MVA." Eversource also stated, "Because Cos Cob Substation's permissible load rating is 135 MVA, Cos Cob Substation is projected to be overloaded in 2017..." (Council Admin. Notice 43, Eversource 1, p. E-5)

4. Eversource based its projections as depicted in Table E-1 off actual peak load data from 2013, in which the peak load on the Cos Cob transformers was stated to be 130.5 MVA. (Council Admin. Notice 43, Eversource 1, p. E-5)

5. In arriving at its projections, Eversource ignored actual peak load data on the Cos Cob transformers for 2014 and 2015. Instead, Eversource made projections of anticipated peak load on the Cos Cob transformers, assuming a 1% growth rate, working off of the claimed actual peak load in 2013 of 130.5 MVA. (Council Admin. Notice 43, 3-10-16 Tr. pp. 91-92; Council Admin. Notice 43, Eversource 1, p. E-5)

6. Working off of the claimed actual peak load in 2013 of 130.5 MVA, Eversource projected peak loads on the Cos Cob transformers of 131.8 MVA in 2014, 133.1 MVA in 2015, and 134.5 MVA in 2016. (Council Admin. Notice 43, Eversource 1, p. E-5; Council Admin. Notice 43, 3-10-16 Tr. p. 92)

7. Eversource admits that the actual peak load on the Cos Cob 27.6-kV transformers was 107.7 MVA in 2014, 114.8 MVA in 2015 and 115.6 MVA in 2016. (Eversource 2, Resp. to Q-CSC-011)

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<sup>1</sup> All references to transcripts in in Docket 461 and Docket 461A are identified in the following format: [Month]-[Day]-[Year] Tr., at [page]. For example, page 1 of the March 10, 2016 transcript in Docket 461 would be identified as Council Admin. Notice 43, 3-10-16 Tr. p. 1 while page 1 of the July 25, 2017 transcript in this Docket would be identified as 7-25-17 Tr. p. 1.

8. When Eversource filed its Petition for Reconsideration (“Current Application”) in May, 2017 in this Docket 461A, it continued to rely on its projections of overloads on the Cos Cob transformers to justify the need for this project. (Eversource 1, Vol. 1, Pre-Filed Testimony, p. 26, Att. A; Council Admin. Notice 43, FOF No. 97).

9. At the July 25, 2017 hearing, Eversource announced for the first time that it was no longer relying on its projections of overloads on the Cos Cob transformers to justify the need for a transmission line and substation in Greenwich. (Council Admin. Notice 43, RECORD; 7-25-17 Tr. p. 11-12)

10. At the July 25, 2017 hearing, Eversource announced that load growth is no longer being projected for the Cos Cob 27.6-kV transformers. (7-25-17 Tr. p. 12)

11. Eversource testified that with energy efficiency, distributed generation and demand response, future load usage in the Town is expected to be flat or negative. (7-25-17 Tr. p. 12, 111)

12. It is anticipated that there will be energy efficiency, distributed generation and demand response in the Town of Greenwich that mitigates any future increase in electrical consumption in the Town. (7-25-17 Tr. p. 111)

13. There is no longer a concern about projected load growth in part because of the energy efficiency efforts of the Town of Greenwich. (8-29-17 Tr. p. 24)

14. Eversource admits there is no longer a need for additional capacity in Greenwich. (8-29-17 Tr. p. 91)

15. Eversource is now proposing the project “purely” as a “reliability” project to improve claimed deficiencies in the existing Greenwich distribution system. (7-25-17 Tr. p. 12)

**B. Eversource has failed to prove the “need” for its project in this Docket 461A**

**1. Eversource’s computerized simulations are proven erroneous and unreliable**

16. Eversource now focuses on potential overloads of the 27.6-kV distribution feeders supplying power to Prospect Substation from Cos Cob Substation as a basis for the need for this project. (Eversource 1, Vol. 1, Pre-filed Testimony, p. 4, lines 130-131)

17. The four 27.6-kV distribution feeders supplying power to Prospect Substation from Cos Cob Substation are identified as 11R51, 11R52, 11R55, and 11R58. (Eversource 1, Vol. 1, Pre-Filed Testimony, p. 4 & Figure 1)

18. These four 27.6-kV feeders operate in parallel, so that if one is lost from service its load is automatically redistributed to the remaining three feeders. (Eversource 1, Vol. 1, Pre-Filed Testimony, p. 5)

19. In addition to automatic load shifting, if one feeder is lost from service, Eversource has the ability to further shift load in order to avoid customer outages. (9-5-17 Tr. p. 61; Council Admin. Notice 43, Eversource Resp. to OCC-042; Eversource 9, Resp. to Q-TOWN-017)

20. The Greenwich distribution system is designed to avoid customer outages even if one feeder is lost from service. (8-29-17 Tr. p. 34)

21. Eversource’s claimed risk of potential overloads of these feeders is based on the results of computerized simulations involving load flow analyses on the 27.6-kV distribution feeders in “single contingency scenarios,” i.e., when one of the feeders is lost from service. (Eversource 1, Vol.1, Pre-Filed Testimony, p. 5; Eversource 1, Resp. to Q-CSC-001; 8-29-17 Tr. p. 38)

22. Eversource states that the results of these simulations confirmed the need for this project. (Eversource 1, Vol. 1, Pre-Filed Testimony, p. 5; Eversource 1, Resp. to Q-CSC-001)

23. Based on its computerized simulations, Eversource stated that when the loss of each of the feeders was modeled with their data for the 2013 through 2016 peak loads at the Cos Cob Substation, remaining cables were overloaded. (Eversource 1, Vol. 1, Pre-Filed Testimony, p. 5; Eversource 1, Resp. to Q-CSC-001)

24. When the loss of feeder 11R52 was modeled with the 2015 peak load at the Cos Cob Substation of 114.8 MVA, Eversource's computerized simulation projected that feeder 11R55 would be overloaded to the extent of 33.8 MVA, or 104% of its normal rating of 32.5 MVA. (Eversource 1, Resp. to Q-CSC-001; Eversource 9, Resp. to Q-TOWN-001)

25. In July 2015, feeder 11R52 was lost from service on the day of the 2015 peak load at the Cos Cob Substation. (Eversource 15, Supp. Resp. to Q-TOWN-077; 9-5-17 Tr. p. 55)

26. When feeder 11R52 was lost from service that day, the load on feeder 11R55 did not exceed 25 MVA, representing only 76.9% of its normal rating of 32.5 MVA. Even though Eversource's computerized simulation projected an overload of 33.8 MVA on feeder 11R55, or 104% of its normal rating, in actuality the feeder did not come close to overloading or exceeding its normal rating. (Eversource 1, Resp. to Q-TOWN-001; Eversource 15, Supp. Resp. to Q-TOWN-077; 9-5-17 Tr. pp. 58-59)

27. When feeder 11R52 was lost from service that day, the loads on feeders 11R51 and 11R58 were significantly less than Eversource's projected loads in its computerized simulations. (Eversource 1, Resp. to Q-TOWN-001; Eversource 15, Supp. Resp. to Q-TOWN-077; 9-5-17 Tr. p. 61)

