

Emergency Operations Center Task Force

—

Mitigation Recommendations from Tropical Storm Isaias

Report to First Selectman



November 2020

The test of a utility company's efficiency is the absence of outages and failures- not the visible evidence of a utility company's action in dealing with them.

Professor Daniel Maxwell
University of New Haven

Emergency Operations Center Task Force

—

Mitigation Recommendations from Tropical Storm Isaias

Report to First Selectman

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**SUMMARY TABLE
EOC TASK FORCE RECOMMENDATIONS**

	Recommendation	Considerations	Department Responsible
Communication			
1	Monthly newsletter from First Selectman about seasonal weather issues.	Consider paper form for senior residents who are not internet savvy. Cover issues such as food supplies, water, batteries, loss of well water in power outage, and shelters etc. Zoom meeting could also be used to review storm preparedness.	Office of First Selectman
2	Monthly or bimonthly meetings between Greenwich Town officials and all utility companies to coordinate work, and planning.		Emergency Operations
3	Require more accurate and timely information from Eversource and other utilities during storm outages on restoration times.	With more residents working from home it was not just electric that had issues.	Emergency Operations
4	Require Eversource to inform Town 48-72 hours before storm of their crew staging and restoration planning.	Alert out of state crews sooner.	Emergency Operations
5	Explore the expansion of cell phone service in Greenwich.	Many areas have no cellphone service creating a safety hazard in storm events.	Office of First Selectman
6	Coordinate with Google Maps on the location of road closures to minimize traffic congestion preventing restoration.		Emergency Operations

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Trees			
7	Outreach to homeowners about the danger of hazardous trees or limbs.	Is it possible to charge residents for some of the cost of repair when a private tree damages utility lines?	Parks & Recreation
8	Shorten tree trimming cycle for both Greenwich and Eversource.	Frequent dialogue between Greenwich Tree Warden and Eversource arborist on tree conditions in Greenwich.	Parks & Recreation
9	Recommendations from the Two Storm Panel and specifically the State Vegetation Management Task Force Report should be implemented.	https://portal.ct.gov/DEEP/Forestry/VM-Task-Force/Final-Recommendations	Parks & Recreation
Safety			
10	Open libraries and other locations during storms for sheltering, water, recharging etc.	Make sure area residents are aware of locations in their neighborhood.	Emergency Operations
Long Term			
11	Evaluate the cost of burying all utility lines when roads are being dug up for other reasons.	Especially main thoroughfares. This requires coordination with Town and all Utilities.	Public Works
12	Legislature through PURA needs to develop performance based metrics for Eversource that produce better results for residents.		Office of First Selectman
13	Software upgrade to support EOC Logistics required to allow for better coordination.		Emergency Operations

EOC Task Force - Completed Document

Submitted by: Dan Warzoha
21 September 2020

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Appendix # 4

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EOC Task Force Committee Members

EOC Task Force Executive Summary

The Task Force Members covered a broad spectrum of issues regarding the storm incident. These include but are not limited to the following:

1. Town of Greenwich pre event planning and operations.
2. State of Connecticut pre event planning and operations to include Region 1.
3. Eversource pre-event planning and operations- see follow up action item on recommendation for tightening up with Energy & Utility Committee
4. Storm Response Town of Greenwich.
5. Storm Response Eversource.
6. Storm Response Telecommunications.
7. "Make Safe Operations "Town of Greenwich, Eversource.
8. Road Opening operations Town of Greenwich, Eversource.
9. Utilities restoration Eversource, Telecommunications providers.
10. Public / Private assistance needs operations Town of Greenwich, Red Cross, State of Connecticut DESPP, Connecticut National Guard, U.S. Army Corps of Engineers.
11. Long-Term Recovery / Disaster Declaration Town of Greenwich, FEMA State of Connecticut.
12. COVID-19 effects on the event.
13. Recommended next steps.

Recommendations of Task Force

Communication

Monthly newsletter from First Selectman about seasonal weather issues. Consider paper form for senior residents who are not internet savvy. Cover issues such as food supplies, water, batteries, loss of well water in power outage, and shelters etc. Zoom meeting could also be used to review storm preparedness.

Monthly or bimonthly meetings between Greenwich Town officials and all utility companies to coordinate work, and planning.

Require more accurate and timely information from Eversource and other utilities during storm outages on restoration times. With more residents working from home it was not just electric that had issues.

Require Eversource to inform Town 48-72 hours before storm of their crew staging and restoration planning. Alert out-of-state crews sooner.

Explore the expansion of cell phone service in Greenwich. Many areas have no cellphone service creating a safety hazard in storm events.

Coordinate with Google Maps on the location of road closures to minimize traffic congestion preventing restoration.