28. The table below compares Eversource's projections of the loads on feeders 11R55, 11R51, and 11R58 to their actual loads when 11R52 went out of service on the day of the 114.8 MVA peak load in 2015:

<b>Feeder</b>	<b>Projected Load (MVA)</b>	<b>Actual Load (MVA)</b>	<b>Overstated Projection (MVA)</b>
11R51	33.21	30	3.21
11R52	NA	NA	NA
11R55	33.8	25	8.8
11R58	16.64	15	1.64

(Eversource 2, Resp. to Q-CSC-001; Eversource 9, Resp. to Q-TOWN-001; Eversource 15, Supp. Resp. to Q-TOWN-077; 9-5-17 Tr. pp. 58, 61)

29. The computerized simulations do not reflect reality because they fail to take into account the shifting of load that reduces load on the feeders in service, and avoids customer outages. (9-5-17 Tr. p. 61, lines 18-20)

30. In actuality, Eversource has the ability to shift load in order to avoid the full extent of the projected loads predicted by the computerized simulations. (9-5-17 Tr. p. 62)

31. When feeder 11R52 was lost from service on the day of the 2015 peak load, no customer outages occurred. (9-5-17 Tr. p. 61)

32. Eversource's simulations do not accurately reflect real-time conditions, and are therefore not reliable. (9-5-17 Tr. p. 61, lines 18-20)

**2. The computerized simulations assumed peak load of 130.5 MVA in 2013, when actual peak load was lower.**

33. In its computerized simulations, and throughout Dockets 461 and 461A, Eversource claimed that the 2013 peak load on the Cos Cob transformers was 130.5 MVA. (Council Admin. Notice 43, Eversource 1, p. E-5; Eversource 9, Resp. to Q-TOWN-015; Eversource 1, Resp. to Q-CSC-013)



34. Eversource continues to claim that the need for this project is partly a result of the 130.5 MVA peak load reached on the Cos Cob transformers in 2013. (Eversource 1, Vol. 1, Pre-Filed Testimony, p. 4; Eversource 1, Vol. 1, Current Application, p. 1)

35. The Cos Cob transformers serve the following loads: Prospect Substation, North Greenwich Substation, Byram Substation, The Greenwich Network, and 11 large commercial and industrial customers. (Council Admin. Notice 43, Eversource 1, p. E-3)

36. The Cos Cob transformers do not normally serve the loads at the Tomac and Mianus Substations. Tomac is fed by the "1750" line from Stamford. Tomac then serves the Mianus Substation. (8-29-17 Tr. p. 66; Eversource 9, Resp. to Q-TOWN-009; Eversource 9, Resp. to Q-TOWN-008; Eversource 9, Resp. to Q-TOWN-011; Council Admin. Notice 43, Eversource 1, p. E-3)

37. Although Eversource claims that the 2013 peak load on the Cos Cob transformers was 130.5 MVA, the sum of the 2013 peak loads for the loads served by the 27.6-kV transformers at Cos Cob Substation equals only 126.7 MVA, as demonstrated in the chart below:

1) Prospect Substation	51.2	MVA
2) North Greenwich Substation	31.0	MVA
3) Byram Substation	15.9	MVA
4) The Greenwich Network	9.3	MVA
5) 11 commercial customers	19.3	MVA
<hr/>		
TOTAL:	126.7	MVA

(Eversource 9, Resp. to Q-TOWN-015; Eversource 2, Resp. to Q-CSC-013; Council Admin. Notice 43, Eversource 1, p. E-3)

38. The sum of the peak loads in 2013 for the loads served by the 27.6-Kv transformers at the Cos Cob Substation is 4 MVA lower than Eversource's representation of the 2013 peak load. (Eversource 2, Resp. to Q-CSC-013)

**3. The 27.6-kV distribution feeders are failing because of age and physical condition – not because of overloading.**

39. Cos Cob Substation feeds the Prospect, North Greenwich, and Byram, Substations, the Greenwich Secondary Network, and 11 commercial and industrial customers with 27.6-kV feeders. (Council Admin. Notice 43, Eversource 1, p. E-3)

40. Each of the loads served by Cos Cob are fed by more than one 27.6-kV feeder. Eversource identifies these 27.6-kV feeders as Normal and Alternate feeders. (Eversource 14, Resp. to Q-TOWN-076. 8-29-17 Tr. p. 30)

41. The Greenwich distribution system was designed to work even if one 27.6-kV feeder is down. (8-29-17 Tr. p. 34)

42. Taking into account the Normal and Alternate feeders identified by Eversource and the normal ratings of those feeders, the Greenwich distribution system is designed so that any one feeder to any load center can go down and there would be sufficient feeder capacity to feed that load center. (Eversource 14, Resp. to Q-TOWN-076; Eversource 9, Resp. to Q-TOWN-001; 8-29-17 Tr. p. 34 lines 3-6; 8-29-17 Tr. p. 35 lines 1-3)

43. Eversource identified failures on the 27.6-kV feeders as part of its claim for the need for this project. (7-25-17 Tr. pp. 22-23; 8-29-17 Tr. pp. 43, 52-53)

44. Eversource experienced three feeder failures in July 2015. (Council Admin. Notice 43, Eversource Resp. to OCC-042; Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. p. 52)

45. At the time of the failures on these 27.6-kV feeders, the feeders remaining in service had sufficient capacity to carry the actual loads without overloading or exceeding their normal ratings. (Council Admin. Notice 43, Eversource Resp. to OCC-042; Eversource 9, Resp. to Q-TOWN-001, Q-TOWN-017; 8-29-17 Tr. pp. 54-56)

46. The faults on these 27.6-kV feeders were not caused by their being overloaded at the time they failed. (Council Admin. Notice 43, Eversource Resp. to OCC-042; Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. pp. 54-57)

47. The July 2015 failures of the 27.6-kV feeders from Cos Cob Substation did not impact customers. (Council Admin. Notice 43, Eversource Late Filed Exhibit LF-024)

48. Eversource also identified an outage that occurred on July 20, 2017 on the 27.6-kV 11R56 feeder, which is the normal 27.6-kV feeder to Byram. (8-29-17 Tr. p. 44; Eversource 14, Resp. to Q-TOWN-076)

49. The outage on July 20, 2017 was not caused by an overload on the 11R56 27.6-kV feeder. (8-29-17 Tr. pp. 48, 51)

50. The cable fault on feeder 11R56 on July 20, 2017 occurred at 4:00 a.m. when load on that feeder was likely at its lowest. (8-29-17 Tr. p. 51)

51. The cause of the outage on July 20, 2017 was a fault in the 11R56 feeder cable, which is an older cable. The resulting failure of the cable then caused an overload on a Prospect transformer, and an outage. (8-29-17 Tr. pp. 48-49)

52. If feeder 11R56 had been functioning properly, it should not have failed because there was still capacity according to its normal rating. (8-29-17 Tr. p. 51)

53. Even after this project would be built, feeder 11R56 would remain the Normal feeder to the Byram Substation. (Eversource 14, Resp. to Q-TOWN-076; 8-29-17 Tr. p. 98)