Trees

Outreach to homeowners about the danger of hazardous trees or limbs. Is it possible to charge residents for some of the cost of repair when a private tree damages utility lines?

Shorten tree trimming cycle for both Greenwich and Eversource. Frequent dialogue between Greenwich Tree Warden and Eversource arborist on tree conditions in Greenwich.

Recommendations from the Two Storm Panel and specifically the State Vegetation Management Task Force Report should be implemented.

Safety

Open libraries and other locations during storms for sheltering, water, recharging etc. Make sure area residents are aware of locations in their neighborhood.

Long Term

Evaluate the cost of burying all utility lines when roads are being dug up for other reasons. Especially main thoroughfares. This requires coordination with Town and all Utilities.

Legislature through PURA needs to develop performance based metrics for Eversource that produce better results for residents.

Software upgrade to support EOC Logistics required to allow for better coordination

Meeting Notes

15 September 18, 2020

1. Review of Draft for Final
2. Comments: Low hanging wires for other utility companies such as: Optimum and other cable companies & Verizon, ATT, Frontier et al.
Suggestion from Lou Paglia - ability to notify google maps, (the biggest contractor for private trucking) for messaging to truckers making deliveries to alert them of storm conditions, closed roads and downed wires to keep them out of the mix.
3. Double pole issues discussed where Eversource other utility companies have adjoining poles, replacements etc.
4. Town should conduct monthly meetings with all utilities regarding all projects, local & municipal with road repairs, construction, system upgrades to sync everyone.
This includes overheads & underground: Town of Greenwich Sewer Dept., Aquarion & CNG. Stamford has had success with syncing all - we could model them.

02 September 2020

After Storm Report Pending for 347 trees that came down

Combination of healthy, young & mature trees

Final analysis pending to include:

Municipal vs Private Trees

Debris remaining

800 tons of debris removed to Holly Hill

Is full tree evaluation feasible/best use of resources at this time?

FEMA reimbursement to cover money to replace trees

Look Back Assessment in process, assisted by Emerald Tree for valuation of town trees

Could we have residents reporting a tree with location and photos, via town website

Eversource Operations discussion

Claims 1M spent in tree trimming

Crews will not go up in buckets over 35 MPH- was up to 50MPH in past

No Local presence/field office (Railroad Avenue office closed). They used to coordinate with town departments to efficiently repair downed wires while working in tandem to remove trees

No Eversource Representative present in the EOC- this has been normal protocol

Legislature needs to act and impose penalties for failures

Metrics need to be assigned for pre-staging

Measure of performance is critical

Reimbursements for food and medical supplies lost should be considered

Implement at 72-hour pre storm discussion with EOC Regions to Mayors & Selectman

Let's Prepare-Looks at Cone, winds and other factors for staging

Crews should be in place on the ground at 72-hour mark

Analyze cost to burying lines on major thoroughfares to improve emergency vehicle mobility and resident traffic to shelters etc.

Fred Camillo has intern doing this analysis

02 September Meeting Notes continued...

Best practices discussion

Strategy to be codified by Pura (new chairperson engaged)

Stephen Meskers to bring concerns to Hartford

All in attendance will send top 5 concerns or suggestions to be compiled in this document

Make Safe Process was a failure even though training and meetings exist annually
Eversource's repositioning crews for strategic placement, to work in tandem with town failed

Better Communication with municipality and residents

Who bears costs for weather decisions?

EOC Logistics & Upgrades

Software update mandatory

Stay away from google maps for road closure reporting due to criminals using to rob homes

Training sessions suggested to tighten team:

GPD's new dispatchers

Restructuring of chiefs

GFD new chief

26 August 2020

Everyone expressed well placed frustration with the response and focus of Eversource. From my experience in the utility industry all utilities have ultimately one customer as it relates to their conduct: The Public Utility Commission. Using CT as an example, the PURA sets their rates, allows them to earn a return on equity, and ultimately approves all their major actions. For Eversource, cultivating that relationship is a priority. It is in that relationship where the failures to serve the customers reside. Good utility commissions set performance metrics, and require operational responsiveness that produce good results for residents and shareholders. It is the leadership and staff of PURA that has failed the CT electric customers. Through the Governor's office and State Legislature sweeping changes in PURA should be made. As you can see from the attached chart, CT residential electric rates are 75% higher than the national average with what I expect is below average performance.

<https://www.eia.gov/electricity/state/>

26 August Meeting Notes Continued...

Some very good ideas were floated last night to protect Greenwich residents in the current storm season. I'm not sure of the cost to accomplish many of these but at first glance they don't seem too expensive.