54. The 2015 and 2017 failures on the 27.6-kV feeders even when they were not overloaded resulted from their age and physical condition or, in the case of newly-installed cables, improper installation or maintenance. The cables failed to operate as they were designed despite the fact that they were not overloaded. Because the faults occurred when the cables were not overloaded or close to fully-loaded, the cause of those failures is not an electrical overload, but rather the cables' age, care or workmanship. (8-29-17 Tr. pp. 49, 54-57, 64. Town 1, p. 18)

55. The table below demonstrates that the feeders that failed in 2015<sup>2</sup> were not overloaded at the time of failure, and had ample additional capacity, based on normal rating and load figures provided by Eversource:

<b>Date</b>	<b>Feeder</b>	<b>Normal Rating (MVA)</b>	<b>Load at failure (MVA)</b>	<b>% of Unused Feeder Capacity at Time of Failure</b>
7/22/2015	11R52	33.5	25	25.37%
7/27/2015	11R56	15.9	7.5	52.83%
7/28/2015	11R55	32.5	14	56.92%

(Council Admin. Notice 43, Eversource Resp. to OCC-042 (Dates of failures, loads at failure); Eversource 9, Resp. to Q-TOWN-017 (Identification of feeders); Eversource 9, Resp. to Q-TOWN-017 (Normal Ratings); 8-29-17 Tr. at 52-57 (discussion of feeder failures))

56. Eversource identified 27.6-kV feeder failures as a basis for the need for this project. However, Eversource did not present any evidence of any feeder failure being caused by the feeder being overloaded. (7-25-17 Tr. p. 23; Eversource 1, Vol. 1, Pre-Filed Testimony, p.7; Eversource 14, Resp. to Q-TOWN-074)

57. Eversource also did not present information necessary to determine the cause of the feeder failures, including the loads before failure, the duration the feeder was out of service, the number of customers who lost power as a result of each failure, and the

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<sup>2</sup> Eversource refused to provide the loads on feeder 11R56 that failed in July 2017. (Eversource 14, Resp. to Q-TOWN-074)

length of time the customers were out of service. (Eversource 14, Resp. to Q-TOWN-074)

58. There is no evidence that in real-life conditions, any feeder failures have been caused by any 27.6-kV feeder being overloaded. The failures of the cables, not overloads of the feeders, are causing faults and outages. (Docket 461A, RECORD)

**C. The proposed project does not solve the actual electrical system reliability deficiencies in Greenwich.**

**1. The proposed project does nothing to improve the performance or reliability of the 27.6-kV feeders running from Cos Cob.**

59. Upon completion of the proposed project, each of the North Greenwich Substation, Byram Substation, The Greenwich Network, and the 11 large commercial and industrial customers would continue to be fed electricity via the same 27.6-kV feeders running from the Cos Cob Substation as they are fed today. (Eversource 9, Resp. to Q-TOWN-020; Eversource 14, Resp. to Q-TOWN-076; 8-29-17 Tr. pp. 61-63)

60. The 11 commercial and industrial customers, including Greenwich Hospital and the Grass Island Wastewater Treatment Plant, are significant commercial and industrial users of electricity in Greenwich that will continue to be fed electricity via the same 27.6-kV feeders even if this project is built. (8-29-17 Tr. p. 62; Council Admin. Notice 43, Eversource Resp. to OCC-075; Town 1, p.16; Eversource 9, Resp. to Q-TOWN-020)

61. The electrical usage of the 11 commercial and industrial customers makes up approximately 10% of the total load usage in the Town of Greenwich. In 2016, the total peak load in Greenwich equaled 173.7 MVA, while the peak demand of the 11 commercial and industrial customers was 18.5 MVA. (Eversource 2, Resp. to Q-CSC-013; Eversource 9, Resp. to Q-TOWN-021).

62. The combined 2016 peak loads of the North Greenwich Substation, Byram Substation, The Greenwich Network, and the 11 large commercial and industrial customers equaled 69.9 MVA out of a total peak load at Cos Cob of 115.6 MVA. These

combined loads serve a majority of customers in Greenwich. Each of those load centers would continue to rely on the 27.6-kV feeders from Cos Cob after the proposed project would be built. (Eversource 2, Resp. to Q-CSC-013; 8-29-17 Tr. pp. 61-63)

63. The proposed project does not involve any upgrading or replacing of the 27.6-kV feeders in Greenwich. (8-29-17 Tr. p. 63)

64. Because the 27.6-kV feeders are not failing because of overloads, but rather because of the age and physical condition of the cables, even if this project was approved, the North Greenwich Substation, Byram Substation, The Greenwich Network, and the 11 large commercial and industrial customers would all be susceptible to the same cable failures and potential outages as they are today. (8-29-17 Tr. p. 61-63; Town 1, at 16)

65. The project does nothing to address the need to upgrade or replace the 27.6-kV feeder cables and, as a result, they will continue to fail and Eversource will continue to incur expense to replace these deficient feeder cables. (7-25-17 Tr. p. 24)

66. Eversource has not determined if it will go forward with a programmatic program to replace the older “paper and lead” feeder cables. (7-25-17 Tr. p. 24)

**2. The proposed project does nothing to address the impact of outages on the 115-kV “1740” / “1750” lines feeding the Cos Cob Substation.**

67. Two 115-kV transmission lines, the “1740” line from Waterside Substation to Cos Cob Substation, and the “1750” line from South End Substation to Cos Cob Substation, provide the only supply of electricity for the 115-kV-to-27.6-kV transformers at Cos Cob Substation. These 115-kV lines supply virtually all of the electricity in Greenwich. (Eversource 1, Vol. 1, Pre-Filed Testimony, p. 10; Eversource 10(a), revised Figure 5; 8-29-17 Tr. pp. 65-67)

68. The 1750 line also supplies the Tomac Substation. (Eversource 10(a), revised Figure 5; 8-29-17 Tr. p. 66)

69. The 1740 and 1750 lines exist on the same overhead structures, or towers, between Stamford and Cos Cob Substation, which Eversource refers to as “double circuit towers.” (8-29-17 Tr. p. 66)

70. “Double circuit towers,” such as the towers upon which the 1740 and 1750 lines reside, are less reliable than two independent lines. Because the 1740 and 1750 115-kV transmission lines exist on the same double circuit towers, both lines are vulnerable to the same contingency event. (8-29-17 Tr. pp. 66-67)

71. The placement of the 1740 and 1750 lines on the same structures hampers Eversource’s ability to maintain both lines if maintenance work is required. (8-29-17 Tr. p. 69)

72. If both of the 1740 and 1750 lines go out of service, 99.5% of Greenwich customers would suffer outages, including all of the customers fed by Cos Cob Substation. (8-29-17 Tr. p. 67; Eversource 2, Resp. to Q-CSC-024)

73. If one of the structures upon which the 1740 and 1750 lines reside goes down, both lines would go out of service and 99.5% of Greenwich customers would suffer outages. (8-29-17 Tr. p. 67)

74. In August, 2012, tree contact caused an overlapping outage of the 1740 and 1750 lines, causing 99.5% of Greenwich customers to lose power. (Council Admin. Notice 43, Eversource Resp. to Q-PANTRY-046; Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. p. 68)

75. In November 2011, outages on the 1740 and 1750 lines caused a similar total blackout of Greenwich customers. (Council Admin. Notice 43, Eversource Late Filed Exhibit LF-024)