- 1.
2. A monthly communication from the First Selectman about preparedness for upcoming seasonal weather.
3. Communication to homeowners with well water about the value of generators.
4. Get new software for the tracking of vulnerable resident's location and medical needs to speed response during storms.
5. Require Eversource to have a town or regional representative with decision making authority for Greenwich Town officials to interface in storm/cleanup periods.
6. Develop a local priority list for repairs for Eversource rather than leaving it entirely to their discretion.
7. Have all utility vendors (electric, cable and phone) improve their communication about outage times. I've heard from many residents that their power and cable/internet service was taken down several times after the storm with no warning. With so many people working from home that was a big issue for many residents.
8. Develop a system by using town employees or private contractors to identify dangerous and impaired trees on private property which is communicated to homeowners.
9. Since 60% of the downed trees were private trees, consider the possibility of charging homeowners for removal of private trees that fall on town wires or property. This would incent homeowners to have their trees checked by an arborist periodically.
10. Consider a function on the Town's website for residents to report dangerous trees, perhaps attaching photos.
11. Start a more aggressive tree trimming & removal program in conjunction with the efforts of Eversource.
12. Have the Planning and Zoning Committee add a requirement that new homes of a certain size must be outfitted with a generator especially if they have well water.
13. Have Eversource alert out of state crews earlier of any potential major storms.

EOC Task Force – Recommendations

Dr. Gregory Kramer

Department of Parks and Recreation

Superintendent of Parks and Trees/Tree Warden

Statewide Legislative Considerations for Utility Providers:

- 1) Where and when appropriate replace overhead wires with underground wires. Review utility pole composition; Wood vs. Steel vs. Concrete.
- 2) Outreach and continuing education statewide with regards to correct tree pruning and removal of hazardous trees on private property. Possible include some verbiage that holds the homeowner responsible for the cleanup cost that the municipality had to endure.
- 3) Form a local consortium with key utility and municipality employees that meet yearly to review storm procedures. In the event of a storm, the consortium meets 72 hours at a minimum prior to the storm and staging begins 48 hours prior to the storm.

Diana Singer

President & Founder of Diana Singer Education

Founder of The Porchuck Neighborhood Association

RTM Representative - D10

Action Items:

It is important to make Eversource accountable by:

How, where, and when would repair crews be operating?

Why did the classification of the storm of a rating of 4 was different then from science experts?

Why was restoration so slow?

After Sandy, few held Eversource accountable. Greenwich had a plan in place which was for whatever reason not taken seriously by our elected officials to implement effectively All elected officials on both sides of the aisle are " shocked " at Eversource. We need to make them accountable too.

The First Selectman should:

1. Make sure that a mailing MONTHLY is sent to every citizen in Greenwich. It should be easy to read strategies on colored paper. Our storms are becoming more frequent and severe due to climate change. This should not be an email as many elderly people can't always navigate.

On mailer- get charger, generator, have water, canned products packaged non refrigerated food. Community Answers is a valuable tool used by Fred but it doesn't get to everyone.

EOC Task Force Recommendations Continued (Singer)...

2. Implement town Zoom meetings explaining how and what the First Selectman is doing to protect citizens during hurricane and snow season- we have public BET and RTM meetings that are available to the public - these informational storm Q&As should be available monthly to Greenwich residents.
3. More help stations need to be set up after storms for water, meals cell phones etc. We had one at the Round Hill Fire Station in D 10 without a charging station and folks didn't even know they were there- the monthly flyers and zoom meetings are useful to raise awareness of services in place.
4. Tree trimming is a piecemeal solution. Dead trees and branches need to be taken care of but healthy trees fall too.
5. The town needs to be kept current on modernizing our electrical grids to protect against extreme weather.
6. Municipals can't be solely responsible for clearing main roads - extra emergency workers NEED to be quickly sent to towns that need more help. This comes from the state level- Governor Lamont where were you? He must be held accountable.

James Clifford

Retired Line Supervisor Eversource/Former Chief Glenville Fire Department

Recommendations:

- 3 -On all major storms demand that Eversource have in place enough resources to handle the worse of the storm
- 4- Have make safe crews in place consisting of a line crew and tree crew.
- 5- Have the DPW highway Div. on standby with back hoe to open all roads without Electrical wires down
- 6- Eversource should have a person in the emergency operations room with the knowledge of the town and the elec. system in Greenwich, this will help speed up repairs and information ASAP
- 7- Demand Eversource put out TRUE info to public ASAP with updates every 2 hours
- 8- Eversource and the T.O.G. should update their phone systems to be able to handle the amount of calls during major emergency. Also to get information out to the public.
- 1 -Identify all unsafe tree conditions over back bone of the system and make repairs.
- 2- Tree trimming 4-year cycle should be evaluated very 2 years
- 9- For health reasons. The Dept. of Health should suggest that all homes with well water should install a back-up generator, and all new homes should be required to do it in order to get their C.O.
- 10- The first selectman should set up a committee to see how the progress of committee's request are doing, to be able to observe operations during emergency
- 11- Radio system of the Town should make updates so cross communication can be made during major situations- his could save time and avoid misinformation.
- 12- Require Eversource to inform the town 48 to 72 hours in advance of storm hitting e amount of crews in town and ready to start staging when storm hits.