76. Even if Eversource's proposed project was built, it would not have prevented these outages. (Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. pp. 69-70)

77. The supply of electricity to Eversource's proposed new substation would also be completely dependent on the supply of electricity from the 1740 and 1750 lines. (8-29-17 Tr. p. 69; Eversource 2, Resp. to Q-CSC-024)

78. The proposed project does nothing to provide a contingency in the event the 1740 and 1750 lines go down. (8-29-17 Tr. p. 69)

79. Eversource is not proposing anything in this docket to address the risk posed to the Greenwich electric system by outages on the 1740 and 1750 lines. (8-29-17 Tr. p. 70)

**3. The proposed project does nothing to address the isolation of the Tomac Substation and its reliance on a single 4.8-kV transformer.**

80. The Tomac Substation is fed by the "1750" 115-kV transmission line and has one 4.8-kV transformer, which supplies approximately 1,200 customers in Old Greenwich. (Eversource 9, Resp. to Q-TOWN-004, Q-TOWN-008; 8-29-17 Tr. pp. 71, 76)

81. Unlike the 27.6-kV or 13.2-kV distribution systems, Tomac is the only substation in Greenwich that distributes electricity to customers at 4.8-kV. (8-29-17 Tr. p. 71)

82. There is no backup transformer for the 4.8-kV transformer at Tomac. (8-29-17 Tr. p. 72)

83. If the 4.8-kV transformer at Tomac goes out of service, those customers who are served at 4.8-kV in Old Greenwich are going to lose power. (8-29-17 Tr. p. 72-73)



84. In the event of the loss of that 4.8-kV transformer, only 2 MVA could be served by the surrounding 13.2-kV system and, even after this project is built, half of the Old Greenwich customers would still lose power. (Eversource 2, Resp. to Q-CSC-013; Eversource 9, Resp. to Q-TOWN-029; 9-29-Tr. p. 74-75)

85. In April 2016, there was a failure of a lightning arrestor at the Tomac Substation, which caused an outage on the single 4.8-kV transformer, leaving Old Greenwich customers with no electrical service. (Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. p. 73)

86. Eversource's proposal does nothing to address Tomac's partial isolation by virtue of its continued distribution at 4.8-kV, and its reliance on a single 4.8-kV transformer, with no backup in the event of a contingency. (Eversource 9, Resp. to Q-TOWN-017; 8-29-17 Tr. p. 73)

#### **4. The proposed project does nothing to address the obsolete equipment in the Byram Substation.**

87. In the Initial Application in Docket 461, Eversource proposed retiring both the Prospect and Byram Substations and replacing them with a new 115-kV substation with three 60 MVA transformers. (Council Admin. Notice 43, Eversource 1, p. ES-3, E-5, E-20; 8-29-17 Tr. p. 78)

88. Eversource claimed the project in the Initial Application was needed to retire the "vintage and obsolete" transformers at the Byram Substation. (Council Admin. Notice 43, Eversource Resp. to Data Request FPET-03, Q-FPET-010; 8-29-17 Tr. p. 78)

89. Eversource admits in this docket that the Byram transformers are "vintage and obsolete." (Eversource 9, Resp. to Q-TOWN-027)

90. However, Eversource's proposed project does not address the obsolete transformers at Byram, which would remain in place after the project is built. (8-29-17 Tr. p. 79-80; Eversource 1, Vol. 1, Pre-Filed Testimony, p.11; Eversource 2, Resp. to Q-CSC-019)

91. Mr. Bowes explained Eversource's change in plan by admitting that the company was trying to reduce costs. (8-29-17 Tr. pp. 78-79)

92. Eversource admitted that in the future it may upgrade the Byram Substation equipment, like it recently has at Mianus Substation, but has also stated that energy efficiency, demand response and distributed generation efforts in the Town of Greenwich may be effective enough to enable Eversource to retire the Byram Substation. (Eversource 2, Resp. to Q-CSC-025; Eversource 9, Resp. to Q-TOWN-027; 7-25-17 Tr. p. 26; 8-29-17 Tr. pp. 81, 96)

93. Eversource is willing to wait up to five years to see if load is reduced so much that it might be able to retire the Byram Substation. (7-25-17 Tr. p. 26)

94. The proposed project does nothing to upgrade the vintage and obsolete equipment at the Byram Substation. (8-29-17 Tr. p. 79)

**5. The proposed project does nothing to address the Town's poor performing 13.2-kV overhead distribution lines.**

95. The majority of Greenwich customers receive electricity at 13.2-kV. (8-29-17 Tr. p. 82)

96. Of the 100 worst-performing circuits in the state based on the System Average Interruption Duration Index, 14 of the circuits are 13.2-kV overhead distribution lines that emanate in Greenwich. (Eversource 14, Resp. to Q-TOWN-080 Appendix 11)

97. Of the 100 worst performing circuits in the state based on the System Average Interruption Frequency Index, 11 of the circuits are 13.2-kV overhead distribution lines that emanate in Greenwich. (Eversource 14, Resp. to Q-TOWN-080 Appendix 12)

98. More than *one-third* of the Town's 13.2-kV overhead distribution lines are among the 100 worst performing circuits in the state. (Eversource 14, Resp. to Q-TOWN-080; Eversource 2, Resp. to Q-CSC-024)

99. Other than the proposed new substation's connections to the 13.2-kV feeders, Eversource's project does not include any other upgrades to the 13.2-kV circuits in Greenwich. (8-29-17 Tr. p. 86; Eversource 9, Resp. to Q-TOWN-028)

100. Eversource's project, if approved, would not do anything to improve the deficient 13.2-kV circuits in Greenwich. (8-29-17 Tr. p. 88)

**II. There are more cost-effective solutions to the Town's system reliability needs than this project.**

**A. The current proposal is too expensive for the minimal benefit provided.**

101. In Docket 461, Eversource testified that its \$140 million project was its attempt "to satisfy need at the lowest possible cost." (Council Admin. Notice 43, 12-1-15 Tr. p. 148; Council Admin. Notice 43, Eversource Late Filed Exhibit LF-001)

102. Eversource's project in Docket 461 included three 60 MVA transformers, with a total permissible load capacity of 134 MVA. (Council Admin. Notice 43, Eversource 1, p. E-17)

103. In Docket 461, Eversource justified its rejection of distribution-based alternatives as too costly and not providing enough capacity by arguing that the transmission-based project would provide approximately \$1 million per MVA while the distribution-based alternatives were much more expensive per MVA. (Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001)

104. Eversource's project in this Docket 461A includes two 60 MVA transformers, with a total permissible load capacity of 60 MVA at a cost of approximately \$100 million, or \$1.67 million per MVA. (Eversource 1, Resp. to Q-CSC-023; Eversource 1, Vol. 1, Exh. B, p. A-17; Eversource 1, Vol. 1, Exh. A, p. A-27)

105. When taking into account that the existing Prospect Substation would be retired, along with its 55 MVA of transformer capacity, the new project proposes spending approximately \$100 million for a net increase of only 5 MVA of permissible load capacity, or \$20 million per additional MVA. (Eversource 1, Resp. to Q-CSC-013, Q-CSC-023; Eversource 1, Vol. 1, Ex. B, p. A-17; Eversource 1, Vol. 1, Ex. A, p. A-27)

106. Based on the cost per MVA of capacity, the project in this Docket 461A is more expensive than the project proposed in Docket 461. (8-29-17 Tr. p. 90)

107. Even after this project is built, Eversource will engage in costly upgrades of 27.6-kV equipment at the Byram Substation as needed. (Eversource 1, Vol. 1, Pre-Filed Testimony, p.11; 8-29-17 Tr. p. 96; Council Admin. Notice 43, Eversource 1, p. E-16 Table E-4).

108. Eversource has also sized the underground transmission cables in its project to accommodate the potential future installation of two 80-MVA transformers in the new substation. As a result, even after this project is built, Eversource has plans to engage in costly upgrades of the transformers at the new substation to be paid for by Connecticut ratepayers. (Eversource Resp. to Q-TOWN-058)

109. The costs of the upgrades to Byram and the new substation are not included in the \$100 million estimate provided by Eversource. (Eversource 1, Vol. 1, Ex. B, p. A-17; Eversource 1, Vol. 1, Ex. A, p. A-27)

**B. Eversource has failed to adequately consider distribution alternatives.**

110. In support of its argument in Docket 461 that a new substation with three 60-MVA transformers was required to satisfy the Town's needs because of the imminent risk of overloads on the 27.6-kV Cos Cob transformers, Eversource rejected any distribution alternatives to its proposed project. (Council Admin. Notice 43, Eversource 1, p. F-2; Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001)

111. Eversource continues to contend that there are no distribution alternatives to the project in Docket 461A. (Eversource 2, Resp. to Q-CSC-026)

112. Eversource states that it considered and rejected eight “distribution alternatives” to the project. (Eversource 2, Resp. to Q-CSC-026)

113. Eversource rejected many of the distribution alternatives because the configurations result in a loss of load in the event two or more of the 27.6-kV transformers at the Cos Cob Substation fail. This is not a proper criterion on which to reject a distribution alternative because Eversource has never lost two of the 27.6-kV transformers at the Cos Cob Substation, Eversource projects flat or declining load usage on those transformers, and Eversource does not plan for such double-contingency events. Indeed, this project contemplates a new substation with only two transformers, demonstrating that Eversource does not plan for the loss of more than one transformer. (Eversource 2, Resp. to Q-CSC-026)

**1. Distribution Option 1 was never meaningfully analyzed.**

114. Distribution Option 1 involved reconductoring the four existing feeders from Cos Cob Substation to Prospect Substation by replacing 500 kcmil-sized circuits with 750 kcmil-sized circuits. (Eversource 2, Resp. to Q-CSC-026)

115. Eversource did not provide a cost estimate for Distribution Option 1. (Eversource 2, Resp. to Q-CSC-026)

116. Eversource based its refusal to provide a cost estimate of Distribution Option 1 on the results of single contingency simulations that showed “overloads” on the feeders. However, those contingency simulations have been proven false, unreliable and not reflective of real conditions. (Eversource 2, Resp. to Q-CSC-026; Eversource 2, Resp. to Q-CSC-001; Eversource 9, Resp. to Q-TOWN-001; Eversource 15, Supp. Resp. to Q-TOWN-077; 9-5-17 Tr. pp. 58, 61)

117. Eversource also based its refusal to provide a cost estimate of Distribution Option 1 by arguing that the length and impedance differences of the four feeders resulted in projected overloads. However, Eversource did not identify any steps it has taken to explore the feasibility or cost of addressing those length and impedance differences, such as by installing current limiting reactors. (Eversource 2, Resp. to Q-CSC-026)

118. Eversource only considered the replacement of the current 500 kcmil-sized circuits with larger 750 kcmil-sized circuits, which would require construction of new duct banks and trenches. (Eversource 2, Resp. to Q-CSC-026; 9-5-17 Tr. p. 34)

119. One of the ways to deal with an older cable that is failing even when it's not overloaded is to replace the cable with a newer cable in the same underground duct, which is something that Eversource does "all the time." (8-29-17 Tr. p. 60)

120. There is a cost savings in replacing older cables with newer cables in the same ducts. (8-29-17 Tr. p. 60)

121. Modern cables can be operated at higher temperatures and can carry more ampacity than older cables of the same size. (8-29-17 Tr. pp. 59, 181)

122. Eversource did not consider reconductoring the current feeder cables in the existing ducts with same-sized modern cables that can be operated at higher temperatures and can carry more ampacity. (Eversource 2, Resp. to Q-CSC-026; 8-29-17 Tr. pp. 59, 181)

## **2. Distribution Option 4 is not a fair alternative.**

123. The Town suggested reconductoring the four existing feeders, 11R51, 11R52, 11R55, and 11R58 and feeding the new Greenwich Substation with at least two reconducted 27.6-kV feeders from the Cos Cob Substation. (Town 1, p. 23)

124. Eversource claims that it considered and rejected that proposal in its “Distribution Option 4” because it would cost approximately \$120 million. (Eversource 2, Resp. to Q-CSC-026; 9-5-17 Tr. p. 34)

125. Distribution Option 4 involved the following: (i) “install” four new 27.6-kV feeders from Cos Cob to a new substation; (ii) build a new substation with two 80-MVA transformers; and (iii) reconfigure and upgrade the 13.2-kV feeders at Prospect and Byram, while retiring both Prospect and Byram Substations. (Eversource 2, Resp. to Q-CSC-026)

126. Unlike the Town’s suggestion, Distribution Option 4 involved the additional expenses of digging entirely new ducts and trenches, rather than reconductoring within the existing ducts with same-sized higher-rated cables. (Eversource 2, Resp. to Q-CSC-026; Town 1, p. 23)

127. Unlike the Town’s suggestion and Eversource’s current proposal, Distribution Option 4 involved the additional expenses associated with reconfiguring and upgrading the 13.2-kV feeders at Prospect and Byram, while retiring both those substations. (Eversource 2, Resp. to Q-CSC-026; Town 1, p. 23)

128. In addition, the substation contemplated in Distribution Option 4 is a substation with 80 MVA transformers, which would be larger and more expensive than the 60 MVA substation proposed by Eversource in this Docket 461A. (Eversource 2, Resp. to Q-CSC-026)

129. Eversource never properly examined a distribution option involving the reconductoring of same-sized 27.6-kV cables in their existing ducts, a substation with 60-MVA permissible load capacity, and no upgrades to Byram. (Eversource 2, Resp. to Q-CSC-026)

**3. A real distribution alternative has been shown to be much less expensive and more beneficial.**

130. In Docket 461, Eversource identified four key objectives of its proposed transmission-based project, the steps required to improve and expand its distribution system to achieve those objectives, and the estimated costs associated with those steps. (Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001)

131. Eversource rejected the steps to improve and expand the distribution system because they would provide only 14 MVA of capacity, at an estimated cost of \$116 million to \$134 million or approximately \$8.3 million to \$9.6 million per MVA. (Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001)

132. The first of those four key objectives, reducing load on the Cos Cob Substation, is no longer a concern. (7-25-17 Tr. pp. 11-12; 8-29-17 Tr. p. 91)