EOC Task Force Recommendations Continued (Clifford)...

Everyone expressed well placed frustration with the response and focus of Eversource. From my experience in the utility industry all utilities have ultimately one customer as it relates to their conduct: The Public Utility Commission. Using CT as an example, the PURA sets their rates, allows them to earn a return on equity, and ultimately approves all their major actions. For Eversource, cultivating that relationship is a priority. It is in that relationship where the failures to serve the customers reside. Good utility commissions set performance metrics, and require operational responsiveness that produce good results for residents and shareholders. It is the leadership and staff of PURA that has failed the CT

14. Electric customers. Through the Governor's office and State Legislature sweeping changes in PURA should be made. As you can see from the attached chart, CT residential electric rates are 75% higher than the national average with what I expect is below average performance. <https://www.eia.gov/electricity/state/>

Lou Paglia

Retired Energy Consultant

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Dr. Gregory Kramer

Tree Warden, Town of Greenwich

Recommendations:

I copied some information and links from Florida Power and Light. My feeling is their approach to managing storms would be worth reviewing. Although long it has some great information that could be pulled out, reviewed and added to what is ultimately going to be proposed to the state legislature.

<https://www.fpl.com/storm/pdf/storm-guide.pdf>

<http://newsroom.fpl.com/2016-05-05-FPL-conducts-annual-storm-drill-highlights-new-technology-and-emergency-response-partnerships-in-advance-of-2016-hurricane-season>

Here is a paragraph I pulled out from the above document:

FPL also demonstrated how crews work more efficiently in the field to speed restoration. The company's storm response fleet, including its Mobile Command Center and Community Response Vehicle, allows field employees to operate remotely in the hardest hit areas. The company's network of smart meters allows response crews to use a simple computer "ping" to confirm lights are back on before a crew leaves a neighborhood, replacing the traditional door-to-door approach

<http://www.floridapsc.com/Files/PDF/Publications/Reports/Electricgas/UtilityHurricanePreparednessRestorationActions2018.pdf>

I also had some thoughts as to what the task force is called. Although tree/vegetation management is a large component of how to manage storm power outages, my feeling it is a subset of an overarching umbrella. The name may lead others outside of the group to believe only trees need to be addressed, however overall preparedness and procedures is that are being evaluated. If agreed, the name change can be discussed.

Julia Chiappetta

Former Member Board of Health & Selectman's Team EOC Volunteer

Recommendations:

- Reinststate Eversource Regional Field Office (temporary or permanent) pre/during/post storms
- Metrics for accountability/penalties
- Regional pre meeting communications 72 hours prior to storm with crew staging
- Make Safe Policy – update and initiate

EOC Task Force Recommendations continued...

JoAnn Messina

Executive Director Greenwich Tree Conservancy, Town of Greenwich

Recommendations:

- Your "Make Safe" program should be working and operational. Eversource must have a person or crew immediately in town after a storm to kill all live wires so our tree crews can open roads and remove debris.
- Undergrounding of electrical wires should begin when conduits are dug and open such as when the substation went in recently so specifically when new development is done and then continuing where feasible.
- Recommendations from the Two Storm Panel and specifically the State Vegetation Management Task Force Report should be implemented.

Best Practices:

- It is imperative that the Tree Department have an updated software system to inventory and then monitor all trees in town. We have been asking for this for a decade.
- Communications generally need to be improved. I am not knowledgeable of your Emergency communications software system but it should be a system where are departments can access information easily during and immediately following a storm.
- All town libraries should be the go to places for charging and water and any basics during a storm.

Appendix # 1

Testimony to CGA Energy & Technology Committee in support of LCO No. 3920.

07 September

An Act Concerning Emergency Response by Electric Distribution Companies and Revising the Regulation of Other Public Utilities the Greenwich Tree Conservancy, an 800 strong non-profit organization, whose mission is to preserve and enhance the tree and forest resources to benefit the community its health and its quality of life. We have worked with and watched Eversource for over a decade. In August, we submitted testimony to this Committee and to PURA to look beyond Eversource's "act of nature" response, to the broader elements of the quality of their systems and response, the recognition of new weather patterns, and the current financial structure under which Eversource operates. Eversource is a critical infrastructure supplier that must manage, and be managed, more effectively. This comprehensive legislation addresses many of the questions that we raised as well as goes beyond to address other constituents' concerns. We would like to express support for those elements that relate to the "blame the trees" concerns and suggest a few modifications. • We wholeheartedly support (Bill sections 1&2) requiring PURA to develop performance-based metrics of regulatory oversight, that the development of those metrics be tied to and consistent with the State's Integrated Resources and Energy Plans. We also support giving PURA the ability to "demystify" and scrutinize the components of proposed rate increases in light of a broad-based performance evaluation. • We wholeheartedly conceptually support (Bill sections 3,9-12) incentives for improved performance and penalties for continued inadequate performance, particularly those penalties for inadequate performance during and after emergencies, having those funds collected as penalties allocated to ratepayers and not using those penalties as operating expense for future rate increases. We will defer to others with more expertise on the form of those incentives and penalties. • We fully endorse requiring data gathering regarding past storm events, e.g., resources expended, damage and service outages, restoration management, etc. (Sec 13). However, in our view limiting the data gathering of the last 5 storm events categorized as level 3, 4 or 5 is insufficient. Isaias was a category 1 storm which would be missed by this measure. The severe storms that created the 5 CT tornados in August did not reach the threshold of categorization but resulted in significant impacts. Widespread damage occurs in events that are not hurricanes of 3, 4, or 5 and that data should be captured. We urge the legislature to consider other metrics such as time, e.g., storms since 2010 that have created widespread outages in a particular community or across the state. • We support requiring regional service centers for increased responsiveness (Sec 14) as was practice in the past. • We applaud the E&T Committee for recognizing the need for implementing resilience projects and proposing a grant and loan program to accelerate implementation of such projects (Section 19). Five tornados in one month is a sign of Connecticut's severe weather to come in our future. Damage to our antiquated distribution system is inevitable in 80+ mile hour winds. One need only at images of Louisiana, with relatively few trees compared to Connecticut, and see the damage to the distribution system in the recent hurricane. We also recognize the need to start with critical facilities such as municipal centers, police and fire stations and hospitals. • While we support requiring DEEP to work with the CT Academy of Science and Engineering regarding the study of options for the provision of reliable electric

service, including undergrounding, we ask that it be made clear that projects applying for grants for undergrounding prior to the study's completion will not be downgraded or denied. Years ago, Greenwich asked Eversource for a pilot undergrounding project which would extend from Railroad Avenue to Town Hall to Greenwich Hospital (approximately 2 miles) and nothing happened. With new incentives and a grant and loan program this could provide the impetus for this pilot project. • We also support water utilities filing plans for promoting water conservation (Section 2) Additions and Changes to Bill: • In relation to the above comment, the GTC further urges a more explicit statement of support for undergrounding of wires in critical areas now, not after the completion of the assessment report. Connecticut must not only modernize how we generate and use energy; we must modernize how we deliver it too. We should not be relying on century-old pole distribution technology to withstand storms while accommodating the 21st Century weight of cable, transformers, coils of wire, internet, and phone. • GTC urges incorporation of recommendations from the 2012 State Vegetation Management Task Force report in particular providing funds to municipalities for their use in hazardous tree assessments and removals. • Telephone company references need to be more inclusive "communications technology company" • Several cases where the years in the proposal seem like typos: lines 925 and 940 appears to be a typo in stating deadline of 2013 and assume the intent was 2023; Line 1004 reads 2012 assume should be 2022 We watched and listened to the PURA hearing and the first E&T Committee hearing and noted that Eversource said their reliability has improved dramatically in non-storm events. Reliability should be the rule in non-storm events – in a 21st century system we should not be experiencing outages due to squirrels being electrocuted on the lines, for example. It is storm response and recovery that must improve as Connecticut prepares for more frequent and severe storms in our future. On Behalf of GTC: Cheryl Dunson, GTC President, 355 Taconic Road, Greenwich, CT 06831

Appendix # 2
Town Community Wide Preparation Communication Discussion
02September

BOH, BOS, GPD, GFD, and other overlapping departments collaborate with a redesigned Emergency Preparedness flyer (2 sided) mailed, emailed, texted and on social media for all residents to have a guide to prepare by month.

For Example: March - time to purchase bottled water for bathing and drinking to last 2 weeks, purchase new batteries, solar powered phone and computer charges. Check your RX for critical medication, check in with BOH if you or a loved one is homebound or on a ventilator to plan for contingency plan or sheltering during storms.

Open Libraries (with generators), for cooling, heat and charging technology during storms

Sheltering – town needs MOU from Red Cross for volunteers & sheltering during major storms.

BOH is in discussion to resolve the regional issues that presented during past storms.

Appendix # 3

Energy and Technology Committee Forum on Eversource Response to Tropical Storm Isaias

27 August

JoAnn Messina Attendee

CEO of Eversource Jim Judge yesterday in front of the Energy and Technology Committee. repeated that this recent storm response was a tree issue. I would disagree with him on several levels but think a video is worth a 1000 words. Below is a short one from the storms down south. As you can see it is relatively treeless. That does not stop poles and wires from coming down in a storm.