133. The third and fourth of those key objectives, addressing the aging transformers and switchgear at Prospect Substation, can be addressed by retiring Prospect and building a new substation to feed the loads it currently supplies, as Eversource is proposing. (Council Admin. Notice 43, Eversource Late Filed Exhibit LF-001; Eversource 1, Vol. 1, Pre-Filed Testimony, p. 9)

134. Eversource estimates that achieving the second of those key objectives, increasing 27.6-kV distribution feeder capacity, would cost approximately \$33 to \$37 million. (Council Admin. Notice 43, Eversource Late Filed Exhibit LF-001)

135. Eversource estimates that building a new indoor substation with two 60 MVA transformers on Railroad Avenue will cost approximately \$28.2 million. (Eversource 1, Vol. 1, Ex. B, p. A-17; Eversource 1, Vol. 1, Ex. A, p. A-27)



136. According to Eversource's own data, the total cost to increase distribution feeder capacity and build a new substation with two 60 MVA transformers on Railroad Avenue would be approximately \$62 - \$66 million. (Eversource 1, Vol. 1, Ex. B, p. A-17; Eversource 1, Vol. 1, Ex. A, p. A-27; Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001)

137. Eversource has never considered a distribution-based solution involving increased distribution feeder capacity and a new substation with two 60 MVA transformers fed with modern cables at 27.6-kV. (Eversource 2, Resp. to Q-CSC-026; Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-001)

### **III. Eversource's project does not provide benefits to the State of Connecticut**

138. Just as in Docket 461, in this Docket 461A, Eversource claims that its proposed project is required because of the "continuing public need for reliability improvements to the electric distribution system of the Town of Greenwich." (Eversource 1, Vol. 1, Pre-filed Testimony, p. 1; Council Admin. Notice 43, Eversource 1, p. ES-1).

139. Eversource has identified the claimed reliability deficiencies being addressed by the project as projected overloads on equipment in the Greenwich distribution system serving only customers in Greenwich. (Eversource 1, Vol. 1, Pre-filed Testimony, p. 4)

140. Eversource's project in this Docket, just as in Docket 461, is designed only to supply electricity to and benefit Greenwich customers. (Council Admin. Notice 43, 10-6-15 Tr. p. 83).

141. Eversource's project will not result in the feeding of 13.2-kV circuits in Stamford from 13.2-kV circuits that normally originate in Greenwich. (Eversource Resp. to Q-TOWN-081; 8-29-17 Tr. p. 26-27)

142. Eversource does not identify and has not presented any evidence that its project is necessary for the reliability of the electric power supply of the State. (Docket 461A, RECORD)

**IV. The Town of Greenwich's efforts to improve energy efficiency and reduce demand have been successful.**

143. The Town has made significant progress, shown a strong commitment to, and demonstrated positive results from its efforts to improve energy efficiency and reduce demand. (Town 1, pp. 20-21; Town 4, pp. 1-5 & Ex. A – I; Town 5; Council Admin. Notice 43, Town Resp. to Q-CSC Interrogatory Q-8 through Q-10; 8-29-17 Tr. pp. 198-201, 250-256; 9-5-17 Tr. pp. 84-89)

144. With energy efficiency, distributed generation and demand response, future load usage in the Town is expected to be flat or negative and Eversource admits there is no need for additional capacity. (7-25-17 Tr. p. 12; 8-29-17 Tr. p. 91)

145. The Town's efforts in improving energy efficiency have been one cause for Eversource's abandonment of its projections of load growth in Greenwich. (7-25-17 Tr. p. 111; 8-29-17 Tr. p. 24)

146. The Town's efforts in improving energy efficiency have caused Eversource to abandon its plans to upgrade the obsolete equipment at the Byram Substation. Those conservation efforts have been so effective that Eversource stated it may be able to retire the Byram Substation, and its 25 MVA of capacity, altogether in the next several years. (8-29-17 Tr. pp. 80-81)

147. Although Eversource now admits that capacity is not a concern and load growth is not the basis for its proposed project, in Docket 461 Eversource argued that its project was needed because of demand in Greenwich. (Eversource 1, Vol. 1, Pre-Filed Testimony, p. 26, Att. A)

148. After the close of Docket 461, the Town asked Eversource to explain what energy efficiency, distributed generation and grid modernization efforts it intended to pursue in Greenwich. At the time, Eversource was informed that the Town was interested in investigating distributed generation projects and a modern grid. (9-5-17 Tr. p. 86-87)

149. Public Act 15-5, § 103 requires each utility to submit proposals to the Connecticut DEEP for pilot programs to build grid-side system enhancements, such as energy storage systems. Even though Eversource was aware of the Town's eagerness to implement such projects, Eversource did not use the opportunity to work with the Town on submitting a proposal for such a pilot project in the Town after the close of Docket 461. (9-5-17 Tr. p. 87)

150. The Town has demonstrated a strong commitment to improving energy efficiency and reducing demand by Greenwich residents, including the following:

i) For the years 2014 through 2016, 1958 KW of renewable energy capacity has been installed in Greenwich, which ranks third among all municipalities in Fairfield County. (Town 5, Sched. B)

ii) The Town is a "Clean Energy Community" and it has committed to a 20% reduction in energy use by 2018. (Town 1, pp. 20-21)

iii) Since 2008, the Town has participated in the CT Clean Energy Community, including the Solarize CT and C-PACE programs. (Town 1, at 20-21; Town 4, at 3)

iv) The Town participated in the Sunshot Grant program aimed at streamlining the process and lowering the cost for solar PV installation and local permitting. (Town 4, p. 3).

v) The Town is working to identify distributed generation projects that produce clean energy and reduce loads and peak loads on the grid. (Town 4, p. 3)

vi) Acknowledging that approximately half of the energy consumed in Greenwich is by households, since October 2016, the Town has been partnering with Eversource and Energize Connecticut to launch the Home Energy Solutions (HES) program. As part of the HES program, the Town has been encouraging Town residents to take advantage of the services provided by Energize Connecticut to increase energy efficiency, including sending a joint letter from the Town and Eversource to Town residents encouraging their participation. (Town 4, pp. 5-6).

vii) Through the first three months of the HES program (October – December 2016), 78 audits of residences were conducted. (Town 4, pp. 5-6)

viii) Through the second four months of the HES program, 122 audits of residences were conducted. (Town 5, Sched. B, p. 3)

ix) On April 22, 2017, the Town hosted its second light bulb swap. 357 households attended the light bulb swap, which is the equivalent of 1,785 LEDs swapped out for incandescent and/or compact fluorescent light bulbs. In the first light bulb swap in October 2016, 230 households participated, which is the equivalent of 1,159 LEDs swapped out. A third light bulb swap is being planned for this fall to capitalize on the success of the first two. The light bulb swap makes up just one part of the Home Energy Solutions program, which provides lower-cost solutions to residences for increasing energy efficiency. (Town 4, p. 6)

151. The Town has made significant progress in its strategy toward achieving a reduction in municipal building energy consumption by 2018, including the following:

i) A 17% reduction in usage at the plant in Grass Island Wastewater Treatment Plant over the last six years. (Town 5, Sched. A)

ii) In addition to utilizing more efficient lighting at schools, the Town has also installed solar energy at two schools including Greenwich High School, which experienced a usage reduction of 8% in only one year from 2014 to 2015. (Town 5, Sched. B)

iii) Eversource recently conducted an energy audit of the Greenwich Town Hall and expects to achieve a 10-25% reduction in usage at Town Hall in the coming year. (Town 5, Sched. B)

152. Energy efficiency measures have reduced demand in Greenwich.

**V. Eversource's Application is motivated by increasing its profits – not improving electrical service for Connecticut ratepayers.**

153. Eversource gets a much higher rate of return on transmission projects than distribution projects.

154. Con Edison's Eastview Substation in New York is the closest bulk transmission substation to the Connecticut-New York border. (Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-013)

155. Eastview Substation is approximately 7 miles from the Connecticut-New York Border. (Council Admin. Notice 43, Eversource Late Filed Exhibit Q-LF-013)

156. Greenwich is at the farthest extent of Eversource's electric network in southwest Connecticut and this project, if approved, will extend Eversource's ability to supply electricity at 115-kV approximately 2.3 miles closer to the border with New York. (Eversource 1, Vol. 1, Pre-Filed Testimony, p. 2)

157. Eversource values the extension of a 115-kV transmission line to the westernmost part of the state, as a future tap into a new market in New York. (7-13-17 Tr. p. 31, public comment of Peter Malkin)

**VI. A coffer dam crossing of Indian Harbor is appropriate provided environmental harm to the surrounding areas is mitigated**

158. Eversource's proposed route includes running the 115-kV transmission line across Indian Harbor. (7-25-17 Tr. p. 61)

159. Eversource will either utilize a coffer dam or a pedestrian bridge to facilitate the crossing of Indian Harbor. (8-29-17 Tr. p. 119)

160. During discussions with Eversource in the winter and spring of 2017, the Town's representatives questioned how Eversource would limit the impact on the surrounding environment with the use of a coffer dam and further discussed the approval process that would result from the need for Eversource to obtain permitting from the U.S. Army Corps of Engineers, which it acknowledged in Docket 461. During these discussions, the Town also suggested that Eversource explore attaching the transmission line to a pedestrian bridge that the Town already had plans to build. (Town 2, Resp. to Q-CSC Q-12; Admin. Notice 43, 12-1-15 Tr. p. 164; Eversource 1, Vol. 1, Pre-Filed Testimony, p. 20 line 653)

161. The Town never opposed a coffer dam, nor has it ever insisted on a pedestrian bridge. (Town 2, Resp. to Q-CSC Q-12; 8-29-17 Tr. p. 159)

162. The Town has consistently stated that the use of a cofferdam may present a viable construction option at a cost savings if Eversource was able to construct it in a way that minimizes the adverse environmental impact to surrounding areas. (Town 2, Resp. to Q-CSC Q-12)

163. Until the July 25<sup>th</sup> hearing, the Town had not received details from Eversource as to how it proposed to build a coffer dam crossing of Indian Harbor. (Town 2, Resp. to Q-CSC Q-12)

164. At the July 25<sup>th</sup> hearing, Eversource stated for the first time that it would use a floating barge (“floating work platforms”) in order to construct the cofferdam. (7-25-17 Tr. p. 67)

165. The Town does not oppose construction of a coffer dam to cross Indian Harbor, provided that any such construction avoids negative environmental impacts, including by the use of a floating barge. (Town Resp. to Q-CSC Q-12)

**VII. Eversource has failed to communicate and cooperate with the Town since the conclusion of the proceedings in Docket 461.**

166. In Docket 461, the Council expressed its concern about the apparent lack of communication and cooperation between the Town and Eversource, and encouraged the Town and Eversource to develop a mutually suitable solution to meet Greenwich’s electric needs. (Council Admin. Notice 43, Opinion, pp. 3, 8)

167. After the conclusion of Docket 461, representatives of the Town and Eversource had numerous meetings to discuss the Town’s electric system, during which Eversource insisted on a transmission-based project. (Town 1, p. 3-4)

168. The Town questioned the need for a transmission-based project and sought a better explanation for why Eversource has not proposed alternative measures that would get to the heart of the electric needs in Greenwich, including improvements to the 27.6-kV feeders and the 13.2-kV distribution system, replacing older equipment and transformers in the existing substations, load-shifting, reliance on the 115-kV tap to the Tomac Substation, and improvements to the Tomac Substation. (Town 1, p. 3; 8-29-17 Tr. p. 158; Eversource 1, Vol. 1, Pre-Filed Testimony, p. 17 lines 528-529).

169. Eversource repeatedly dismissed any distribution-based solutions or alternative measures, insisting on a transmission-based project. (Town 1, p. 3; 8-29-17 Tr. p. 158)

170. One of the transmission-based projects proposed by Eversource involved the construction of a hybrid overhead-underground transmission line along the Metro-North Railroad (“MNRR”) tracks. (Eversource 1, Vol. 1, Pre-Filed Testimony, p. 23)

171. The Town’s force main is located just south of the MNRR tracks. (Eversource 2, Resp. to Q-CSC-036, cross-section sheets identifying location of force main)

172. The Town is party to a Federal Consent Decree that requires the Town to replace and upgrade its force main. In addition, the Town is required to maintain its existing force main in place as a back-up after it is replaced by a new force main. (Council Admin. Notice 43, 3-10-16 Tr. p. 105; Eversource 1, Vol. 1, Pre-Filed Testimony, p. 18)

173. While the Town always preferred any siting of a new line to be outside of Bruce Park, at the same time, it always expressed concern about the ability to construct a new line in the MNRR without impeding the Town’s access to the force main, and without causing the Town to violate the Federal Consent Decree. (Council Admin. Notice 43, Town 6, Resp. to Q-CSC Q-6; 2-23-16 Tr. pp. 34-35, 118; 8-29-17 Tr. at 158)

174. In meetings with Eversource after the close of Docket 461, the Town asked Eversource to provide details of its proposed line along the MNRR to explain the exact placement of the transmission line and structures relative to its force main, and the Town also expressed concern as to potential public health and safety issues if a transmission line were to be sited so close to the force main. (8-29-17 Tr. p. 158-159,162)

175. In January and February 2017, Eversource conceded that, unlike the construction proposed in Docket 461, there were options for new cables to be placed through Bruce Park that didn’t require horizontal directional drilling or high-pressure fluid filled cables, which could mitigate the environmental impact concerns that were central to the Town’s opposition in Docket 461. (Town 1, pp. 4-5; 8-29-17 Tr. pp. 166-167)



176. The Town consistently informed Eversource that it had not demonstrated the need for a transmission-based solution, and until they could do so, the Town could not endorse such a plan. The Town also told Eversource that it would have to see more details including a detailed depiction of the design (including the crossing of Indian Harbor and I-95), and a route map identifying the locations of splice vaults in the park due to the environmental impact of installing such vaults. In addition, the Town communicated to Eversource that if it was going to insist on placing splice vaults in the park, the Town wanted to know the reason for doing so. (Town 1, pp. 3, 4; Town 2, Resp. to Council Q-12; 8-29-17 Tr. p. 146, 148-150)