<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.nytimes.com%2Fvideo%2Fus%2F100000007312440%2Fdamage-from-hurricane-laura-seen-from->

[above.html&data=02%7C01%7CEMOC%40greenwichct.org%7C90d936db05114a77fb7108d84b79e4e3%7C0b5c882cbfa04a59b4b61e638dcf7814%7C1%7C0%7C637342334194586695&sdata=vYjgmLeVyuHHYteSLEBISm5%2F9qSRpOme2GFHHnxSJ7M%3D&reserved=0](https://www.nytimes.com%2Fvideo%2Fus%2F100000007312440%2Fdamage-from-hurricane-laura-seen-from-above.html&data=02%7C01%7CEMOC%40greenwichct.org%7C90d936db05114a77fb7108d84b79e4e3%7C0b5c882cbfa04a59b4b61e638dcf7814%7C1%7C0%7C637342334194586695&sdata=vYjgmLeVyuHHYteSLEBISm5%2F9qSRpOme2GFHHnxSJ7M%3D&reserved=0)

Mr. Judge spoke to 80 million dollars Eversource has spent on tree pruning and removal and still the worst storm response to date. In addition to that money most municipalities in Fairfield County have spent money on tree pruning and removal. I would suggest that trees may not be the main issue to discuss. Everyone expressed well placed frustration with the response and focus of Eversource. From my experience in the utility industry all utilities have ultimately one customer as it relates to their conduct: The Public Utility Commission. Using CT as an example, the PURA sets their rates, allows them to earn a return on equity, and ultimately approves all their major actions. For Eversource, cultivating that relationship is a priority. It is in that relationship where the failures to serve the customers reside. Good utility commissions set performance metrics, and require operational responsiveness that produce good results for residents and shareholders. It is the leadership and staff of PURA that has failed the CT electric customers. Through the Governor's office and State Legislature sweeping changes in PURA should be made. As you can see from the attached chart, CT residential electric rates are 75% higher than the national average with what I expect is below average performance.

<https://www.eia.gov/electricity/state/>

Appendix # 4 Testimonies in Support

A.

Dear Chairmen Needleman and Arconti and Energy and Technology Committee Members:

The Greenwich Tree Conservancy, an 800 strong non-profit organization, has worked with and watched Eversource for over a decade. We continue to be alarmed at their ineffective performance. If the past serves as a predictor of the future, then Connecticut, a coastal state already impacted by climate change needs to implement immediate changes to our energy sourcing and management. There is no reason why trees and infrastructure cannot coexist. Mature, healthy trees are the backbone of our ecosystem and are essential to mitigate the severe weather which will recur due to climate change. We must balance the needs of the utilities with the measurable benefits provided by trees to our communities. We urge our State officials and PURA as the regulating authority to look beyond Eversource's "act of nature" response, to the broader elements of the quality of their systems and response, the recognition of new weather patterns, and the current financial structure under which Eversource operates. In 2012, PURA slammed Connecticut Light & Power in a decision analyzing the utility company's response to two storms, calling it "deficient and inadequate."

(<https://patch.com/connecticut/wilton/pura-wants-to-penalize-clp-for-deficient-response-toa0b81b9fa4>) Despite the passage of 8 years, the successor's response remains inadequate and deficient. They did not have a well-crafted restoration plan and the crews they did have were not allocated in an efficient manner. Many towns did not see crews for many days. We ask that you evaluate the following: How does their current above ground pole distribution system compare to that designed a century ago? One need only at images of Greenwich from the early 1900's to see the lack of progress. • How has Eversource strengthened the pole distribution system to withstand storms while accommodating the weight of cable, transformers, coils of wire, internet and phone? • How much has it cost the state, municipalities, and residents to deal with the impacts of this storm? In looking back 20 years, how much has it cost directly (with tree trimming and storm clean-up) and indirectly when considering losses to businesses and individuals? • Has the CGA and/or PURA looked at Eversource's Budget, P&L or Balance sheets to determine their expenditures for their "enhanced tree trimming" program plus how much they spend on cleanup, replacing damaged poles/ lines and power restoration, then compare those combined costs to what it would cost to install power lines underground? Eversource has raised rates yet has had the worst response to a storm in years. • Why is Eversource granted a guaranteed rate of return rather than a return contingent upon performance? • Why aren't incentives placed by PURA that will promote quicker responses and undergrounding of wires where appropriate? If poles are truly the only option, then how can they be replaced based upon 21st century demands of a system to ensure electricity and communications systems? • Does the higher rate of return for transmission projects discourage investments in distribution projects? • Does their financial structure and regulatory oversight need to be thoroughly evaluated to determine whether it promotes tree trimming and repeated storm recovery costs shouldered by ratepayers rather than resiliency investments which would better

perform under severe weather conditions? • How have municipal utility systems rates and storm responses compared to Eversource? What lessons can we learn from them? • How does the statutory authority granted to, and oversight by, PURA promote consistency with Connecticut's long-term energy and resilience plans or detract from them? Are changes needed? The Greenwich Tree Conservancy asks the Legislature for answers from Eversource to these questions. Tropical Storm Isaias caused significant damage to the power grid and downed trees were blamed. Eversource needs to stop blaming nature and put a plan in place for Connecticut, using 21st century solutions. The Greenwich Tree Conservancy believes a different incentive program is necessary that rewards innovative technological solutions. Eversource has shown that they will not do what is cost effective and innovative unless it is mandated. Respectfully submitted by, JoAnn Messina, Executive Director Greenwich Tree Conservancy 15 Perryridge Road Greenwich, CT 06830 www.greenwichtreeconservancy.org

B.

Dear CT Legislators, I am writing you to ask that you address the serious and persistent issue of our antiquated, failing electrical infrastructure in Connecticut. Recent tropical storm Isaias caused power outages across Connecticut leaving more than 1 million households without power and without communications (cable, phone) for a week and more. Unfortunately, outages are not unique to this storm, but rather have become commonplace with every passing storm, due to our vulnerable, outdated infrastructure. During 1983-87, I lived in Europe and ALL of the local transmission and distribution lines were buried - never a power outage. Then from 1992-2008 living in Manhattan, through many strong storms, I continued to have reliable service because the lines are buried. However, since moving to Greenwich in 2008, I have been dismayed by the unreliability of electrical distribution, constant outages, as well as the visual clutter of what looks like Third World infrastructure. In the last two years, our family has lost power at least 12 times — one outage lasted 9 days, and twice we had outages caused by a squirrel that shorted the line. It is unacceptable that our infrastructure is so fragile that a squirrel can derail it. But it is equally unacceptable that winds, ice, falling trees can also derail our services. Severe weather is a fact of life in New England, our infrastructure must be tailored to the realities of the conditions. During all of the outages over the years, we have never once lost our natural gas or water service. Why? Because their pipes are underground and protected.

Our standards and expectations of Eversource must be elevated. We cannot continue to accept multiple power outages that disrupt residents' work, businesses, schools, and lives, and in many cases endanger, their lives. Trees and storms are not the problem. Overhead lines and poor planning are. **Overhead lines are the "horse-and-buggy" of electrical distribution. Buried lines are the current standard for new construction, so we must update our existing infrastructure to the current standard.**

Some points and information to consider:

- There is broad consensus on the **BENEFITS** of burying the lines:

- **Reduced Maintenance**
 - Weather-related outages are eliminated.
 - Significant cost savings to ratepayers once the initial undergrounding cost has been paid.
- **21st Century reliability**
 - Your constituents rely on electrical, cable and phone utilities to run their businesses, further their education, and show up for remote jobs and internships. Lack of these services can jeopardize job security, cause lapses in education and disables emergency communications.
 - Hospitals, police and fire stations, and EMS need power and communications to save lives.
 - School cancellations due to outages also would be avoided with buried lines.
- **Aesthetics**
 - Overhead lines only detract from the beauty and historic charm of our communities. Eliminating the visual clutter of overhead lines creates a more beautiful, park-like feel with benefits to mental health.
 - Trees would not have to be pruned so aggressively and could grow in a more balanced, natural shape, making them more structurally sound and resilient.
 - Improvement projects such as adding or widening sidewalks are made possible without utility pole obstructions.
- **Safety**
 - Burying lines eliminates the risk of fire hazards, electrocution from falling lines.
 - Utility line work is one of the most dangerous jobs in America with about 40 of every 100K workers killed on the job every year. Many more are injured. The fatality rate is more than twice the fatality rate of police officers and firemen. Less necessary maintenance brings less exposure to workers to “hot” wires and less need for workers to do their work at precarious heights, reducing overall risk.
 - Reduce automobile accidents as motorists will no longer strike utility poles, often with fatal consequences.
 - Police, Fire, EMS, Hospitals and nursing homes rely on electricity to power critical communications as well as life-saving equipment.
 - Vulnerable residents reliant on CPAP machines, refrigerated medicines, and monitoring equipment will not have to worry about the next outage.
- **Environmental**
 - Save the trees/forests: carbon-sequestering pine trees are used as utility poles (In the US, there are 120-180M wood utility poles with about 6M more harvested per year). One study found that stopping deforestation is AS important as reducing carbon emissions to combating climate change.