177. For the first few months after the meeting in January 2017, Eversource only addressed with the Town its proposed transmission-based solution through Bruce Park, and all of the communications with the Town related only to the details of that proposed solution. (8-29-17 Tr. p. 162)

178. In April 2017, after months of discussions that related solely to the proposed route through Bruce Park, Eversource surprised the Town by announcing for the first time that it intended to file a petition to reopen Docket 461 seeking approval for the route along the MNRR tracks. (8-29-17 Tr. p. 158, 162)

179. At no time did Eversource provide the details as to how a transmission line along the MNRR tracks could be reconciled with the Town's need to access and maintain its force main, and comply with the Federal Consent Decree. Nor did Eversource provide any responses to the Town's concerns about potential public health and safety issues by siting a transmission line so close to the force main. The Town's questions were never answered. (8-29-17 Tr. p. 158, 162)

180. The Proposed Modified Project that Eversource eventually filed proposed the placement of poles in the corridor of the existing force main and the siting of the overhead lines above the route of the existing force main and very close to the location of the new force main ten feet away. Eversource acknowledged the potential "irreconcilable conflict" with the force main but, even in its Force Main Variation, maps

submitted by Eversource showed the overhead lines above the existing force main and at least one structure (14006) adjacent to the existing force main. (Eversource 2, Resp. to Q-CSC-036; Eversource 1, Vol. 1, Ex. A, Fig. F-3; Eversource 1, Vol. 1, Pre-Filed Testimony, p. 23).

181. Eversource did not in any way address how the proposed project along the MNRR would impact the Town's access to the force main or indicate how the Town could possibly comply with the Federal Consent Decree if the Proposed Modified Project was built. (Eversource 1, Vol. 1 & 2)

182. In addition, at the time that Eversource asked the Council to approve its transmission project along the MNRR, although Eversource knew that it needed permission from the Connecticut Department of Transportation (CDOT) to build its proposed transmission line in the MNRR right-of-way, Eversource presented the Proposed Modified Project without obtaining that permission. (Eversource 4, pp. 1-2; 7-25-17 Tr. pp. 100-101; Eversource 5, Ex. A; 9-5-17 Tr. pp. 72-73).

183. CDOT, upon reviewing the details of Eversource's Proposed Modified Project, refused to grant Eversource permission to use its right-of-way, concluding that Eversource's Proposed Modified Project "will cause immediate and irreparable harm to [New Haven Line] commuter rail service operation" for the following reasons:

- (i) Eversource's Proposed Modified Project would "jeopardize [CDOT's] ability to maintain the rail infrastructure to safe standards";
  - (ii) The MNRR "has no available manpower to support a power transmission project";
  - (iii) Installations such as the one proposed by Eversource "have been proven to cause physical damage to the railroad structures"; and
  - (iv) the project would "hinder future expansion of the [New Haven] line, curtail the growth of Connecticut's economy, and be inconsistent with federal legislation which protects railroads for the purposes of providing interstate commerce."
- (Eversource 5, Ex. A).

184. Since the close of Docket 461, Eversource has not worked cooperatively with the Town to address the Town's electric system reliability issues.

**VIII. Construction of the proposed underground route through the roads of Bruce Park is acceptable, provided Eversource confines construction to previously-disturbed roadways and does not remove trees.**

185. Neither the Town nor any of its representatives have stated that the Town would support any of Eversource's transmission-based projects. Instead, the Town has consistently questioned whether Eversource has demonstrated the need for a transmission-based project. (Town 1, pp. 2-4)

186. However, the Town has stated that if Eversource is able to demonstrate a need for its transmission-based solution, the current project satisfies many of the serious concerns that were central to the Town's opposition in Docket 461. (Town 1, p. 4)

187. In Docket 461, the Town opposed the proposed route of the transmission line through Bruce Park because Eversource's proposal utilized horizontal directional drilling to install high pressure fluid filled cables (HPFF) that would have had a devastating impact on the park. (8-29-17 Tr. pp. 116-119, 166-167)

188. None of the route alternatives proposed by Eversource in Docket 461 addressed all of the Town's concerns or was comparable to the project proposed by Eversource in this Docket. (Council Admin. Notice 43, Eversource 1, pp. ES.4 to ES.8, G-15 to G-22; Council Admin. Notice 43, Eversource Resp. to Data Request CSC-02, Q-CSC-001 & Q-CSC-006; Council Admin. Notice 43, Eversource 9, pp. 5-6)

189. If Eversource is able to demonstrate the need for this project, it addresses many of the Town's serious concerns by: (i) not utilizing horizontal directional drilling, instead using solid dielectric (XLPE) cables, (ii) conducting all work within the already-disturbed roadways in Bruce Park, curb to curb, and (iii) avoiding the removal of any trees. (7-25-17 Tr. p. 185; 8-29-17 Tr. pp. 116-119)

**IX. A fully-enclosed indoor substation is the only appropriate design for a substation at either 281 Railroad Avenue or 290 Railroad Avenue.**

190. Eversource proposes that a new substation be built at either 281 Railroad Avenue or 290 Railroad Avenue. (Eversource 1, Vol. 1, Ex. B, p. B-2; Eversource 8, pp. 2-3)

191. Both of these locations are in close proximity to occupied residential and commercial buildings. (Eversource 1, Vol. 1, Ex. A, p. B-1; Council Admin. Notice 43, FOF No. 372; Eversource 1, Vol. 1, Ex B. p. F-2)

192. Due to noise and safety concerns, the Town supports the construction of a fully-enclosed substation as proposed by Eversource in Exhibit B to its Application and opposes an open-air substation. (Eversource 1, Vol. 1, Ex. B, pp. A-5, A-7; Town 1, pp. 25-29)

193. A fully-enclosed indoor substation at either location would be feasible and satisfactory to Eversource. (Eversource 8, p. 3; 8-29 Tr. p. 111)

194. The proposed new substation is unique in that it will be located extremely close to residential and commercial customers, whereas Eversource usually builds substations in rural areas with much larger acreage. (7-25-17 Tr. p. 84; 8-29-17 Tr. p. 115)

195. If the substation is located at 290 Railroad Avenue, it will be adjacent to an Airgas facility that stores compressed flammable gasses. (Town 1, at 26)

196. Building an open air substation in close proximity to any form of occupied building – with or without a fence – has become rare due to the noise and safety issues posed by substations. (Town 1, at 25)


197. A “fully-enclosed indoor substation would be more effective in reducing sound levels from substation equipment, would provide a higher level of physical security, and would have less visual impact” than an open-air substation. (Eversource 14, Resp. to Q-TOWN-082)

198. If an open-air substation is built at 281 Railroad Avenue, additional noise mitigation efforts may be required in order to comply with the Greenwich noise ordinance. However, a fully-enclosed substation would not require any additional noise mitigation efforts. (Eversource 1, Vol. 1, Ex. A, p. F-2; Eversource 1, Resp. to Q-CSC-054)

199. The Town has raised legitimate safety, security and noise concerns that can only be addressed by the utilization of a fully-enclosed indoor design.

**Respectfully submitted,**

Town of Greenwich

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## CERTIFICATE OF SERVICE

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