- Eliminate contamination of soil/water: Utility poles are treated with toxic chemicals, like creosote and arsenic, which off-gas and run off, contaminating our soil and water table.
 - Health risks of exposure to electromagnetic radiation fields (EMF's) are reduced and possibly eliminated.
 -
 - **Economic Development**
 - Funding infrastructure upgrades employs local workers, who return their earnings into local and state economy.
 - Increase property values: Studies show that real estate values can increase up to 15% when utilities are undergrounded. Higher real estate sales and valuations create a vibrant economy and more tax revenue.
 - Local businesses may benefit as customers are drawn to the improved appearance in local business areas. Stronger businesses equal happier, stable business owners, more employees, as well as increased state tax revenue.
 - Reduce interruptions economic activity (impacts on businesses, tax revenue) due to power outages are eliminated. Some storm-related outages have had estimates in the billions of dollars in lost economic output.
 - Historic sites, scenic vistas, parks and historic towns in our state will be beautified and revitalized which will bring more tourism.
 - **Equity**
 - Many wealthy neighborhoods have pooled resources to underground their lines. In Greenwich, a few examples are Belle Haven, Mead Point and Conyers Farms. These neighborhoods should not be the only ones to receive reliable service. The fact that these neighborhoods can continue to work remotely and learn online, while others cannot, widens the disparity of resources and education.
 - Generators for an average home, installed, cost \$10K and up. This is unaffordable for most households in CT. Median household income in CT as of 2017 was \$73,781 pre-tax.
 - Communications from our Town's Emergency Management cannot get through to our vulnerable populations for emergency instructions and information like where warming or cooling centers are when power and phones are out.
- Many cities and towns are burying their lines: San Antonio, TX; Colorado Springs, CO; New Castle, DE; Saratoga Springs, NY; Williamsburg, VA; Tacoma, WA; Palm Beach, FL; and Frederick, MD. Many more have already done it.
- Some **EXCUSES** cited for not burying the lines do not hold up to scrutiny:
 - **"There is too much ledge/rock"**: Eversource has the technology and equipment to do "pipe jacking" as they have done it when needed in

Greenwich. Pipe jacking is a trench-less method of installing underground pipes horizontally using hydraulic power and a navigation system. In addition, there are so many other “trench-less technologies” that go through rock. Think of fracking equipment and their ability to drill down 2 miles and then horizontally for miles beyond that. The technology is readily available. In the past, the trenching was cited as the most expensive part of an undergrounding project, so using trench-less technologies saves money.

- **“There are too many coastal areas that flood and can’t have underground wires”**: Low-lying areas can be undergrounded. Underground lines are protected in waterproof pipes or casings. Think also of the transmission lines that run under water from Cape Cod to Nantucket - water and electrical can safely co-exist. Also, waterfront communities in Greenwich like Mead Point and Belle Haven have not had problems with water on their underground lines. There is safety “trips” that will shut down power if it comes in contact with water.
- **“It’s too hard to pinpoint an issue with underground lines and easy with overhead lines”**: Actually, there are low-cost sensors that are now routinely placed along underground lines so that issues can be detected quickly. And of course, there will be many fewer maintenance/repair issues in the first place with underground lines.
- **“It’s too expensive”**: If this is a 30-year project (as Eversource has said), then let’s start now. Interest rates are low. Overhead lines only detract from the beauty and historic charm of our communities. Maintenance costs of overhead lines are saved as more lines are buried. Buried lines also result in increases to property values, so that could play into future property assessments, bringing in more revenue for towns. In addition, the federal government also currently offers low cost loans for electrical infrastructure projects. Let’s lock it in! Please let me know if I can help in any way on moving this forward. I’d be happy to provide the information resources for the above points if needed. Thank you for considering undergrounding our State’s wires, as it is a unique opportunity to promote a project which will benefit ALL citizens of Connecticut.

Sincerely, Elizabeth Hopley, 5 Hill Road, Greenwich, CT 06830

Appendix # 5
EOC Task Force Committee Members

Town Residents & Supporting Organizations:

Julia Chiappetta, Former Member Board of Health, Town of Greenwich
James E. Clifford, Retired Line Supervisor Eversource/Past Chief Glenville Fire Department
Stephanie Dunn Ashley, CEO American Red Cross Metro New York North
Drew Marzullo, Former Selectman Town of Greenwich CT
Joann Messina, Greenwich Tree Conservancy
Lou Paglia, Retired Energy Consultant
Diana Singer, RTM District 10

Town of Greenwich Departments & Representatives:

Fred Camillo, The Honorable First Selectman
Dr. Gregory Kramer, Tree Warden
Steven Meskers, Member Connecticut House of Representatives 150th District
Daniel Warzoha, Director of Emergency Management/State Fire Coordinator,
Connecticut Fire Rescue Plan